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August 25, 2005

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Hazardous Waste and
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NYSDEC – DER – Region 2
47-40 21st Street
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Vadim Brevdo, P.E.
Environmental Engineer
NYSDEC – DER – Region 2
47-40 21st Street
Long Island City, NY 11101-5407

Re: Remedial Work Plan (RWP)
Queens West – Parcel 9, Hunters Point, Queens, NY
NYSDEC BCP Site No. C241049

Dear Mr. Walsh and Mr. Brevdo:

On behalf of AvalonBay Communities, Inc., enclosed is the revised Remedial Work Plan (RWP). The RWP assesses potential exposure pathways with respect to on-site contamination, develops remedial goals for the site, develops and evaluates appropriate remedial alternatives, and presents a design of the preferred alternative. This document was completed in accordance with New York State Department of Environmental Conservation's (NYSDEC's) Draft Generic List of Agreements. Attached is a table listing the numbered items in the Generic List of Agreements and the corresponding section number in the RWP where each issue is addressed.

Please call me at (914) 949-7336 or e-mail at marc_godick@akrf.com, if you have questions or comments.

Sincerely yours,
AKRF Engineering, P.C.

Marc S. Godick, LEP
Vice President

Enclosure

cc: Alali Tamuno, NYSDEC
Joseph Moloughney, NYSDEC
Geoffrey Laccetti, NYSDOH
Dawn Hettrick, NYSDOH
Fred Harris, AvalonBay
Fred Brockunier, AvalonBay Communities
Philip Wharton, AvalonBay Communities
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Richard M. Schwartz, Fried, Frank
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Rachel Shatz, ESDC
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Arnold F. Fleming, Fleming-Lee Shue
Mark Chertok, Sive Paget & Riesel, P.C.

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
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| 1) Remedial Actions will be in compliance with DER-10. | DER-10 was used as guidance in preparing the Queens West – Parcel 9 RWP. |
| 2) An emergency contact sheet will be submitted to NYSDEC's Project Manager that will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency. | Emergency contact list is included in Appendix E Health and Safety Plan (Section 6.3). |
| 3) Pertinent data and information from the Remedial Investigation Report will be incorporated into the Remedial Work Plan. | Pertinent data from previous site investigations are included in RWP Sections 2.7 and 2.8; Figures 9-14. |
| 4) Composite of all Sanborn maps, including a summary presentation of all historical structures of environmental significance, must be submitted. | Composite Sanborn maps are provided as Figures 5a and 5b. |
| (5) A site map showing the defined Areas of Concern with an overlay of the site development plan will be submitted. | Figure 6 shows the site development plan with the limits of the contamination shown as an overlay. |
| (6) A separate list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and development work will be submitted in the RWP and updated in the Final Remedial Report. | A list of required permits is provide in RWP Section 4.1.5 |
| (7) A comprehensive project schedule including all proposed activities will be provided in the RWP. | A proposed remediation schedule is include in Appendix K |
| (8) The specific details of minimum required technical elements of the Remedial Action will be included in the RWP and associated design documents and will not be shifted to the contractor for submission in contractor documents. | The RWP includes minimum technical specifications included in the bid package for the remediation contractor (Appendix C); design details for erosion and sediment control measures (Appendix D - SWPPP), process flow diagram for dewatering treatment and blower sizing for air handling system (Figure 18), requirements for soil handling (Appendix H – Soil Management Plan), and design specifications for the vapor mitigation system (Appendix I). |
| (9) The Applicants Remediation Engineer is responsible to insure that the contractor documents for remedial work conform to the terms defined in the final approved RWP and the final Interim Remedial Measures Work Plan. | The technical specifications (Appendix C) included in the contractor bid documents specifies compliance with the requirements of the RWP. |
| (10) All documents and reports submitted in fulfillment of consent orders and agreements made with NYSDEC will be submitted in both hard copy and in digital format on CD. | Digital copies of all documents will be submitted upon finalization of reports. |
| (11) All digital and hard copy submittals will be addressed to Project Managers for both the NYSDEC and NYSDOH. | All documents will be submitted in accordance with this requirement. |

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| (12) A digital site map(s) will be submitted to the Department and will show site structures, environmental monitoring apparatus and sampling points, and a recent aerial photo of the site and immediate surrounding area. | A digital site map will be submitted upon finalization of the report. An aerial photo is provided as Figure 3. |
| (13) A surveyed site map showing the metes and bounds for the subject site as described in the governing agreement with New York State will be submitted. | A site survey is included in Appendix A. |
| (14) Metes and bounds description of the site will include a global positioning system coordinate for the starting point for the description. | Coordinates for southwestern property corner are: 73° 57' 27.81" W and 40° 44' 41.99" N |
| (15) Project numbers will appear on the cover and face page of all reports. | The BCP number (C241049) appears on the RWP cover. |
| (16) A glossary will be provided to provide an explanation of all acronyms used in each report. | A List of Acronyms is provided following the Table of Contents for the RWP. |
| (17) Photographs will be taken of all remedial action activities and submitted to NYSDEC in digital form on a CD(s). | Photographs will be taken as described in RWP Section 4.8.2 Final Remedial Report. |
| (18) The Remedial Investigation Report will include a conceptual site model that explains the occurrence of contaminant sources and their fate and transport at the site in the context of the local site stratigraphy and hydrogeology. The conceptual model will utilize both plan and cross-sectional views of the site. | A conceptual site model is included in the Supplemental RI Report and summarized in Sections 2.7 and 2.8 in the RWP. |
| (19) An itemized summary of projected costs for the proposed remedial activity will be submitted as an appendix to the RWP. Actual final costs will be reported as an appendix to the Final Remediation Report. | Itemized project costs are included in Appendix K. Actual final costs will be included in the Final Remedial Report (as described in RWP Section 4.8.2) |
| (20) A general description of hours (i.e. 7 A.M. to 3 P. M.) and days of operation (Monday to Friday) for performance of remedial actions will be submitted. Early morning, evening, and weekend remedial work will be prohibited. | Daily work schedule will be 7 AM to 5 PM as described in RWP Section 4.10 Schedule and Costs |
| (21) For all BCP projects, the Track 1 alternative must be considered in the feasibility assessment of the RWP. | Alternative #2 (Soil and NAPL Removal with Unrestricted Use) is analyzed in Section 3.6.2. |
| (22) The RWP will include a complete and thorough description of the remedy. | Complete description of remedy provided in Section 4.0. |
| (23) The RWP will specify whether additional design documents will be prepared for the project or for elements of the project. | Design for implementation of the RWP is included in the Technical Specifications (Appendix C); Dewatering Plan (Appendix F); Vapor Mitigation System Design (Appendix I) and in the RWP text and figures. No additional design documents will be submitted. |

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| (24) A detailed map of the proposed end usage (Development Plan) of the site will be submitted. | Figure 6 shows the proposed development plan. |
| (25) A site map will be submitted showing contour lines indicating the cut (soil removal) thicknesses that will be required into soil/fill as part of the site wide development plans. | Figure 17 shows the contours of the bottom elevations of the hydrocarbon-contaminated soil, which correspond to the proposed excavation depths. |
| (26) Details regarding the proposed end usage of buildings and structures, particularly the lower floors and will be submitted and will be coordinated with NYSDOH. | Details of proposed end usage are described in RWP Section 4.4.2. |
| (27) NYSDEC will be provided the opportunity to participate in a pre-remediation/construction meeting at the site. | NYSDEC and NYSDOH will be notified of meeting to be held prior to the start of remediation. |
| (28) Site development activities are prohibited from interfering or otherwise impairing remedial activities proposed in the RWP. | Site development activities will not be allowed to interfere with site remediation as described in RWP – end of first paragraph in Section 4.0. |
| (29) All hotspots and structures to be remediated will be removed and end-point remedial performance sampling completed before excavations related to site-wide development commence. | Endpoint sampling will be conducted as described in RWP Section 4.2.6. |
| (30) Removal of free product and grossly contaminated soils will be performed. | Selected remedy includes removal of NAPL as indicated in Section 3.4 and throughout the RWP. |
| (31) Underground Storage Tanks will be identified and removed from the site in accordance with STARS. | USTs encountered during the Supplemental RI were removed in March 2005. |
| (32) Depths and other dimensions of initial remedial hotspot excavations will be defined. | Figure 12 shows the extent of soil to be removed. Figure 17 (Bottom Elevations of Hydrocarbon-Contaminated Soil) shows the depths of excavation. |
| (33) A table will be provided showing planned location identification number, depth, and Site-Specific Soil Action Level (SSSAL) triggers for all proposed excavations for site specific soil action level-based Areas of Concern. TCLP failure and other hazardous waste containing areas will be identified. | Figure 12 shows all areas of soil exceeding the SSSALs. Appendix B includes an analytical data summary table indicating which sampling locations exceed SSSALs. |
| (34) A site map showing locations of all SSSAL-based Areas of Concern (hotspots) will be submitted with note or code identifying specific contaminant trigger(s) for each hotspot. | Figure 12 shows all locations and depth intervals exceeding SSSALs |
| (35) A scaled map will be submitted showing all proposed remedial excavation areas for hotspots and structures to be removed. | Figure 12 shows the proposed remediation area. |
| (36) For projects with a major IRM program, a site-wide RWP will still be required for the entire project. | No major IRM programs are proposed for the site, the work plan being submitted is for the overall site remedy. |

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| (37) Major IRM that constitute a substantial part of the overall remedy are subject to a formal 45-day public review. | See above. |
| (38) Plan for decommissioning historic subterranean systems will be submitted. | Not applicable. USTs encountered during the Supplemental RI were removed in March 2005. No other underground structures were identified during RI test pitting activities. |
| (39) The Applicant, Volunteer, Responsible Party 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. | The Applicant, AKRF, and selected remediation subcontractor will be responsible for the safe implementation of the RWP. |
| (40) The Final Remediation Report will include a certification by a Professional Engineer that all invasive work done during the remediation and development was performed in accordance with the contaminant field screening methodology defined in the Soil Management Plan. | Final Remedial Report will include a P.E. certification that all work was in accordance with Soil Management Plan as described in RWP Section 4.8.2 |
| (41) Resumes should be provided for all personnel responsible for field screening of invasive work during the IRM and subsequent remediations and all invasive development work for unknown contaminant sources. | Resumes are included in Appendix H- Soil Management Plan (Attachment A). |
| (42) A plan will be submitted for screening of all excavations during invasive work that may penetrate residual contamination, including excavations for remediation and development. | Soil screening plan is provided as Appendix H - Soil Management Plan. |
| (43) Post-excavation sampling following hot-spot or other mandatory soil removal is required. A plan for post-excavation samples to be collected for all hotspot and other remedial excavations will be submitted. | Endpoint sampling will be conducted as described in RWP Section 4.2.6. |
| (44) A plan for monitoring down-gradient wells to assess the success of remedial measures to be taken during the IRMs and Remedial Actions will be submitted. | Included in Off-Site Investigation Work Plan. |
| (45) A monitoring plan for groundwater at the down-gradient site perimeter to evaluate site-wide post-remedial performance will be submitted. | Included in Off-Site Investigation Work Plan. |
| (46) Appropriately placed groundwater monitor wells will be installed immediately down-gradient of all volatile organic carbon remediation areas for the purpose of evaluation of the effectiveness of the remedy that is implemented. | Included in Off-Site Investigation Work Plan. |
| (47) A plan for site-wide, soil gas monitoring to be performed after the completion of remediation will be submitted and will be coordinated with NYSDOH. | Monitoring of passive vapor collection system (as per RWP Section 4.4.3) will be conducted to determine soil gas concentrations. |

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| (48) Sites with identified methane and other contaminated soil vapors will be required to construct utility seals at all underground entry points for utilities into onsite buildings and all utility departures from the site to prevent preferential migration of methane and other soil gasses along utility pathways. | All penetrations through the building foundations, inclusive of utilities, will be sealed using spray applied vapor barrier, as specified in RWP Section 4.4.2. |
| (49) All remedial plan involving the capture and release of soil vapors known or suspected to be contaminated must demonstrate that the atmospheric emissions of those contaminants is consistent with requirements defined in NYSDEC Division of Air document Air Guide One. | Air treatment will meet Air Guide One requirements. Air treatment will be conducted as described in RWP Section 4.1.4 and Appendix F (NYSDEC Air Facility Registration). |
| (50) Sites containing historic fill or other organic-rich fill material will require testing of soil vapor for methane. | Not applicable - site characterization did not identify subsurface materials that would be indicative of methane generation. |
| (51) Proposed design of the sub-slab portion of the proposed development will be provided and will be coordinated with NYSDOH. | Sub-slab elements of the development are described in RWP Sections 4.4.2 and 4.4.3 and Appendix I Vapor Mitigation Design. |
| (52) After the completion of soil removal and other invasive remedial activities, a land survey will be performed by a New York State licensed surveyor. | As-built drawings described in Section 4.8.2 of the RWP will be based upon a survey performed by an New York licensed surveyor. |
| (53) Demarcation layer will be placed over on-site soils at all locations outside the footprint of buildings to be included in the final development. | A demarcation layer will be installed as described in RWP Section 4.4.1. |
| (54) A site map and plan will be submitted that shows the design detail and location for each of the proposed final surfaces contemplated for the site. | Figure 20 shows the proposed final surfaces contemplated for the site. |
| (55) A description will be submitted of the nature of surface cover that will be in place after the remediation is complete but before development commences | Not applicable – site development will commence concurrent with and immediately following remediation. |
| (56) Double layers of minimum 8-mil plastic sheeting will be used at the base of all stockpiles. | Double layers of 8-mil plastic will be used as described in Appendix H Soil Management Plan (Section 4.2.6). |
| (57) 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. | Stockpiles will be covered with tarps as described in Appendix H Soil Management Plan (Section 4.2.6). |
| (58) 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. | All stockpiles will have silt fence or a hay-bale berm around the perimeter as described in Appendix H Soil Management Plan (Section 4.2.6). |
| (59 A stockpile management plan will be submitted and will address historic fill, clean fill for reuse and imported of offsite soil. | Appendix H Soil Management Plan (Section 4.2.6) describes the stockpile management practices. |

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| (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 city sewer systems will be addressed through approval by NYCDEP. | Dewatering fluids will be treated on-site and discharged to the City sewer under a NYCDEP permit as described in RWP Section 4.2.3 and Appendix F. |
| (61) Dewatered fluids will not be recharged back to the land surface or subsurface of the site. | Dewatering fluids will be treated on-site and discharged to the City sewer under a NYCDEP permit as described in RWP Section 4.2.3 and Appendix F. Dewatering fluids will not be discharged to the land surface or subsurface. |
| (62) Characterization plan for onsite reuse of grading cut soils will be submitted and will be consistent with the sampling protocol defined in DER-10 or otherwise approved by NYSDEC. | Soil characterization procedures are described in RWP Section 4.3.1 and Appendix H Soil Management Plan (Section 4.3.2) |
| (63) Onsite soils removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill above subsurface utility lines. | Soil cap will consist of clean imported fill as specified in RWP Section 4.4.1. |
| (64) Development-related grading cuts and fills for development must not interfere with, or otherwise compromise, the performance of remediation necessary at the site. | Development activities will not interfere with site remediation as described in RWP – end of first paragraph in Section 4.0. |
| (65) Organic matter or other solid waste derived from on-site or from offsite is prohibited from reuse or use on-site. | Organic matter/solid waste will not be used as fill as described in Appendix H Soil Management Plan (Sections 4.3.2 and 4.3.3). |
| (66) Historical fill is prohibited from being reused as backfill in utility trenches or landscape berms. | Soil cap will consist of clean imported fill as specified in RWP Section 4.4.1. |
| (67) Mechanical processing of historical fill on-site is prohibited. | Mechanical processing will not be conducted without prior approval from the NYSDEC, as described in Appendix H Soil Management Plan (Section 4.2.6). |
| (68) A plan for composite sampling for reuse of site soils will be provided. The plan will describe the sampling frequency, analytes, sampling methods and stockpile management plan. | Waste/re-use characterization will be conducted as described in RWP Section 4.3.1 and Appendix H Soil Management Plan (Section 4.3.2) |
| (69) Plan for all material to be removed from the site will be submitted and will include excavated soil, historic fill and other solid waste and hazardous waste, showing that the material will be handled, transported and disposed in accordance with applicable Part 360 regulations and other applicable local, state, and federal regulations. | Appendix H Soil Management Plan |
| (70) Non-hazardous historic fill taken off-site will be handled as a Municipal Solid Waste per 6NYCRR Part 360-1.2 | Appendix H Soil Management Plan (Section 4.3.2). |

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| (71) Historical fill (Municipal Solid Waste) can be received by permitted Part 360-2 or Part 360-11 facilities without modification of their permits. These materials are prohibited from Part 360-16 Registration Facilities (also known as Soil Recycling Facilities). | Appendix H Soil Management Plan (Section 4.3.2). |
| (72) Native soils that are contaminated and non-hazardous that are being removed from remediation sites are considered Construction and Demolition (C/D) materials with contamination not typical of virgin soils by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC. These soils may be sent to a permitted Part 360 landfill. | All soil removed off-site will be disposed of in accordance with applicable requirements as referenced in Appendix H Soil Management Plan (Section 4.3.1). |
| (73) The Final Remediation 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, and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material. | The Final Remedial Report will included an accounting of all material removed from the site including manifests/bills of lading and certificates of disposal, as described in RWP Section 4.8.2. |
| (74) Bill of Lading system or equivalent will be used for offsite movement of non-hazardous wastes and contaminated soils. This information will be reported in the Final Remediation Report. | The Final Remedial Report will included an accounting of all material removed from the site including manifests/bills of lading and certificates of disposal, as described in RWP Section 4.8.2. |
| (75) Hazardous wastes derived from on-site will be stored, transported, and disposed in full compliance with applicable local, state, and federal regulations. | Waste characterization data from the RI and Supplemental RI indicates that there is no hazardous waste at the site. |
| (76) Soils imported to the site for use for the final cover will meet TAGM 4046 criteria. | Imported fill will be tested for compliance with TAGM 4046, as described in Appendix H Soil Management Plan (Sections 4.2.3, 4.2.4, and 4.3.3). |
| (77) The Final Remediation Report will include a certification by a Professional Engineer that all import of soils from offsite, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the RWP or other pertinent project plans. | RWP Section 4.8.2 Final Remedial Report |
| (78) Soil materials that exceed TAGM 4046 will not be imported onto the site. | Imported fill will be tested for compliance with TAGM 4046, as described in Appendix H Soil Management Plan (Sections 4.2.3, 4.2.4, and 4.3.3). Soil exceeding TAGM levels will not be used as backfill. |
| (79) For larger projects, an evaluation should be performed for the import of cover soils via alternatives to overland truck transport (barge, rail, etc.). | Not applicable. |
| (80) Solid waste will not be brought onsite. Solid waste will not be used for grading fill or cover soil on-site. | Solid waste will not be used as backfill, as described in Appendix H Soil Management Plan (Section 4.3.3). |

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| (81) A dust suppression plan that addresses dust management during invasive on-site work, including, at a minimum, the items listed below: | Water will be used to control dust as described in Appendix G Air Monitoring Work Plan (Section 8.5). |
| (82) Dust suppression will be achieved though the use of a dedicated on-site water truck equipped with a water cannon to enable the spray of water into off-road areas including excavations and stockpiles. | Water will be used to control dust as described in Appendix G Air Monitoring Work Plan (Section 8.5 – water will be used to mist roadways, etc.) |
| (83) Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils subject to dust production. | Complete clearing and grubbing will be required for grading of site and relocation of existing pile. Erosion and sediment control measures, including dust suppression, will be implemented during the site-preparation activities. |
| (84) Gravel will be used on roadways to provide a clean and dust-free road surface. | Stabilized construction entrances and truck decontamination pads will be provided as specified in RWP Sections 4.2.4 and Appendix C SWPPP. |
| (85) On-site roads will be limited in total area in order to minimize the area required for water truck sprinkling. | Stabilized construction entrances and truck decontamination pads will be provided as specified in RWP Sections 4.2.4 Trucking and Disposal, and Appendix D SWPPP. |
| (86) The Final Remediation Report will include a certification by a P.E. that all invasive work during the remediation (including IRM's) and all invasive development work was done in accord with dust and odor suppression methodology defined in the Interim Remedial Measures Work Plan or RWP. | Final Remedial Report will include P.E. certification that dust suppression and odor control was performed according to the Air Monitoring Work Plan (Appendix G). |
| (87) A truck wash will be constructed and used for all trucks and equipment departing the site | A decontamination pad and truck wash station will be installed as described in RWP Section 4.2.4 and Appendix D SWPPP. |
| (88) Proposed truck routes for ingress and egress to the site will be defined. Routes will consider: (a) limiting transport through residential areas; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; and (e) promoting safety in access to highways. | Truck routs are shown on Figure I9. |
| (89) Trucks will be prohibited from stopping and idling in the neighborhood outside the project site. | Trucks will be prohibited from stopping in the Queens West neighborhood and will proceed directly to the highway as described in RWP Section 4.2.4. |
| (90) Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development. | Appendix D SWPPP (Section E) |
| (91) Queuing of trucks will be performed onsite. Offsite queuing will be prohibited. | Queuing of loaded trucks will be prohibited, as stipulated in RWP Section 4.2.4. Loaded trucks will be required to travel directly to the highway with no stops. |
| (92) Trucks exiting the site will be securely covered with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. | RWP Section 4.2.4. |

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| (93) An odor control plan will be submitted that is capable of controlling emissions of nuisance odors off-site, and on-site, where there are residents or tenants on the property. | A containment structure will be erected and an air monitoring plan will be implemented to control nuisance odors on and off-site, as described in RWP Section 4.1.4 (containment structure) and Appendix G Air Monitoring Work Plan. |
| (94) Among the means to be considered for minimization of odors during remedial actions 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. | Appendix H Soil Management Plan (Section 4.6)<br>Appendix G Air Monitoring Plan (Section 8.5) |
| (95) Where odor problems have developed during remedial work or where the release of nuisance odors cannot otherwise be avoided due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by containing excavation and handling areas through the use of tents containment structures. | A containment structures will be used to control odors as described in RWP Section 4.1.4 (containment structure) |
| (96) A plan for rodent control will be submitted and will be utilized prior and during site clearing and site grubbing, and during all remedial work. | RWP Section 4.5.1. |
| (97) A plan will be submitted for noise control will be included in the Remedial Work Plan or Interim Remedial Measures for all remedial work and will conform, at a minimum, to NYCDEP noise control standards. | RWP Section 4.5.2. |
| (98) A plan that conforms to the requirements of a Stormwater Pollution Prevention Plan will be submitted. | Appendix D Stormwater Pollution Prevention Plan (SWPPP). |
| (99) The Applicant, Volunteer, Responsible Party and associated parties preparing the remedial documents submitted to the State, and parties performing this 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. | All work will be conducted in accordance with the Health and Safety Plan provided as Appendix E. |
| (100) The Health and Safety Plan (HASP) and all agreements made related to invasive activities will be required for all work performed until the completion of the development of the site (including site grading and materials relocation). | Appendix E Environmental Health and Safety Plan |
| (101) The HASP will be submitted as a separate, standalone document independent from the project plans. | Although the HASP is being submitted as an appendix to the RWP, it was prepared so that it can be a stand alone document. |
| (102) The Site Safety Coordinator will be identified. A resume will be provided. | The Site Safety Coordinator (called Field Safety Officer in the HASP), will be assigned before any remediation work commences at the site. |

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| (103) Details of the Community Air Monitoring Program (CAMP) will be defined and will be coordinated with the NYSDOH. | Appendix G – Air Monitoring Work Plan is consistent with the NYSDOH Generic Community Air Monitoring Plan. NYSDOH will be consulted during implementation of air monitoring at the project site. |
| (104) Exceedences observed in the CAMP will be reported in the daily report to the NYSDEC Project Manager. | RWP Section 4.8.1. |
| (105) The HASP will include affirmative statements to indicate procedures to be followed. | Language in Appendix E Health and Safety Plan includes affirmative statements. |
| (106) The HASP will cover all invasive work performed for remediation and site development (including site grading and materials relocation). | Appendix H Soil Management Plan (Section 5.0) indicates that HASP will be implemented during remediation, site development, and future maintenance activities. |
| (107) Appropriate HAZWOPER training will be provided as required for remedial activities. | Appendix E Environmental HASP (Section 3.2). |
| (108) Institutional Controls necessary for appropriate management of residual contamination of the site will be defined in the Remedial Work Plan and finalized in the Site Management Plan in the Final Remedial Report for the site. | RWP Section 4.9.1. |
| (109) Engineering Controls necessary for appropriate management of residual contamination of the site will be defined in the final Remedial Work Plan for the site. Long-term management of engineering controls will be defined in the Site Management Plan in the Final Remediation Report. | RWP Sections 4.4 and 4.9.1. |
| (110) Fact Sheets are the property of New York State. The applicant will be requested to assist in their preparation (including the development of draft Fact Sheets) and their distribution. | RWP Section 4.6. |
| (111) All draft Fact Sheets will be provided to the Department in WordPerfect files and in the format used by Region 2, as dictated by the Project Manager. | RWP Section 4.6. |
| (112) A certification of mailing will be sent by the Applicant 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, and a list of recipients. | RWP Section 4.6. |
| (113) CP Plans: check latest guidance on DER Website. | RWP Section 4.6. |
| (114) Daily Reports will be provided to the Project Manager for NYSDEC and NYSDOH by email during all periods of major invasive activity on remedial projects. | Daily reports will be emailed as described in RWP Section 4.8.1. |

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| Generic Agreement Number and Description | Section Addressed in RWP |
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| (115) Daily reports are not intended as a 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 must be made directly with project managers. | Time-critical information will be communicated directly to the NYSDEC project manager as described in RWP Section 4.8.1 Daily Reports. |
| (116) Periodic reports will be required for site development that occurs prior to the issuance of State signoff for a project. | Such reports will be included in Daily Report as described in RWP Section 4.8.1. |
| (117) Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated to the NYSDEC's project manager. These findings will be included in daily or periodic electronic media reports. | Such identifications will be communicated in daily reports or directly to the project manager, as described in RWP Section 4.8.1. |
| (118) A site map will be submitted that shows a predefined grid for use to identify locations in reports provided to NYSDEC. | RWP Section 4.8.1 Daily Reports. |
| (119) Mandatory job-site record keeping will be required. These records must be maintained onsite at all times during the project and be available for inspection by NYSDEC and NYSDOH staff. | The project log book will be maintained on-site for inspection as described in RWP Section 4.7 Record Keeping. |
| (120) The Final Remedial Report will include as-built drawings for all constructed elements, certifications, manifests and bills of lading; and the Site Management Plan (formerly the Operation and Maintenance Plan). | RWP Section 4.8.2. Final Remedial Report |
| (121) Where determined to be necessary by the Department, a Financial Assurance Plan will be required to insure the sufficiency of revenue to perform long-term operations, maintenance and monitoring tasks defined in the Site Management Plan and Environmental Easements. | Not applicable. |
| (122) The Final Remediation Report will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill and solid waste and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material. | RWP Section 4.8.2 Final Remedial Report. |
| (123) An itemized description of costs incurred during all aspects of the Remedial Action taken on the project will be provided as an appendix to the Final Remedial Report. | RWP Section 4.8.2 Final Remedial Report. |
| (124) Before completion of a project (before approval of a final Remedial Report and issuance of a Certificate of Completion), all project reports must be submitted in digital form (PDF). | All reports will be submitted in PDF format in accordance with this requirement. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
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| (125) 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. | As-built drawings described in RWP Section 4.8.2 Final Remedial Report will be created based on a survey performed by a NYS licensed surveyor. |
| (126) The Final Site Management Plan must be submitted in the Final Remedial Report and must include a Soil Management Plan and a listing of all Institutional Controls, Engineering Controls, operation, monitoring and maintenance for the site and Annual Certification that the controls are still in-place and effective. | A Site Management Plan will be submitted as described in RWP Section 4.8.2. |
| (127) Environmental Easements will be required for all residual contamination left onsite after the remedial action is complete at the site. | Environmental Easements will be recorded as described in RWP Section 4.9.1. |
| (128) The Environmental Easements must include the Site Management Plan including a listing of all Institutional Controls, Engineering Controls, and Operation, Monitoring and Maintenance, and Annual Certification for the site. | The Environmental Easements will include a copy of the Site Management Plan as described in RWP Section 4.9.1. |

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September 16, 2005

Daniel C. Walsh, Ph.D., Chief
Hazardous Waste and
Petroleum Remediation Section
NYSDEC – DER – Region 2
47-40 21st Street
Long Island City, NY 11101-5407

Vadim Brevdo, P.E.
Environmental Engineer
NYSDEC – DER – Region 2
47-40 21st Street
Long Island City, NY 11101-5407

Re: Remedial Work Plan (RWP) Addendum
Queens West – Parcel 9, Hunters Point, Queens, NY
NYSDEC BCP Site No. C241049

Dear Mr. Walsh and Mr. Brevdo:

On August 25, 2005, AKRF submitted a Remedial Work Plan (RWP) for the subject site to the NYSDEC on behalf of AvalonBay Communities, Inc. (AvalonBay). This letter serves as an addendum to the RWP to stipulate additional requirements and procedures that will be followed during the site remediation. The additional requirements/procedures include the following:

1. Onsite mechanical processing (crusher, screener, etc.) of concrete and brick will not be performed. A machine (excavator) with either a ram or claw attachment may be used to break the material into manageable sized pieces.

2. All environmental data for the project will be summarized in a Final Remedial Investigation Report.

3. Summary tables for all environmental data (including earlier data) will be submitted to NYSDEC prior to the start of remedial construction.

4. Signage will be provided at the site according to NYSDEC specifications to show that the project is being performed under the New York State Brownfield Cleanup Program.

5. Analytical QA/QC to be used for environmental media sampling during the remedial construction phase, including DUSR or data validation, will be submitted to NYSDEC prior to start of construction.

6. Substantive requirements for acquisition of a Long Island Well Permit will be reported and a description of how these requirements will be met will be provided in correspondence to DEC project manager for approval prior to implementation of the dewatering work.

7. Field screening can be performed to direct continued remedial work (excavation) but will not be used in lieu of end point sample results.

8. The remedial approach for the petroleum contaminated area will include, in order, screening for gross contamination including visual and olfactory and PID/FID screening, and when this screening demonstrates attainment of remedial goals, end-point sampling and chemical analysis for designated Site Specific Soil Action Levels (SSSALs). Termination of excavation without attainment of these remedial goals due to impracticability will require approval by NYSDEC.

9. The soil vapor management system is proposed to be built as an active system. A passive system will only be built with prior approval of NYSDEC and NYSDOH.

10. Only concrete and brick that has been sampled and has met SSSALs will be used for backfill.

11. A Fact Sheet will be prepared and sent to the project Contact List after the RAWP is approved announcing the approval and a schedule for the start of remedial work.

12. Daily Reports and Milestone Reports will be prepared and submitted to NYSDEC and NYSDOH.

13. Michelle Lapin, P.E., Senior Vice President at AKRF Engineering, P.C., will be responsible for certifying all remediation reports.

14. The Final Remediation Report will include a certification by a Professional Engineer that all export of soil, fill, water, or other material from the property was performed in accordance with the Work Plan, and were taken to facilities licensed to accept this material in full compliance with all federal, state and local laws.

15. All dust control measures listed in the Soil Management Plan will be used as needed to keep dust under control.

16. Non-virgin offsite source areas will not be used as sources for clean backfill. Specific approval by NYSDEC is required if such usage is pursued. Sampling frequency defined in this report, including provisions for reduction in frequency, will not apply to such sources.

17. All soils imported onto the site will meet TAGM 4046 RSCOs. 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.

18. After the completion of soil removal and other invasive remedial activities, a land survey will be performed by a New York State licensed surveyor. The survey will define the top elevation of all residual soils. This constitutes the top of the 'Residuals Management Zone', the zone that requires adherence to special conditions for disturbance of contaminated residual soils defined in the Site Management Plan. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute the physical and written record of the upper surface of the 'Residuals Management Zone' for the Site Management Plan as part of overall site Institutional Controls and Environmental Easements. A sheet showing a map of the survey results will be included in the Final Remedial Report, the Site Management Plan, and Environmental Easements.

19. The Final Remediation Report will include a certification by a Professional Engineer that all remedial work conforms to the terms defined in the approved Remedial Action Work Plan.

20. A separate list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and development work will be submitted to the NYSDEC prior to commencement of the remedial construction. This should include a citation of the law, statute or code to be complied with, the originating agency, and a contact name and contact phone number.

21. The Applicants Remediation Engineer is responsible to insure that the contractor specifications for remedial work conform to the terms defined in the final approved Remedial Action Measures Work Plan. All contractor specifications will be submitted to NYSDEC.

22. All documents and reports submitted in fulfillment of agreements made with NYSDEC will be submitted in both hard copy and in digital format on CD. Digital submittals will include PDF format files for all documents. Data in tabular format will also be submitted in active source files format (such as Excel) to enable direct evaluation by Department staff.

23. A surveyed site map showing the metes and bounds for the subject site as described in the governing agreement with New York State will be submitted. The map should include pertinent roadways and onsite structures. Both hard copy and digital form of this map will be submitted.

24. Metes and bounds description of the site will include a global positioning system coordinate for the starting point for the description.

25. Photographs will be taken of all interim remedial construction activities and submitted to NYSDEC in digital form on a CD(s). Photos should illustrate all remedial program elements and should be of acceptable quality. Representative photos of the site prior to any remedial actions should be provided. Representative photos should be provided of contaminant sources and source areas and structures before and during remediation. Photos will be submitted to NYSDEC on CD and will be sent to NYSDEC's project Manager (2 copies) and to NYSDOH Project Manager (1 copy). CD's 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.

26. NYSDEC will be provided the opportunity to participate in a pre-remediation/construction meeting at the site. Advance notice and scheduling will be provided to enable NYSDEC attendance.

27. Site development activities will not start until after completion of Phase I remediation activities. Site development activities will not be conducted in areas of active remediation and will not interfere with the remediation proposed in the RWP.

28. The Applicant, Volunteer, Responsible Party 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, roadways, sidewalks, utilities, etc.).

29. 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.

30. Onsite soils removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill above subsurface utility lines. This will be expressed in the final Site Management Plan.

31. Non-hazardous historic fill taken off-site will be handled as a Municipal Solid Waste per 6NYCRR Part 360-1.2 and must be treated as contaminated material. This material is prohibited from being disposed at a Registration/Recycling facility as defined in Part 360.

32. Native soils that are contaminated and non-hazardous that are being removed from remediation sites are considered Construction and Demolition (C/D) materials with contamination not typical of virgin soils by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC. 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. 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 must not be redirected to on-site or off-site Soil Recycling Facilities. The chemical data for the soil must be attached to the correspondence.

33. The Final Remedial 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, and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material. Letters from the Volunteers representative describing the material prior to receipt by the disposal facility and letters accepting material by the receiving facility will be provided.

34. If any hazardous wastes are identified onsite, they will be stored, transported, and disposed in full compliance with applicable local, state, and federal regulations.

35. The Final Remediation Report will include a certification by a Professional Engineer that all import of soils from offsite, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan or other pertinent project plans.

36. Gravel will be used on on-site roadways located outside of the containment structure to provide a clean and dust-free road surface.

37. The Final Remediation Report will include a certification by a P.E. that all invasive work during the remediation and all invasive development work was done in accord with dust and odor suppression methodology defined in the Remedial Action Work Plan.

38. Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

39. Prior to construction a plan for queuing of trucks will be submitted to NYSDEC. The plan will insure that no trucks will travel or queue on 48th Street and that minimal impact will be imparted to the community. Idling of trucks will be prohibited within the community.

40. Trucks exiting the site will be securely covered with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited.

41. Summa canister air sampling devices will be maintained onsite for collection of air samples if an odor event is identified, or as directed by NYSDEC or NYSDOH.

42. Fact Sheets are the property of New York State. The applicant will be requested to assist in their preparation (including the development of draft Fact Sheets) and their distribution. However, only Fact Sheets approved by NYSDEC will be issued under any project. No changes will be made to approved Fact Sheets authorized for release by NYSDEC without the express consent of the Department in writing. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

43. A certification of mailing will be sent by the Applicant 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, and a list of recipients.

44. Daily Reports will be provided to the Project Manager for NYSDEC and NYSDOH by email during all periods of major invasive activity on remedial projects. These reports will include daily activities with alpha-numeric identification of 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.

45. Daily reports are not intended as a 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 must be made directly with project managers.

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

47. A site map will be submitted that shows a predefined grid for use to identify locations in reports provided to NYSDEC.

48. Mandatory job-site record keeping will be required. These records must be maintained onsite at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

49. The Final Remedial Report will include a Site Management Plan that will propose a system for environmental groundwater monitoring and will provide for long-term management of residual contaminated soils, maintenance and annual inspection of the cap and other remedial structures and systems.

50. Work Plan requirements for conformance of the contractor with the provisions of the truck traffic plan, including prohibitions on idling in the neighborhood, will be managed by the Volunteer.

51. A signed copy of the Stormwater Pollution Prevention Plan (SWPPP) certification will be provided.

52. An Environmental Easement will be obtained for this project and will address residual contamination remaining, inclusive of groundwater use limitations, after the remedial construction is complete.

53. All soils entering the site must be sampled, including 'virgin soils.'

54. The specification for paved areas shall include a minimum thickness of four inches for either concrete, asphalt, or pavers overlying a two-inch layer of sand or gravel.

Please call me at (914) 949-7336 or e-mail at marc_godick@akrf.com, if you have questions or comments.

Sincerely yours,
AKRF Engineering, P.C.

Marc S. Godick, LEP
Vice President

Enclosure

cc: Alali Tamuno, NYSDEC
Joseph Moloughney, NYSDEC
Geoffrey Laccetti, NYSDOH
Dawn Hettrick, NYSDOH
Fred Harris, AvalonBay
Fred Brockunier, AvalonBay Communities
Philip Wharton, AvalonBay Communities
Steven Spiro, AvalonBay Communities
Richard M. Schwartz, Fried, Frank
Stephen Lefkowitz, Fried, Frank
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August 25, 2005

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Vadim Brevdo, P.E.
Environmental Engineer
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47-40 21st Street
Long Island City, NY 11101-5407

Re: Remedial Work Plan (RWP)
Queens West – Parcel 9, Hunters Point, Queens, NY
NYSDEC BCP Site No. C241049

Dear Mr. Walsh and Mr. Brevdo:

On behalf of AvalonBay Communities, Inc., enclosed is the revised Remedial Work Plan (RWP). The RWP assesses potential exposure pathways with respect to on-site contamination, develops remedial goals for the site, develops and evaluates appropriate remedial alternatives, and presents a design of the preferred alternative. This document was completed in accordance with New York State Department of Environmental Conservation's (NYSDEC's) Draft Generic List of Agreements. Attached is a table listing the numbered items in the Generic List of Agreements and the corresponding section number in the RWP where each issue is addressed.

Please call me at (914) 949-7336 or e-mail at marc_godick@akrf.com, if you have questions or comments.

Sincerely yours,
AKRF Engineering, P.C.

Marc S. Godick, LEP
Vice President

Enclosure

cc: Alali Tamuno, NYSDEC
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# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| 1) Remedial Actions will be in compliance with DER-10. | DER-10 was used as guidance in preparing the Queens West – Parcel 9 RWP. |
| 2) An emergency contact sheet will be submitted to NYSDEC's Project Manager that will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency. | Emergency contact list is included in Appendix E Health and Safety Plan (Section 6.3). |
| 3) Pertinent data and information from the Remedial Investigation Report will be incorporated into the Remedial Work Plan. | Pertinent data from previous site investigations are included in RWP Sections 2.7 and 2.8; Figures 9-14. |
| 4) Composite of all Sanborn maps, including a summary presentation of all historical structures of environmental significance, must be submitted. | Composite Sanborn maps are provided as Figures 5a and 5b. |
| (5) A site map showing the defined Areas of Concern with an overlay of the site development plan will be submitted. | Figure 6 shows the site development plan with the limits of the contamination shown as an overlay. |
| (6) A separate list of all local, regional and national governmental permits, certificates or other approvals or authorizations required to perform the remedial and development work will be submitted in the RWP and updated in the Final Remedial Report. | A list of required permits is provide in RWP Section 4.1.5 |
| (7) A comprehensive project schedule including all proposed activities will be provided in the RWP. | A proposed remediation schedule is include in Appendix K |
| (8) The specific details of minimum required technical elements of the Remedial Action will be included in the RWP and associated design documents and will not be shifted to the contractor for submission in contractor documents. | The RWP includes minimum technical specifications included in the bid package for the remediation contractor (Appendix C); design details for erosion and sediment control measures (Appendix D - SWPPP), process flow diagram for dewatering treatment and blower sizing for air handling system (Figure 18), requirements for soil handling (Appendix H – Soil Management Plan), and design specifications for the vapor mitigation system (Appendix I). |
| (9) The Applicants Remediation Engineer is responsible to insure that the contractor documents for remedial work conform to the terms defined in the final approved RWP and the final Interim Remedial Measures Work Plan. | The technical specifications (Appendix C) included in the contractor bid documents specifies compliance with the requirements of the RWP. |
| (10) All documents and reports submitted in fulfillment of consent orders and agreements made with NYSDEC will be submitted in both hard copy and in digital format on CD. | Digital copies of all documents will be submitted upon finalization of reports. |
| (11) All digital and hard copy submittals will be addressed to Project Managers for both the NYSDEC and NYSDOH. | All documents will be submitted in accordance with this requirement. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
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| (12) A digital site map(s) will be submitted to the Department and will show site structures, environmental monitoring apparatus and sampling points, and a recent aerial photo of the site and immediate surrounding area. | A digital site map will be submitted upon finalization of the report. An aerial photo is provided as Figure 3. |
| (13) A surveyed site map showing the metes and bounds for the subject site as described in the governing agreement with New York State will be submitted. | A site survey is included in Appendix A. |
| (14) Metes and bounds description of the site will include a global positioning system coordinate for the starting point for the description. | Coordinates for southwestern property corner are: 73° 57' 27.81" W and 40° 44' 41.99" N |
| (15) Project numbers will appear on the cover and face page of all reports. | The BCP number (C241049) appears on the RWP cover. |
| (16) A glossary will be provided to provide an explanation of all acronyms used in each report. | A List of Acronyms is provided following the Table of Contents for the RWP. |
| (17) Photographs will be taken of all remedial action activities and submitted to NYSDEC in digital form on a CD(s). | Photographs will be taken as described in RWP Section 4.8.2 Final Remedial Report. |
| (18) The Remedial Investigation Report will include a conceptual site model that explains the occurrence of contaminant sources and their fate and transport at the site in the context of the local site stratigraphy and hydrogeology. The conceptual model will utilize both plan and cross-sectional views of the site. | A conceptual site model is included in the Supplemental RI Report and summarized in Sections 2.7 and 2.8 in the RWP. |
| (19) An itemized summary of projected costs for the proposed remedial activity will be submitted as an appendix to the RWP. Actual final costs will be reported as an appendix to the Final Remediation Report. | Itemized project costs are included in Appendix K. Actual final costs will be included in the Final Remedial Report (as described in RWP Section 4.8.2) |
| (20) A general description of hours (i.e. 7 A.M. to 3 P. M.) and days of operation (Monday to Friday) for performance of remedial actions will be submitted. Early morning, evening, and weekend remedial work will be prohibited. | Daily work schedule will be 7 AM to 5 PM as described in RWP Section 4.10 Schedule and Costs |
| (21) For all BCP projects, the Track 1 alternative must be considered in the feasibility assessment of the RWP. | Alternative #2 (Soil and NAPL Removal with Unrestricted Use) is analyzed in Section 3.6.2. |
| (22) The RWP will include a complete and thorough description of the remedy. | Complete description of remedy provided in Section 4.0. |
| (23) The RWP will specify whether additional design documents will be prepared for the project or for elements of the project. | Design for implementation of the RWP is included in the Technical Specifications (Appendix C); Dewatering Plan (Appendix F); Vapor Mitigation System Design (Appendix I) and in the RWP text and figures. No additional design documents will be submitted. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
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| (24) A detailed map of the proposed end usage (Development Plan) of the site will be submitted. | Figure 6 shows the proposed development plan. |
| (25) A site map will be submitted showing contour lines indicating the cut (soil removal) thicknesses that will be required into soil/fill as part of the site wide development plans. | Figure 17 shows the contours of the bottom elevations of the hydrocarbon-contaminated soil, which correspond to the proposed excavation depths. |
| (26) Details regarding the proposed end usage of buildings and structures, particularly the lower floors and will be submitted and will be coordinated with NYSDOH. | Details of proposed end usage are described in RWP Section 4.4.2. |
| (27) NYSDEC will be provided the opportunity to participate in a pre-remediation/construction meeting at the site. | NYSDEC and NYSDOH will be notified of meeting to be held prior to the start of remediation. |
| (28) Site development activities are prohibited from interfering or otherwise impairing remedial activities proposed in the RWP. | Site development activities will not be allowed to interfere with site remediation as described in RWP – end of first paragraph in Section 4.0. |
| (29) All hotspots and structures to be remediated will be removed and end-point remedial performance sampling completed before excavations related to site-wide development commence. | Endpoint sampling will be conducted as described in RWP Section 4.2.6. |
| (30) Removal of free product and grossly contaminated soils will be performed. | Selected remedy includes removal of NAPL as indicated in Section 3.4 and throughout the RWP. |
| (31) Underground Storage Tanks will be identified and removed from the site in accordance with STARS. | USTs encountered during the Supplemental RI were removed in March 2005. |
| (32) Depths and other dimensions of initial remedial hotspot excavations will be defined. | Figure 12 shows the extent of soil to be removed. Figure 17 (Bottom Elevations of Hydrocarbon-Contaminated Soil) shows the depths of excavation. |
| (33) A table will be provided showing planned location identification number, depth, and Site-Specific Soil Action Level (SSSAL) triggers for all proposed excavations for site specific soil action level-based Areas of Concern. TCLP failure and other hazardous waste containing areas will be identified. | Figure 12 shows all areas of soil exceeding the SSSALs. Appendix B includes an analytical data summary table indicating which sampling locations exceed SSSALs. |
| (34) A site map showing locations of all SSSAL-based Areas of Concern (hotspots) will be submitted with note or code identifying specific contaminant trigger(s) for each hotspot. | Figure 12 shows all locations and depth intervals exceeding SSSALs |
| (35) A scaled map will be submitted showing all proposed remedial excavation areas for hotspots and structures to be removed. | Figure 12 shows the proposed remediation area. |
| (36) For projects with a major IRM program, a site-wide RWP will still be required for the entire project. | No major IRM programs are proposed for the site, the work plan being submitted is for the overall site remedy. |

# NYSDEC GENERIC LIST OF AGREEMENTS

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| (37) Major IRM that constitute a substantial part of the overall remedy are subject to a formal 45-day public review. | See above. |
| (38) Plan for decommissioning historic subterranean systems will be submitted. | Not applicable. USTs encountered during the Supplemental RI were removed in March 2005. No other underground structures were identified during RI test pitting activities. |
| (39) The Applicant, Volunteer, Responsible Party 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. | The Applicant, AKRF, and selected remediation subcontractor will be responsible for the safe implementation of the RWP. |
| (40) The Final Remediation Report will include a certification by a Professional Engineer that all invasive work done during the remediation and development was performed in accordance with the contaminant field screening methodology defined in the Soil Management Plan. | Final Remedial Report will include a P.E. certification that all work was in accordance with Soil Management Plan as described in RWP Section 4.8.2 |
| (41) Resumes should be provided for all personnel responsible for field screening of invasive work during the IRM and subsequent remediations and all invasive development work for unknown contaminant sources. | Resumes are included in Appendix H- Soil Management Plan (Attachment A). |
| (42) A plan will be submitted for screening of all excavations during invasive work that may penetrate residual contamination, including excavations for remediation and development. | Soil screening plan is provided as Appendix H - Soil Management Plan. |
| (43) Post-excavation sampling following hot-spot or other mandatory soil removal is required. A plan for post-excavation samples to be collected for all hotspot and other remedial excavations will be submitted. | Endpoint sampling will be conducted as described in RWP Section 4.2.6. |
| (44) A plan for monitoring down-gradient wells to assess the success of remedial measures to be taken during the IRMs and Remedial Actions will be submitted. | Included in Off-Site Investigation Work Plan. |
| (45) A monitoring plan for groundwater at the down-gradient site perimeter to evaluate site-wide post-remedial performance will be submitted. | Included in Off-Site Investigation Work Plan. |
| (46) Appropriately placed groundwater monitor wells will be installed immediately down-gradient of all volatile organic carbon remediation areas for the purpose of evaluation of the effectiveness of the remedy that is implemented. | Included in Off-Site Investigation Work Plan. |
| (47) A plan for site-wide, soil gas monitoring to be performed after the completion of remediation will be submitted and will be coordinated with NYSDOH. | Monitoring of passive vapor collection system (as per RWP Section 4.4.3) will be conducted to determine soil gas concentrations. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| (48) Sites with identified methane and other contaminated soil vapors will be required to construct utility seals at all underground entry points for utilities into onsite buildings and all utility departures from the site to prevent preferential migration of methane and other soil gasses along utility pathways. | All penetrations through the building foundations, inclusive of utilities, will be sealed using spray applied vapor barrier, as specified in RWP Section 4.4.2. |
| (49) All remedial plan involving the capture and release of soil vapors known or suspected to be contaminated must demonstrate that the atmospheric emissions of those contaminants is consistent with requirements defined in NYSDEC Division of Air document Air Guide One. | Air treatment will meet Air Guide One requirements. Air treatment will be conducted as described in RWP Section 4.1.4 and Appendix F (NYSDEC Air Facility Registration). |
| (50) Sites containing historic fill or other organic-rich fill material will require testing of soil vapor for methane. | Not applicable - site characterization did not identify subsurface materials that would be indicative of methane generation. |
| (51) Proposed design of the sub-slab portion of the proposed development will be provided and will be coordinated with NYSDOH. | Sub-slab elements of the development are described in RWP Sections 4.4.2 and 4.4.3 and Appendix I Vapor Mitigation Design. |
| (52) After the completion of soil removal and other invasive remedial activities, a land survey will be performed by a New York State licensed surveyor. | As-built drawings described in Section 4.8.2 of the RWP will be based upon a survey performed by an New York licensed surveyor. |
| (53) Demarcation layer will be placed over on-site soils at all locations outside the footprint of buildings to be included in the final development. | A demarcation layer will be installed as described in RWP Section 4.4.1. |
| (54) A site map and plan will be submitted that shows the design detail and location for each of the proposed final surfaces contemplated for the site. | Figure 20 shows the proposed final surfaces contemplated for the site. |
| (55) A description will be submitted of the nature of surface cover that will be in place after the remediation is complete but before development commences | Not applicable – site development will commence concurrent with and immediately following remediation. |
| (56) Double layers of minimum 8-mil plastic sheeting will be used at the base of all stockpiles. | Double layers of 8-mil plastic will be used as described in Appendix H Soil Management Plan (Section 4.2.6). |
| (57) 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. | Stockpiles will be covered with tarps as described in Appendix H Soil Management Plan (Section 4.2.6). |
| (58) 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. | All stockpiles will have silt fence or a hay-bale berm around the perimeter as described in Appendix H Soil Management Plan (Section 4.2.6). |
| (59 A stockpile management plan will be submitted and will address historic fill, clean fill for reuse and imported of offsite soil. | Appendix H Soil Management Plan (Section 4.2.6) describes the stockpile management practices. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| (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 city sewer systems will be addressed through approval by NYCDEP. | Dewatering fluids will be treated on-site and discharged to the City sewer under a NYCDEP permit as described in RWP Section 4.2.3 and Appendix F. |
| (61) Dewatered fluids will not be recharged back to the land surface or subsurface of the site. | Dewatering fluids will be treated on-site and discharged to the City sewer under a NYCDEP permit as described in RWP Section 4.2.3 and Appendix F. Dewatering fluids will not be discharged to the land surface or subsurface. |
| (62) Characterization plan for onsite reuse of grading cut soils will be submitted and will be consistent with the sampling protocol defined in DER-10 or otherwise approved by NYSDEC. | Soil characterization procedures are described in RWP Section 4.3.1 and Appendix H Soil Management Plan (Section 4.3.2) |
| (63) Onsite soils removed for grading or other purposes will not be reused within a cover soil layer, within landscaping berms, or as backfill above subsurface utility lines. | Soil cap will consist of clean imported fill as specified in RWP Section 4.4.1. |
| (64) Development-related grading cuts and fills for development must not interfere with, or otherwise compromise, the performance of remediation necessary at the site. | Development activities will not interfere with site remediation as described in RWP – end of first paragraph in Section 4.0. |
| (65) Organic matter or other solid waste derived from on-site or from offsite is prohibited from reuse or use on-site. | Organic matter/solid waste will not be used as fill as described in Appendix H Soil Management Plan (Sections 4.3.2 and 4.3.3). |
| (66) Historical fill is prohibited from being reused as backfill in utility trenches or landscape berms. | Soil cap will consist of clean imported fill as specified in RWP Section 4.4.1. |
| (67) Mechanical processing of historical fill on-site is prohibited. | Mechanical processing will not be conducted without prior approval from the NYSDEC, as described in Appendix H Soil Management Plan (Section 4.2.6). |
| (68) A plan for composite sampling for reuse of site soils will be provided. The plan will describe the sampling frequency, analytes, sampling methods and stockpile management plan. | Waste/re-use characterization will be conducted as described in RWP Section 4.3.1 and Appendix H Soil Management Plan (Section 4.3.2) |
| (69) Plan for all material to be removed from the site will be submitted and will include excavated soil, historic fill and other solid waste and hazardous waste, showing that the material will be handled, transported and disposed in accordance with applicable Part 360 regulations and other applicable local, state, and federal regulations. | Appendix H Soil Management Plan |
| (70) Non-hazardous historic fill taken off-site will be handled as a Municipal Solid Waste per 6NYCRR Part 360-1.2 | Appendix H Soil Management Plan (Section 4.3.2). |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| (71) Historical fill (Municipal Solid Waste) can be received by permitted Part 360-2 or Part 360-11 facilities without modification of their permits. These materials are prohibited from Part 360-16 Registration Facilities (also known as Soil Recycling Facilities). | Appendix H Soil Management Plan (Section 4.3.2). |
| (72) Native soils that are contaminated and non-hazardous that are being removed from remediation sites are considered Construction and Demolition (C/D) materials with contamination not typical of virgin soils by the Division of Solid & Hazardous Materials (DSHM) in NYSDEC. These soils may be sent to a permitted Part 360 landfill. | All soil removed off-site will be disposed of in accordance with applicable requirements as referenced in Appendix H Soil Management Plan (Section 4.3.1). |
| (73) The Final Remediation 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, and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material. | The Final Remedial Report will included an accounting of all material removed from the site including manifests/bills of lading and certificates of disposal, as described in RWP Section 4.8.2. |
| (74) Bill of Lading system or equivalent will be used for offsite movement of non-hazardous wastes and contaminated soils. This information will be reported in the Final Remediation Report. | The Final Remedial Report will included an accounting of all material removed from the site including manifests/bills of lading and certificates of disposal, as described in RWP Section 4.8.2. |
| (75) Hazardous wastes derived from on-site will be stored, transported, and disposed in full compliance with applicable local, state, and federal regulations. | Waste characterization data from the RI and Supplemental RI indicates that there is no hazardous waste at the site. |
| (76) Soils imported to the site for use for the final cover will meet TAGM 4046 criteria. | Imported fill will be tested for compliance with TAGM 4046, as described in Appendix H Soil Management Plan (Sections 4.2.3, 4.2.4, and 4.3.3). |
| (77) The Final Remediation Report will include a certification by a Professional Engineer that all import of soils from offsite, including source approval and sampling, has been performed in a manner that is consistent with the methodology defined in the RWP or other pertinent project plans. | RWP Section 4.8.2 Final Remedial Report |
| (78) Soil materials that exceed TAGM 4046 will not be imported onto the site. | Imported fill will be tested for compliance with TAGM 4046, as described in Appendix H Soil Management Plan (Sections 4.2.3, 4.2.4, and 4.3.3). Soil exceeding TAGM levels will not be used as backfill. |
| (79) For larger projects, an evaluation should be performed for the import of cover soils via alternatives to overland truck transport (barge, rail, etc.). | Not applicable. |
| (80) Solid waste will not be brought onsite. Solid waste will not be used for grading fill or cover soil on-site. | Solid waste will not be used as backfill, as described in Appendix H Soil Management Plan (Section 4.3.3). |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| (81) A dust suppression plan that addresses dust management during invasive on-site work, including, at a minimum, the items listed below: | Water will be used to control dust as described in Appendix G Air Monitoring Work Plan (Section 8.5). |
| (82) Dust suppression will be achieved though the use of a dedicated on-site water truck equipped with a water cannon to enable the spray of water into off-road areas including excavations and stockpiles. | Water will be used to control dust as described in Appendix G Air Monitoring Work Plan (Section 8.5 – water will be used to mist roadways, etc.) |
| (83) Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils subject to dust production. | Complete clearing and grubbing will be required for grading of site and relocation of existing pile. Erosion and sediment control measures, including dust suppression, will be implemented during the site-preparation activities. |
| (84) Gravel will be used on roadways to provide a clean and dust-free road surface. | Stabilized construction entrances and truck decontamination pads will be provided as specified in RWP Sections 4.2.4 and Appendix C SWPPP. |
| (85) On-site roads will be limited in total area in order to minimize the area required for water truck sprinkling. | Stabilized construction entrances and truck decontamination pads will be provided as specified in RWP Sections 4.2.4 Trucking and Disposal, and Appendix D SWPPP. |
| (86) The Final Remediation Report will include a certification by a P.E. that all invasive work during the remediation (including IRM's) and all invasive development work was done in accord with dust and odor suppression methodology defined in the Interim Remedial Measures Work Plan or RWP. | Final Remedial Report will include P.E. certification that dust suppression and odor control was performed according to the Air Monitoring Work Plan (Appendix G). |
| (87) A truck wash will be constructed and used for all trucks and equipment departing the site | A decontamination pad and truck wash station will be installed as described in RWP Section 4.2.4 and Appendix D SWPPP. |
| (88) Proposed truck routes for ingress and egress to the site will be defined. Routes will consider: (a) limiting transport through residential areas; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; and (e) promoting safety in access to highways. | Truck routs are shown on Figure 19. |
| (89) Trucks will be prohibited from stopping and idling in the neighborhood outside the project site. | Trucks will be prohibited from stopping in the Queens West neighborhood and will proceed directly to the highway as described in RWP Section 4.2.4. |
| (90) Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development. | Appendix D SWPPP (Section E) |
| (91) Queuing of trucks will be performed onsite. Offsite queuing will be prohibited. | Queuing of loaded trucks will be prohibited, as stipulated in RWP Section 4.2.4. Loaded trucks will be required to travel directly to the highway with no stops. |
| (92) Trucks exiting the site will be securely covered with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. | RWP Section 4.2.4. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| (93) An odor control plan will be submitted that is capable of controlling emissions of nuisance odors off-site, and on-site, where there are residents or tenants on the property. | A containment structure will be erected and an air monitoring plan will be implemented to control nuisance odors on and off-site, as described in RWP Section 4.1.4 (containment structure) and Appendix G Air Monitoring Work Plan. |
| (94) Among the means to be considered for minimization of odors during remedial actions 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. | Appendix H Soil Management Plan (Section 4.6)<br>Appendix G Air Monitoring Plan (Section 8.5) |
| (95) Where odor problems have developed during remedial work or where the release of nuisance odors cannot otherwise be avoided due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by containing excavation and handling areas through the use of tents containment structures. | A containment structures will be used to control odors as described in RWP Section 4.1.4 (containment structure) |
| (96) A plan for rodent control will be submitted and will be utilized prior and during site clearing and site grubbing, and during all remedial work. | RWP Section 4.5.1. |
| (97) A plan will be submitted for noise control will be included in the Remedial Work Plan or Interim Remedial Measures for all remedial work and will conform, at a minimum, to NYCDEP noise control standards. | RWP Section 4.5.2. |
| (98) A plan that conforms to the requirements of a Stormwater Pollution Prevention Plan will be submitted. | Appendix D Stormwater Pollution Prevention Plan (SWPPP). |
| (99) The Applicant, Volunteer, Responsible Party and associated parties preparing the remedial documents submitted to the State, and parties performing this 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. | All work will be conducted in accordance with the Health and Safety Plan provided as Appendix E. |
| (100) The Health and Safety Plan (HASP) and all agreements made related to invasive activities will be required for all work performed until the completion of the development of the site (including site grading and materials relocation). | Appendix E Environmental Health and Safety Plan |
| (101) The HASP will be submitted as a separate, standalone document independent from the project plans. | Although the HASP is being submitted as an appendix to the RWP, it was prepared so that it can be a stand alone document. |
| (102) The Site Safety Coordinator will be identified. A resume will be provided. | The Site Safety Coordinator (called Field Safety Officer in the HASP), will be assigned before any remediation work commences at the site. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| (103) Details of the Community Air Monitoring Program (CAMP) will be defined and will be coordinated with the NYSDOH. | Appendix G – Air Monitoring Work Plan is consistent with the NYSDOH Generic Community Air Monitoring Plan. NYSDOH will be consulted during implementation of air monitoring at the project site. |
| (104) Exceedences observed in the CAMP will be reported in the daily report to the NYSDEC Project Manager. | RWP Section 4.8.1. |
| (105) The HASP will include affirmative statements to indicate procedures to be followed. | Language in Appendix E Health and Safety Plan includes affirmative statements. |
| (106) The HASP will cover all invasive work performed for remediation and site development (including site grading and materials relocation). | Appendix H Soil Management Plan (Section 5.0) indicates that HASP will be implemented during remediation, site development, and future maintenance activities. |
| (107) Appropriate HAZWOPER training will be provided as required for remedial activities. | Appendix E Environmental HASP (Section 3.2). |
| (108) Institutional Controls necessary for appropriate management of residual contamination of the site will be defined in the Remedial Work Plan and finalized in the Site Management Plan in the Final Remedial Report for the site. | RWP Section 4.9.1. |
| (109) Engineering Controls necessary for appropriate management of residual contamination of the site will be defined in the final Remedial Work Plan for the site. Long-term management of engineering controls will be defined in the Site Management Plan in the Final Remediation Report. | RWP Sections 4.4 and 4.9.1. |
| (110) Fact Sheets are the property of New York State. The applicant will be requested to assist in their preparation (including the development of draft Fact Sheets) and their distribution. | RWP Section 4.6. |
| (111) All draft Fact Sheets will be provided to the Department in WordPerfect files and in the format used by Region 2, as dictated by the Project Manager. | RWP Section 4.6. |
| (112) A certification of mailing will be sent by the Applicant 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, and a list of recipients. | RWP Section 4.6. |
| (113) CP Plans: check latest guidance on DER Website. | RWP Section 4.6. |
| (114) Daily Reports will be provided to the Project Manager for NYSDEC and NYSDOH by email during all periods of major invasive activity on remedial projects. | Daily reports will be emailed as described in RWP Section 4.8.1. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| (115) Daily reports are not intended as a 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 must be made directly with project managers. | Time-critical information will be communicated directly to the NYSDEC project manager as described in RWP Section 4.8.1 Daily Reports. |
| (116) Periodic reports will be required for site development that occurs prior to the issuance of State signoff for a project. | Such reports will be included in Daily Report as described in RWP Section 4.8.1. |
| (117) Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated to the NYSDEC's project manager. These findings will be included in daily or periodic electronic media reports. | Such identifications will be communicated in daily reports or directly to the project manager, as described in RWP Section 4.8.1. |
| (118) A site map will be submitted that shows a predefined grid for use to identify locations in reports provided to NYSDEC. | RWP Section 4.8.1 Daily Reports. |
| (119) Mandatory job-site record keeping will be required. These records must be maintained onsite at all times during the project and be available for inspection by NYSDEC and NYSDOH staff. | The project log book will be maintained on-site for inspection as described in RWP Section 4.7 Record Keeping. |
| (120) The Final Remedial Report will include as-built drawings for all constructed elements, certifications, manifests and bills of lading; and the Site Management Plan (formerly the Operation and Maintenance Plan). | RWP Section 4.8.2. Final Remedial Report |
| (121) Where determined to be necessary by the Department, a Financial Assurance Plan will be required to insure the sufficiency of revenue to perform long-term operations, maintenance and monitoring tasks defined in the Site Management Plan and Environmental Easements. | Not applicable. |
| (122) The Final Remediation Report will include an accounting of the destination of all material removed from the site, including excavated contaminated soil, historic fill and solid waste and fluids, and documentation associated with that disposal showing requisite approvals for receipt of the material. | RWP Section 4.8.2 Final Remedial Report. |
| (123) An itemized description of costs incurred during all aspects of the Remedial Action taken on the project will be provided as an appendix to the Final Remedial Report. | RWP Section 4.8.2 Final Remedial Report. |
| (124) Before completion of a project (before approval of a final Remedial Report and issuance of a Certificate of Completion), all project reports must be submitted in digital form (PDF). | All reports will be submitted in PDF format in accordance with this requirement. |

# NYSDEC GENERIC LIST OF AGREEMENTS

| Generic Agreement Number and Description | Section Addressed in RWP |
|---|---|
| (125) 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. | As-built drawings described in RWP Section 4.8.2 Final Remedial Report will be created based on a survey performed by a NYS licensed surveyor. |
| (126) The Final Site Management Plan must be submitted in the Final Remedial Report and must include a Soil Management Plan and a listing of all Institutional Controls, Engineering Controls, operation, monitoring and maintenance for the site and Annual Certification that the controls are still in-place and effective. | A Site Management Plan will be submitted as described in RWP Section 4.8.2. |
| (127) Environmental Easements will be required for all residual contamination left onsite after the remedial action is complete at the site. | Environmental Easements will be recorded as described in RWP Section 4.9.1. |
| (128) The Environmental Easements must include the Site Management Plan including a listing of all Institutional Controls, Engineering Controls, and Operation, Monitoring and Maintenance, and Annual Certification for the site. | The Environmental Easements will include a copy of the Site Management Plan as described in RWP Section 4.9.1. |

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Submitted to:

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# REMEDIAL WORK PLAN

## Queens West Development-

*Parcel 9*
*Queens, New York*

*Project Number:10516*

**Revised August 2005**

# Queens West Development
# Parcel 9

**QUEENS, NEW YORK**

## Remedial Work Plan

**NYSDEC BCP Number: C241087**

**AKRF Project Number: 10516**

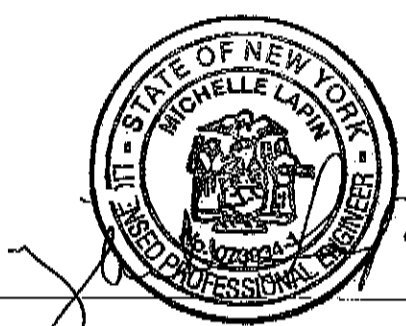
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**REVISED AUGUST 2005**

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## LIST OF ACRONYMS

1. BaP – Benzo(a)pyrene
2. BCP – Brownfield Cleanup Program
3. BQE – Bronx-Queens Expressway
4. BTEX – Benzene, Toluene, Ethylbenzene, and Xylenes
5. DNAPL – Dense Non Aqueous Phase Liquid
6. HASP – Health and Safety Plan
7. HDPE – High Density Polyethylene
8. GAC – Granular Activated Carbon
9. LNAPL – Light Non Aqueous Phase Liquid
10. MGP – Manufactured Gas Plant
11. NAPL – Non Aqueous Phase Liquid
12. NYCDEP – New York City Department of Environmental Protection
13. NYCRR – New York Code of Rules and Regulations
14. NYSDEC – New York State Department of Environmental Conservations
15. NYSDOH – New York State Department of Health
16. OM&M – Operation, Maintenance, and Monitoring
17. PAHs – Polycyclic Aromatic Hydrocarbons
18. PCBs – Polychlorinated Biphenyls
19. PPE – Personal Protective Equipment
20. QWDC – Queens West Development Corporations
21. RWP – Remedial Work Plan
22. RSCOs – Recommended Soil Cleanup Objectives
23. SCGs – Standards, Criteria, and Guidance
24. SMP – Soil Management Plan
25. SSSALs – Site Specific Soil Action Levels
26. SVOCs – Semivolatile Organic Compounds
27. SWPPP – Storm Water Pollution Prevention Plan
28. TAGM – Technical and Administrative Guidance Memorandum
29. VOCs – Volatile Organic Compounds

# 1.0 INTRODUCTION

The Queens West Development is a project of the Queens West Development Corporation (QWDC), a subsidiary of New York State's Empire State Development Corp., under the collective sponsorship of The Port Authority of New York and New Jersey, The New York City Economic Development Corporation, and Empire State Development Corporation. The overall Queens West Development site comprises 74 acres along the East River in Hunters Point, Queens, extending from Anable Basin to the north to Newtown Creek to the south (Figure 1). Stage I of the development involves construction of residential buildings on the portion of the site between 47th Road and 50th Avenue. The development sites in this area have been designated Parcels 8, 9, 10, and 11, as shown on Figure 2.

In August 1998, a Voluntary Cleanup Agreement was entered into between New York State Department of Environmental Conservation (NYSDEC) and QWDC. This agreement covered Parcels 8, 9, and 11 and the portion of Center Boulevard between Parcels 8 and 9. In July 2000, the Voluntary Cleanup Agreement was amended to allow it to be separated into separate agreements for each parcel, which would be executed by the designated developer for the parcel. Accordingly, after AvalonBay Communities (AvalonBay) was selected as the developer of Parcels 8, 9, and 11, AvalonBay executed separate agreements for each of the three parcels in September 2000. In March 2004, AvalonBay requested that NYSDEC transition Parcels 8 and 9 into the Brownfield Cleanup Program (BCP), with the BCP Agreements for both parcels being signed by the NYSDEC and becoming effective on June 28, 2005.

The objectives of this Remedial Work Plan (RWP) are to: analyze results from an Additional Delineation Investigation conducted by AKRF in April 2005; assess potential exposure pathways with respect to on-site contamination; develop remedial goals for the site; develop and evaluate appropriate remedial alternatives; and present a preliminary design of the preferred alternative. A complete description of the preferred alternative is presented in Section 4.0. Remediation of Parcel 9 is being conducted separately from the surrounding development areas (e.g., Parcel 8) to allow for staged development. Parcel 8 and the roadways surrounding Parcel 9 will be addressed in an off-site investigation. An off-site investigation work plan is being submitted to the NYSDEC concurrently with this RWP. An aerial photograph of Parcel 9, including the site boundaries, is shown on Figure 3.

# 2.0 SITE DESCRIPTION

## 2.1 SITE LOCATION

Parcel 9 is located in the Hunters Point section of Queens, New York. The parcel is bounded by 5th Street on the east, 48th Avenue on the south, Center Boulevard on the west, and 47th Road on the north. It has a total area of approximately 1.79 acres, and includes Lots 5 and a portion of Lot 19 of Tax Block 19 of Queens County. A site survey is provided in Appendix A.

## 2.2 SITE AND VICINITY CHARACTERISTICS

Parcel 9 is vacant; all former structures were demolished in 2001. The entire parcel is surrounded by a chain-link fence. According to a survey performed by Montrose Surveying Company in 2003, Parcel 9 is generally at an elevation of 8 to 10 feet (Queens Borough Datum), with a mound in the middle of the parcel rising to an elevation of 15 feet.

Parcel 10, located across 48th Avenue south of the site, is occupied by a high-rise residential building and includes a public elementary school, P.S. 78, and a day care center. Parcel 8, located across Center Boulevard west of the site, is vacant. The area between Parcel 8 and the

East River is part of the Queens West waterfront park. The East River is located approximately 500 feet west of the site.

The area north of the site across 47th Road, is currently undergoing remediation and is slated for future residential development. The area east of the site across 5th Street, is not part of the Queens West Development. This area is occupied by a mix of light industrial, commercial, and residential uses. A land use map for the area surrounding Parcel 9 is shown on Figure 4.

## 2.3 NEARBY PUBLIC AREAS OF CONCERN

A high-rise residential building, which includes a public elementary school and a day care center are located south of the site across 48th Avenue. Peninsular Park, a portion of the Queens West waterfront park, is located immediately west of Parcel 8, approximately 200 feet from the site. The area east of the site contains a mix of light industrial, commercial, and residential uses.

## 2.4 SITE HISTORY

The history of the site and the surrounding area is summarized in the Hunters Point Development Final Environmental Impact Statement (June 1990). Hunters Point area was originally a rocky outcrop surrounded by low-lying marshlands and tidal meadows. Filling of the wetlands and development of the area began in the mid-19th century. Starting around 1890, the area became a major industrial center. Historic Sanborn Insurance Maps show the following uses on and adjacent to the site:

**Historical On-Site and Area Uses**

| Year | On-site Uses | Adjacent Areas |
|---|---|---|
| 1898 | Lawson-Valentine Boiler Works<br>Warren Chemical Co. (western edge of site) | West - Warren Chemical Co.<br>North – vacant, small commercial bldgs<br>East - manufacturing, commercial, residential<br>South – Barber Asphalt |
| 1915 | Edward Smith Varnish Works<br>Blau Gas Company of America<br>Barber Asphalt | West – vacant<br>North – National Varnish Co.<br>East – manufacturing, commercial, residential<br>South - railyards |
| 1936 | Edward Smith Varnish Works<br>Harlem Chemical Co.<br>Stanley Barrel Corp.<br>Crest Mfg Plumbers Supplies<br>Kelly Dry Ginger Ale Corp. | West – Liquid Carbonic Corp.<br>North – Quimby Corp<br>East manufacturing, commercial, residential<br>South – railyards |
| 1950 | Paint and Varnish Works<br>Harlem Chemical Co.<br>Refrigeration Equip. Mfr.<br>Crest Mfg – Plumbers Supplies<br>Auto Repair. | West – Liquid Carbonic Corp.<br>North - Buchman Spark Wheel Mfr., Mfr. of Detergents and Insecticides<br>East – manufacturing, commercial, residential<br>South – railyards |
| 1970 | Hub Paint Works<br>Adam Metal Supply | West – Metal Storage Warehouse<br>North - Buchman Spark Wheel, Mfr., Mfr. of Detergents and Insecticides<br>East - manufacturing, commercial, residential<br>South – railyards |
| 1979 | Vacant<br>Charles Offset Co. | West – Hallen Contractors<br>North – Buchman Spark Wheel Mfr., Mfr. of Detergents and Insecticides |

| Year | On-site Uses | Adjacent Areas |
|---|---|---|
| | | East -- manufacturing, commercial, residential<br>South – railyards |
| 1988 | Vacant<br>Charles Offset Co. | West – Hallen Contractors<br>North – Buchman Spark Wheel Corp., Mfr. of Detergents and Insecticides<br>East - manufacturing, commercial, residential<br>South – railyards |
| 1996 | Vacant<br>Charles Offset Co. | West – Hallen Contractors<br>North – Buchman Spark Wheel Mfr., Mfr. of Detergents and Insecticides<br>East - manufacturing, commercial, residential<br>South – vacant |

In summary, the eastern end of the site was occupied by varnish or paint manufacturers from sometime prior to 1915 until the 1970's. It has been mostly vacant since that time. The western portion of the site has been occupied by a variety of manufacturing uses. The Blau Gas Company of America occupied a portion of the site in 1915, but was gone by 1936. The Blau Gas process involved "cracking" petroleum to increase the concentrations of the lighter fractions, which were then distilled off, purified, and compressed into cylinders. The waste from this type of process would be a petroleum product distinguishable from manufactured gas plant (MGP) wastes derived from coal. The Blau Gas plant on the site was a small facility which occupied about a one-half acre portion of the site, and is not comparable to a typical MGP facility either in the type of process or the scale of operations. Other historic uses on the western portion of the site include an asphalt company, the Harlem Chemical Company, which manufactured insecticides, a plumbing supply manufacturer, a refrigeration equipment manufacturer, a barrel manufacturer, and an auto repair shop. Historic site uses are summarized on Figure 5.

## 2.5 OFF-SITE HISTORY

The majority of the area to the south of the site was occupied by rail yards since the early development of Hunters Point in the 19th century. The area directly south of the site (on the south side of what is now 48th Avenue) was occupied by an asphalt paving company in 1898, but the rail yards were expanded to occupy this area by 1915.

The western edge of the project site and the area to the west were occupied by the Warren Chemical Company, a manufacturer of roofing and paving materials in 1898. By 1915, the former Warren Chemical site was vacant. From 1936 through 1950, this area was occupied by the Liquid Carbonic Company, which produced carbon dioxide gas for soda fountains. A construction company used this site from the 1970s until the buildings were demolished in the 1990s.

The adjacent area to the north (across what is now 47th Road) has been used historically for a variety of manufacturing operations. The New York Mastics Company was in this area in 1898. From 1915 through 1936, the area was occupied by a varnish company. Later uses included Eagle Paint and Varnish Works, the Tempo Chemical Company, a manufacturer of industrial sanitary and chemical products, and the Buchman Spark Wheel Corporation, a manufacturer of machine products.

## 2.6 DESCRIPTION OF CONTEMPLATED SITE USE

The proposed development on the site is a multi-tenant residential complex with low-rise and high-rise structures, which would be located on the western half of the site. A multi-level parking garage would occupy the eastern half of the site, with townhouses located south of the garage, along 48th Avenue. Neither structure would have a basement or any subgrade levels. The layout for the contemplated site use is shown on Figure 6.

## 2.7 SITE GEOLOGY, HYDROGEOLOGY, AND SUBSURFACE CHARACTERISTICS

Mueser Rutledge Consulting Engineers performed a geotechnical study on the site, the results of which are reported in a Geotechnical Report dated May 25, 2004. The study included 37 soil borings to bedrock and the installation of two piezometers to monitor groundwater levels. The Mueser Rutledge report indicated that the top 10 to 12 feet of soil on the parcel is miscellaneous fill. This is underlain in most borings by a layer of alluvial sand up to 17 feet thick. About two-thirds of the borings encountered a stratum of soft gray organic silty clay, representing old marsh deposits. The organic deposits were generally less than 10 feet thick, and were found directly below the fill at some locations, and interlayered with the sand stratum at others. Below the sand and organic deposits is a layer of glacial till up to 30 feet thick. This consists of compact fine to coarse sand with some gravel, silt, clay, clay pockets, and boulders. The surface of the till is at an elevation of -10 to -12 (Queens Borough Datum) feet over most of the parcel, but dips sharply to a depth of -30 feet in the southwest corner of the parcel. Figure 7 shows the surface elevation of the till layer. Bedrock was encountered at an elevation of -20 to -30 feet over most of the parcel, but similarly dips in the southwest corner, to a minimum elevation of -55 feet. Figure 8 shows the bedrock surface elevation.

Groundwater studies performed by TRC Engineers in publicly accessible off-site areas north and west of Parcel 9 show local groundwater flowing towards a depression in 47th Road, approximately 150 feet west of 5th Street. The groundwater depression in 47th Road was also noted in the studies performed by AKRF in 1989. The groundwater elevations observed during AKRF's 2005 Supplemental Remedial Investigation, shown on Figures 9 and 10, indicate a general flow from northeast to southwest, towards the East River. These results differ from findings of the previous investigations by TRC and AKRF, but are generally consistent with studies performed elsewhere in the Queens West area, which show groundwater flow to the west, towards the East River, with some tidal influence at locations close to the river. It should be noted that the April 2005 depth to water measurements were taken following a series of heavy rains, so the groundwater surface may have been unusually high.

## 2.8 NATURE AND EXTENT OF CONTAMINATION

### 2.8.1 Soil and Groundwater Assessments

Soil and groundwater sampling programs were performed on the site in 1985-86 and in 1989 as part of assessments of the entire Queens West Development area (then known as the Hunters Point Waterfront Development). The results are reported in the Final Environmental Impact Statement, Hunters Point Waterfront Development, dated June 1990. Elevated levels of benzene, toluene, ethylbenzene, and xylene (BTEX), and naphthalene were detected in groundwater sampled from a monitoring well near the southwest corner of Parcel 9.

Testing performed by AKRF in 1998 is reported in Site Assessment Report, Queens West Development Site, Parcels 8 and 9, Queens, New York, dated June 1998. This

additional testing was requested by NYSDEC, which reviewed and approved the work plan. Groundwater samples from three wells contained elevated levels of BTEX and naphthalene. In 2000, when it was possible to gain access to the interiors of the buildings on Parcel 9, a supplemental sampling program was performed, following a sampling protocol approved by NYSDEC (Supplemental Site Assessment Report, Queens West Development Site, Parcel 9, Building Interiors, Queens, New York, dated September 2001). When the buildings on Parcel 9 were demolished in September-October 2000, two steel vaults set in concrete full of oily water, sludge and debris were discovered. A spill (00-0618) was reported for the site and the steel vaults and the concrete surrounding them were removed. The Supplemental Site Assessment Report concluded that no changes were warranted in the approved Remedial Work Plan for Parcel 9.

A Supplemental Remedial Investigation (RI) was performed by AKRF on the site in 2005 (Supplemental Remedial Investigation Report, April 2005). The investigation was intended to assess potential contamination from the Blau Gas manufacturing facility, which was located on the western portion of Parcel 9 of the Queens West Development area around 1915, and to provide the data required for development of a Supplemental Remedial Work Plan.

Following completion of the Supplemental RI, additional testing was performed to better delineate the horizontal and vertical extent of soil contamination. Soil borings were performed at 17 locations in and around the areas where the Supplemental Remedial Investigation detected hydrocarbon contamination (shown on Figure 11). Samples from each two-foot interval from the surface to the till or clay layer (22 to 30 feet below grade) were analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) using Methods 8260 and 8270, respectively. In addition to the VOC and SVOC analyses, samples from the surface fill (from the surface down to about 10 feet below grade) were analyzed for priority pollutant metals to help determine their suitability for reuse on the site. Selected samples from the areas to be excavated were analyzed for RCRA disposal parameters to provide data needed to select a disposal facility.

The soil testing performed in the Supplemental Remedial Investigation detected no significant levels of pesticides, polychlorinated biphenyls (PCBs), or cyanide. The delineation sampling, therefore, did not include analysis for these parameters. Levels of metals in the native soils below the fill were at typical background levels, so the delineation sampling only included analysis for metals in the surface fill material. The analytical results from the additional delineation sampling are presented in Appendix B. Complete descriptions of the delineation sampling methods and results are provided in Additional Delineation Testing Report, Queens West Development Parcel 9, prepared by AKRF, dated June 2005.

AKRF conducted soil gas sampling at the site in July 2005 to determine if site-related contaminants are potentially present in off-site soil gas. The samples were collected at thirteen locations on the Center Boulevard, 47th Road, and 48th Avenue sidewalks, as shown on Figure 11. Two ambient air samples were collected during soil gas sampling activities to determine potential background concentrations. All samples were collected in 1-liter Summa canisters and analyzed for VOCs by EPA Method TO-15 plus tentatively identified compounds (TICs). The analytical results from the soil gas sampling are included in Appendix B.

In July 2005, AKRF conducted composite sampling of the existing soil piles located in the central and eastern portion of the site. The samples were collected by dividing the soil piles into approximately 500 to 1000 cubic yard sections and compositing soil from multiple locations in each section. Sampling locations and the soil pile configuration are shown on Figure 11. The composite samples were analyzed for VOCs by EPA method 8260, SVOCs by EPA method 8270, and metals by EPA method 6000/7000 series. Analytical results for the soil pile sampling are included in Appendix B.

### 2.8.2 Soil Contamination

The soil analyses indicate the presence of two separate types of soil contamination on the site. The extent of each type of contamination is shown on Figure 12, which indicates the areas where levels of BTEX or naphthalene in soil samples exceeded the TAGM 4046 recommended soil cleanup objectives. Petroleum contamination, including the presence of light non-aqueous phase liquid (LNAPL) is centered in the north-central portion of the site. A vault containing underground storage tanks was found in this area during the Supplemental Remedial Investigation. Coal tar contamination, including the presence of dense non-aqueous phase liquid (DNAPL), was found in the southwestern corner of the site, and along the western boundary of the site adjacent to Center Boulevard. Petroleum-contaminated soil and coal tar-contaminated soil are herein referred to collectively as "hydrocarbon-contaminated soil."

As shown in Section B-B on Figure 13, the petroleum-contaminated soil extends from the "smear zone" around the groundwater surface down to the surface of the till layer at an elevation of approximately -10 feet (Queens Borough Datum), but the thickness of the contaminated layer thins out to the east, west, and south of the apparent source area. The petroleum-contaminated soil is characterized by high levels of BTEX, as well as other relatively light, monocyclic hydrocarbons, including cyclohexane and methylcyclohexane. Naphthalene is present in the petroleum-contaminated soil, but at lower levels than the monocyclic compounds. The heavier polycyclic aromatic hydrocarbons (PAHs) are present at relatively low concentrations (except for samples from the historic fill layer). The petroleum-contaminated soils are also characterized by low fluoranthene/pyrene and dibenzofuran/fluorene ratios (less than 1.0), as is typical of petroleum-derived products which have not been subjected to heat treatments.

Section A-A on Figure 13 shows a section through the area of coal tar-contaminated soil along the western end of the site, adjacent to Center Boulevard. There is an area of deep contamination in the southwestern corner of the site where DNAPL was found. This area corresponds to a low point in the lower confining layer (till or clay) where it is not unexpected that DNAPL would tend to accumulate. In addition, there is a second area of coal tar contamination further north along the western boundary of the site, around sampling locations S-1 and P-2. In this area, the contamination extends from the "smear zone" around the groundwater surface down to the surface of the till layer, but thins out to the north and south. The coal tar-contaminated soil is characterized by high levels of naphthalene and 2-methylnaphthalene. BTEX is present, but at lower levels than naphthalene. The heavier PAHs are present at relatively low concentrations (except for samples from the historic fill layer). The coal tar-contaminated soils are also characterized by higher fluoranthene/pyrene and dibenzofuran/fluorene ratios, as is typical of pyrogenic compounds formed by heating organic matter under conditions where there is not enough oxygen to support combustion.

Section C-C on Figure 14 shows a soil profile through both the coal tar-contaminated area at the west end of the site, and the petroleum-contaminated area towards the center of the site. The area of petroleum contamination is approximately 20 feet thick in the presumed source area, but thins out to the east and west. Similarly, the coal tar-contaminated soil is deepest adjacent to Center Boulevard and tapers to a few feet thick to the north, where it meets the area of petroleum contamination.

None of the samples of petroleum- or coal tar-contaminated soil that were analyzed for RCRA characteristics were found to be characteristic hazardous waste, either by ignitability or by toxic characteristic for benzene.

The surface soils on the site are historic fill material incorporating ash as well as brick, concrete, and other demolition debris. The fill contains higher and more variable concentrations of metals and heavy PAHs than the underlying native soils. Metals were detected generally at concentrations typical of soil background levels. Above-background concentrations of mercury were detected in a few soil samples. However, these appear to be randomly distributed in the fill. In all cases where an elevated mercury concentration was detected, the levels in the adjacent samples (from two feet above and two feet below) were within the normal background range. In general, BTEX, naphthalene, and total SVOC concentrations were below their respective RSCOs in fill material overlying the hydrocarbon-contaminated soil in the western portion of the site and above the native soil in the eastern portion of the site (outside of the area of hydrocarbon contamination). However, fill from approximately 0 to 2 feet below grade in P-16, located just outside the area of hydrocarbon-contamination, exhibited a naphthalene concentration of 64 ppm (above the 13-ppm RSCO) and a total SVOC concentration of 8,760 ppm (above the 500-ppm RSCO).

A trace level of one PCB was detected in one soil sample, and the pesticide BHC was detected at low levels in two soil samples. No other PCBs or pesticides were detected in any of the soil samples analyzed.

### 2.8.3 Soil Pile Contamination

The composite samples generally contained elevated concentrations of SVOCs, but relatively low concentrations of BTEX and metals. The highest total SVOC concentrations ranged from 353 ppm to 491 ppm in composite samples C-2, C-8, C-6, and C-4. Sample C-4 also contained an elevated concentration of naphthalene (69 ppm), which may be indicative of contaminated residuals associated with the former tank excavation. The detected contamination in the composite soil samples, excluding C-4, is similar to the contaminant levels detected in historic fill throughout the site and does not appear to be related to petroleum or coal tar sources.

### 2.8.4 Groundwater Contamination

Petroleum and coal tar-related volatile and semivolatile organic compounds were present at elevated levels in groundwater samples from wells in the northwest quadrant and the area of coal tar contamination at the southwestern corner and along the western edge of the site. The most common compounds detected were BTEX and naphthalene and 2-methylnaphthalene. Methyl and dimethyl phenols, typical of coal tar, were detected in a number of samples, particularly from the wells along the western edge of the site adjacent to Center Boulevard. In general, the higher levels of naphthalene were associated with the coal tar contamination along the western edge of the site, and the

higher levels of benzene are associated with the petroleum contamination in the north-central portion of the site.

Metals were generally either undetected or detected at concentrations well below the Class GA groundwater standards. The exception is the upgradient well, A-8, located in the northeastern corner of the site, where the detected antimony concentration (1,220 parts per billion) exceeded the applicable groundwater standard. This result was suspected of being an anomaly, and not indicative of overall site conditions. PCBs or pesticides were detected in any of the groundwater samples analyzed.

### 2.8.5 Soil Gas

Petroleum/coal tar related compounds were prevalent in several of the soil gas samples, with the highest concentrations detected in SG-3 (located near the northwestern portion of Parcel 9). High concentrations of chlorinated compounds, including tetrachloroethene (PCE) at 3,900 ug/m$^3$, were detected at the southeastern corner of Center Boulevard and 48th Avenue, adjacent to the Citilights residential apartment building. PCE was prevalent at relatively low concentrations (6 to 29 ug/m$^3$) in many of the sampling locations, with a higher concentration of 290 ug/m$^3$ detected in SG-7, near the southeastern portion of Parcel 9. Confirmatory sampling was conducted for the SG-11 location on August 2, 2005, to determine if the initial chlorinated VOC results were anomalous. The results indicated elevated levels of chlorinated compounds, including a PCE concentration of 3,250 ug/m$^3$, confirming results from the initial sampling. The soil and groundwater data collected at Parcel 9 did not contain elevated concentrations of chlorinated VOCs, indicating that Parcel 9 is not the source of chlorinated compounds detected in the SG-11 soil gas sample.

# 3.0 ALTERNATIVES ANALYSIS

## 3.1 EXPOSURE ASSESSMENT

Potentially exposed populations and potential exposure pathways for on-site contamination are evaluated in this section. An exposure assessment for off-site contamination will be included in a separate off-site investigation. Exposure can only occur if there is a complete pathway from a specific chemical of concern contained in one of the on-site media to a receptor. The mere presence of a chemical at a site is not in itself evidence that a complete exposure pathway will exist. Based on results from the previous site investigations, contaminated media at the site include NAPL, contaminated soil, and contaminated groundwater. Potential receptors include: on-site environmental and construction workers for the proposed redevelopment, future residents of the proposed development, future on-site maintenance workers, off-site residents, off-site maintenance workers, and off-site surface water. Considering the use limitations already in place at the site and in the surrounding area, the following potential exposure pathways are considered incomplete:

- *Groundwater ingestion:* New York City code prohibits the use of groundwater for potable purposes; therefore, this exposure pathway is not complete for any current or future on-site or off-site receptors.
- *Soil dermal contact by future on-site residents:* Following site redevelopment, direct contact with soil would be prevented by the presence of structures or impervious surfaces

over the majority of the site ground surface and two feet of clean fill material covering the small landscaped area in the north-central portion of the site.

The following on-site pathways are considered potentially complete:

- *Soil dermal contact by on-site environmental and construction workers, and future maintenance workers:* Proposed remediation and construction activities would involve excavation in areas of known soil contamination, which could result in direct contact with the soil. Direct contact with contaminated soil could also occur during future maintenance activities requiring soil excavation (e.g., repair of utility lines).
- *Groundwater dermal contact by on-site environmental and construction workers, and future maintenance workers:* Proposed remediation and construction activities would involve excavation to below the water table and dewatering, which could result in direct contact with contaminated groundwater. Future maintenance activities could also involve excavating below the water table, resulting in direct contact with groundwater.
- *Incidental groundwater ingestion by on-site environmental and construction workers, and future maintenance workers:* Remediation and construction workers could ingest small amounts of contaminated groundwater that would be exposed during remediation/redevelopment activities. Incidental groundwater ingestion could also occur during non-potable groundwater use (e.g., for irrigation) by future maintenance workers.
- *Inhalation of particulates and vapors by on-site environmental and construction workers:* Proposed remediation activities involve disturbing contaminated soil, which could result in the release of contaminant-laden dust and contaminant vapors. Dust and contaminant vapors could be released during future maintenance activities requiring excavation.
- *Inhalation of particulates and vapors by off-site residents:* Dust and vapors released on-site during proposed remediation activities and future maintenance activities could migrate off-site, resulting in exposure to off-site residents.
- *Inhalation of vapors by future on-site residents:* Future residents could be exposed to contaminant vapors as a result volatile organic compounds in soil gas migrating into the inside of the proposed residential building.
- *Storm water runoff to the East River:* Contaminated soil exposed during proposed remediation activities could become entrained in storm water runoff, and subsequently enter the East River through the City storm water sewer system.

## 3.2 REMEDIAL ACTION GOALS

The remedial action goals for the Queens West Parcel 9 site are: to be protective of public health and the environment, given the intended use of the site; and to remove or eliminate identifiable sources of contamination, to the extent feasible, regardless of presumed risk or intended use of the site. These remedial action goals are consistent with guidance for Voluntary Cleanup Program sites in NYSDEC DER-10.

## 3.3 STANDARDS, CRITERIA, AND GUIDANCE

For unrestricted use of the site, contaminant levels in soil would need to be below Recommended Soil Clean-up Objectives (RSCOs) listed in Technical and Administrative Guidance Memorandum (TAGM) #4046. Considering the contemplated site use and anticipated institutional controls, Site Specific Soil Action Levels (SSSALs) have been developed that are

considered consistent with the remedial goal of protection of human health and the environment. The SSSALs for BTEX, naphthalene, total VOCs, and total SVOCs are the RSCOs listed in TAGM #4046. The SSSALs for metals are based on site and nearby background levels in the Queens West Development area. The SSSALs are summarized in Table 1.

**TABLE 1**
**SITE SPECIFIC SOIL ACTION LEVELS**

| Compound | Action Level (mg/kg) | Source |
|---|---|---|
| Benzene | 0.06 | TAGM 4046 |
| Toluene | 1.5 | TAGM 4046 |
| Ethylbenzene | 5.5 | TAGM 4046 |
| O-xylene | 1.2 | TAGM 4046 |
| M/P-xylene | 0.6 | TAGM 4046 |
| Naphthalene | 13.0 | TAGM 4046 |
| Total VOCs | 10.0 | TAGM 4046 |
| Total SVOCs | 500 | TAGM 4046 |
| Lead | 1,000 | Background range in Queens West historic fill |
| Mercury | 2 | Background range in Queens West historic fill |
| Arsenic | 25 | Background range in Queens West historic fill |
| Other Criteria | Grossly petroleum-contaminated soil | DER-10 |

**Notes:**
mg/kg = milligrams per kilogram
TAGM 4046 = NYSDEC Technical and Administrative Guidance Memorandum #4046 – Determination of Soil Cleanup Objectives and Cleanup Levels
DER-10 – NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation

A table summarizing the analytical results for all soil samples collected at the site during the Supplemental RI, additional delineation soil borings, and the soil pile characterization is provided in Appendix B. Hydrocarbon-contaminated soil, fill material overlying the hydrocarbon-contaminated soil, and composite sample results of the soil pile are highlighted in red, yellow, and green, respectively.

## 3.4 REMEDIAL ACTION OBJECTIVES

Based on the potentially complete exposure pathways identified in the exposure assessment and the remedial goals for the site, remedial action objectives have been established, as follows:

- Remove soil containing NAPL from the site subsurface;
- Remove hydrocarbon-contaminated soil and historic fill with BTEX, naphthalene, total VOC, and/or total SVOC concentrations exceeding SSSALs;
- Prevent on-site reuse of historic fill with BTEX, naphthalene, total VOC, and total SVOC concentrations exceeding SSSALs;
- Prevent inhalation of contaminant vapors and dust;

- Prevent direct contact with NAPL and contaminants in soil and groundwater; and
- Prevent storm water runoff during soil disturbing activities.

## 3.5 DEVELOPMENT OF REMEDIAL ALTERNATIVES

Three remedial alternatives were developed to achieve the remedial action objectives established for the site, as described in this section.

Remedial Alternative #1: No Action

Alternative #1 involves conducting no remedial activities to address subsurface contamination at the site. The site would be redeveloped with residential buildings and parking garage; however, contaminated soil would be left in place, and no engineering or institutional controls would be implemented during or after construction. Consideration of this alternative fulfills NYSDEC guidance requiring analysis of the "no action" alternative.

Remedial Alternative #2: Soil and NAPL Removal with Unrestricted Use

Alternative #2 consists of excavating and disposing of all soil that contains contaminant concentrations above the applicable RSCOs and removing all NAPL from the site subsurface. This would include removing the historic fill layer from the entire site footprint, and removing hydrocarbon-contaminated soil from the area shown on Figure 12. Site controls, including, a Health and Safety Plan (HASP), an Air Monitoring Plan, and a Storm Water Pollution Prevention Plan (SWPPP), would be implemented during remedial activities to prevent unacceptable exposure to site workers, the surrounding community, and nearby surface water. A containment wall would be constructed to enclose the soil remediation area to allow excavation to the required depths and to the property boundaries. The containment wall would remain in place following site remediation. Consideration of this alternative fulfills NYSDEC guidance requiring analysis of a clean-up action that would result in unrestricted use of the site.

Remedial Alternative #3: Soil and NAPL Removal with Engineering and Institutional Controls

Alternative #3 consists of excavating and disposing of all soil that contains contaminant concentrations above the applicable SSSALs for remediation, and removing all NAPL from the site subsurface. This would involve removing all hydrocarbon-contaminated soil from the western portion of the site, and a small area of historic fill from the eastern portion of the site, as shown on Figure 12. Historic fill overlying the hydrocarbon soil would be stockpiled on-site and characterized for potential reuse, consistent with the SSSALs, during site development. Site controls, including a HASP, Air Monitoring Plan, and SWPPP would be implemented during remedial activities to prevent unacceptable exposure to site workers, the surrounding community, and nearby surface water. Alternative #3 would also include the following institutional and engineering controls:

- Construction of the proposed residential buildings with a sub-slab vapor barrier and venting system to prevent exposure to contaminant vapors by future residents;
- Placement of a cap consisting of either building foundations, impervious surfaces in paved areas, or two-feet of clean soil in landscaped areas, to cover residual soil containing contaminant concentrations that exceed NYSDEC RSCOs;
- Installation of a permanent containment wall to isolate the site from off-site contamination and to isolate reused on-site fill meeting the SSSALs that will be backfilled during the remediation activities; and

- Institutional controls to prevent on-site groundwater use and uncontrolled excavation of residual contamination, and to ensure maintenance of the vapor mitigation system, permanent containment wall, and soil cap. These controls would be specified in a Site Management Plan (SMP) for long-term management of any contaminated materials left in place.

## 3.6 ANALYSIS OF REMEDIAL ALTERNATIVES

### 3.6.1 Remedial Alternative #1: No Action

*Overall Protection of Public Health and the Environment*

Alternative #1 would not provide overall protection of public health and the environment because proposed construction workers and future maintenance workers could be exposed directly to subsurface contamination at the site, and contaminants could enter nearby surface water through storm water runoff. In addition, future residents could be exposed to contaminant vapors that could migrate from soil gas into the proposed residential building.

*Compliance with Standards, Criteria, and Guidance (SCGs)*

Alternative #1 would not comply with the SCGs because contaminants would be left in place at concentrations that exceed NYSDEC RSCOs and the SSSALs.

*Long-Term Effectiveness and Permanence*

Alternative #1 would not provide long term effectiveness and permanence because contamination would be left in the site subsurface indefinitely.

*Reduction of Toxicity, Mobility or Volume with Treatment*

Contaminant toxicity, mobility, and volume would not be reduced if Alternative #1 is implemented, as none of the contaminated material would be removed, stabilized, or treated.

*Short-term Effectiveness*

Alternative #1 does would not provide short term effectiveness because there would be no controls in place to prevent direct exposure to contaminants by construction workers for the proposed development. In addition, uncontrolled storm water runoff could result in contaminants entering nearby surface water.

*Implementability*

Alternative #1 requires no action and, therefore, could be easily implemented.

*Cost*

There would be no costs associated with Alternative #1.

### 3.6.2 Remedial Alternative #2: Soil and NAPL Removal with Unrestricted Use

*Overall Protection of Public Health and the Environment*

Alternative #2 would provide site controls (e.g., HASP, air monitoring plan, and SWPPP) to prevent unacceptable exposure by site workers, the surrounding community, and nearby surface water during remediation activities. In addition, all soil containing contaminant concentrations exceeding NYSDEC RSCOs would be removed from the site

and replaced with clean fill material; protecting future residents and maintenance workers from unacceptable exposure in the near term. However, without engineering and institutional controls, no vapor mitigation or long term monitoring would be conducted to ensure that on-site receptors are protected from potential vapor migration from off-site sources. Therefore, Alternative #2 does not provide overall protection of public health.

*Compliance with Standards, Criteria, and Guidance (SCGs)*

Alternative #2 would comply with the SCGs, as all soil exceeding NYSDEC RSCOs would be removed from the site.

*Long-Term Effectiveness and Permanence*

Alternative #2 would not provide long term effectiveness and permanence, since long-term monitoring would not be conducted to ensure protection from potential vapor migration from off-site sources.

*Reduction of Toxicity, Mobility or Volume with Treatment*

Alternative #2 would reduce the mobility of on-site contamination, as all material with concentrations exceeding NYSDEC RSCOs would be removed from the site and disposed of at a receiving facility with appropriate engineering controls to prevent contaminant migration. In addition, the contaminant volume and toxicity could be reduced if the soil is thermally treated at the receiving facility.

*Short-term Effectiveness*

Alternative #2 would provide short-term effectiveness during the remediation activities via implementation of a HASP and air monitoring plan to prevent exposure by on-site workers and the surrounding community. Implementation of a SWPPP would protect nearby surface water from contaminants potentially entrained in storm water runoff.

*Implementability*

Alternative #2 could be implemented with standard construction techniques, using widely available equipment and materials. No specialized equipment or materials would be needed; however, a short lead time could be required for ordering custom sized containment structures and sheeting. The environmental and construction permits required for the remediation could be obtained within normal timeframes; no extended review times or difficult approvals would be needed.

*Cost*

The estimated cost associated with Alternative #2 is approximately 15.8 million dollars.

### 3.6.3 Soil and NAPL Removal with Engineering and Institutional Controls.

*Overall Protection of Public Health and the Environment*

Alternative #3 would provide overall protection of Public Health and the Environment. Site controls (e.g., HASP, air monitoring plan, and SWPPP) would prevent unacceptable exposure by site workers, the surrounding community, and nearby surface water during remediation activities. Engineering controls, including a sub-slab vapor mitigation system, a permanent containment wall, and placement of a cap would prevent unacceptable exposure to contaminant vapors and contaminated soil by future residents. Site restrictions requiring appropriate engineering controls during future excavation

activities and prohibiting non-potable water wells would protect future maintenance workers and the surrounding community from residual contaminants in soil and groundwater.

*Compliance with Standards, Criteria, and Guidance (SCGs)*

Alternative #3 complies with the applicable SCGs, as all contamination exceeding the SSSALs for remediation would be excavated and disposed of off-site. Remaining fill materials exceeding NYSDEC RSCOs would be covered by an on-site structure, impervious paving, or two-feet of clean fill material.

*Long-Term Effectiveness and Permanence*

Alternative #3 would provide long term effectiveness and permanence, as a containment wall with impermeable gaskets would be installed along a majority of the site perimeter to prevent off-site contamination from entering the site and re-contaminating subsurface soil.

*Reduction of Toxicity, Mobility or Volume with Treatment*

Alternative #3 would reduce contaminant mobility, as all hydrocarbon-contaminated material with concentrations exceeding the SSSALs would be removed from the site and disposed of at a receiving facility with appropriate treatment and/or engineering controls to prevent contaminant migration. In addition, the contaminant volume and toxicity would be reduced if the soil is thermally treated at the receiving facility.

*Short-term Effectiveness*

Alternative #3 would provide short-term effectiveness during the remediation activities via implementation of a HASP and air monitoring plan to prevent unacceptable exposure to contamination by on-site workers and the surrounding community. Implementation of a SWPPP would protect nearby surface water from contaminants potentially entrained in storm water runoff.

*Implementability*

Alternative #3 could be implemented with standard construction techniques, using widely available equipment and materials. No specialized equipment or materials would be needed; however, a short lead time could be required for ordering custom sized containment structures and sheet piling. The environmental and construction permits required for the remediation could be obtained within normal timeframes; no extended review times or difficult approvals would be needed.

*Cost*

The estimate cost for implementing Alternative #3 is approximately 11.9 million dollars.

### 3.6.4 Preferred Alternative

Alternative #1 is not considered a reasonable remedial option because it does not accomplish the remedial action goals of protection of public health and the environment and removal of grossly contaminated soil. Alternatives #2 and #3 both accomplish the remedial action goals in the short term; however, Alternative #2 would not provide long term protection of human health since no long-term monitoring and vapor controls would be implemented to ensure protection from vapor migration into the new building. In addition, the 3.9 million dollar greater costs associated with Alternative #2 do not justify

removing the historic fill layer from the entire site considering that nearly the entire site would be covered by the site structures or impervious paving, thereby eliminating potential direct exposure to the underlying fill. Therefore, Alternative #3 was selected as the preferred remedial alternative.

# 4.0 REMEDIAL WORK PLAN

The selected remedial alternative (Alternative #3) involves excavating and disposing of all hydrocarbon-contaminated soil and historic fill that contains contaminant concentrations exceeding the SSSALs. The anticipated limits of the soil removal are shown in Figure 11. Based on the elevated levels of VOCs in the contaminated soil and nuisance odors encountered during excavation activities at nearby Queens West Development parcels, excavation of all hydrocarbon-contaminated soil will be conducted under a temporary containment structure to control potential contaminant vapors and odors. Excavation of the small area of historic fill containing naphthalene and total SVOC levels exceeding the SSSALs will be conducted outside of the containment structure; however, plastic sheeting and foam will be used during excavation of this area to contain odors and dust. A HASP, air monitoring plan, and SWPPP will be implemented to ensure protection of site workers, the surrounding community, and nearby surface water during the soil excavation activities. A containment wall will be installed around the entire hydrocarbon-contaminated soil excavation area to facilitate removal of the contaminated soil and to prevent migration of off-site contamination on to the parcel during and after the remediation activities. The residential buildings will be constructed with a sub-slab vapor mitigation system and institutional controls will be implemented to prevent exposure to residual contamination that is left in place following soil removal. All remediation work will be conducted in accordance with this RWP. Any development activities conducted concurrently with the remediation activities will not interfere with the work described in this RWP. The various elements of the proposed remedial alternative are described in more detail in the following sections. Technical specifications for contractor implementation of the RWP are included as Appendix C.

## 4.1 SITE PREPARATION

### 4.1.1 Sediment and Erosion Control Measures

Sediment and erosion control measures will be installed at the site prior to conducting any ground-intrusive work. These measures will be installed according to the requirements of the Storm Water Pollution Prevention Plan (SWPPP), which is provided as Appendix D, and all applicable or relevant and appropriate federal, state and local laws. The measures will provide for abatement and control of environmental pollution arising from proposed remediation and construction activities. The control measures will include silt fencing around the perimeter of the site, drainage inlet protection, and stabilized construction pads at each construction entrance.

### 4.1.2 Permanent Sheeting

Based on results from the Supplemental Remedial Investigation and additional delineation sampling, DNAPL has migrated onto the site along a portion of the western and southern site boundaries, as shown on Figure 12. Additional sources of dissolved contamination potentially exist to the north of the site, across 47th Road. Therefore, permanent interlocking steel sheeting will be installed around the entire soil remediation area to isolate the site from future contaminant migration, as shown on Figure 15. The sheeting will be driven into the low-permeability till or clay layer, which is at an

elevation of approximately -25 (Queens Borough Datum) at the southwestern corner of the site and rises to an elevation of -12 to the north and east. The seams in the sheeting will be sealed with hydrocarbon-resistant Adeka gaskets, or equivalent, to prevent infiltration of contaminants back onto the site.

During soil remediation activities, the sheeting will serve to limit lateral and vertical migration of groundwater into the excavation area, thereby limiting the volume of dewatering fluids that will need to be treated and discharged. The sheeting will also serve to prevent collapse of the excavation sidewalls to ensure that the excavation areas will fit within the containment structures and allow excavation up to the property lines. During the remediation activities, fill material meeting the SSSALs will be backfilled within the confines of the permanent sheeting, which will serve to further isolate potential contaminants from the surrounding environment.

### 4.1.3 Grading

Currently, portions of the site (primarily the western portion) are depressed approximately one to two feet relative to street level. These areas will require approximately 1,300 cubic yards of fill to create a level work area to erect the containment structure. Results from composite sampling of the existing soil pile located in the central portion of the site, which was conducted in July 2005, indicate that most of the soil pile material results meet the SSSALs. A portion of this soil will be used to fill in the depressed areas. The remainder of the soil that meets the SSSALs will be stockpiled in the southeastern portion of the site for future reuse as backfill during the remediation activities. Any material from the soil stockpile that is reused on-site will be ultimately placed within the sheet pile wall, described in Section 4.1.2, and covered by the site cap, described in Section 4.4.1, thereby minimizing the mobility of contaminants that are present at levels above NYSDEC RSCOs, but below the SSSALs. The portion of the soil pile that does not meet the SSSALs will be segregated and stockpiled separately in the southeastern portion of the site for off-site disposal during the remediation activities. All soil stockpiling and grading activities will be performed in conformance with the SWPPP.

Based on results from the soil delineation and composite soil sampling, the VOC and SVOC levels in the soil piles are not indicative of petroleum or coal tar-contamination; therefore, the proposed grading does not warrant working within a containment structure to control vapors/odors. Air monitoring for VOCs, dust, and odors will be conducted during all grading activities, and foam, Biosolve, and plastic sheeting will be available and used as necessary.

### 4.1.4 Containment Structure

A containment structure will be mobilized to the site to be erected over the proposed excavation areas. The containment structure will be self-supporting and constructed of a material that is compatible with the proposed environment and impermeable to the anticipated contaminant vapors. The temporary containment structure will measure 130 feet wide by 270 feet long and will be oriented in an east-west direction during the remediation. This will allow the remediation to be completed in two phases (one move of the enclosure). The enclosure will meet all local building codes with regard to loadings and structural considerations, including foundation structural support. Figure 15 shows layouts of the containment structure during the two phases of remediation.

The containment structure will be fully-enclosed and include an air handling/vapor treatment system. The air handling system will consist of six blowers that will draw air out of the structure to maintain a negative air pressure so that vapors and odors are contained, including when access doors are opened to allow truck entry/exit. The blowers will be sized to induce a minimum of five to six air exchanges per hour, inclusive of the open excavation volume, and to allow work within the structure at Level D, as defined in the HASP (provided in Appendix E). Personal protective equipment (PPE) will be upgraded to Level C, if required, based upon work zone air monitoring (as described in the HASP).

The vapor treatment system will consist of a six vapor phase granular activated carbon (GAC) units (one unit connected to the discharge line of each blower) that will reduce VOC concentrations in discharged air to below relevant emissions standards in accordance with the NYSDEC publication "Air Guide 1". During operation of the air handling system, stack emissions will be tested to confirm that they meet NYSDEC discharge criteria. Testing will consist of field screening the treated discharge on a daily basis using a photoionization detector (PID). Vapor samples will also be collected for laboratory analysis using Summa canisters at system activation and once again during contaminated soil removal activities to calibrate the PID measurements to actual contaminant concentrations.

At the conclusion of each work day, exposed contaminated soil within the structure will be covered with plastic and/or long-duration foam and then the air handling system will be turned off. Operation of the air handling system will be resumed the next morning approximately one hour prior to any excavation or loading activities to evacuate and treat any vapors in the structure. If the covering of the exposed contaminated soil proves to be inadequate to control vapors/odors, as a contingency measure, at least one blower will be operated during non-working hours to create negative pressure within the structure.

### 4.1.5 Permits

All necessary permits will be obtained prior to commencing the remediation work. The required permits include:

- New York City Department of Sanitation (DOS) landfill permit (16 RCNY Chapter 3) for placement of clean fill;
- A New York City Department of Environmental Protection (NYCDEP) sewer connection permit (15 RCNY Chapter 19) for discharge of the groundwater from dewatering operations to the City sanitary sewer, with a copy of the NYCDEP Wastewater Quality Control Application provided in Appendix F; and
- Filing of a Notice of Intent (NOI) with the NYSDEC to obtain coverage under New York State Pollutant Discharge Elimination System (SPDES) General Storm Water Permit for Construction Activity (Permit Number GP-02-01).

A copy of the NYSDEC Air Facility Registration form and manufacturer cut sheets for the blowers and the granular activated carbon vessels associated with the air handling/vapor treatment system are provided in Appendix F.

## 4.2 SOIL REMOVAL

### 4.2.1 Extent of Soil Removal

The soil removal area will extend laterally to the limits of excavation, as shown on Figure 12. Within this area, soil will be removed from the top of the contaminated interval shown on Figure 16 to the depths at which non-hydrocarbon-contaminated soil was encountered during the Supplemental RI and additional delineation sampling as shown on Figure 17. The estimated quantity of coal tar and petroleum contaminated soil to be excavated and disposed of off-site is approximately 5,100 $yd^3$ (7,700 tons) and 11,000 $yd^3$ (16,500 tons), respectively.

### 4.2.2 Excavation

All excavation and loading of soil will be performed within a fully-enclosed containment structure as described in Section 4.1.4. For each phase, soil excavation would proceed by first removing the fill material overlying the targeted hydrocarbon-contaminated areas. The fill material will be staged outside the containment structure (in the southeastern portion of the site), handled, and tested for on-site reuse, as described in Section 4.3.1. Removal of hydrocarbon-contaminated soil would then be completed, as necessary, to a depth of 8 to 10 feet below grade (relative to sidewalk/street) to allow for the sheeting tie-backs (structural supports) to be installed.

Hydrocarbon-contaminated soil will be excavated in the containment structure and directly loaded onto trucks, to the extent practicable, for off-site disposal. If it becomes infeasible to directly load the soil onto trucks due to inaccessibility within the excavation, excess water requiring stabilization, or other difficulties, a maximum of 500 cubic yards will be staged within the structure at any one time. The staged contaminated soil will be covered with plastic sheeting if loading operations are not being conducted. The excavation will extend laterally to the limits shown on Figure 12. Field screening and endpoint sampling will be conducted to confirm the lateral and vertical extents of the excavation, as described in Section 4.2.6.

### 4.2.3 Dewatering

Dewatering will be performed as necessary to complete the proposed work. Submersible pumps will be used to pump groundwater from gravel-lined sumps dug at the bottom of the excavations. The groundwater will be pumped to a treatment unit consisting of two settling tanks to remove suspended solids, a separator to remove free-phase product (either DNAPL or LNAPL), filters to remove suspended particles from the water stream, and liquid phase GAC units to remove dissolved organic contaminants. Vents in the holding tanks will be connected to a vapor phase GAC unit to remove VOCs from the vented air stream. The treated water will be discharged to the sanitary sewer through a sewer connection to the existing 12-inch New York City sanitary sewer under 48th Avenue. The sewer connection and discharge will be conducted under a sewer connection permit from the NYCDEP. A sample of the treated water will be collected prior to the sewer connection at the time of system activation and will be analyzed for NYCDEP discharge parameters to ensure that effluent limitations are met. Additional sampling and analysis of the dewatering discharge will be completed as required by the NYCDEP. All waste materials from the water treatment system (e.g., spent carbon and bag filters, sediment from the settling tanks) will be characterized and disposed of at an appropriate waste receiving facility. No dewatering fluids will be recharged back to the

land surface or subsurface of the site. A process flow diagram for the groundwater treatment unit is shown in Figure 18.

### 4.2.4 Trucking and Disposal

All trucks will have the required waste-transporter permits from the NYSDEC as per 6 NYCRR 364. The trucks will be fully-lined and covered with plastic sheeting followed by a tarp. All loads will be covered before the trucks leave the enclosed containment structure. If deemed necessary, Biosolve will be sprayed on the truckloads before placement of the cover.

A decontamination pad will be located at the exit gate, where soil will be washed off the exterior, undercarriage, and wheels of the trucks before leaving the site. Wash water will be collected for treatment and disposal. Prior to leaving the excavation area, all hydrocarbon-contaminated material containers and transport vehicles will be inspected for evidence of exterior contamination (including inside of wheels and undercarriage). Any such contamination will be removed on the decontamination pad before the truck exits the site.

All trucks will enter the site from 47th Road. Once loaded, all trucks will proceed directly to the Brooklyn-Queens Expressway (BQE) via 47th Road, Vernon Boulevard, and then Borden Avenue, with no stopping or staging in the neighborhood between the site and the BQE. No trucks will enter or leave the site from 48th Avenue. The specified truck routes to and from the BQE are shown on Figure 19. Truck route(s) between the BQE and the designated disposal facilities will be determined once the appropriate disposal facilities are identified.

### 4.2.5 Air/Odor Monitoring

Work zone air monitoring within the sprung structure enclosure will be performed in accordance with the site-specific HASP, provided in Appendix E. Air monitoring at the site perimeter and in the surrounding community will be performed in accordance with an Air Monitoring Work Plan, provided in Appendix G. The Air Monitoring Work Plan specifies monitoring at the site perimeter for organic vapors, particulates (PM10), odors, and visible dust. The walk-around air monitoring described in the work plan will include downwind locations and the south-adjacent school and apartment building.

### 4.2.6 Endpoint Sampling

Once the designated limits of the soil removal area have been reached and prior to the start of site development activities, bottom endpoint soil samples will be collected from the bottom of the excavation on a sampling grid with approximately 30 foot centers (approximately one sample per 900 square feet). The sides of excavation will be generally limited to the sheeting, therefore, sidewall endpoint soil samples outside the sheeting limits will be collected via soil borings installed along each side of the sheeting at a spacing of approximately 50 feet. The sidewall samples will be collected from a depth corresponding to the approximate center of the contaminated interval in the adjacent portion of the excavation Endpoint samples will be collected along any interior walls of the excavation (e.g., in the southern portion of the soil removal area) at a spacing of approximately 50 feet. Endpoint samples will be analyzed for VOCs using EPA Method 8260 and base-neutral SVOCs using EPA Method 8270. If analytical results indicate contaminant concentrations exceeding the applicable SSSALs, additional

soil will be excavated from the corresponding portion of the excavation and an additional round of endpoints samples will be collected, as warranted. Soil removal will not extend vertically beyond the top of the clay/till layer or laterally beyond the permanent sheeting.

## 4.3 RESTORATION

### 4.3.1 Backfill Material

Historic fill from the existing soil piles and excavated from above the hydrocarbon-contaminated soil interval will be staged in approximately 1,000-yd$^3$ stockpiles in the southeastern portion of the site, as shown on Figure 15, and characterized for onsite reuse as backfill. Soil meeting the SSSALs will be used to backfill the soil excavations. The sheet pile wall, described in Section 4.1.2, and site cap, described in Section 4.4.1, will serve to limit the mobility of any residual contamination below the SSSALs in the backfill material. All soil stockpiling, handling, and characterization will be conducted according to the requirements of the SWPPP and Soil Management Plan, included in Appendices D and H, respectively. Historic fill that does not meet the SSSALs will be characterized for waste disposal and delivered to an appropriate disposal facility in accordance with the Soil Management Plan. If insufficient on-site fill material meeting the SSSALs is available for reuse, additional fill material will be imported from off-site for backfilling the excavations. The material will be obtained from a source that is approved in writing by the NYSDEC.

### 4.3.2 Backfilling

Soil excavations will be backfilled to approximately 4.5 feet below street level (approximately +4.5 feet el.) to facilitate placement of pile caps, foundations, and utility lines for the proposed redevelopment. Air monitoring will be performed during all backfilling activities in accordance with the HASP and Air Monitoring Plan.

## 4.4 ENGINEERING CONTROLS

### 4.4.1 Soil Cap

Following site remediation, a cap will be placed over the entire site footprint to prevent exposure to underlying soil that could contain contaminant concentrations exceeding NYSDEC RSCOs. The site cap will consist of: on-site buildings; concrete/asphalt paving; and two feet of certified clean fill in areas not covered by structures or paving, as shown on Figure 20. A marker layer (e.g., orange construction fencing or other geotextile) will be installed under the cap to demarcate the interface between reused fill material and clean fill/paving/structures. The top 12 inches of the soil cap will consist of soil suitable for sustaining vegetation.

### 4.4.2 Vapor Barrier

The proposed development on the site will comprise high-rise and low-rise residential structures on the western portion of the site, and an open multi-level parking structure on the eastern portion. An open courtyard will be located on the north-central portion of the site. All structures will be pile-supported, slab-on-grade buildings with no basements. The only sub-grade spaces will be utility vaults and elevator pits.

A vapor barrier will be installed under all the residential buildings (not the open parking structure). The vapor barrier have a minimum thickness of 40-mil and will be sealed

around all utilities and other penetrations. A smoke test will be performed after barrier installation to confirm that it is air tight.

The design for the vapor barrier is provided in Appendix I. The design provides for the installation of a spray-applied vapor barrier (Liquid Boot). Depending upon weather conditions at the time of installation (i.e., winter conditions), the use of a spray-applied barrier may not be feasible and the design may need to be modified for the installation of a sheet [high density polyethylene (HDPE)] membrane.

### 4.4.3 Sub-slab Ventilation

A sub-slab ventilation system will be installed to prevent the accumulation of vapors beneath the building. The system design, included as Appendix I, consists of a gravel sub-base containing perforated PVC piping runs placed beneath the vapor barrier. The piping runs connect to risers, which vent to the atmosphere. The system design includes active venting of the collected vapors via a blower connected to each piping manifold. Following construction of the building foundation (and underlying vapor barrier and sub-slab venting system), monitoring of potential vapors will be performed by collecting samples from the system sub-slab piping without the blower connected. If the monitoring results demonstrate that elevated vapors are not present below the foundation, a request will be submitted to the NYSDEC and NYSDOH to operate the system passively (i.e., without connecting the blower). The Operation, Maintenance and Monitoring (OM&M) Plan, as described in Section 4.9.1, will specify post-remediation monitoring and include provisions for installation of an active system, if warranted, based upon subsequent monitoring data.

## 4.5 NUISANCE CONTROL

### 4.5.1 Rodent Control

Traps will be placed around the site periphery to control rats and other rodents. The traps will be replaced as required, but at a minimum frequency of once every month. All general refuse generated during remediation/construction activities will be containerized in covered dumpsters or roll-offs, which will be emptied on a weekly basis to avoid attracting rodents. In addition, no food will be stored on-site.

### 4.5.2 Noise Control

All construction vehicles and equipment will be equipped with appropriate noise control devices to maintain noise levels that conform to the latest OSHA standards and all State and local regulations. All mufflers and noise control devices will be properly maintained, and replaced as necessary. All pumps and other equipment that are required to operate during normal non-working hours will be, to the extent possible, electrically driven.

## 4.6 CITIZEN PARTICIPATION

Citizen participation activities will include preparation of a project fact sheet and holding a public meeting. The project fact sheet will be submitted in WordPerfect format for NYSDEC approval, and will include: a site description; a summary of the remedial action objectives and the selected remedial alternative; a project schedule; and a list of sources of additional information. The approved fact sheet will be sent via certified mail to persons on the project mailing list (included as Appendix J) prior to the start of remedial activities, with certification of the mailing provided

to NYSDEC project manager. The public meeting was conducted on August 2, 2005, and included a presentation on the proposed remedial actions and a question and answer period.

## 4.7 RECORD KEEPING

A project logbook will be maintained during all remediation activities, and will be available for NYSDEC and NYSDOH inspection. The following information will be recorded in the project logbook:

- Date, weather, and site conditions;
- Names and companies of all on-site personnel;
- Makes, models, and calibration records for all monitoring equipment;
- Makes and models of remediation equipment;
- Sample numbers and descriptions;
- A truck log listing license plate numbers and arrival/departure times; and
- Site sketches showing excavation areas, sampling locations, and stockpiles (if any).

Copies of all waste manifests and bills of lading will be also be maintained with the project logbook.

## 4.8 REPORTING

### 4.8.1 Daily Reports

Daily reports will be provided to the NYSDEC/NYSDOH project managers via email during excavation activities. The reports will include a summary of daily activities and air sampling results (including any exceedances), and will describe any odor or dust problems and corrective actions taken. A site map will be submitted, as required, to identify work areas described in the reports. Any time-sensitive information (e.g., the occurrence of a spill or an emergency situation) will be communicated directly to the NYSDEC project manager.

### 4.8.2 Final Remedial Report

Upon completion of site remediation, a Final Remedial Report will be prepared and submitted to the NYSDEC and NYSDOH. The Final Remedial Report will include:

- Photographs of remedial activities (submitted on compact disk);
- As-built drawings for all constructed elements (e.g., vapor barrier, containment wall);
- Monitoring and endpoint sampling results collected during implementation of the remedy;
- A Site Management Plan for the remedy;
- An accounting of the destination of all material removed from the site and associated manifests/bills of lading and certificates of disposal from the respective receiving facilities;
- Documentation of source approval and sampling for backfill materials imported from off-site;

- A site survey showing locations of all primary contaminant sources (including but not limited to tanks and hotspots) identified during investigation and remediation activities; and
- An itemized description of costs incurred during site remediation.

The Final Remediation Report will include a certification by a Professional Engineer that all remediation and development excavation activities (i.e. grading cuts, utility trenches, footings, etc.) were completed in accordance with the contaminant field screening methodology defined in the RWP, inclusive of the Soil Management Plan (Appendix II).

## 4.9 INSTITUTIONAL CONTROLS

### 4.9.1 Site Management Plan

Upon completion of the remedial activities, a final Site Management Plan will be prepared to specify future soil handling requirements, operation and maintenance procedures, and site use restrictions. The Site Management Plan will include the project Soil Management Plan, HASP, SWPPP, and OM&M Plan. The Soil Management Plan, HASP, and SWPPP are included as Appendices to this document. The OM&M Plan will be prepared at the completion of the remedy and will include the following:

- As-built drawings and descriptions of all engineering controls implemented as part of the long-term remedy (i.e., vapor mitigation system, site cap, containment wall), including manufacturer cut sheets of any remediation equipment;
- Operation and maintenance procedures, including an inspection protocol, to ensure proper functioning of the remedy;
- Vapor and groundwater monitoring plans to evaluate the performance of the remedy; and
- A contingency plan describing procedures to be conducted in the event of an emergency.

The OM&M Plan will be updated periodically during use to reflect changes in site conditions or the manner in which the remedy is operated and/or maintained.

### 4.9.2 Environmental Easement

An environmental easement will be recorded for the site to enforce the following use restrictions:

- Installation of groundwater wells for potable and non-potable purposes (e.g., car washing, non-contact cooling water) will be prohibited;
- Any future excavation activities must be conducted in accordance with the Site Management Plan; and
- The vapor mitigation system, soil cap, and permanent containment wall must be operated and maintained according to the site OM&M Plan.

The environmental easement will be recorded in the Queens County Clerk's office and will include: a description of the use restriction; a map showing the area of the restriction; a written agreement by the property owner to establish and maintain the institutional and engineering controls; and a copy of the Site Management Plan. Prior to

recording the environmental easement, notification of the intent to establish the institutional controls will be sent to all adjacent property owners; NYSDOH; New York City Department of Health and Mental Hygiene; and the Queens County Clerk's office.

### 4.9.3 Annual Certification

An Annual Certification will be submitted to the NYSDEC to document the efficacy of the remedy. The Annual Certification will be signed by a professional engineer and will certify that: the institutional and/or engineering controls are unchanged from the previous certification; nothing has occurred that would impair the ability of the controls to protect public health and the environment; and no violations of the site management plan have occurred. The certification will include the monitoring data collected during the reporting period as specified in the Site Management Plan.

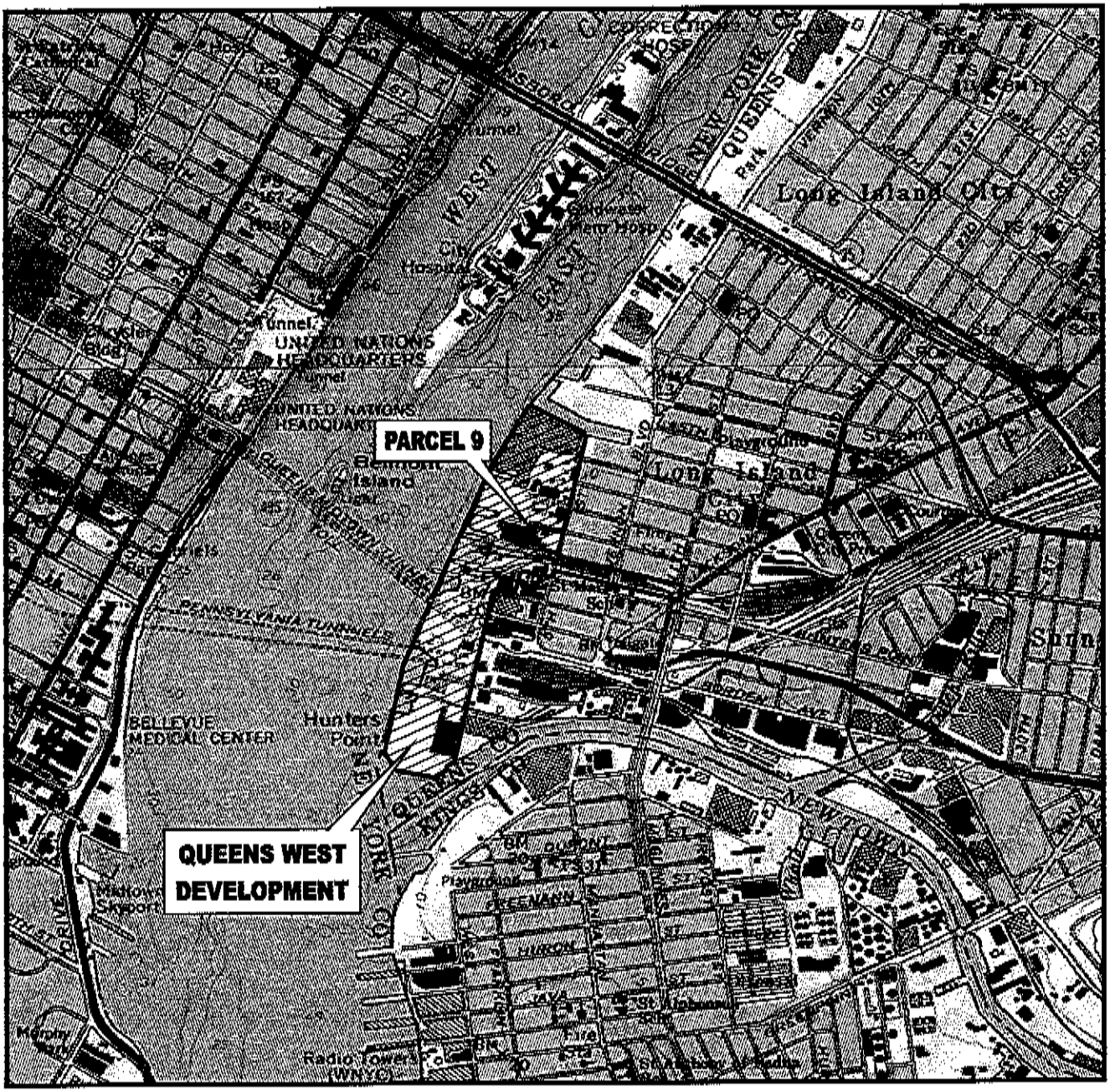
## 4.10 SCHEDULE AND COSTS

Field work for the remedial actions will be scheduled from 7:00 AM to 5:00 PM on weekdays. Prior NYSDEC approval will be obtained for work conducted outside of these hours. The anticipated schedule and estimated costs for completing the remedial program are provided in Appendix K.

# 5.0 REFERENCES

1. AKRF Inc.; *Site Assessment Report, Queens West Development Site, Parcels 8 and 9*, Queens, New York; June 1998.
2. AKRF, Inc.; *Supplemental Site Assessment Report, Queens West Development Site, Parcel 9, Building Interiors*, Queens, New York; September 2001.
3. EDR, Sanborn, Inc.; *Historical Fire Insurance Maps*; 1898, 1915, 1936, 1950, 1970, 1979, 1988, and 1996.
4. Hunters Point Waterfront Development; *Final Environmental Impact Statement*, June 1990.
5. Mueser Rutledge Consulting Engineers; *Geotechnical Report for Queens West – Site 9*, Long Island City, New York; May 25, 2004.
6. NYSDEC, *Draft DER-10 Technical Guidance for Site Investigation and Remediation*, Division of Environmental Remediation, December 2002.
7. TRC Engineers, Inc.; *Results of Initial Groundwater Hydrology Characterization, Queens West Development Stage 2 Site,* August 23, 2004.
8. TRC Engineers, Inc.; *Amended Supplemental Investigation and Design Report No. 10 Queens West Development Stage 2 Site;* December, 2004.
9. TRC Engineers, Inc.; *Supplemental Investigation Report No. 11, Queens West Development Stage 2 Site;* December, 2004.

# FIGURES







QUADRANGLE

SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'

N

SOURCE:

USGS TOPOGRAPHIC MAP - BROOKLYN, N.Y.
QUADRANGLE - DATED 1967, PHOTOREVISED 1979

# QUEENS WEST PARCEL 9

Queens, New York

## PROJECT SITE LOCATION

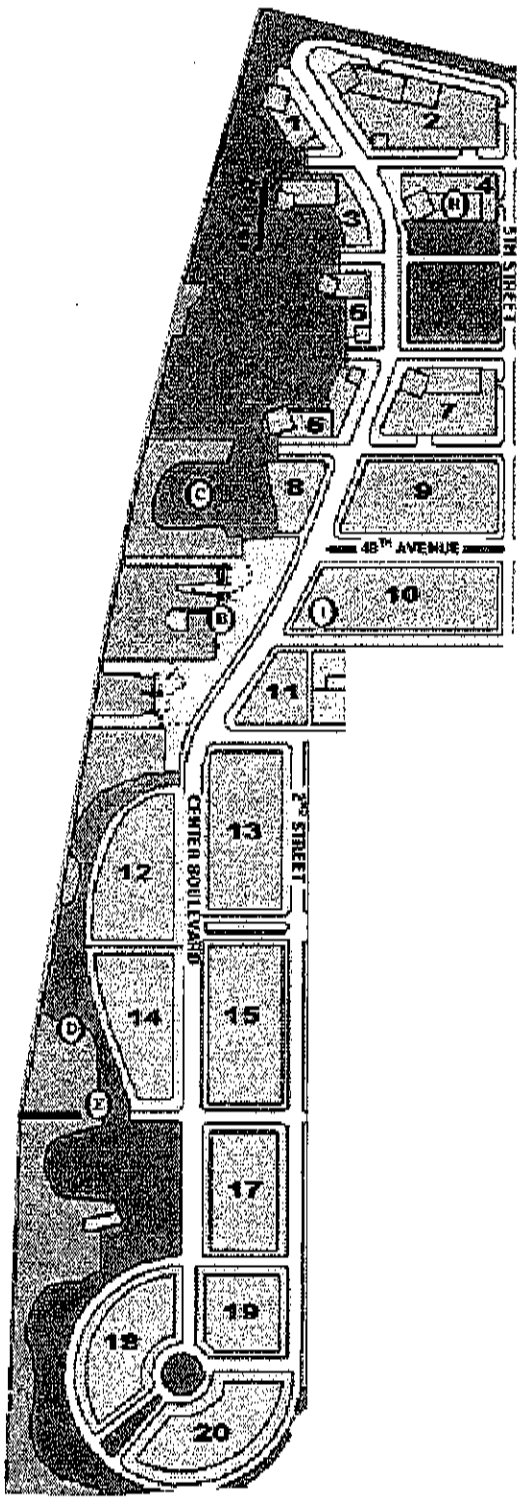
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440 Park Avenue South, New York, NY 10016

| DATE | 8.16.05 |
|---|---|
| PROJECT No. | 10516 |
| FIGURE No. | 1 |

2004 AKRF, Inc. Environmental Consultants C:\akrf-data\10516\10516 Queens West Parcel 9\10516-0001_F1_site location plan.pub




Legend:

10 PARCEL NUMBER

**QUEENS WEST PARCEL 9**
**Queens, New York**

**QUEENS WEST DEVELOPMENT PARCELS**

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Environmental Consultants
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DATE 08.16.05
PROJECT No. 10516
FIGURE No. 2

2004 AKRF, Inc. Environmental Consultants S:\10516 - Queens West Sites 8 & 9\Drawings\Figures 2er SR1



| FIGURE No. | PROJECT No. | SCALE | DATE |
|---|---|---|---|
| 3 | 10516 | 1:2,440 | 08.16.05 |

QUEENS WEST PARCEL 9
Queens, New York

AERIAL PHOTO of PARCEL

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| | | | | | |
|---|---|---|---|---|---|
| FIGURE No. 4 | PROJECT No. 10516 | 1:2,000 | DATE 08.16.05 | QUEENS WEST PARCEL 9<br>Queens, New York<br>SURROUNDING LAND USE | AKRF<br>Environmental Consultants<br>440 Park Avenue South, New York, 10016 |

47th ROAD

5th STREET

48th AVENUE

CENTER BLVD.

WARREN CHEMICAL AND MANUFACTURING COMPANY

BLAU GAS COMPANY OF AMERICA

BARBER ASPHALT PAVING CO.

EDWARD SMITH VARNISH WORKS

BARBER ASPHALT PAVING COMPANY

AND

RAILYARDS

Legend:

- CHAIN-LINK FENCE
- CURRENT PARCEL 8 AND 9 BOUNDARY
- WARREN CHEMICAL AND MANUFACTURING CO. (1898)
- EDWARD SMITH VARNISH WORKS (1898 - 1936)
- BLAU GAS COMPANY OF AMERICA (1915)
- BARBER ASPHALT PAVING CO. (1898 - 1915)

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# QUEENS WEST PARCEL 9

Queens, New York

## COMPOSITE SANBORN MAP: 1898 - 1936

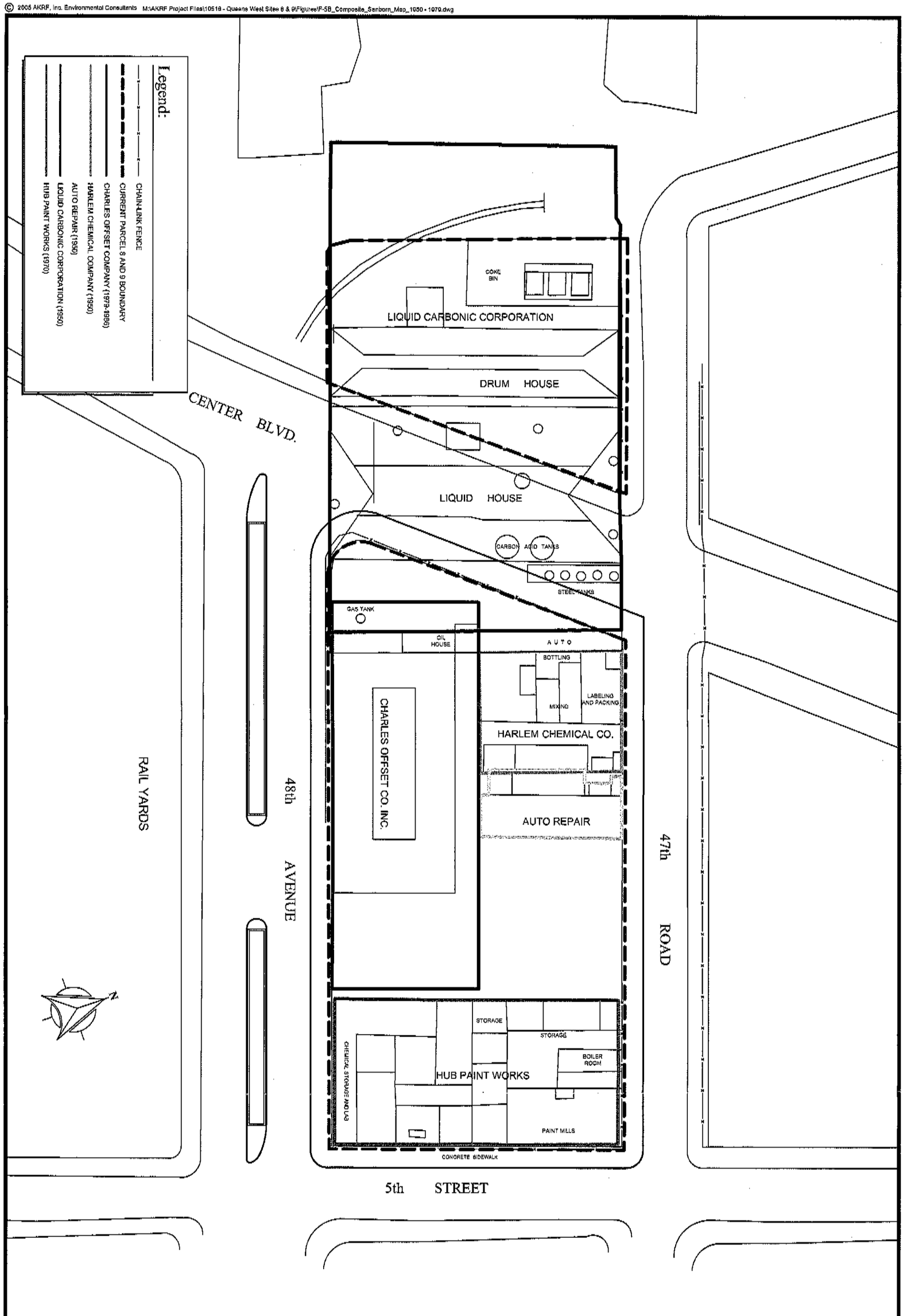
DATE
08.16.05

SCALE
1"=60'

PROJECT No.
10516

FIGURE No.
5A

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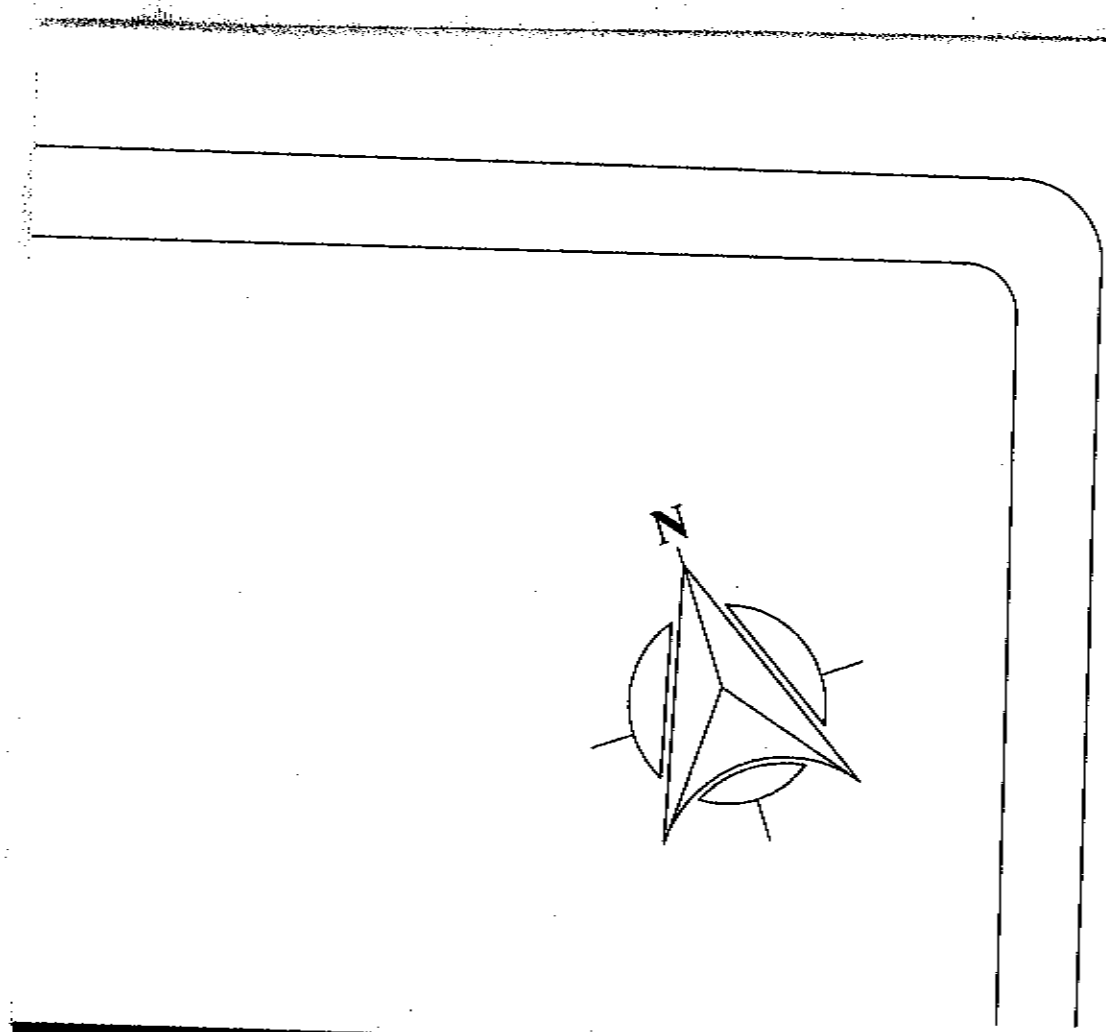



| FIGURE No. | PROJECT No. | SCALE | DATE |
|---|---|---|---|
| 5B | 10516 | 1"=60' | 08.16.05 |

# QUEENS WEST PARCEL 9
Queens, New York

## COMPOSITE SANBORN MAP: 1950 - 1979

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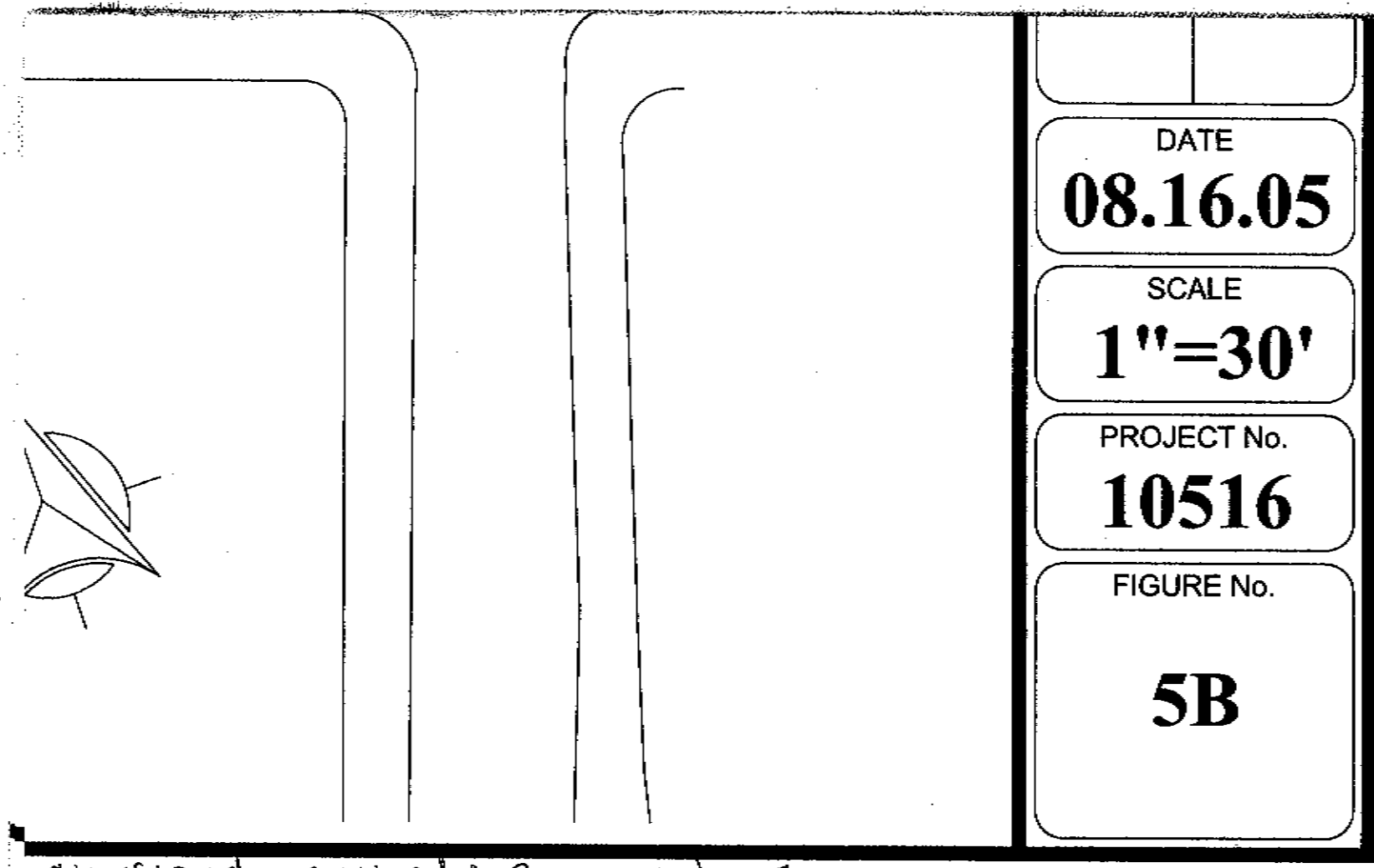

DATE
08.16.05

SCALE
1"=30'

PROJECT No.
10516

FIGURE No.
5A

oversized original: Composite Sanborn map 1898-1936



DATE
08.16.05

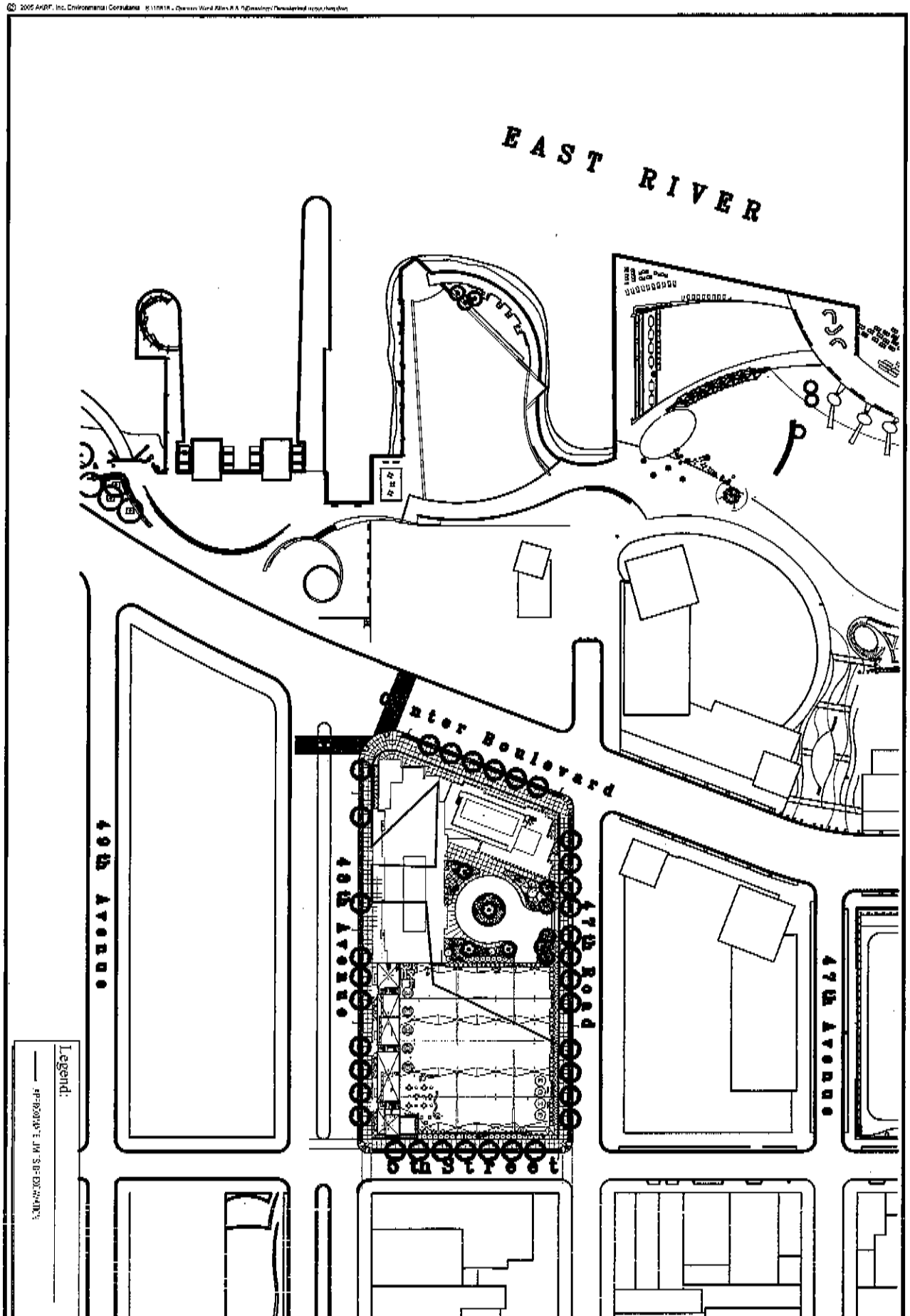
SCALE
1"=30'

PROJECT No.
10516

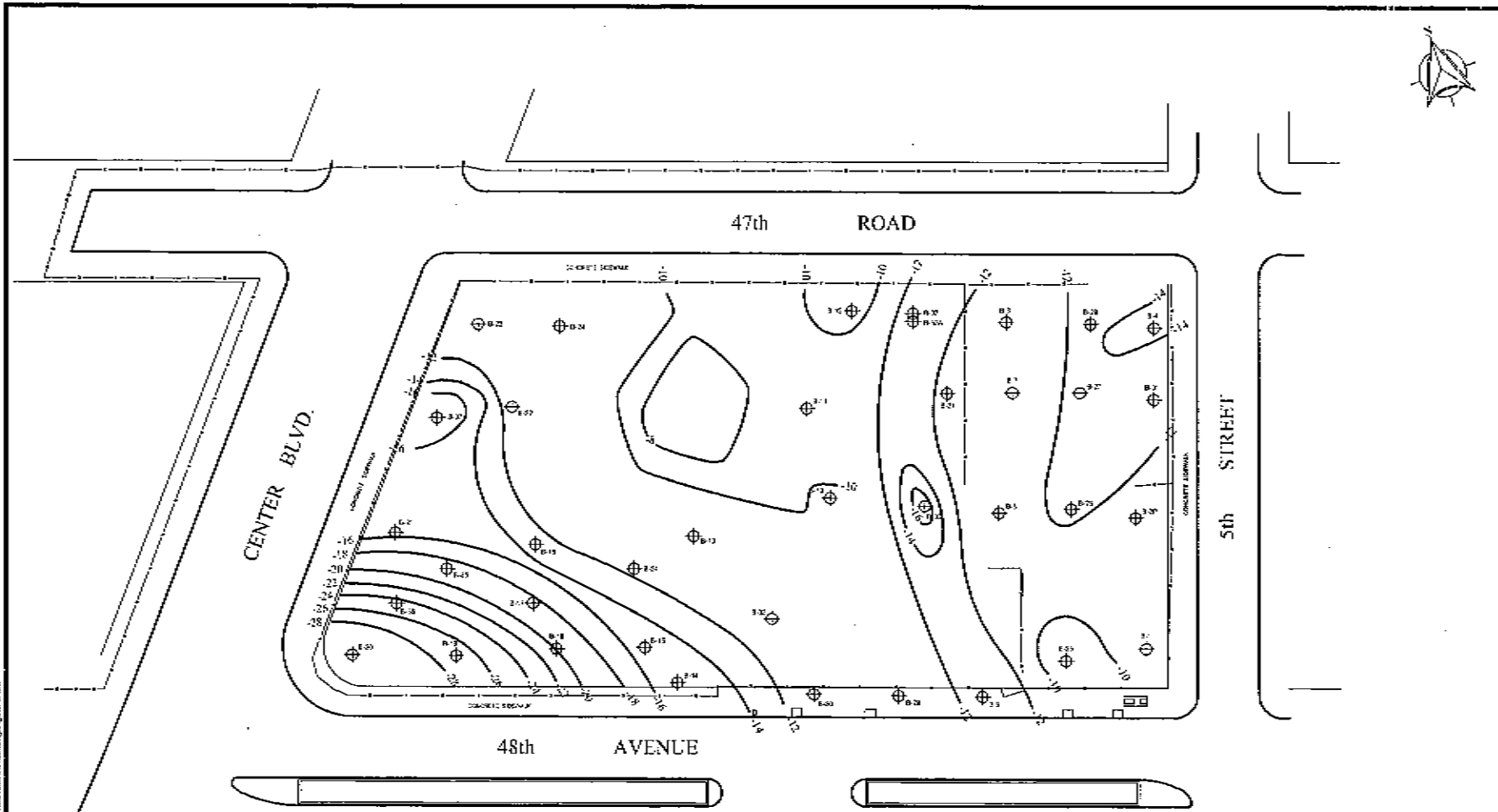
FIGURE No.
5B

Oversized original: Composite Sanborn Map 1950-1979

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| | | | | | |
|---|---|---|---|---|---|
| FIGURE No. 9 | PROJECT No. 10516 | SCALE NTS | DATE 08.16.05 | QUEENS WEST PARCEL 9<br>Queens, New York<br>CONTEMPLATED SITE USE | AKRF<br>Environmental Consultants<br>440 Park Avenue South, New York, 10016 |




Legend:

CHAIN-LINK FENCE

SOIL BORING

-12 ELEVATION OF SURFACE TILL (FT., QUEENS BOROUGH DATUM)

Note:

MAP BASED ON GEOTECHNICAL REPORT FOR QUEENS WEST SITE B, MUESER RUTLEDGE CONSULTING ENGINEERS DATED MAY 28, 2004

SCALE IN FEET

SCALE: 1"=50'

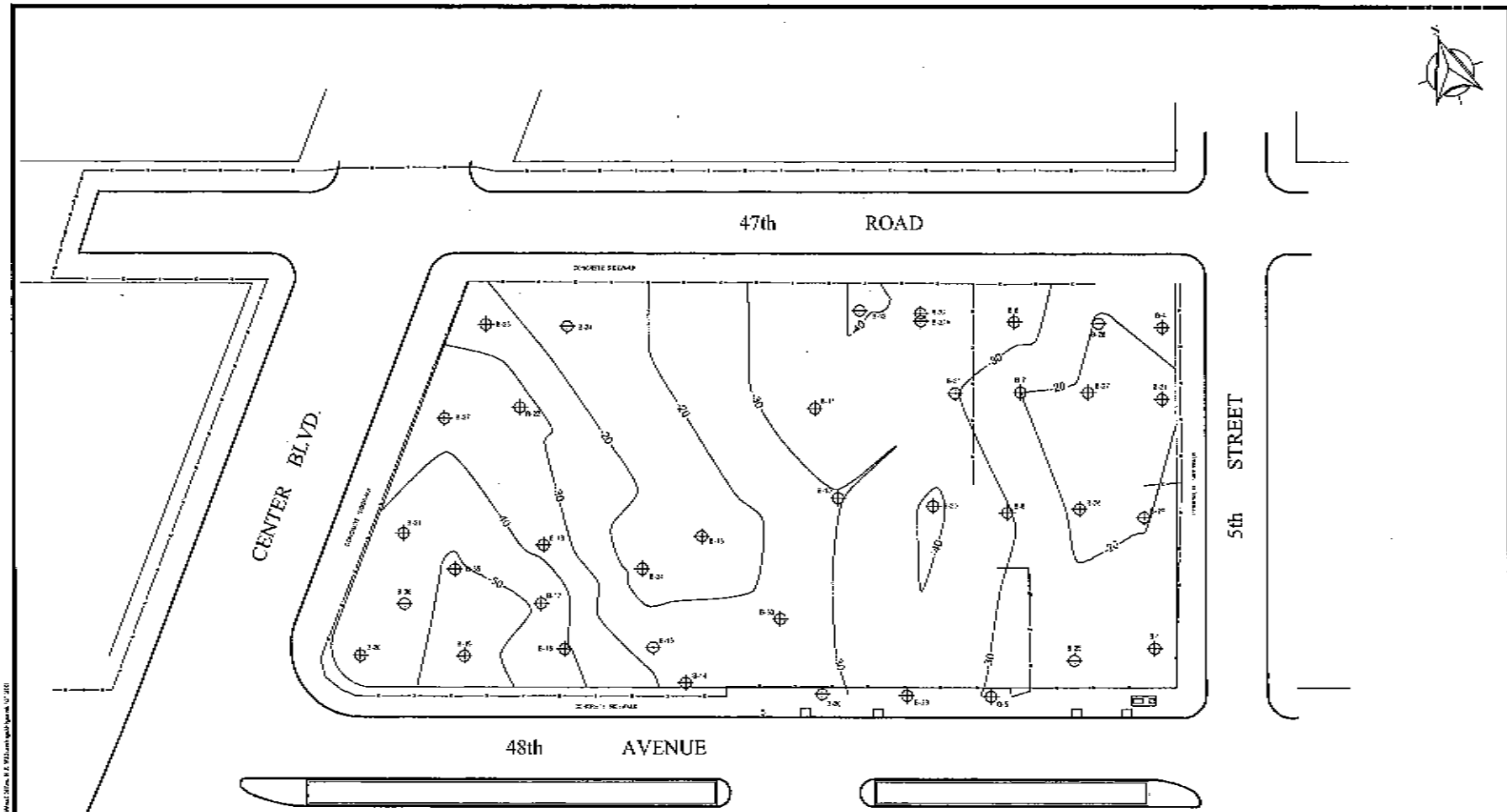
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Environmental Consultants
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**QUEENS WEST PARCEL 9**
Queens, New York

**UPPER ELEVATION OF TILL LAYER**

DATE: 08.16.05
SCALE: 1"=50'
PROJECT No.: 10516
FIG. No.: 7

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Legend:

- CHAIN LINK FENCE
- SOIL BORING
- -30 ELEVATION OF SURFACE OF BEDROCK (FT., QUEENS BOROUGH DATUM)

Note:

WAS BASED ON GEOTECHNICAL REPORT FOR QUEENS WEST SITE 9 WIESER PUT. SEGER CONSULTING ENGINEERS. DATED MAY 25, 2004.

SCALE IN FEET
0' 25' 50' 100'
SCALE 1"=50'

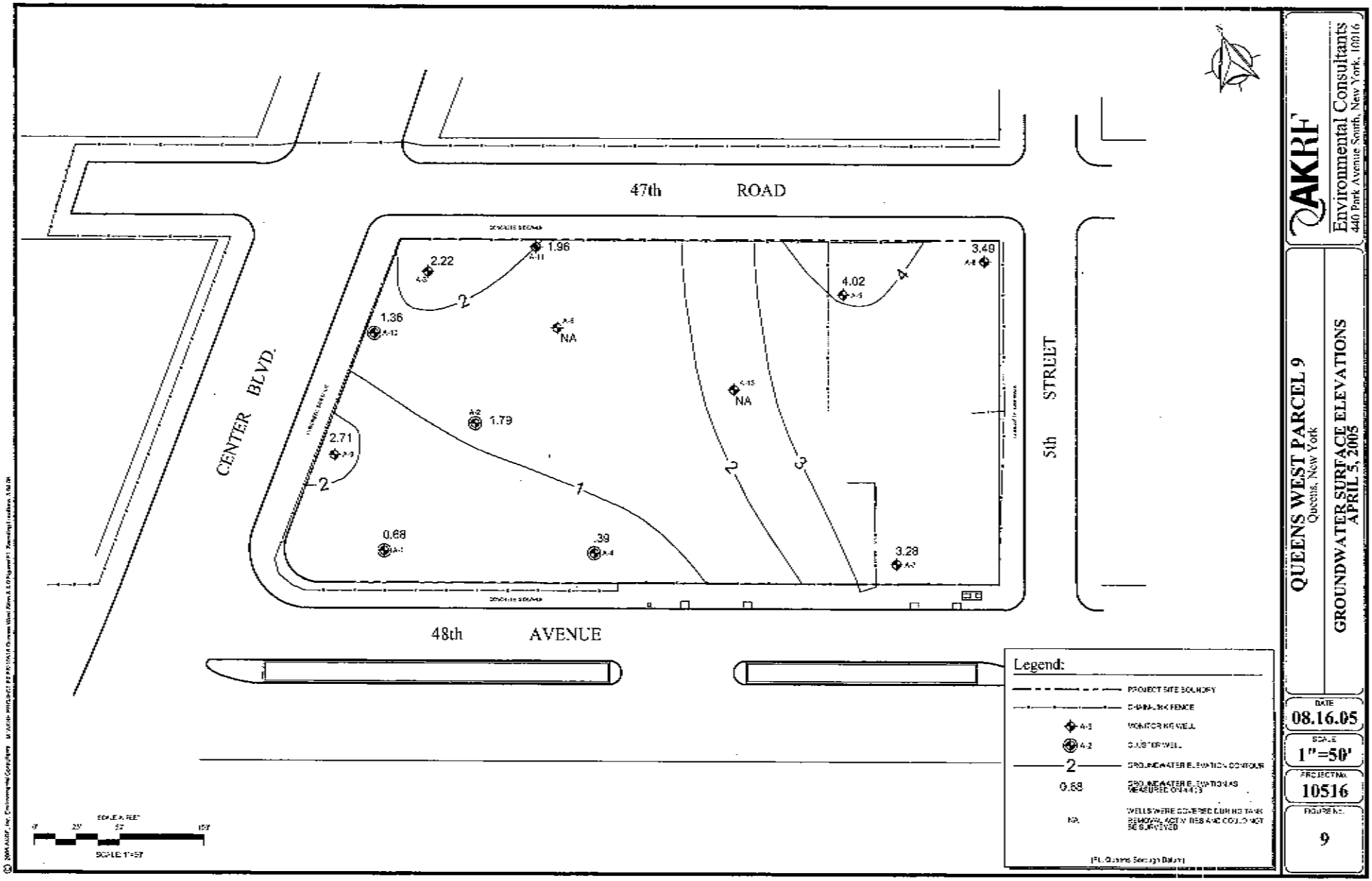
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**QUEENS WEST PARCEL 9**
Queens, New York

**ELEVATION OF SURFACE OF BEDROCK**

DATE: 08.16.05
SCALE: 1"=50'
PROJECT No.: 10516
FIGURE No.: 8

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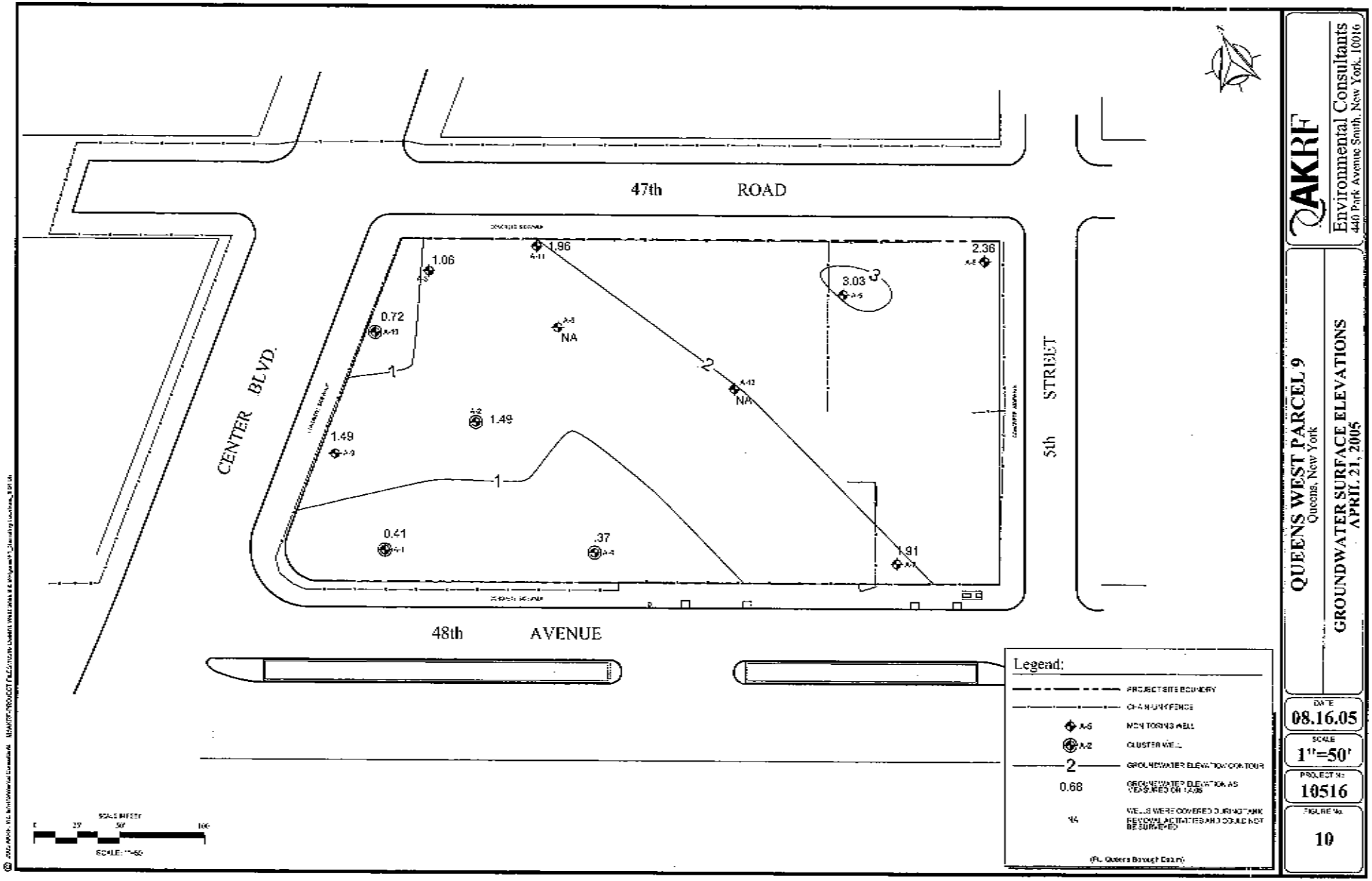

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**QUEENS WEST PARCEL 9**
Queens, New York

**GROUNDWATER SURFACE ELEVATIONS**
**APRIL 5, 2005**

DATE: 08.16.05
SCALE: 1"=50'
PROJECT No.: 10516
FIGURE No.: 9

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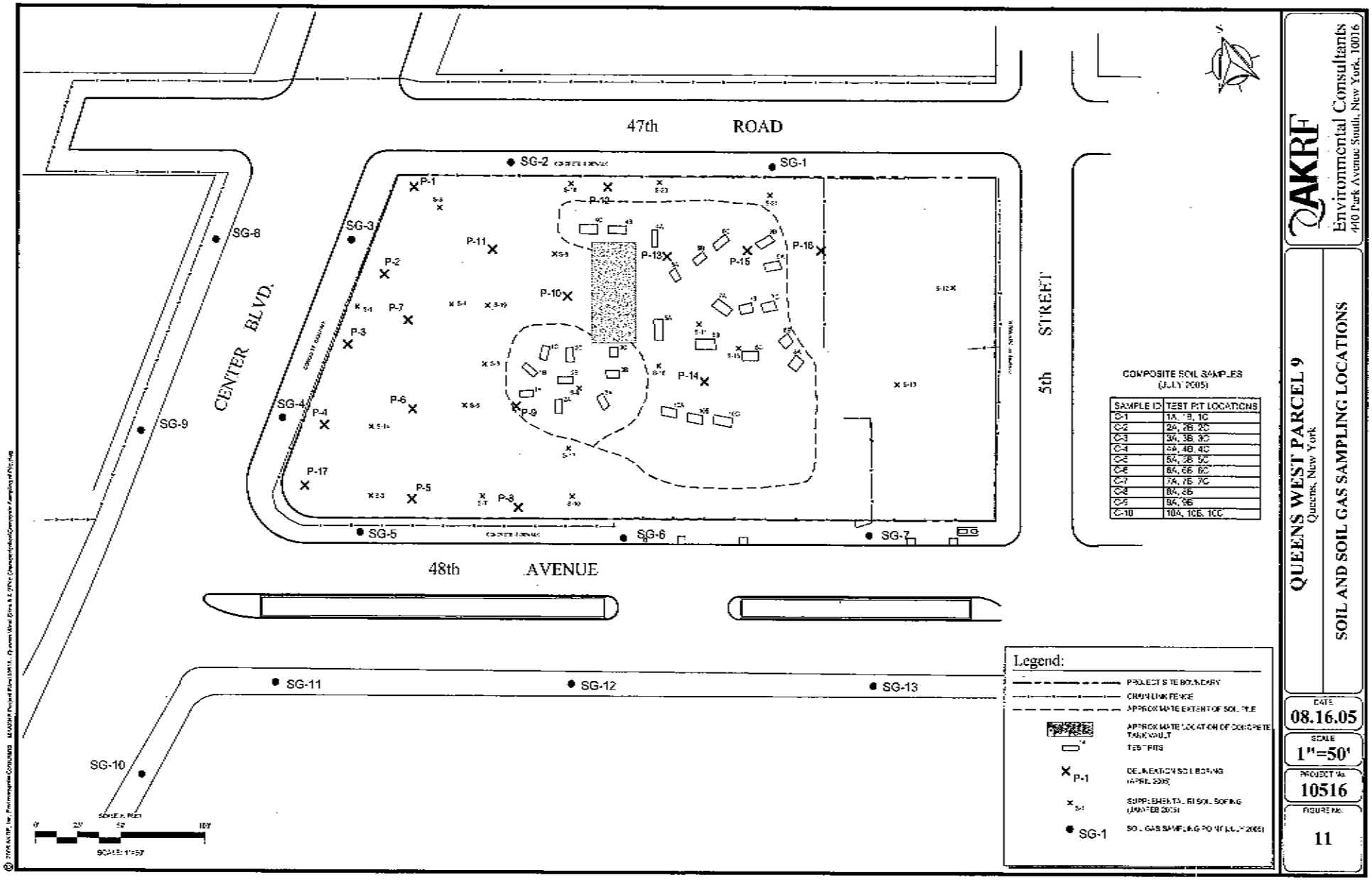



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**QUEENS WEST PARCEL 9**
Queens, New York

**GROUNDWATER SURFACE ELEVATIONS**
**APRIL 21, 2005**

DATE: 08.16.05
SCALE: 1"=50'
PROJECT No.: 10516
FIGURE No.: 10



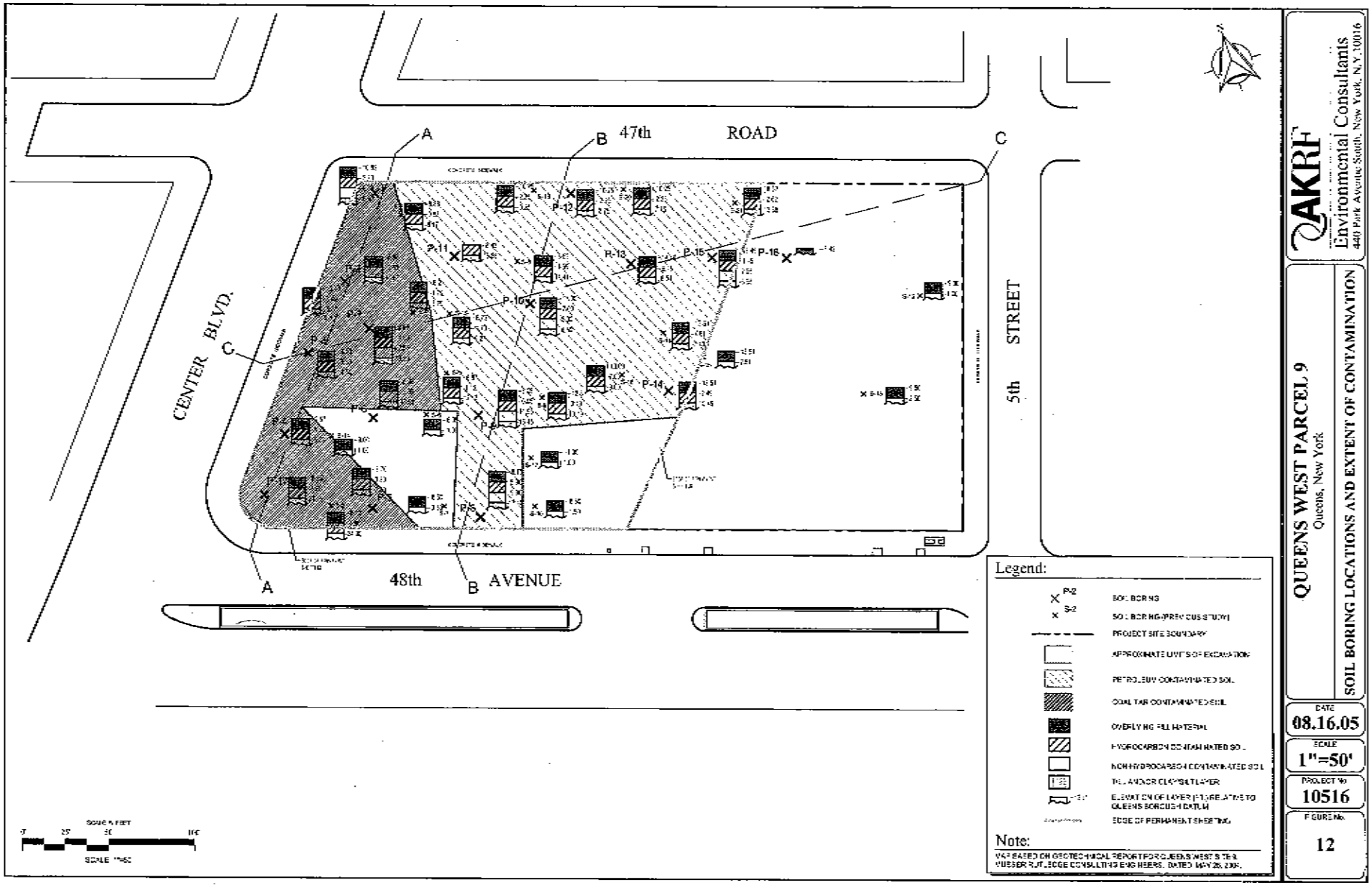

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**QUEENS WEST PARCEL 9**
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**SOIL AND SOIL GAS SAMPLING LOCATIONS**

DATE: 08.16.05
SCALE: 1"=50'
PROJECT No.: 10516
FIGURE No.: 11

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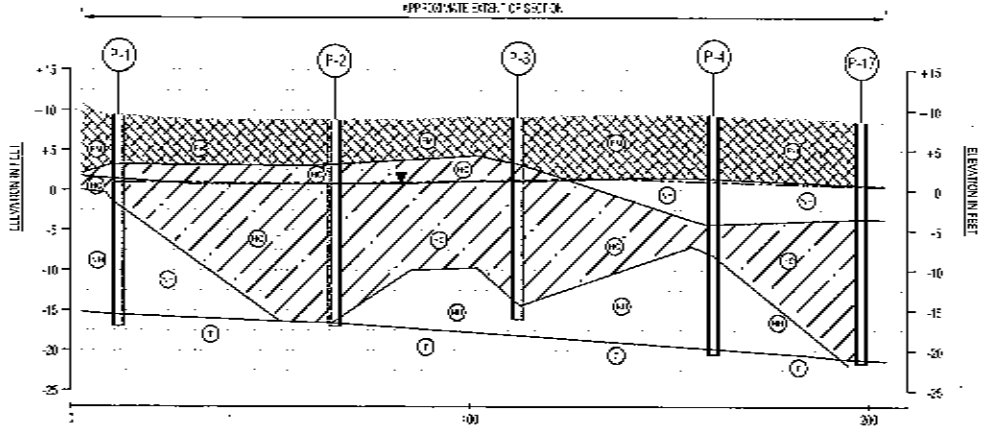
**QUEENS WEST PARCEL 9**
Queens, New York

**SOIL BORING LOCATIONS AND EXTENT OF CONTAMINATION**

DATE: 08.16.05
SCALE: 1"=50'
PROJECT No: 10516
FIGURE No: 12

A
NORTH

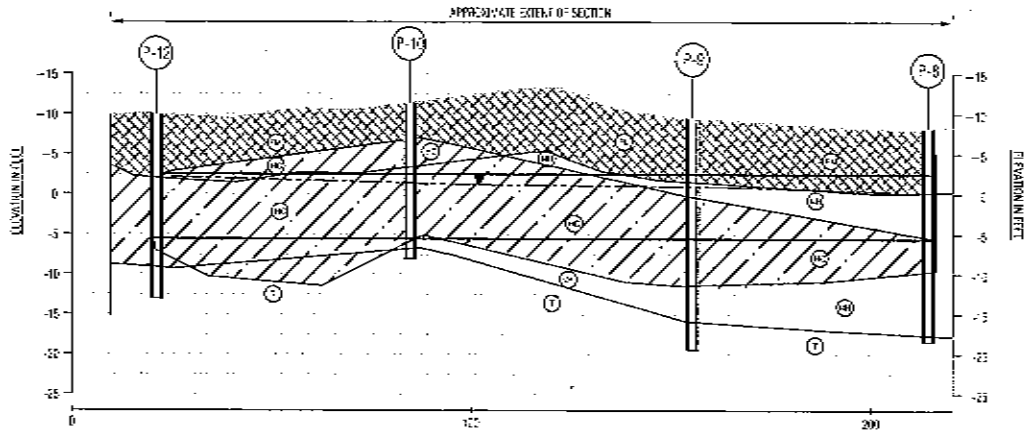
A
SOUTH



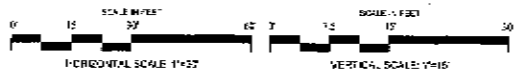

GEOLOGICAL CROSS SECTION A-A

B
NORTH

B
SOUTH




GEOLOGICAL CROSS SECTION B-B




Legend:

- EXISTING GROUND SURFACE
- SOIL BORING
- GROUNDWATER SURFACE
- (FM) OVERLYING FILL MATERIAL
- (HC) HYDROCARBON CONTAMINATED FILL
- (*) NON-HYDROCARBON CONTAMINATED FILL
- (T) GLACIAL TILL
- (P-2) LOCATION AND DESIGNATION OF SOIL BORING

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**QUEENS WEST PARCEL 9**
Queens, New York

**GEOLOGICAL CROSS SECTION (A-A AND B-B)**

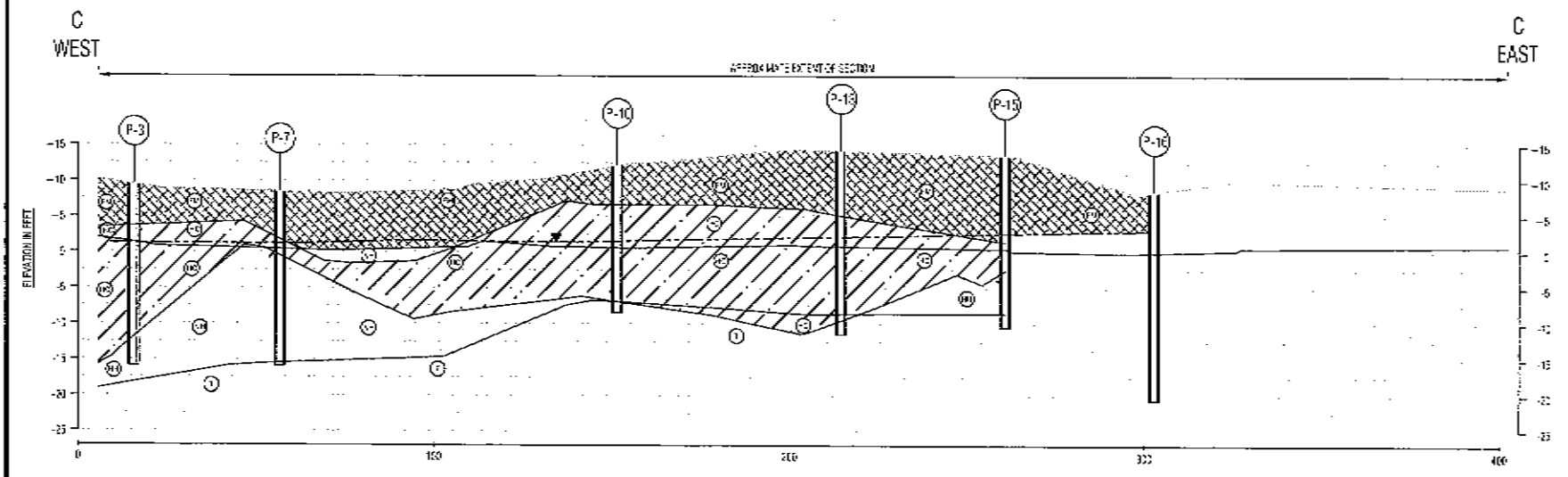
DATE
**08.16.05**

SCALE
**AS SHOWN**

PROJECT No.
**10516**

FIGURE No.
**13**

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GEOLOGICAL CROSS SECTION C-C

Legend:

- EXISTING GROUND SURFACE
- SOIL BORING
- GROUNDWATER SURFACE
- FM — OVERLYING FILL MATERIAL
- HC — HYDROCARBON CONTAMINATED FILL
- NH — NON-HYDROCARBON CONTAMINATED FILL
- T — GLACIAL TILL
- P-3 — LOCATION AND DESIGNATION OF SOIL BORING

SCALE IN FEET
0 30' 60'
HORIZONTAL SCALE: 1"=30'

SCALE IN FEET
0 15' 30'
VERTICAL SCALE: 1"=15'

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QUEENS WEST PARCEL 9
Queens, New York

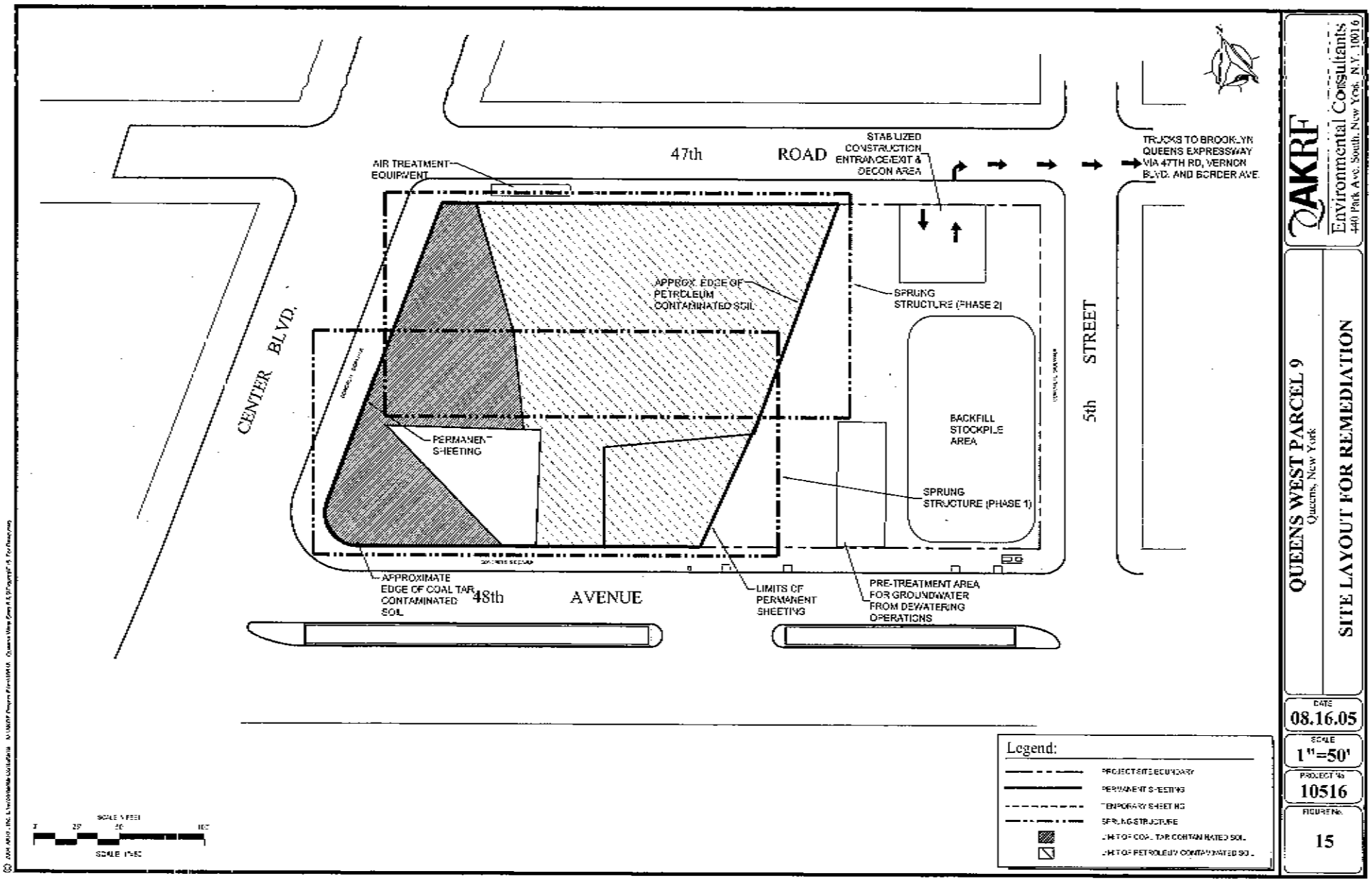
GEOLOGICAL CROSS SECTION C-C

DATE
08.16.05

SCALE
AS SHOWN

PROJECT No.
10516

FIGURE No.
14




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**QUEENS WEST PARCEL 9**
Queens, New York

**SITE LAYOUT FOR REMEDIATION**

DATE: 08.16.05
SCALE: 1"=50'
PROJECT No.: 10516
FIGURE No.: 15

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CENTER BLVD.

48th AVENUE

47th ROAD

5th STREET

Legend:

Note:

# QUEENS WEST PARCEL 9

Queens, New York

TOP ELEVATIONS OF HYDROCARBON CONTAMINATED SOIL

| DATE | SCALE | PROJECT # | FIGURE # |
|---|---|---|---|
| 08.16.05 | 1"=50' | 10516 | 16 |

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CENTER BLVD.

48th AVENUE

47th ROAD

5th STREET

Legend:

Note:

# QUEENS WEST PARCEL 9

Queens, New York

BOTTOM ELEVATIONS OF HYDROCARBON CONTAMINATED SOIL

| DATE | SCALE | PROJECT No. | FIGURE No. |
|---|---|---|---|
| 08.16.05 | 1"=50' | 10516 | 17 |

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# QUEENS WEST PARCEL 9

Queens, New York

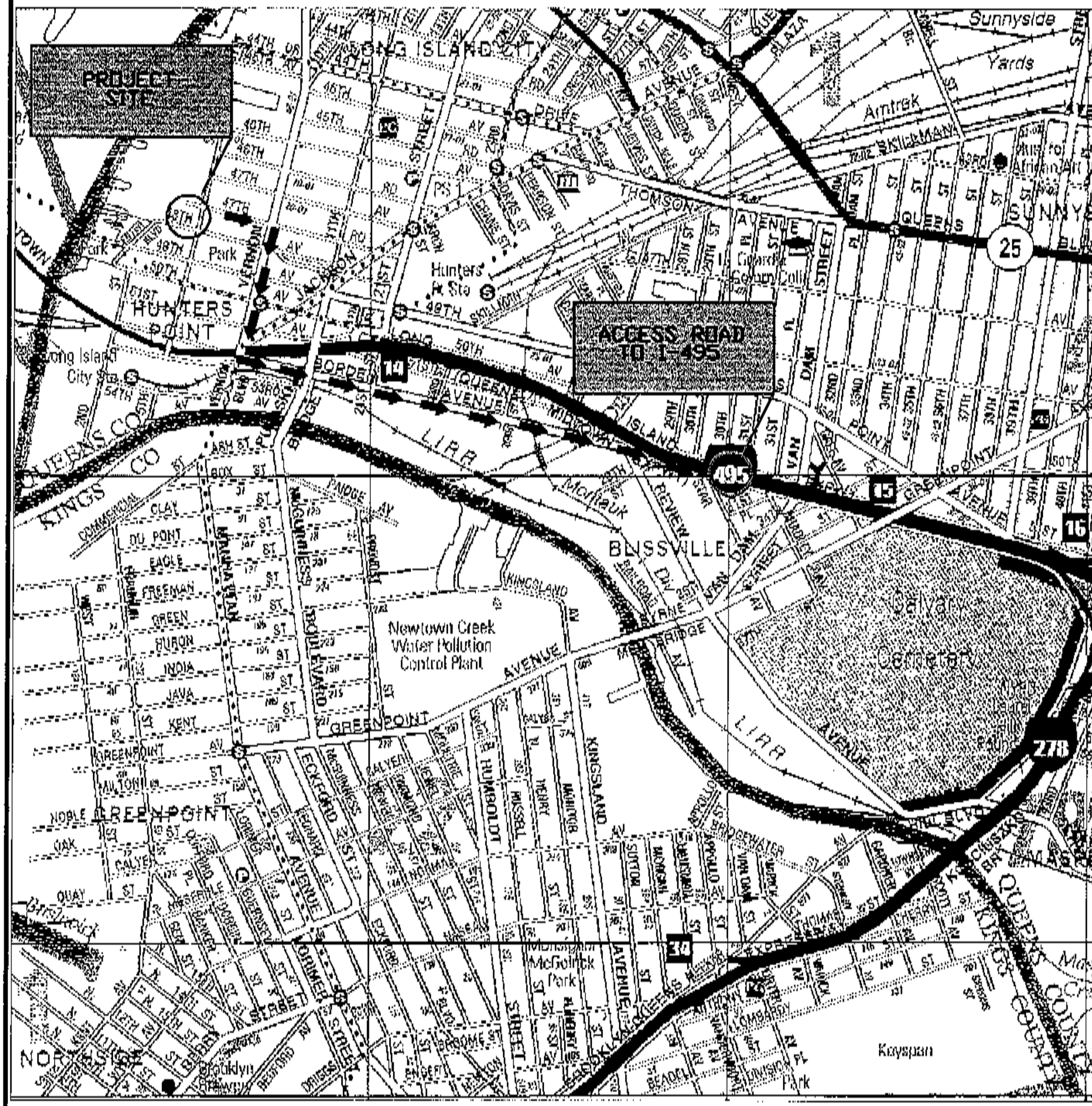
## PROCESS FLOW FOR GROUNDWATER TREATMENT

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| FIGURE | SCALE | PROJECT | DATE |
|---|---|---|---|
| 18 | NTS | 10516 | 08.16.05 |







QUADRANGLE

SOURCE:
HAGSTROM MAP - NEW YORK CITY 5 BOROUGH ATLAS DATED 1994.

N

**QUEENS WEST PARCEL 9**
**Queens, New York**

**TRUCK ROUTES**

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DATE **08.16.05**
PROJECT No. **10516**
FIGURE No. **19**

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| | | | | | |
|---|---|---|---|---|---|
| FIGURE No. 20 | PROJECT No. 10516 | SCALE NTS | DATE 08.16.05 | **QUEENS WEST PARCEL 9**<br>Queens, New York<br>**SITE CAP** | AKRF<br>Environmental Consultants<br>440 Park Avenue South, New York, 10016 |

# APPENDIX A
# SITE SURVEY

# Queens West Development
# Parcel 9

**QUEENS, NEW YORK**

## Remedial Work Plan

**NYSDEC BCP Number: C241087**

**AKRF Project Number: 10516**

**Prepared for:**

AvalonBay Communities
535 Fifth Avenue
New York, New York 10017

**Prepared by:**

**AKRF Engineering, P.C.**
440 Park Avenue South
New York, NY 10016
212-696-0670

**Reviewed and Approved by:**




**REVISED AUGUST 2005**

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Appendix K — Estimated Remediation Costs and Schedule

## LIST OF ACRONYMS

1. BaP – Benzo(a)pyrene
2. BCP – Brownfield Cleanup Program
3. BQE – Bronx-Queens Expressway
4. BTEX – Benzene, Toluene, Ethylbenzene, and Xylenes
5. DNAPL – Dense Non Aqueous Phase Liquid
6. HASP – Health and Safety Plan
7. HDPE – High Density Polyethylene
8. GAC – Granular Activated Carbon
9. LNAPL – Light Non Aqueous Phase Liquid
10. MGP – Manufactured Gas Plant
11. NAPL – Non Aqueous Phase Liquid
12. NYCDEP – New York City Department of Environmental Protection
13. NYCRR – New York Code of Rules and Regulations
14. NYSDEC – New York State Department of Environmental Conservations
15. NYSDOH – New York State Department of Health
16. OM&M – Operation, Maintenance, and Monitoring
17. PAHs – Polycyclic Aromatic Hydrocarbons
18. PCBs – Polychlorinated Biphenyls
19. PPE – Personal Protective Equipment
20. QWDC – Queens West Development Corporations
21. RWP – Remedial Work Plan
22. RSCOs – Recommended Soil Cleanup Objectives
23. SCGs – Standards, Criteria, and Guidance
24. SMP – Soil Management Plan
25. SSSALs – Site Specific Soil Action Levels
26. SVOCs – Semivolatile Organic Compounds
27. SWPPP – Storm Water Pollution Prevention Plan
28. TAGM – Technical and Administrative Guidance Memorandum
29. VOCs – Volatile Organic Compounds

# 1.0 INTRODUCTION

The Queens West Development is a project of the Queens West Development Corporation (QWDC), a subsidiary of New York State's Empire State Development Corp., under the collective sponsorship of The Port Authority of New York and New Jersey, The New York City Economic Development Corporation, and Empire State Development Corporation. The overall Queens West Development site comprises 74 acres along the East River in Hunters Point, Queens, extending from Anable Basin to the north to Newtown Creek to the south (Figure 1). Stage I of the development involves construction of residential buildings on the portion of the site between 47th Road and 50th Avenue. The development sites in this area have been designated Parcels 8, 9, 10, and 11, as shown on Figure 2.

In August 1998, a Voluntary Cleanup Agreement was entered into between New York State Department of Environmental Conservation (NYSDEC) and QWDC. This agreement covered Parcels 8, 9, and 11 and the portion of Center Boulevard between Parcels 8 and 9. In July 2000, the Voluntary Cleanup Agreement was amended to allow it to be separated into separate agreements for each parcel, which would be executed by the designated developer for the parcel. Accordingly, after AvalonBay Communities (AvalonBay) was selected as the developer of Parcels 8, 9, and 11, AvalonBay executed separate agreements for each of the three parcels in September 2000. In March 2004, AvalonBay requested that NYSDEC transition Parcels 8 and 9 into the Brownfield Cleanup Program (BCP), with the BCP Agreements for both parcels being signed by the NYSDEC and becoming effective on June 28, 2005.

The objectives of this Remedial Work Plan (RWP) are to: analyze results from an Additional Delineation Investigation conducted by AKRF in April 2005; assess potential exposure pathways with respect to on-site contamination; develop remedial goals for the site; develop and evaluate appropriate remedial alternatives; and present a preliminary design of the preferred alternative. A complete description of the preferred alternative is presented in Section 4.0. Remediation of Parcel 9 is being conducted separately from the surrounding development areas (e.g., Parcel 8) to allow for staged development. Parcel 8 and the roadways surrounding Parcel 9 will be addressed in an off-site investigation. An off-site investigation work plan is being submitted to the NYSDEC concurrently with this RWP. An aerial photograph of Parcel 9, including the site boundaries, is shown on Figure 3.

# 2.0 SITE DESCRIPTION

## 2.1 SITE LOCATION

Parcel 9 is located in the Hunters Point section of Queens, New York. The parcel is bounded by 5th Street on the east, 48th Avenue on the south, Center Boulevard on the west, and 47th Road on the north. It has a total area of approximately 1.79 acres, and includes Lots 5 and a portion of Lot 19 of Tax Block 19 of Queens County. A site survey is provided in Appendix A.

## 2.2 SITE AND VICINITY CHARACTERISTICS

Parcel 9 is vacant; all former structures were demolished in 2001. The entire parcel is surrounded by a chain-link fence. According to a survey performed by Montrose Surveying Company in 2003, Parcel 9 is generally at an elevation of 8 to 10 feet (Queens Borough Datum), with a mound in the middle of the parcel rising to an elevation of 15 feet.

Parcel 10, located across 48th Avenue south of the site, is occupied by a high-rise residential building and includes a public elementary school, P.S. 78, and a day care center. Parcel 8, located across Center Boulevard west of the site, is vacant. The area between Parcel 8 and the

East River is part of the Queens West waterfront park. The East River is located approximately 500 feet west of the site.

The area north of the site across 47th Road, is currently undergoing remediation and is slated for future residential development. The area east of the site across 5th Street, is not part of the Queens West Development. This area is occupied by a mix of light industrial, commercial, and residential uses. A land use map for the area surrounding Parcel 9 is shown on Figure 4.

## 2.3 NEARBY PUBLIC AREAS OF CONCERN

A high-rise residential building, which includes a public elementary school and a day care center are located south of the site across 48th Avenue. Peninsular Park, a portion of the Queens West waterfront park, is located immediately west of Parcel 8, approximately 200 feet from the site. The area east of the site contains a mix of light industrial, commercial, and residential uses.

## 2.4 SITE HISTORY

The history of the site and the surrounding area is summarized in the Hunters Point Development Final Environmental Impact Statement (June 1990). Hunters Point area was originally a rocky outcrop surrounded by low-lying marshlands and tidal meadows. Filling of the wetlands and development of the area began in the mid-19th century. Starting around 1890, the area became a major industrial center. Historic Sanborn Insurance Maps show the following uses on and adjacent to the site:

**Historical On-Site and Area Uses**

| Year | On-site Uses | Adjacent Areas |
|---|---|---|
| 1898 | Lawson-Valentine Boiler Works<br>Warren Chemical Co. (western edge of site) | West - Warren Chemical Co.<br>North – vacant, small commercial bldgs<br>East – manufacturing, commercial, residential<br>South Barber Asphalt |
| 1915 | Edward Smith Varnish Works<br>Blau Gas Company of America<br>Barber Asphalt | West vacant<br>North – National Varnish Co.<br>East – manufacturing, commercial, residential<br>South – railyards |
| 1936 | Edward Smith Varnish Works<br>Harlem Chemical Co.<br>Stanley Barrel Corp.<br>Crest Mfg – Plumbers Supplies<br>Kelly Dry Ginger Ale Corp. | West Liquid Carbonic Corp.<br>North – Quimby Corp<br>East – manufacturing, commercial, residential<br>South – railyards |
| 1950 | Paint and Varnish Works<br>Harlem Chemical Co.<br>Refrigeration Equip. Mfr.<br>Crest Mfg – Plumbers Supplies<br>Auto Repair. | West Liquid Carbonic Corp.<br>North – Buchman Spark Wheel Mfr., Mfr. of Detergents and Insecticides<br>East – manufacturing, commercial, residential<br>South railyards |
| 1970 | Hub Paint Works<br>Adam Metal Supply | West – Metal Storage Warehouse<br>North – Buchman Spark Wheel, Mfr., Mfr. of Detergents and Insecticides<br>East – manufacturing, commercial, residential<br>South – railyards |
| 1979 | Vacant<br>Charles Offset Co. | West – Hallen Contractors<br>North – Buchman Spark Wheel Mfr., Mfr. of Detergents and Insecticides |

| Year | On-site Uses | Adjacent Areas |
|---|---|---|
| | | East – manufacturing, commercial, residential<br>South – railyards |
| 1988 | Vacant<br>Charles Offset Co. | West – Hallen Contractors<br>North Buchman Spark Wheel Corp., Mfr. of Detergents and Insecticides<br>East – manufacturing, commercial, residential<br>South – railyards |
| 1996 | Vacant<br>Charles Offset Co. | West – Hallen Contractors<br>North Buchman Spark Wheel Mfr., Mfr. of Detergents and Insecticides<br>East – manufacturing, commercial, residential<br>South vacant |

In summary, the eastern end of the site was occupied by varnish or paint manufacturers from sometime prior to 1915 until the 1970's. It has been mostly vacant since that time. The western portion of the site has been occupied by a variety of manufacturing uses. The Blau Gas Company of America occupied a portion of the site in 1915, but was gone by 1936. The Blau Gas process involved "cracking" petroleum to increase the concentrations of the lighter fractions, which were then distilled off, purified, and compressed into cylinders. The waste from this type of process would be a petroleum product distinguishable from manufactured gas plant (MGP) wastes derived from coal. The Blau Gas plant on the site was a small facility which occupied about a one-half acre portion of the site, and is not comparable to a typical MGP facility either in the type of process or the scale of operations. Other historic uses on the western portion of the site include an asphalt company, the Harlem Chemical Company, which manufactured insecticides, a plumbing supply manufacturer, a refrigeration equipment manufacturer, a barrel manufacturer, and an auto repair shop. Historic site uses are summarized on Figure 5.

## 2.5 OFF-SITE HISTORY

The majority of the area to the south of the site was occupied by rail yards since the early development of Hunters Point in the 19th century. The area directly south of the site (on the south side of what is now 48th Avenue) was occupied by an asphalt paving company in 1898, but the rail yards were expanded to occupy this area by 1915.

The western edge of the project site and the area to the west were occupied by the Warren Chemical Company, a manufacturer of roofing and paving materials in 1898. By 1915, the former Warren Chemical site was vacant. From 1936 through 1950, this area was occupied by the Liquid Carbonic Company, which produced carbon dioxide gas for soda fountains. A construction company used this site from the 1970s until the buildings were demolished in the 1990s.

The adjacent area to the north (across what is now 47th Road) has been used historically for a variety of manufacturing operations. The New York Mastics Company was in this area in 1898. From 1915 through 1936, the area was occupied by a varnish company. Later uses included Eagle Paint and Varnish Works, the Tempo Chemical Company, a manufacturer of industrial sanitary and chemical products, and the Buchman Spark Wheel Corporation, a manufacturer of machine products.

## 2.6 DESCRIPTION OF CONTEMPLATED SITE USE

The proposed development on the site is a multi-tenant residential complex with low-rise and high-rise structures, which would be located on the western half of the site. A multi-level parking garage would occupy the eastern half of the site, with townhouses located south of the garage, along 48th Avenue. Neither structure would have a basement or any subgrade levels. The layout for the contemplated site use is shown on Figure 6.

## 2.7 SITE GEOLOGY, HYDROGEOLOGY, AND SUBSURFACE CHARACTERISTICS

Mueser Rutledge Consulting Engineers performed a geotechnical study on the site, the results of which are reported in a Geotechnical Report dated May 25, 2004. The study included 37 soil borings to bedrock and the installation of two piezometers to monitor groundwater levels. The Mueser Rutledge report indicated that the top 10 to 12 feet of soil on the parcel is miscellaneous fill. This is underlain in most borings by a layer of alluvial sand up to 17 feet thick. About two-thirds of the borings encountered a stratum of soft gray organic silty clay, representing old marsh deposits. The organic deposits were generally less than 10 feet thick, and were found directly below the fill at some locations, and interlayered with the sand stratum at others. Below the sand and organic deposits is a layer of glacial till up to 30 feet thick. This consists of compact fine to coarse sand with some gravel, silt, clay, clay pockets, and boulders. The surface of the till is at an elevation of -10 to -12 (Queens Borough Datum) feet over most of the parcel, but dips sharply to a depth of -30 feet in the southwest corner of the parcel. Figure 7 shows the surface elevation of the till layer. Bedrock was encountered at an elevation of -20 to -30 feet over most of the parcel, but similarly dips in the southwest corner, to a minimum elevation of -55 feet. Figure 8 shows the bedrock surface elevation.

Groundwater studies performed by TRC Engineers in publicly accessible off-site areas north and west of Parcel 9 show local groundwater flowing towards a depression in 47th Road, approximately 150 feet west of 5th Street. The groundwater depression in 47th Road was also noted in the studies performed by AKRF in 1989. The groundwater elevations observed during AKRF's 2005 Supplemental Remedial Investigation, shown on Figures 9 and 10, indicate a general flow from northeast to southwest, towards the East River. These results differ from findings of the previous investigations by TRC and AKRF, but are generally consistent with studies performed elsewhere in the Queens West area, which show groundwater flow to the west, towards the East River, with some tidal influence at locations close to the river. It should be noted that the April 2005 depth to water measurements were taken following a series of heavy rains, so the groundwater surface may have been unusually high.

## 2.8 NATURE AND EXTENT OF CONTAMINATION

### 2.8.1 Soil and Groundwater Assessments

Soil and groundwater sampling programs were performed on the site in 1985-86 and in 1989 as part of assessments of the entire Queens West Development area (then known as the Hunters Point Waterfront Development). The results are reported in the Final Environmental Impact Statement, Hunters Point Waterfront Development, dated June 1990. Elevated levels of benzene, toluene, ethylbenzene, and xylene (BTEX), and naphthalene were detected in groundwater sampled from a monitoring well near the southwest corner of Parcel 9.

Testing performed by AKRF in 1998 is reported in Site Assessment Report, Queens West Development Site, Parcels 8 and 9, Queens, New York, dated June 1998. This

additional testing was requested by NYSDEC, which reviewed and approved the work plan. Groundwater samples from three wells contained elevated levels of BTEX and naphthalene. In 2000, when it was possible to gain access to the interiors of the buildings on Parcel 9, a supplemental sampling program was performed, following a sampling protocol approved by NYSDEC (Supplemental Site Assessment Report, Queens West Development Site, Parcel 9, Building Interiors, Queens, New York, dated September 2001). When the buildings on Parcel 9 were demolished in September-October 2000, two steel vaults set in concrete full of oily water, sludge and debris were discovered. A spill (00-0618) was reported for the site and the steel vaults and the concrete surrounding them were removed. The Supplemental Site Assessment Report concluded that no changes were warranted in the approved Remedial Work Plan for Parcel 9.

A Supplemental Remedial Investigation (RI) was performed by AKRF on the site in 2005 (Supplemental Remedial Investigation Report, April 2005). The investigation was intended to assess potential contamination from the Blau Gas manufacturing facility, which was located on the western portion of Parcel 9 of the Queens West Development area around 1915, and to provide the data required for development of a Supplemental Remedial Work Plan.

Following completion of the Supplemental RI, additional testing was performed to better delineate the horizontal and vertical extent of soil contamination. Soil borings were performed at 17 locations in and around the areas where the Supplemental Remedial Investigation detected hydrocarbon contamination (shown on Figure 11). Samples from each two-foot interval from the surface to the till or clay layer (22 to 30 feet below grade) were analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) using Methods 8260 and 8270, respectively. In addition to the VOC and SVOC analyses, samples from the surface fill (from the surface down to about 10 feet below grade) were analyzed for priority pollutant metals to help determine their suitability for reuse on the site. Selected samples from the areas to be excavated were analyzed for RCRA disposal parameters to provide data needed to select a disposal facility.

The soil testing performed in the Supplemental Remedial Investigation detected no significant levels of pesticides, polychlorinated biphenyls (PCBs), or cyanide. The delineation sampling, therefore, did not include analysis for these parameters. Levels of metals in the native soils below the fill were at typical background levels, so the delineation sampling only included analysis for metals in the surface fill material. The analytical results from the additional delineation sampling are presented in Appendix B. Complete descriptions of the delineation sampling methods and results are provided in Additional Delineation Testing Report, Queens West Development Parcel 9, prepared by ARKF, dated June 2005.

AKRF conducted soil gas sampling at the site in July 2005 to determine if site-related contaminants are potentially present in off-site soil gas. The samples were collected at thirteen locations on the Center Boulevard, 47th Road, and 48th Avenue sidewalks, as shown on Figure 11. Two ambient air samples were collected during soil gas sampling activities to determine potential background concentrations. All samples were collected in 1-liter Summa canisters and analyzed for VOCs by EPA Method TO-15 plus tentatively identified compounds (TICs). The analytical results from the soil gas sampling are included in Appendix B.

In July 2005, AKRF conducted composite sampling of the existing soil piles located in the central and eastern portion of the site. The samples were collected by dividing the soil piles into approximately 500 to 1000 cubic yard sections and compositing soil from multiple locations in each section. Sampling locations and the soil pile configuration are shown on Figure 11. The composite samples were analyzed for VOCs by EPA method 8260, SVOCs by EPA method 8270, and metals by EPA method 6000/7000 series. Analytical results for the soil pile sampling are included in Appendix B.

### 2.8.2 Soil Contamination

The soil analyses indicate the presence of two separate types of soil contamination on the site. The extent of each type of contamination is shown on Figure 12, which indicates the areas where levels of BTEX or naphthalene in soil samples exceeded the TAGM 4046 recommended soil cleanup objectives. Petroleum contamination, including the presence of light non-aqueous phase liquid (LNAPL) is centered in the north-central portion of the site. A vault containing underground storage tanks was found in this area during the Supplemental Remedial Investigation. Coal tar contamination, including the presence of dense non-aqueous phase liquid (DNAPL), was found in the southwestern corner of the site, and along the western boundary of the site adjacent to Center Boulevard. Petroleum-contaminated soil and coal tar-contaminated soil are herein referred to collectively as "hydrocarbon-contaminated soil."

As shown in Section B-B on Figure 13, the petroleum-contaminated soil extends from the "smear zone" around the groundwater surface down to the surface of the till layer at an elevation of approximately -10 feet (Queens Borough Datum), but the thickness of the contaminated layer thins out to the east, west, and south of the apparent source area. The petroleum-contaminated soil is characterized by high levels of BTEX, as well as other relatively light, monocyclic hydrocarbons, including cyclohexane and methylcyclohexane. Naphthalene is present in the petroleum-contaminated soil, but at lower levels than the monocyclic compounds. The heavier polycyclic aromatic hydrocarbons (PAHs) are present at relatively low concentrations (except for samples from the historic fill layer). The petroleum-contaminated soils are also characterized by low fluoranthene/pyrene and dibenzofuran/fluorene ratios (less than 1.0), as is typical of petroleum-derived products which have not been subjected to heat treatments.

Section A-A on Figure 13 shows a section through the area of coal tar-contaminated soil along the western end of the site, adjacent to Center Boulevard. There is an area of deep contamination in the southwestern corner of the site where DNAPL was found. This area corresponds to a low point in the lower confining layer (till or clay) where it is not unexpected that DNAPL would tend to accumulate. In addition, there is a second area of coal tar contamination further north along the western boundary of the site, around sampling locations S-1 and P-2. In this area, the contamination extends from the "smear zone" around the groundwater surface down to the surface of the till layer, but thins out to the north and south. The coal tar-contaminated soil is characterized by high levels of naphthalene and 2-methylnaphthalene. BTEX is present, but at lower levels than naphthalene. The heavier PAHs are present at relatively low concentrations (except for samples from the historic fill layer). The coal tar-contaminated soils are also characterized by higher fluoranthene/pyrene and dibenzofuran/fluorene ratios, as is typical of pyrogenic compounds formed by heating organic matter under conditions where there is not enough oxygen to support combustion.

Section C-C on Figure 14 shows a soil profile through both the coal tar-contaminated area at the west end of the site, and the petroleum-contaminated area towards the center of the site. The area of petroleum contamination is approximately 20 feet thick in the presumed source area, but thins out to the east and west. Similarly, the coal tar-contaminated soil is deepest adjacent to Center Boulevard and tapers to a few feet thick to the north, where it meets the area of petroleum contamination.

None of the samples of petroleum- or coal tar-contaminated soil that were analyzed for RCRA characteristics were found to be characteristic hazardous waste, either by ignitability or by toxic characteristic for benzene.

The surface soils on the site are historic fill material incorporating ash as well as brick, concrete, and other demolition debris. The fill contains higher and more variable concentrations of metals and heavy PAHs than the underlying native soils. Metals were detected generally at concentrations typical of soil background levels. Above-background concentrations of mercury were detected in a few soil samples. However, these appear to be randomly distributed in the fill. In all cases where an elevated mercury concentration was detected, the levels in the adjacent samples (from two feet above and two feet below) were within the normal background range. In general, BTEX, naphthalene, and total SVOC concentrations were below their respective RSCOs in fill material overlying the hydrocarbon-contaminated soil in the western portion of the site and above the native soil in the eastern portion of the site (outside of the area of hydrocarbon contamination). However, fill from approximately 0 to 2 feet below grade in P-16, located just outside the area of hydrocarbon-contamination, exhibited a naphthalene concentration of 64 ppm (above the 13-ppm RSCO) and a total SVOC concentration of 8,760 ppm (above the 500-ppm RSCO).

A trace level of one PCB was detected in one soil sample, and the pesticide BHC was detected at low levels in two soil samples. No other PCBs or pesticides were detected in any of the soil samples analyzed.

### 2.8.3 Soil Pile Contamination

The composite samples generally contained elevated concentrations of SVOCs, but relatively low concentrations of BTEX and metals. The highest total SVOC concentrations ranged from 353 ppm to 491 ppm in composite samples C-2, C-8, C-6, and C-4. Sample C-4 also contained an elevated concentration of naphthalene (69 ppm), which may be indicative of contaminated residuals associated with the former tank excavation. The detected contamination in the composite soil samples, excluding C-4, is similar to the contaminant levels detected in historic fill throughout the site and does not appear to be related to petroleum or coal tar sources.

### 2.8.4 Groundwater Contamination

Petroleum and coal tar-related volatile and semivolatile organic compounds were present at elevated levels in groundwater samples from wells in the northwest quadrant and the area of coal tar contamination at the southwestern corner and along the western edge of the site. The most common compounds detected were BTEX and naphthalene and 2-methylnaphthalene. Methyl and dimethyl phenols, typical of coal tar, were detected in a number of samples, particularly from the wells along the western edge of the site adjacent to Center Boulevard. In general, the higher levels of naphthalene were associated with the coal tar contamination along the western edge of the site, and the

higher levels of benzene are associated with the petroleum contamination in the north-central portion of the site.

Metals were generally either undetected or detected at concentrations well below the Class GA groundwater standards. The exception is the upgradient well, A-8, located in the northeastern corner of the site, where the detected antimony concentration (1,220 parts per billion) exceeded the applicable groundwater standard. This result was suspected of being an anomaly, and not indicative of overall site conditions. PCBs or pesticides were detected in any of the groundwater samples analyzed.

### 2.8.5 Soil Gas

Petroleum/coal tar related compounds were prevalent in several of the soil gas samples, with the highest concentrations detected in SG-3 (located near the northwestern portion of Parcel 9). High concentrations of chlorinated compounds, including tetrachloroethene (PCE) at 3,900 ug/m$^3$, were detected at the southeastern corner of Center Boulevard and 48th Avenue, adjacent to the Citilights residential apartment building. PCE was prevalent at relatively low concentrations (6 to 29 ug/m$^3$) in many of the sampling locations, with a higher concentration of 290 ug/m$^3$ detected in SG-7, near the southeastern portion of Parcel 9. Confirmatory sampling was conducted for the SG-11 location on August 2, 2005, to determine if the initial chlorinated VOC results were anomalous. The results indicated elevated levels of chlorinated compounds, including a PCE concentration of 3,250 ug/m$^3$, confirming results from the initial sampling. The soil and groundwater data collected at Parcel 9 did not contain elevated concentrations of chlorinated VOCs, indicating that Parcel 9 is not the source of chlorinated compounds detected in the SG-11 soil gas sample.

# 3.0 ALTERNATIVES ANALYSIS

## 3.1 EXPOSURE ASSESSMENT

Potentially exposed populations and potential exposure pathways for on-site contamination are evaluated in this section. An exposure assessment for off-site contamination will be included in a separate off-site investigation. Exposure can only occur if there is a complete pathway from a specific chemical of concern contained in one of the on-site media to a receptor. The mere presence of a chemical at a site is not in itself evidence that a complete exposure pathway will exist. Based on results from the previous site investigations, contaminated media at the site include NAPL, contaminated soil, and contaminated groundwater. Potential receptors include: on-site environmental and construction workers for the proposed redevelopment, future residents of the proposed development, future on-site maintenance workers, off-site residents, off-site maintenance workers, and off-site surface water. Considering the use limitations already in place at the site and in the surrounding area, the following potential exposure pathways are considered incomplete:

- *Groundwater ingestion:* New York City code prohibits the use of groundwater for potable purposes; therefore, this exposure pathway is not complete for any current or future on-site or off-site receptors.
- *Soil dermal contact by future on-site residents:* Following site redevelopment, direct contact with soil would be prevented by the presence of structures or impervious surfaces

over the majority of the site ground surface and two feet of clean fill material covering the small landscaped area in the north-central portion of the site.

The following on-site pathways are considered potentially complete:

- *Soil dermal contact by on-site environmental and construction workers, and future maintenance workers:* Proposed remediation and construction activities would involve excavation in areas of known soil contamination, which could result in direct contact with the soil. Direct contact with contaminated soil could also occur during future maintenance activities requiring soil excavation (e.g., repair of utility lines).
- *Groundwater dermal contact by on-site environmental and construction workers, and future maintenance workers:* Proposed remediation and construction activities would involve excavation to below the water table and dewatering, which could result in direct contact with contaminated groundwater. Future maintenance activities could also involve excavating below the water table, resulting in direct contact with groundwater.
- *Incidental groundwater ingestion by on-site environmental and construction workers, and future maintenance workers:* Remediation and construction workers could ingest small amounts of contaminated groundwater that would be exposed during remediation/redevelopment activities. Incidental groundwater ingestion could also occur during non-potable groundwater use (e.g., for irrigation) by future maintenance workers.
- *Inhalation of particulates and vapors by on-site environmental and construction workers:* Proposed remediation activities involve disturbing contaminated soil, which could result in the release of contaminant-laden dust and contaminant vapors. Dust and contaminant vapors could be released during future maintenance activities requiring excavation.
- *Inhalation of particulates and vapors by off-site residents:* Dust and vapors released on-site during proposed remediation activities and future maintenance activities could migrate off-site, resulting in exposure to off-site residents.
- *Inhalation of vapors by future on-site residents:* Future residents could be exposed to contaminant vapors as a result volatile organic compounds in soil gas migrating into the inside of the proposed residential building.
- *Storm water runoff to the East River:* Contaminated soil exposed during proposed remediation activities could become entrained in storm water runoff, and subsequently enter the East River through the City storm water sewer system.

## 3.2 REMEDIAL ACTION GOALS

The remedial action goals for the Queens West Parcel 9 site are: to be protective of public health and the environment, given the intended use of the site; and to remove or eliminate identifiable sources of contamination, to the extent feasible, regardless of presumed risk or intended use of the site. These remedial action goals are consistent with guidance for Voluntary Cleanup Program sites in NYSDEC DER-10.

## 3.3 STANDARDS, CRITERIA, AND GUIDANCE

For unrestricted use of the site, contaminant levels in soil would need to be below Recommended Soil Clean-up Objectives (RSCOs) listed in Technical and Administrative Guidance Memorandum (TAGM) #4046. Considering the contemplated site use and anticipated institutional controls, Site Specific Soil Action Levels (SSSALs) have been developed that are

considered consistent with the remedial goal of protection of human health and the environment. The SSSALs for BTEX, naphthalene, total VOCs, and total SVOCs are the RSCOs listed in TAGM #4046. The SSSALs for metals are based on site and nearby background levels in the Queens West Development area. The SSSALs are summarized in Table 1.

**TABLE 1**
**SITE SPECIFIC SOIL ACTION LEVELS**

| Compound | Action Level (mg/kg) | Source |
|---|---|---|
| Benzene | 0.06 | TAGM 4046 |
| Toluene | 1.5 | TAGM 4046 |
| Ethylbenzene | 5.5 | TAGM 4046 |
| O-xylene | 1.2 | TAGM 4046 |
| M/P-xylene | 0.6 | TAGM 4046 |
| Naphthalene | 13.0 | TAGM 4046 |
| Total VOCs | 10.0 | TAGM 4046 |
| Total SVOCs | 500 | TAGM 4046 |
| Lead | 1,000 | Background range in Queens West historic fill |
| Mercury | 2 | Background range in Queens West historic fill |
| Arsenic | 25 | Background range in Queens West historic fill |
| Other Criteria | Grossly petroleum-contaminated soil | DER-10 |

**Notes:**
mg/kg – milligrams per kilogram
TAGM 4046 – NYSDEC Technical and Administrative Guidance Memorandum #4046 – Determination of Soil Cleanup Objectives and Cleanup Levels
DER-10 – NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation

A table summarizing the analytical results for all soil samples collected at the site during the Supplemental RI, additional delineation soil borings, and the soil pile characterization is provided in Appendix B. Hydrocarbon-contaminated soil, fill material overlying the hydrocarbon-contaminated soil, and composite sample results of the soil pile are highlighted in red, yellow, and green, respectively.

## 3.4 REMEDIAL ACTION OBJECTIVES

Based on the potentially complete exposure pathways identified in the exposure assessment and the remedial goals for the site, remedial action objectives have been established, as follows:

- Remove soil containing NAPL from the site subsurface;
- Remove hydrocarbon-contaminated soil and historic fill with BTEX, naphthalene, total VOC, and/or total SVOC concentrations exceeding SSSALs;
- Prevent on-site reuse of historic fill with BTEX, naphthalene, total VOC, and total SVOC concentrations exceeding SSSALs;
- Prevent inhalation of contaminant vapors and dust;

- Prevent direct contact with NAPL and contaminants in soil and groundwater; and
- Prevent storm water runoff during soil disturbing activities.

## 3.5 DEVELOPMENT OF REMEDIAL ALTERNATIVES

Three remedial alternatives were developed to achieve the remedial action objectives established for the site, as described in this section.

Remedial Alternative #1: No Action

Alternative #1 involves conducting no remedial activities to address subsurface contamination at the site. The site would be redeveloped with residential buildings and parking garage; however, contaminated soil would be left in place, and no engineering or institutional controls would be implemented during or after construction. Consideration of this alternative fulfills NYSDEC guidance requiring analysis of the "no action" alternative.

Remedial Alternative #2: Soil and NAPL Removal with Unrestricted Use

Alternative #2 consists of excavating and disposing of all soil that contains contaminant concentrations above the applicable RSCOs and removing all NAPL from the site subsurface. This would include removing the historic fill layer from the entire site footprint, and removing hydrocarbon-contaminated soil from the area shown on Figure 12. Site controls, including, a Health and Safety Plan (HASP), an Air Monitoring Plan, and a Storm Water Pollution Prevention Plan (SWPPP), would be implemented during remedial activities to prevent unacceptable exposure to site workers, the surrounding community, and nearby surface water. A containment wall would be constructed to enclose the soil remediation area to allow excavation to the required depths and to the property boundaries. The containment wall would remain in place following site remediation. Consideration of this alternative fulfills NYSDEC guidance requiring analysis of a clean-up action that would result in unrestricted use of the site.

Remedial Alternative #3: Soil and NAPL Removal with Engineering and Institutional Controls

Alternative #3 consists of excavating and disposing of all soil that contains contaminant concentrations above the applicable SSSALs for remediation, and removing all NAPL from the site subsurface. This would involve removing all hydrocarbon-contaminated soil from the western portion of the site, and a small area of historic fill from the eastern portion of the site, as shown on Figure 12. Historic fill overlying the hydrocarbon soil would be stockpiled on-site and characterized for potential reuse, consistent with the SSSALs, during site development. Site controls, including a HASP, Air Monitoring Plan, and SWPPP would be implemented during remedial activities to prevent unacceptable exposure to site workers, the surrounding community, and nearby surface water. Alternative #3 would also include the following institutional and engineering controls:

- Construction of the proposed residential buildings with a sub-slab vapor barrier and venting system to prevent exposure to contaminant vapors by future residents;
- Placement of a cap consisting of either building foundations, impervious surfaces in paved areas, or two-feet of clean soil in landscaped areas, to cover residual soil containing contaminant concentrations that exceed NYSDEC RSCOs;
- Installation of a permanent containment wall to isolate the site from off-site contamination and to isolate reused on-site fill meeting the SSSALs that will be backfilled during the remediation activities; and

- Institutional controls to prevent on-site groundwater use and uncontrolled excavation of residual contamination, and to ensure maintenance of the vapor mitigation system, permanent containment wall, and soil cap. These controls would be specified in a Site Management Plan (SMP) for long-term management of any contaminated materials left in place.

## 3.6 ANALYSIS OF REMEDIAL ALTERNATIVES

### 3.6.1 Remedial Alternative #1: No Action

*Overall Protection of Public Health and the Environment*

Alternative #1 would not provide overall protection of public health and the environment because proposed construction workers and future maintenance workers could be exposed directly to subsurface contamination at the site, and contaminants could enter nearby surface water through storm water runoff. In addition, future residents could be exposed to contaminant vapors that could migrate from soil gas into the proposed residential building.

*Compliance with Standards, Criteria, and Guidance (SCGs)*

Alternative #1 would not comply with the SCGs because contaminants would be left in place at concentrations that exceed NYSDEC RSCOs and the SSSALs.

*Long-Term Effectiveness and Permanence*

Alternative #1 would not provide long term effectiveness and permanence because contamination would be left in the site subsurface indefinitely.

*Reduction of Toxicity, Mobility or Volume with Treatment*

Contaminant toxicity, mobility, and volume would not be reduced if Alternative #1 is implemented, as none of the contaminated material would be removed, stabilized, or treated.

*Short-term Effectiveness*

Alternative #1 does would not provide short term effectiveness because there would be no controls in place to prevent direct exposure to contaminants by construction workers for the proposed development. In addition, uncontrolled storm water runoff could result in contaminants entering nearby surface water.

*Implementability*

Alternative #1 requires no action and, therefore, could be easily implemented.

*Cost*

There would be no costs associated with Alternative #1.

### 3.6.2 Remedial Alternative #2: Soil and NAPL Removal with Unrestricted Use

*Overall Protection of Public Health and the Environment*

Alternative #2 would provide site controls (e.g., HASP, air monitoring plan, and SWPPP) to prevent unacceptable exposure by site workers, the surrounding community, and nearby surface water during remediation activities. In addition, all soil containing contaminant concentrations exceeding NYSDEC RSCOs would be removed from the site

and replaced with clean fill material; protecting future residents and maintenance workers from unacceptable exposure in the near term. However, without engineering and institutional controls, no vapor mitigation or long term monitoring would be conducted to ensure that on-site receptors are protected from potential vapor migration from off-site sources. Therefore, Alternative #2 does not provide overall protection of public health.

*Compliance with Standards, Criteria, and Guidance (SCGs)*

Alternative #2 would comply with the SCGs, as all soil exceeding NYSDEC RSCOs would be removed from the site.

*Long-Term Effectiveness and Permanence*

Alternative #2 would not provide long term effectiveness and permanence, since long-term monitoring would not be conducted to ensure protection from potential vapor migration from off-site sources.

*Reduction of Toxicity, Mobility or Volume with Treatment*

Alternative #2 would reduce the mobility of on-site contamination, as all material with concentrations exceeding NYSDEC RSCOs would be removed from the site and disposed of at a receiving facility with appropriate engineering controls to prevent contaminant migration. In addition, the contaminant volume and toxicity could be reduced if the soil is thermally treated at the receiving facility.

*Short-term Effectiveness*

Alternative #2 would provide short-term effectiveness during the remediation activities via implementation of a HASP and air monitoring plan to prevent exposure by on-site workers and the surrounding community. Implementation of a SWPPP would protect nearby surface water from contaminants potentially entrained in storm water runoff.

*Implementability*

Alternative #2 could be implemented with standard construction techniques, using widely available equipment and materials. No specialized equipment or materials would be needed; however, a short lead time could be required for ordering custom sized containment structures and sheeting. The environmental and construction permits required for the remediation could be obtained within normal timeframes; no extended review times or difficult approvals would be needed.

*Cost*

The estimated cost associated with Alternative #2 is approximately 15.8 million dollars.

### 3.6.3 Soil and NAPL Removal with Engineering and Institutional Controls.

*Overall Protection of Public Health and the Environment*

Alternative #3 would provide overall protection of Public Health and the Environment. Site controls (e.g., HASP, air monitoring plan, and SWPPP) would prevent unacceptable exposure by site workers, the surrounding community, and nearby surface water during remediation activities. Engineering controls, including a sub-slab vapor mitigation system, a permanent containment wall, and placement of a cap would prevent unacceptable exposure to contaminant vapors and contaminated soil by future residents. Site restrictions requiring appropriate engineering controls during future excavation

activities and prohibiting non-potable water wells would protect future maintenance workers and the surrounding community from residual contaminants in soil and groundwater.

*Compliance with Standards, Criteria, and Guidance (SCGs)*

Alternative #3 complies with the applicable SCGs, as all contamination exceeding the SSSALs for remediation would be excavated and disposed of off-site. Remaining fill materials exceeding NYSDEC RSCOs would be covered by an on-site structure, impervious paving, or two-feet of clean fill material.

*Long-Term Effectiveness and Permanence*

Alternative #3 would provide long term effectiveness and permanence, as a containment wall with impermeable gaskets would be installed along a majority of the site perimeter to prevent off-site contamination from entering the site and re-contaminating subsurface soil.

*Reduction of Toxicity, Mobility or Volume with Treatment*

Alternative #3 would reduce contaminant mobility, as all hydrocarbon-contaminated material with concentrations exceeding the SSSALs would be removed from the site and disposed of at a receiving facility with appropriate treatment and/or engineering controls to prevent contaminant migration. In addition, the contaminant volume and toxicity would be reduced if the soil is thermally treated at the receiving facility.

*Short-term Effectiveness*

Alternative #3 would provide short-term effectiveness during the remediation activities via implementation of a HASP and air monitoring plan to prevent unacceptable exposure to contamination by on-site workers and the surrounding community. Implementation of a SWPPP would protect nearby surface water from contaminants potentially entrained in storm water runoff.

*Implementability*

Alternative #3 could be implemented with standard construction techniques, using widely available equipment and materials. No specialized equipment or materials would be needed; however, a short lead time could be required for ordering custom sized containment structures and sheet piling. The environmental and construction permits required for the remediation could be obtained within normal timeframes; no extended review times or difficult approvals would be needed.

*Cost*

The estimate cost for implementing Alternative #3 is approximately 11.9 million dollars.

### 3.6.4 Preferred Alternative

Alternative #1 is not considered a reasonable remedial option because it does not accomplish the remedial action goals of protection of public health and the environment and removal of grossly contaminated soil. Alternatives #2 and #3 both accomplish the remedial action goals in the short term; however, Alternative #2 would not provide long term protection of human health since no long-term monitoring and vapor controls would be implemented to ensure protection from vapor migration into the new building. In addition, the 3.9 million dollar greater costs associated with Alternative #2 do not justify

removing the historic fill layer from the entire site considering that nearly the entire site would be covered by the site structures or impervious paving, thereby eliminating potential direct exposure to the underlying fill. Therefore, Alternative #3 was selected as the preferred remedial alternative.

# 4.0 REMEDIAL WORK PLAN

The selected remedial alternative (Alternative #3) involves excavating and disposing of all hydrocarbon-contaminated soil and historic fill that contains contaminant concentrations exceeding the SSSALs. The anticipated limits of the soil removal are shown in Figure 11. Based on the elevated levels of VOCs in the contaminated soil and nuisance odors encountered during excavation activities at nearby Queens West Development parcels, excavation of all hydrocarbon-contaminated soil will be conducted under a temporary containment structure to control potential contaminant vapors and odors. Excavation of the small area of historic fill containing naphthalene and total SVOC levels exceeding the SSSALs will be conducted outside of the containment structure; however, plastic sheeting and foam will be used during excavation of this area to contain odors and dust. A HASP, air monitoring plan, and SWPPP will be implemented to ensure protection of site workers, the surrounding community, and nearby surface water during the soil excavation activities. A containment wall will be installed around the entire hydrocarbon-contaminated soil excavation area to facilitate removal of the contaminated soil and to prevent migration of off-site contamination on to the parcel during and after the remediation activities. The residential buildings will be constructed with a sub-slab vapor mitigation system and institutional controls will be implemented to prevent exposure to residual contamination that is left in place following soil removal. All remediation work will be conducted in accordance with this RWP. Any development activities conducted concurrently with the remediation activities will not interfere with the work described in this RWP. The various elements of the proposed remedial alternative are described in more detail in the following sections. Technical specifications for contractor implementation of the RWP are included as Appendix C.

## 4.1 SITE PREPARATION

### 4.1.1 Sediment and Erosion Control Measures

Sediment and erosion control measures will be installed at the site prior to conducting any ground-intrusive work. These measures will be installed according to the requirements of the Storm Water Pollution Prevention Plan (SWPPP), which is provided as Appendix D, and all applicable or relevant and appropriate federal, state and local laws. The measures will provide for abatement and control of environmental pollution arising from proposed remediation and construction activities. The control measures will include silt fencing around the perimeter of the site, drainage inlet protection, and stabilized construction pads at each construction entrance.

### 4.1.2 Permanent Sheeting

Based on results from the Supplemental Remedial Investigation and additional delineation sampling, DNAPL has migrated onto the site along a portion of the western and southern site boundaries, as shown on Figure 12. Additional sources of dissolved contamination potentially exist to the north of the site, across 47th Road. Therefore, permanent interlocking steel sheeting will be installed around the entire soil remediation area to isolate the site from future contaminant migration, as shown on Figure 15. The sheeting will be driven into the low-permeability till or clay layer, which is at an

elevation of approximately -25 (Queens Borough Datum) at the southwestern corner of the site and rises to an elevation of -12 to the north and east. The seams in the sheeting will be sealed with hydrocarbon-resistant Adeka gaskets, or equivalent, to prevent infiltration of contaminants back onto the site.

During soil remediation activities, the sheeting will serve to limit lateral and vertical migration of groundwater into the excavation area, thereby limiting the volume of dewatering fluids that will need to be treated and discharged. The sheeting will also serve to prevent collapse of the excavation sidewalls to ensure that the excavation areas will fit within the containment structures and allow excavation up to the property lines. During the remediation activities, fill material meeting the SSSALs will be backfilled within the confines of the permanent sheeting, which will serve to further isolate potential contaminants from the surrounding environment.

### 4.1.3 Grading

Currently, portions of the site (primarily the western portion) are depressed approximately one to two feet relative to street level. These areas will require approximately 1,300 cubic yards of fill to create a level work area to erect the containment structure. Results from composite sampling of the existing soil pile located in the central portion of the site, which was conducted in July 2005, indicate that most of the soil pile material results meet the SSSALs. A portion of this soil will be used to fill in the depressed areas. The remainder of the soil that meets the SSSALs will be stockpiled in the southeastern portion of the site for future reuse as backfill during the remediation activities. Any material from the soil stockpile that is reused on-site will be ultimately placed within the sheet pile wall, described in Section 4.1.2, and covered by the site cap, described in Section 4.4.1, thereby minimizing the mobility of contaminants that are present at levels above NYSDEC RSCOs, but below the SSSALs. The portion of the soil pile that does not meet the SSSALs will be segregated and stockpiled separately in the southeastern portion of the site for off-site disposal during the remediation activities. All soil stockpiling and grading activities will be performed in conformance with the SWPPP.

Based on results from the soil delineation and composite soil sampling, the VOC and SVOC levels in the soil piles are not indicative of petroleum or coal tar-contamination; therefore, the proposed grading does not warrant working within a containment structure to control vapors/odors. Air monitoring for VOCs, dust, and odors will be conducted during all grading activities, and foam, Biosolve, and plastic sheeting will be available and used as necessary.

### 4.1.4 Containment Structure

A containment structure will be mobilized to the site to be erected over the proposed excavation areas. The containment structure will be self-supporting and constructed of a material that is compatible with the proposed environment and impermeable to the anticipated contaminant vapors. The temporary containment structure will measure 130 feet wide by 270 feet long and will be oriented in an east-west direction during the remediation. This will allow the remediation to be completed in two phases (one move of the enclosure). The enclosure will meet all local building codes with regard to loadings and structural considerations, including foundation structural support. Figure 15 shows layouts of the containment structure during the two phases of remediation.

The containment structure will be fully-enclosed and include an air handling/vapor treatment system. The air handling system will consist of six blowers that will draw air out of the structure to maintain a negative air pressure so that vapors and odors are contained, including when access doors are opened to allow truck entry/exit. The blowers will be sized to induce a minimum of five to six air exchanges per hour, inclusive of the open excavation volume, and to allow work within the structure at Level D, as defined in the HASP (provided in Appendix E). Personal protective equipment (PPE) will be upgraded to Level C, if required, based upon work zone air monitoring (as described in the HASP).

The vapor treatment system will consist of a six vapor phase granular activated carbon (GAC) units (one unit connected to the discharge line of each blower) that will reduce VOC concentrations in discharged air to below relevant emissions standards in accordance with the NYSDEC publication "Air Guide 1". During operation of the air handling system, stack emissions will be tested to confirm that they meet NYSDEC discharge criteria. Testing will consist of field screening the treated discharge on a daily basis using a photoionization detector (PID). Vapor samples will also be collected for laboratory analysis using Summa canisters at system activation and once again during contaminated soil removal activities to calibrate the PID measurements to actual contaminant concentrations.

At the conclusion of each work day, exposed contaminated soil within the structure will be covered with plastic and/or long-duration foam and then the air handling system will be turned off. Operation of the air handling system will be resumed the next morning approximately one hour prior to any excavation or loading activities to evacuate and treat any vapors in the structure. If the covering of the exposed contaminated soil proves to be inadequate to control vapors/odors, as a contingency measure, at least one blower will be operated during non-working hours to create negative pressure within the structure.

### 4.1.5 Permits

All necessary permits will be obtained prior to commencing the remediation work. The required permits include:

- New York City Department of Sanitation (DOS) landfill permit (16 RCNY Chapter 3) for placement of clean fill;
- A New York City Department of Environmental Protection (NYCDEP) sewer connection permit (15 RCNY Chapter 19) for discharge of the groundwater from dewatering operations to the City sanitary sewer, with a copy of the NYCDEP Wastewater Quality Control Application provided in Appendix F; and
- Filing of a Notice of Intent (NOI) with the NYSDEC to obtain coverage under New York State Pollutant Discharge Elimination System (SPDES) General Storm Water Permit for Construction Activity (Permit Number GP-02-01).

A copy of the NYSDEC Air Facility Registration form and manufacturer cut sheets for the blowers and the granular activated carbon vessels associated with the air handling/vapor treatment system are provided in Appendix F.

## 4.2 SOIL REMOVAL

### 4.2.1 Extent of Soil Removal

The soil removal area will extend laterally to the limits of excavation, as shown on Figure 12. Within this area, soil will be removed from the top of the contaminated interval shown on Figure 16 to the depths at which non-hydrocarbon-contaminated soil was encountered during the Supplemental RI and additional delineation sampling as shown on Figure 17. The estimated quantity of coal tar and petroleum contaminated soil to be excavated and disposed of off-site is approximately 5,100 $yd^3$ (7,700 tons) and 11,000 $yd^3$ (16,500 tons), respectively.

### 4.2.2 Excavation

All excavation and loading of soil will be performed within a fully-enclosed containment structure as described in Section 4.1.4. For each phase, soil excavation would proceed by first removing the fill material overlying the targeted hydrocarbon-contaminated areas. The fill material will be staged outside the containment structure (in the southeastern portion of the site), handled, and tested for on-site reuse, as described in Section 4.3.1. Removal of hydrocarbon-contaminated soil would then be completed, as necessary, to a depth of 8 to 10 feet below grade (relative to sidewalk/street) to allow for the sheeting tie-backs (structural supports) to be installed.

Hydrocarbon-contaminated soil will be excavated in the containment structure and directly loaded onto trucks, to the extent practicable, for off-site disposal. If it becomes infeasible to directly load the soil onto trucks due to inaccessibility within the excavation, excess water requiring stabilization, or other difficulties, a maximum of 500 cubic yards will be staged within the structure at any one time. The staged contaminated soil will be covered with plastic sheeting if loading operations are not being conducted. The excavation will extend laterally to the limits shown on Figure 12. Field screening and endpoint sampling will be conducted to confirm the lateral and vertical extents of the excavation, as described in Section 4.2.6.

### 4.2.3 Dewatering

Dewatering will be performed as necessary to complete the proposed work. Submersible pumps will be used to pump groundwater from gravel-lined sumps dug at the bottom of the excavations. The groundwater will be pumped to a treatment unit consisting of two settling tanks to remove suspended solids, a separator to remove free-phase product (either DNAPL or LNAPL), filters to remove suspended particles from the water stream, and liquid phase GAC units to remove dissolved organic contaminants. Vents in the holding tanks will be connected to a vapor phase GAC unit to remove VOCs from the vented air stream. The treated water will be discharged to the sanitary sewer through a sewer connection to the existing 12-inch New York City sanitary sewer under 48th Avenue. The sewer connection and discharge will be conducted under a sewer connection permit from the NYCDEP. A sample of the treated water will be collected prior to the sewer connection at the time of system activation and will be analyzed for NYCDEP discharge parameters to ensure that effluent limitations are met. Additional sampling and analysis of the dewatering discharge will be completed as required by the NYCDEP. All waste materials from the water treatment system (e.g., spent carbon and bag filters, sediment from the settling tanks) will be characterized and disposed of at an appropriate waste receiving facility. No dewatering fluids will be recharged back to the

land surface or subsurface of the site. A process flow diagram for the groundwater treatment unit is shown in Figure 18.

### 4.2.4 Trucking and Disposal

All trucks will have the required waste-transporter permits from the NYSDEC as per 6 NYCRR 364. The trucks will be fully-lined and covered with plastic sheeting followed by a tarp. All loads will be covered before the trucks leave the enclosed containment structure. If deemed necessary, Biosolve will be sprayed on the truckloads before placement of the cover.

A decontamination pad will be located at the exit gate, where soil will be washed off the exterior, undercarriage, and wheels of the trucks before leaving the site. Wash water will be collected for treatment and disposal. Prior to leaving the excavation area, all hydrocarbon-contaminated material containers and transport vehicles will be inspected for evidence of exterior contamination (including inside of wheels and undercarriage). Any such contamination will be removed on the decontamination pad before the truck exits the site.

All trucks will enter the site from 47th Road. Once loaded, all trucks will proceed directly to the Brooklyn-Queens Expressway (BQE) via 47th Road, Vernon Boulevard, and then Borden Avenue, with no stopping or staging in the neighborhood between the site and the BQE. No trucks will enter or leave the site from 48th Avenue. The specified truck routes to and from the BQE are shown on Figure 19. Truck route(s) between the BQE and the designated disposal facilities will be determined once the appropriate disposal facilities are identified.

### 4.2.5 Air/Odor Monitoring

Work zone air monitoring within the sprung structure enclosure will be performed in accordance with the site-specific HASP, provided in Appendix E. Air monitoring at the site perimeter and in the surrounding community will be performed in accordance with an Air Monitoring Work Plan, provided in Appendix G. The Air Monitoring Work Plan specifies monitoring at the site perimeter for organic vapors, particulates (PM10), odors, and visible dust. The walk-around air monitoring described in the work plan will include downwind locations and the south-adjacent school and apartment building.

### 4.2.6 Endpoint Sampling

Once the designated limits of the soil removal area have been reached and prior to the start of site development activities, bottom endpoint soil samples will be collected from the bottom of the excavation on a sampling grid with approximately 30 foot centers (approximately one sample per 900 square feet). The sides of excavation will be generally limited to the sheeting, therefore, sidewall endpoint soil samples outside the sheeting limits will be collected via soil borings installed along each side of the sheeting at a spacing of approximately 50 feet. The sidewall samples will be collected from a depth corresponding to the approximate center of the contaminated interval in the adjacent portion of the excavation. Endpoint samples will be collected along any interior walls of the excavation (e.g., in the southern portion of the soil removal area) at a spacing of approximately 50 feet. Endpoint samples will be analyzed for VOCs using EPA Method 8260 and base-neutral SVOCs using EPA Method 8270. If analytical results indicate contaminant concentrations exceeding the applicable SSSALs, additional

soil will be excavated from the corresponding portion of the excavation and an additional round of endpoints samples will be collected, as warranted. Soil removal will not extend vertically beyond the top of the clay/till layer or laterally beyond the permanent sheeting.

## 4.3 RESTORATION

### 4.3.1 Backfill Material

Historic fill from the existing soil piles and excavated from above the hydrocarbon-contaminated soil interval will be staged in approximately 1,000-$yd^3$ stockpiles in the southeastern portion of the site, as shown on Figure 15, and characterized for onsite reuse as backfill. Soil meeting the SSSALs will be used to backfill the soil excavations. The sheet pile wall, described in Section 4.1.2, and site cap, described in Section 4.4.1, will serve to limit the mobility of any residual contamination below the SSSALs in the backfill material. All soil stockpiling, handling, and characterization will be conducted according to the requirements of the SWPPP and Soil Management Plan, included in Appendices D and H, respectively. Historic fill that does not meet the SSSALs will be characterized for waste disposal and delivered to an appropriate disposal facility in accordance with the Soil Management Plan. If insufficient on-site fill material meeting the SSSALs is available for reuse, additional fill material will be imported from off-site for backfilling the excavations. The material will be obtained from a source that is approved in writing by the NYSDEC.

### 4.3.2 Backfilling

Soil excavations will be backfilled to approximately 4.5 feet below street level (approximately +4.5 feet el.) to facilitate placement of pile caps, foundations, and utility lines for the proposed redevelopment. Air monitoring will be performed during all backfilling activities in accordance with the HASP and Air Monitoring Plan.

## 4.4 ENGINEERING CONTROLS

### 4.4.1 Soil Cap

Following site remediation, a cap will be placed over the entire site footprint to prevent exposure to underlying soil that could contain contaminant concentrations exceeding NYSDEC RSCOs. The site cap will consist of: on-site buildings; concrete/asphalt paving; and two feet of certified clean fill in areas not covered by structures or paving, as shown on Figure 20. A marker layer (e.g., orange construction fencing or other geotextile) will be installed under the cap to demarcate the interface between reused fill material and clean fill/paving/structures. The top 12 inches of the soil cap will consist of soil suitable for sustaining vegetation.

### 4.4.2 Vapor Barrier

The proposed development on the site will comprise high-rise and low-rise residential structures on the western portion of the site, and an open multi-level parking structure on the eastern portion. An open courtyard will be located on the north-central portion of the site. All structures will be pile-supported, slab-on-grade buildings with no basements. The only sub-grade spaces will be utility vaults and elevator pits.

A vapor barrier will be installed under all the residential buildings (not the open parking structure). The vapor barrier have a minimum thickness of 40-mil and will be sealed

around all utilities and other penetrations. A smoke test will be performed after barrier installation to confirm that it is air tight.

The design for the vapor barrier is provided in Appendix I. The design provides for the installation of a spray-applied vapor barrier (Liquid Boot). Depending upon weather conditions at the time of installation (i.e., winter conditions), the use of a spray-applied barrier may not be feasible and the design may need to be modified for the installation of a sheet [high density polyethylene (HDPE)] membrane.

### 4.4.3 Sub-slab Ventilation

A sub-slab ventilation system will be installed to prevent the accumulation of vapors beneath the building. The system design, included as Appendix I, consists of a gravel sub-base containing perforated PVC piping runs placed beneath the vapor barrier. The piping runs connect to risers, which vent to the atmosphere. The system design includes active venting of the collected vapors via a blower connected to each piping manifold. Following construction of the building foundation (and underlying vapor barrier and sub-slab venting system), monitoring of potential vapors will be performed by collecting samples from the system sub-slab piping without the blower connected. If the monitoring results demonstrate that elevated vapors are not present below the foundation, a request will be submitted to the NYSDEC and NYSDOH to operate the system passively (i.e., without connecting the blower). The Operation, Maintenance and Monitoring (OM&M) Plan, as described in Section 4.9.1, will specify post-remediation monitoring and include provisions for installation of an active system, if warranted, based upon subsequent monitoring data.

## 4.5 NUISANCE CONTROL

### 4.5.1 Rodent Control

Traps will be placed around the site periphery to control rats and other rodents. The traps will be replaced as required, but at a minimum frequency of once every month. All general refuse generated during remediation/construction activities will be containerized in covered dumpsters or roll-offs, which will be emptied on a weekly basis to avoid attracting rodents. In addition, no food will be stored on-site.

### 4.5.2 Noise Control

All construction vehicles and equipment will be equipped with appropriate noise control devices to maintain noise levels that conform to the latest OSHA standards and all State and local regulations. All mufflers and noise control devices will be properly maintained, and replaced as necessary. All pumps and other equipment that are required to operate during normal non-working hours will be, to the extent possible, electrically driven.

## 4.6 CITIZEN PARTICIPATION

Citizen participation activities will include preparation of a project fact sheet and holding a public meeting. The project fact sheet will be submitted in WordPerfect format for NYSDEC approval, and will include: a site description; a summary of the remedial action objectives and the selected remedial alternative; a project schedule; and a list of sources of additional information. The approved fact sheet will be sent via certified mail to persons on the project mailing list (included as Appendix J) prior to the start of remedial activities, with certification of the mailing provided

to NYSDEC project manager. The public meeting was conducted on August 2, 2005, and included a presentation on the proposed remedial actions and a question and answer period.

## 4.7 RECORD KEEPING

A project logbook will be maintained during all remediation activities, and will be available for NYSDEC and NYSDOH inspection. The following information will be recorded in the project logbook:

- Date, weather, and site conditions;
- Names and companies of all on-site personnel;
- Makes, models, and calibration records for all monitoring equipment;
- Makes and models of remediation equipment;
- Sample numbers and descriptions;
- A truck log listing license plate numbers and arrival/departure times; and
- Site sketches showing excavation areas, sampling locations, and stockpiles (if any).

Copies of all waste manifests and bills of lading will be also be maintained with the project logbook.

## 4.8 REPORTING

### 4.8.1 Daily Reports

Daily reports will be provided to the NYSDEC/NYSDOH project managers via email during excavation activities. The reports will include a summary of daily activities and air sampling results (including any exceedances), and will describe any odor or dust problems and corrective actions taken. A site map will be submitted, as required, to identify work areas described in the reports. Any time-sensitive information (e.g., the occurrence of a spill or an emergency situation) will be communicated directly to the NYSDEC project manager.

### 4.8.2 Final Remedial Report

Upon completion of site remediation, a Final Remedial Report will be prepared and submitted to the NYSDEC and NYSDOH. The Final Remedial Report will include:

- Photographs of remedial activities (submitted on compact disk);
- As-built drawings for all constructed elements (e.g., vapor barrier, containment wall);
- Monitoring and endpoint sampling results collected during implementation of the remedy;
- A Site Management Plan for the remedy;
- An accounting of the destination of all material removed from the site and associated manifests/bills of lading and certificates of disposal from the respective receiving facilities;
- Documentation of source approval and sampling for backfill materials imported from off-site;

- A site survey showing locations of all primary contaminant sources (including but not limited to tanks and hotspots) identified during investigation and remediation activities; and
- An itemized description of costs incurred during site remediation.

The Final Remediation Report will include a certification by a Professional Engineer that all remediation and development excavation activities (i.e. grading cuts, utility trenches, footings, etc.) were completed in accordance with the contaminant field screening methodology defined in the RWP, inclusive of the Soil Management Plan (Appendix H).

## 4.9 INSTITUTIONAL CONTROLS

### 4.9.1 Site Management Plan

Upon completion of the remedial activities, a final Site Management Plan will be prepared to specify future soil handling requirements, operation and maintenance procedures, and site use restrictions. The Site Management Plan will include the project Soil Management Plan, HASP, SWPPP, and OM&M Plan. The Soil Management Plan, HASP, and SWPPP are included as Appendices to this document. The OM&M Plan will be prepared at the completion of the remedy and will include the following:

- As-built drawings and descriptions of all engineering controls implemented as part of the long-term remedy (i.e., vapor mitigation system, site cap, containment wall), including manufacturer cut sheets of any remediation equipment;
- Operation and maintenance procedures, including an inspection protocol, to ensure proper functioning of the remedy;
- Vapor and groundwater monitoring plans to evaluate the performance of the remedy; and
- A contingency plan describing procedures to be conducted in the event of an emergency.

The OM&M Plan will be updated periodically during use to reflect changes in site conditions or the manner in which the remedy is operated and/or maintained.

### 4.9.2 Environmental Easement

An environmental easement will be recorded for the site to enforce the following use restrictions:

- Installation of groundwater wells for potable and non-potable purposes (e.g., car washing, non-contact cooling water) will be prohibited;
- Any future excavation activities must be conducted in accordance with the Site Management Plan; and
- The vapor mitigation system, soil cap, and permanent containment wall must be operated and maintained according to the site OM&M Plan.

The environmental easement will be recorded in the Queens County Clerk's office and will include: a description of the use restriction; a map showing the area of the restriction; a written agreement by the property owner to establish and maintain the institutional and engineering controls; and a copy of the Site Management Plan. Prior to

recording the environmental easement, notification of the intent to establish the institutional controls will be sent to all adjacent property owners; NYSDOH; New York City Department of Health and Mental Hygiene; and the Queens County Clerk's office.

### 4.9.3 Annual Certification

An Annual Certification will be submitted to the NYSDEC to document the efficacy of the remedy. The Annual Certification will be signed by a professional engineer and will certify that: the institutional and/or engineering controls are unchanged from the previous certification; nothing has occurred that would impair the ability of the controls to protect public health and the environment; and no violations of the site management plan have occurred. The certification will include the monitoring data collected during the reporting period as specified in the Site Management Plan.

## 4.10 SCHEDULE AND COSTS

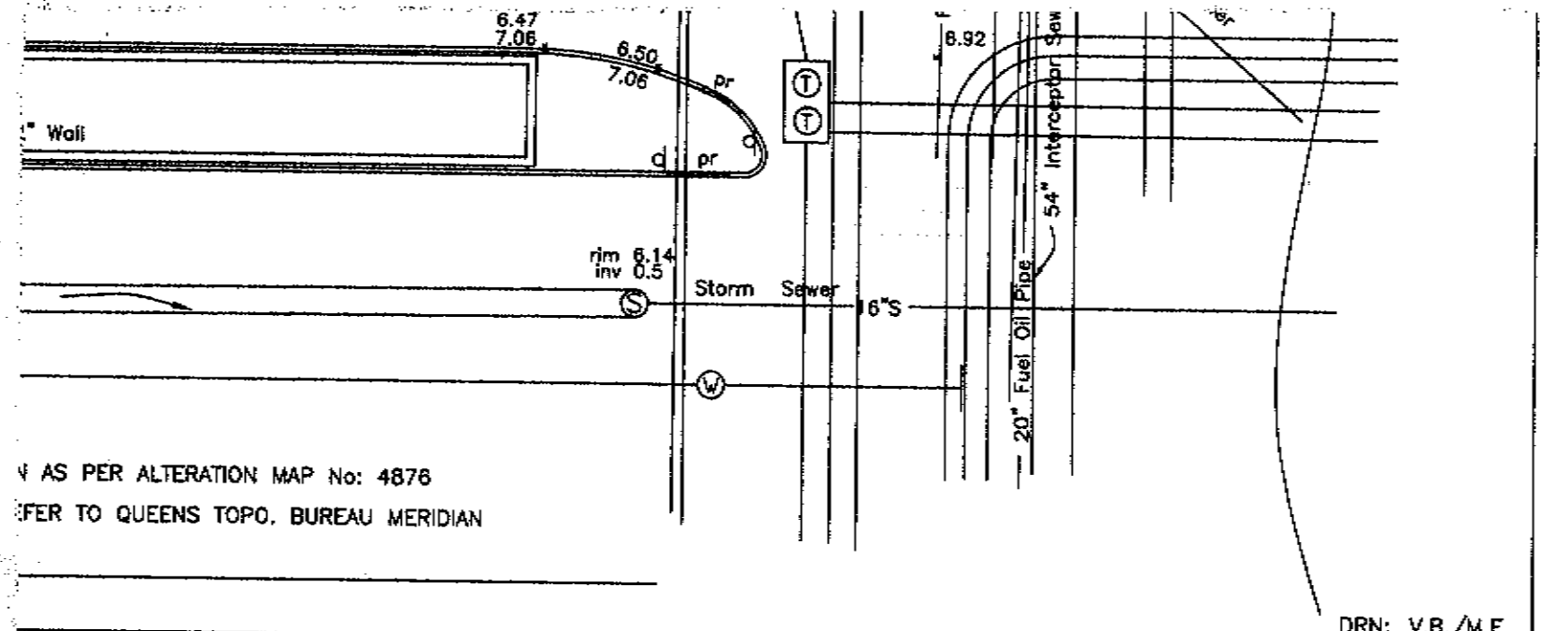
Field work for the remedial actions will be scheduled from 7:00 AM to 5:00 PM on weekdays. Prior NYSDEC approval will be obtained for work conducted outside of these hours. The anticipated schedule and estimated costs for completing the remedial program are provided in Appendix K.

# 5.0 REFERENCES

1. AKRF Inc.; *Site Assessment Report, Queens West Development Site, Parcels 8 and 9*, Queens, New York; June 1998.
2. AKRF, Inc.; *Supplemental Site Assessment Report, Queens West Development Site, Parcel 9, Building Interiors*, Queens, New York; September 2001.
3. EDR, Sanborn, Inc.; *Historical Fire Insurance Maps*; 1898, 1915, 1936, 1950, 1970, 1979, 1988, and 1996.
4. Hunters Point Waterfront Development; *Final Environmental Impact Statement*, June 1990.
5. Mueser Rutledge Consulting Engineers; *Geotechnical Report for Queens West - Site 9*, Long Island City, New York; May 25, 2004.
6. NYSDEC, *Draft DER-10 Technical Guidance for Site Investigation and Remediation*, Division of Environmental Remediation, December 2002.
7. TRC Engineers, Inc.; *Results of Initial Groundwater Hydrology Characterization, Queens West Development Stage 2 Site*, August 23, 2004.
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# FIGURES

# APPENDIX A
# SITE SURVEY




V AS PER ALTERATION MAP No: 4876

:FER TO QUEENS TOPO. BUREAU MERIDIAN

DRN: V.B./M.F.

NTROSE

VEYING CO., LLP.

Y & LAND SURVEYORS

N AVE * RICHMOND HILL NY 11418-1090 * (718) 849-0600

2008

CITY OF NEW YORK
COUNTY OF QUEENS
TAX BLOCK 19
TAX LOT 5 & 19

SCALE 1" = 20'

oversized original; survey map no. 59186

# APPENDIX B
## DELINEATION SAMPLE, SOIL GAS, AND COMPOSITE SAMPLE ANALYTICAL RESULTS TABLES

# Queens West Development
## Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C-1 | P | N | Y | 240.3 | 3.3 | 0.002 | 0 | 0 | 0 | | 1.3 | 9.5 | 356 |
| C-2 | P | N | Y | 490.7 | 8 | 0 | 0 | 0 | 0 | | 1.1 | 6.2 | 178 |
| C-3 | P | N | Y | 110.8 | 2.2 | 0 | 0 | 0 | 0 | | 0.99 | 8.1 | 187 |
| C-4 | P | H | Y | 469.9 | 69 | 0 | 0.008 | 0.1 | 1 | | 2.4 | 9.1 | 115 |
| C-5 | P | N | Y | 107.6 | 0 | 0 | 0 | 0 | 0 | | 0.8 | 9.5 | 194 |
| C-6 | P | N | Y | 353.4 | 11 | 0 | 0 | 0 | 0 | | 0.64 | 9.9 | 285 |
| C-7 | P | N | Y | 115.8 | 0 | 0 | 0 | 0 | 0 | | 0.56 | 8.2 | 222 |
| C-8 | P | N | Y | 434.0 | 5.6 | 0 | 0 | 0 | 0 | | 0.51 | 13.6 | 340 |
| C-9 | P | N | Y | 68.2 | 0 | 0 | 0 | 0 | 0 | | 0.56 | 8.4 | 196 |
| C-10 | P | N | Y | 77.2 | 0 | 0 | 0 | 0 | 0 | | 0.46 | 8.7 | 260 |
| P-1(0-2) | F | N | Y | 37.38 | 0 | 0 | 0 | 0 | 0 | 0 | 0.152 | 5.04 | 108 |
| P-1(10-12) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-1(12-14) | N | N | Y | 6.62 | 1.3 | 0.003 | 0 | 0 | 0 | 0 | | | |
| P-1(14-16) | N | N | NO | 10.74 | 2 | 0.043 | 0.002 | 0.046 | 0.011 | 2.2 | | | |
| P-1(16-18) | N | N | NO | 12.97 | 3.1 | 0.06 | 0 | 0.025 | 0.005 | 0 | | | |
| P-1(18-20) | N | N | NO | 2.46 | 0.44 | 0.008 | 0 | 0.006 | 0.002 | 0 | | | |
| P-1(22-24) | N | N | NO | 19.70 | 4.3 | 0 | 0 | 0.002 | 0.001 | 0 | | | |
| P-1(24-26) | N | N | NO | 2.63 | 0.8 | 0.011 | 0 | 0.003 | 0.002 | 0 | | | |
| P-1(26-28) | N | N | NO | 0.66 | 0.18 | 0.016 | 0.002 | 0.007 | 0.005 | 2.2 | | | |
| P-1(6-8) | F | N | Y | 357.40 | 9.2 | 0 | 0 | 0 | 0 | 0 | | | |
| P-1(8-10) | F | N | Y | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-2(0-2) | F | N | Y | 25.10 | 0 | 0 | 0 | 0.001 | 0.002 | 0 | 0.538 | 30.9 | 114 |
| P-2(10-12) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-2(12-14) | N | N | NO | 0.41 | 0.41 | 0 | 0 | 0 | 0 | 0 | | | |
| P-2(14-16) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-2(16-18) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-2(18-20) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-2(20-22) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-2(22-24) | N | N | NO | 0.94 | 0.77 | 0.03 | 0.011 | 0.016 | 0.029 | 13 | | | |
| P-2(2-4) | F | N | Y | 133.70 | 0 | 0 | 0 | 0.001 | 0.002 | 0 | 0.528 | 5.12 | 71.4 |
| P-2(24-26) | N | N | NO | 0.85 | 0.85 | 0.004 | 0.002 | 0.003 | 0.007 | 4.6 | | | |
| P-2(6-8) | F | N | Y | 1.30 | 0.83 | 0.008 | 0.002 | 0 | 0.002 | 0.12 | 0.781 | 6.6 | 2.89 |
| P-2(8-10) | F | N | Y | 30.00 | 0 | 0.008 | 0.004 | 0.005 | 0.01 | 0.001 | 0.648 | 7.6 | 17 |
| P-2(8-10) | F | N | Y | 1.30 | 0.83 | 0.008 | 0.002 | 0 | 0.002 | 0.12 | 0.781 | 6.6 | 2.89 |
| P-3(0-2) | F | N | Y | 8.80 | 0 | 0 | 0 | 0 | 0 | 0 | 0.819 | 5.03 | 150 |
| P-3(10-12) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(12-14) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(2-4) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(4-6) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(6-8) | F | N | Y | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(8-10) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(20-22) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(22-24) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(24-26) | N | N | NO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-3(2-4) | F | N | Y | 133.37 | 1.2 | 0 | 0 | 0 | 0 | 0 | 3.8 | 24.6 | 488 |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P-3(4-6) | F | N | Y | 197.94 | 0.88 | 0.001 | 0.002 | 0.002 | 0.003 | 1.2 | 0.362 | 3.66 | 42.9 |
| [illegible] | | | | | | | | | | | | | |
| P-3(8-10) | | | | | | | | | | | | | |
| P-4(0-2) | F | N | Y | 284.80 | 5.5 | 0.003 | 0 | 0 | 0.002 | 0 | 0.402 | 2.24 | 71.8 |
| P-4([illegible]) | N | | | | | | | | | | | | |
| P-4(12-14) | N | | | | | | | | | | | | |
| P-4(16-18) | N | N | Y | 65.38 | 1.2 | 0.05 | 0 | 0.94 | 0.22 | 170 | | | |
| P-4(18-20) | N | N | NO | 1.39 | 0.48 | 0.3 | 0 | 0.95 | 0.23 | 200 | | | |
| P-4(20-22) | N | N | NO | 7.37 | 5.9 | 0.081 | 0 | 0.35 | 0.53 | 130 | | | |
| P-4(22-24) | N | N | NO | 4.39 | 3.3 | 0.08 | 0 | 0.21 | 0.21 | 0 | | | |
| P-4(2-4) | F | N | Y | 13.24 | 0 | 0 | 0 | 0 | 0 | 0 | 2.6 | 8.23 | 118 |
| P-4(24-26) | N | N | NO | 4.59 | 3.9 | 0 | 0 | 0.23 | 0.52 | 220 | | | |
| P-4(26-28) | N | N | NO | 6.98 | 3.1 | 0 | 0 | 0.26 | 0.22 | 140 | | | |
| P-4(28-30) | N | N | NO | 0.41 | 0.2 | 0.006 | 0 | 0.01 | 0.004 | 1.7 | | | |
| P-4(4-6) | F | N | Y | 0.34 | 0 | 0 | 0 | 0 | 0 | 0 | 0.029 | 1.71 | 7.99 |
| P-4(8-10) | F | N | Y | 328.83 | 0 | 0.002 | 0 | 0.006 | 0.006 | 6.3 | | | |
| P-5(0-2) | F | N | Y | 0.81 | 0 | 0 | 0 | 0 | 0 | 0 | 0.28 | 2.73 | 52.1 |
| P-5(10-12) | N | N | Y | 0.08 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-5(12-14) | | | | | | | | | | | | | |
| P-5(14-16) | | | | | | | | | | | | | |
| P-5(16-18) | N | N | NO | 0.86 | 0.86 | 0.001 | 0 | 0.005 | 0.004 | 5.3 | | | |
| P-5(18-20) | N | N | NO | 0.11 | 0 | 0.002 | 0 | 0 | 0 | 0 | | | |
| P-5(20-22) | N | N | NO | 0.54 | 0.54 | 0.075 | 0 | 0.022 | 0.005 | 0 | | | |
| P-5(22-24) | N | N | NO | 0.72 | 0.63 | 0 | 0 | 0 | 0 | 0 | | | |
| P-5(2-4) | F | N | Y | 35.13 | 0 | 0 | 0 | 0 | 0 | 0 | 0.37 | 2.84 | 44.7 |
| P-5(24-26) | N | N | NO | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-5(28-30) | N | N | NO | 0.51 | 0.51 | 0.003 | 0 | 0 | 0 | 0 | | | |
| P-5(4-6) | F | N | Y | 7.19 | 3.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0.658 | 2.17 |
| P-5(6-8) | F | N | Y | 118.77 | 1.1 | 0 | 0 | 0 | 0 | 0 | 0.366 | 6.49 | 231 |
| P-5(8-10) | F | N | Y | 57.52 | 1 | 0 | 0 | 0 | 0 | 0 | | | |
| P-6(0-2) | F | N | Y | 60.70 | 0 | 0.004 | 0.002 | 0 | 0 | 0 | 1.3 | 5.56 | 109 |
| P-6(10-12) | N | | | | | | | | | | | | |
| P-6(12-14) | N | | | | | | | | | | | | |
| P-6(14-16) | N | | | | | | | | | | | | |
| P-6(20-22) | N | | | | | | | | | | | | |
| P-6(2-4) | F | N | Y | 112.19 | 2 | 0 | 0 | 0 | 0 | 0 | 0.974 | 5.38 | 87.6 |
| P-6(4-6) | F | N | Y | 99.60 | 4.1 | 0 | 0 | 0.001 | 0.005 | 3.7 | 0.233 | 14.1 | 60.4 |
| P-6(6-8) | | | | | | | | | | | | | |
| P-6(8-10) | N | | | | | | | | | | | | |
| P-7(0-2) | F | N | Y | 4.52 | 0 | 0.014 | 0.003 | 0.046 | 0.084 | 46 | 0.702 | 5.18 | 141 |
| P-7(10-12) | N | N | Y | 1.28 | 0 | 0.002 | 0 | 0 | 0 | 0 | | | |
| P-7(12-14) | N | N | Y | 1.31 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-7(14-16) | N | N | Y | 0.21 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-7(16-18) | N | N | NO | 0.71 | 0 | 0 | 0 | 0.001 | 0.002 | 0 | | | |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P-7(16-20) | N | N | Y | 0.00 | 0 | 0.001 | 0 | 0.002 | 0.003 | 0 | 0.086 | 3.51 | 3.17 |
| P-7(18-20) | N | N | NO | 3.49 | 0.099 | 0 | 0 | 0 | 0 | 0 | | | |
| P-7(20-22) | N | N | NO | 0.81 | 0.074 | 0 | 0 | 0 | 0 | 0 | | | |
| P-7(22-24) | N | N | NO | 1.10 | 0 | 0 | 0 | 0.001 | 0.004 | 0 | | | |
| P-7(2-4) | F | N | Y | 423.07 | 14 | 0 | 0 | 0.002 | 0 | 0 | 0.669 | 3.66 | 30.5 |
| [illegible] | | | | | | | | | | | | | |
| P-7(6-8) | F | N | Y | 282.86 | 5.5 | 0 | 0 | 0 | 0 | 0 | 7.3 | 9.92 | 97 |
| [illegible] | | | | | | | | | | | | | |
| P-8(0-2) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | 0.405 | 6.53 | 277 |
| P-8(10-12) | N | N | Y | 14.23 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| [illegible] | | | | | | | | | | | | | |
| P-8(18-20) | N | N | NO | 0.00 | 0 | 0.033 | 0.004 | 0.022 | 0.023 | 0.013 | | | |
| P-8(20-22) | N | N | NO | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-8(22-24) | N | N | NO | 0.00 | 0 | 0.078 | 0 | 0 | 0 | 0 | | | |
| P-8(6-7) | F | N | Y | | | 0.002 | 0.002 | 0.001 | 0.003 | 0 | | | |
| P-9(0-2) | F | N | Y | 149.35 | 2.7 | 0 | 0 | 0 | 0 | 0 | 0.62 | 6.96 | 211 |
| [illegible] | | | | | | | | | | | | | |
| P-9(2-4) | F | N | Y | 432.30 | 0 | 0.015 | 0.003 | 0.004 | 0.006 | 2.0 | 2.8 | 9.41 | 356 |
| P-9(24-25) | N | N | NO | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-9(4-6) | F | N | Y | 719.95 | 2.8 | 0.008 | 0.002 | 0.004 | 0.004 | 1.3 | 0.815 | 10.6 | 519 |
| P-9(6-8) | F | N | Y | 49.17 | 0 | 0.013 | 0 | 0 | 0 | 0 | | | |
| [illegible] | | | | | | | | | | | | | |
| P-10(0-2) | F | N | Y | 28.60 | 0 | 0.004 | 0.005 | 0.008 | 0.018 | 2.2 | 0.905 | 7.54 | 556 |
| P-10(10-12) | N | N | Y | 125.30 | 33 | 26 | 2.9 | 74 | 130 | 11000 | | | |
| [illegible] | | | | | | | | | | | | | |
| P-10(16-18) | N | N | Y | 6.31 | 1.4 | 0.004 | 0 | 0.009 | 0.006 | 1.3 | | | |
| P-10(2-4) | F | N | Y | 50.01 | 4.8 | 0.005 | 0 | 0.003 | 0.005 | 1.8 | 0.325 | 11.3 | 687 |
| [illegible] | | | | | | | | | | | | | |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P-12(0-2) | P | N | Y | 87.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-12(18-20) | N | N | NO | 0.53 | 0.96 | 0.83 | 3 | 1 | 1.7 | 800 | | | |
| P-12(22-24) | N | N | NO | 0.00 | 0 | 0.12 | 0.072 | 0.098 | 0.14 | 61 | | | |
| P-12(2-4) | F | N | Y | 16.00 | 0 | 0.014 | 0.007 | 0.007 | 0.031 | 11 | | | |
| P-12(4-6) | F | N | Y | 1.10 | 0 | 0.11 | 0 | 0 | 0 | 0 | | | |
| P-12(6-8) | F | N | Y | 51.30 | 0 | 0.014 | 0.002 | 0.002 | 0.005 | 1.1 | | | |
| P-13(0-2) | P | N | Y | 50.90 | 0 | 0.005 | 0 | 0 | 0 | 0 | | | |
| P-13(22-24) | N | N | NO | 0.33 | 0.13 | 0.99 | 0.1 | 0.13 | 0.49 | 140 | | | |
| P-13(2-4) | F | N | Y | | | 0.003 | 0 | 0 | 0 | 0 | | | |
| P-13(24-26) | N | N | NO | 0.58 | 0 | 0.22 | 0.003 | 0.002 | 0.004 | 1.3 | | | |
| P-13(4-6) | F | N | Y | 0.00 | 0 | 0.008 | 0.002 | 0.003 | 0.005 | 1.4 | | | |
| P-13(6-8) | F | N | Y | 1.27 | 0.44 | 0.02 | 0.004 | 0.004 | 0.005 | 2.3 | | | |
| P-14(0-2) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | | | |
| P-14(10-12) | F | N | Y | 15.16 | 0.15 | 0 | 0 | 0 | 0 | 1.4 | | | |
| P-14(14-16) | N | N | NO | 0.00 | 0 | 0.002 | 0.002 | 0.002 | 0.001 | 4.1 | | | |
| P-14(2-4) | P | N | Y | 208.82 | 2.5 | 0 | 0 | 0 | 0 | 0 | 0.366 | 10.4 | 207 |
| P-14(26-28) | N | N | NO | 0.00 | 0 | 0.007 | 0 | 0 | 0 | 0.002 | | | |
| P-14(4-6) | P | N | Y | 317.30 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| P-14(6-8) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | | | |
| P-14(8-10) | F | N | Y | 341.10 | 5.7 | 0.004 | 0 | 0.016 | 0.012 | 29 | | | |
| P-15(0-2) | F | N | Y | 0.63 | 0 | 0 | 0 | 0 | 0 | 0 | | | |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P-15(14-16) | N | H | Y | 1,330 | 5.1 | 0.42 | 0.027 | 0.021 | 0.09 | 21 | | | |
| P-15(16-18) | N | N | NO | 0.12 | 0 | 0.028 | 0.004 | 0 | 0.011 | 1.4 | | | |
| P-15(18-20) | N | N | NO | 0.18 | 0 | 0.015 | 0 | 0 | 0.002 | 0 | | | |
| P-15(20-22) | N | N | NO | 0.00 | 0 | 0.002 | 0 | 0 | 0 | 0 | | | |
| P-15(22-24) | N | N | NO | 0.69 | 0 | 0.001 | 0 | 0 | 0 | 0 | | | |
| P-15(2-4) | F | N | Y | 4.96 | 0 | 0.007 | 0.008 | 0.002 | 0.004 | 1.3 | | | |
| P-15(4-6) | F | N | Y | | | 0.031 | 0.049 | 0.009 | 0.016 | 0.007 | | | |
| P-15(6-8) | F | N | Y | 0.00 | 0 | 0.016 | 0.006 | 0 | 0 | 0 | | | |
| P-15(8-10) | F | H | Y | 355.52 | 6.3 | 0 | 0 | 0.27 | 14 | 2500 | | | |
| P-16(0-2) | F | N | Y | 8,712.00 | 84 | 0.0051 | 0.003 | 0.003 | 0.002 | 0 | | | |
| P-16(10-12) | N | N | NO | 57.63 | 0.47 | 0.002 | 0 | 0 | 0 | 0 | | | |
| P-16(12-14) | N | N | NO | 14.37 | 0 | 0.001 | 0 | 0 | 0 | 0 | | | |
| P-16(4-6) | F | N | NO | 283.50 | 0 | 0.007 | 0.004 | 0 | 0 | 0 | | | |
| P-16(6-8) | F | N | NO | 477.50 | 0 | 0.003 | 0 | 0 | 0 | 0 | | | |
| P-16(8-10) | F | N | NO | 135.60 | 0 | 0.006 | 0.002 | 0 | 0 | 0 | | | |
| P-17(0-2) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | | | |
| P-17(10-12) | N | N | Y | 25.97 | 2.4 | 0 | 0 | 0.019 | 0.027 | 40 | | | |
| P-17(12-14) | N | H | Y | 2,086.40 | 380 | 81 | 9 | 68 | 150 | 64000 | | | |
| P-17(14-16) | N | H | Y | 42.93 | 8.4 | 0.85 | 0 | 7.9 | 12 | 5600 | | | |
| P-17(14-16) | N | H | Y | 13.50 | 2.4 | 2 | 0 | 2.8 | 3.5 | 1600 | | | |
| P-17(20-22) | N | H | Y | 2.01 | 0.52 | 2.2 | 0 | 2 | 2.5 | 1200 | | | |
| P-17(22-24) | N | H | Y | 6.10 | 0.98 | 0.013 | 0.009 | 0.057 | 0.19 | 100 | | | |
| P-17(2-4) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | 0.845 | 3.28 | 44.7 |
| P-17(24-26) | N | H | Y | 3.61 | 1.1 | 0 | 0 | 0.001 | 0.002 | 1.1 | | | |
| P-17(26-28) | N | H | Y | 7.34 | 1.2 | 0 | 0 | 0 | 0 | 0 | | | |
| P-17(28-30) | N | H | Y | 8,062.90 | 2,600 | 0.035 | 0.07 | 0 | 5.8 | 4900 | | | |
| P-17(4-6) | F | N | Y | | | | | | | | 0.309 | 6.87 | 165 |
| P-17(8-10) | F | N | Y | 117.03 | 8.9 | 0 | 0 | 0 | 0 | 590 | | | |
| SB-1(16.5-17) | N | H | Y | 144.04 | 53 | 3.2 | 7.1 | 6.7 | 13 | 6100 | 0.019 | 0.666 | 7.5 |
| SB-1(25-25.5) | N | H | Y | 121.03 | 56 | 3.3 | 5.2 | 12 | 24 | 12000 | 0.039 | 0.031 | 9.44 |
| SB-1(9.5-10) | N | H | Y | 862.65 | 420 | 5.4 | 10 | 19 | 38 | 18000 | 0.018 | 1.14 | 58 |
| SB-2(13.5-14) | N | H | Y | 433.00 | 41 | 2.4 | 0.73 | 9.1 | 13 | 6700 | 1.12 | 1.29 | 8.36 |
| SB-2(32.5-33) | N | H | Y | 147.81 | 0.69 | 0.35 | 1.1 | 3.2 | 5.8 | 3200 | 0.016 | 2.1 | 4.86 |
| SB-2(9.5-10) | N | N | Y | 15.33 | 0 | 0.011 | 0.003 | 0.003 | 0.004 | 1.9 | 3.7 | 6.88 | 20.8 |
| SB-20(17-17.5) | N | H | Y | 1,020 | 0 | 20 | 22 | 0.91 | 14 | 610 | | | |
| SB-20(8-8.5) | F | H | Y | 26.13 | 3.7 | 3 | 3.9 | 49 | 140 | 52000 | | | |
| SB-21(12-12.5) | N | H | Y | 116.45 | 5.8 | 0.53 | 0.29 | 11 | 3.3 | 270 | | | |
| SB-21(20.5-21) | N | H | Y | 8.31 | 0.78 | 0.4 | 1.3 | 0.92 | 1.6 | 630 | | | |
| SB-21(9.5-10) | F | H | Y | 732.73 | 110 | 17 | 0.94 | 26 | 10 | 1000 | | | |
| SB-3(16-16.5) | N | H | Y | 11.63 | 0.72 | 0.66 | 0.76 | 3.1 | 5.2 | 3400 | 0.026 | 2.03 | 18 |
| SB-3(9.5-10) | N | H | Y | 59.63 | 0.41 | 1.3 | 0 | 0 | 1.3 | 2200 | 0.042 | 5.77 | 59.1 |
| SB-4(10-10.5) | N | H | Y | 244.94 | 75 | 0 | 0.056 | 0 | 6.1 | 6100 | 0.031 | 0 | 6.39 |
| SB-4(14.5-15) | N | N | Y | 3.02 | 0.43 | 0 | 0 | 0.004 | 0.004 | 1.3 | 0.016 | 0.496 | 7.21 |
| SB-5(17-17.5) | N | H | NO | 16.36 | 2.5 | 0.92 | 0.35 | 2.3 | 2.2 | 1100 | 0.042 | 1.19 | 8.26 |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB-5(9-9.5) | F | N | Y | 12.88 | 1.9 | 0 | 0.002 | 0.016 | 0.037 | 13 | 0.018 | 1.56 | 6.65 |
| SB-6(11.5-12) | N | N | Y | 7.22 | 1.6 | 0.004 | 0.004 | 0.16 | 0.2 | 120 | 0.018 | 2.04 | 8.6 |
| SB-6(22.5-23) | N | N | NO | 0.25 | 0.16 | 0.007 | 0 | 0.012 | 0.005 | 2.6 | 0.017 | 0.55 | 5.09 |
| SB-7(20-20.5) | N | N | NO | 0.00 | 0 | 0.035 | 0 | 0 | 0 | 0 | 0.025 | 0 | 6.06 |
| SB-7(6.5-7) | F | N | Y | 115.98 | 0.51 | 0 | 0 | 0 | 0.16 | 0 | 0.093 | 7.8 | 123 |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| SB-10(22-22.5) | N | N | NO | 0.15 | 0.089 | 0.023 | 0 | 0.014 | 0.003 | 1.4 | 0.019 | 0.278 | 5.05 |
| SB-10(7.5-8) | F | N | NO | 2.75 | 0.22 | 0 | 0 | 0 | 0 | 0 | 0.046 | 3.73 | 28.5 |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| SB-12-(22-22.5) | N | N | NO | 0.11 | 0 | 0.029 | 0.002 | 0.007 | 0.011 | 1.6 | 0 | 0.38 | 7 |
| SB-12-(4.5-5) | F | N | NO | 1.50 | 0 | 0.005 | 0 | 0.002 | 0.005 | 0 | 0.012 | 0 | 4.2 |
| SB-13-(10-10.5) | N | N | NO | 2.69 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| SB-13-(21-21.5) | N | N | NO | 0.00 | 0 | 0.098 | 0.002 | 0.006 | 0.009 | 0.002 | | | |
| SB-14(19.5-20.0) | N | N | NO | 11.91 | 0.24 | 0.019 | 0 | 0.093 | 0.005 | 11 | 0.044 | 1.27 | 7.93 |
| SB-14(6.5-7) | F | N | Y | 11.39 | 0 | 0.007 | 0.002 | 0.003 | 0.003 | 0 | 0.203 | 7.42 | 27.9 |
| SB-15(11.5-12) | N | N | NO | 78.78 | 3.1 | 0.002 | 0 | 0.09 | 0.13 | 18 | | | |
| SB-15(20-20.5) | N | N | NO | 8.42 | 0.28 | 0.036 | 0 | 0.024 | 0.045 | 5.6 | | | |
| SB-16(17-17.5) | N | N | NO | 0.33 | 0 | 0.067 | 0.002 | 0 | 0 | 0 | | | |
| [illegible] | | | | | | | | | | | | | |
| SB-16(28-28.5) | N | N | NO | 136.61 | 1.1 | 0.005 | 0.011 | 0.21 | 0.042 | 13 | | | |
| SB-17(12-12.5) | N | N | NO | 0.98 | 0 | 0.006 | 0.007 | 0.007 | 0.009 | 2.8 | | | |
| SB-17(24-24.5) | N | N | NO | 0.34 | 0.14 | 0.011 | 0 | 0.005 | 0 | 0 | | | |
| SB-18(12-12.5) | N | N | Y | 3.19 | 0.47 | 0 | 0.2 | 1.5 | 1.3 | 250 | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |

**LEGEND**

| | |
|---|---|
| (No Shading) | Soil location/interval that will not be disturbed during remediation |
| [illegible] | Hydrocarbon (coal tar and/or petroleum) contaminated location/interval that will be remediated (excavation and off-site disposal) |
| [illegible] | Material overlying hydrocarbon contaminated soil that will be disturbed during remediation (excavated, stockpiled, tested & reused, as applicable) |
| [illegible] | Composite samples of soil pile collected on July 22, 2005. |
| F | Fill |
| N | Native soil |
| P | Pile located in center portion of site |

# Queens West Development
## Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C-1 | P | N | Y | 240.3 | 3.3 | 0.002 | 0 | 0 | 0 | | 1.3 | 9.5 | 356 |
| C-2 | P | N | Y | 490.7 | 8 | 0 | 0 | 0 | 0 | | 1.1 | 6.2 | 178 |
| C-3 | P | N | Y | 110.8 | 2.2 | 0 | 0 | 0 | 0 | | 0.99 | 8.1 | 187 |
| C-4 | P | H | Y | 469.9 | 69 | 0 | 0.008 | 0.1 | 1 | | 2.4 | 9.1 | 115 |
| C-5 | P | N | Y | 107.6 | 0 | 0 | 0 | 0 | 0 | | 0.8 | 9.5 | 194 |
| C-6 | P | N | Y | 353.4 | 11 | 0 | 0 | 0 | 0 | | 0.64 | 9.9 | 285 |
| C-7 | P | N | Y | 115.8 | 0 | 0 | 0 | 0 | 0 | | 0.56 | 8.2 | 222 |
| C-8 | P | N | Y | 434.0 | 5.6 | 0 | 0 | 0 | 0 | | 0.51 | 13.6 | 340 |
| C-9 | P | N | Y | 68.2 | 0 | 0 | 0 | 0 | 0 | | 0.56 | 8.4 | 196 |
| C-10 | P | N | Y | 77.2 | 0 | 0 | 0 | 0 | 0 | | 0.46 | 8.7 | 260 |
| P-1(0-2) | F | N | Y | 37.38 | 0 | 0 | 0 | 0 | 0 | 0 | 0.152 | 5.04 | 108 |
| P-1(10-12) | N | H | Y | 22.65 | 5.2 | 0 | 0 | 0 | 0 | 0 | | | |
| P-1(12-14) | N | N | Y | 6.62 | 1.3 | 0.003 | 0 | 0 | 0 | 0 | | | |
| P-1(14-16) | N | N | NO | 10.74 | 2 | 0.043 | 0.002 | 0.046 | 0.011 | 2.2 | | | |
| P-1(16-18) | N | N | NO | 12.97 | 3.1 | 0.06 | 0 | 0.025 | 0.005 | 0 | | | |
| P-1(18-20) | N | N | NO | 2.46 | 0.44 | 0.008 | 0 | 0.006 | 0.002 | 0 | | | |
| P-1(22-24) | N | N | NO | 19.70 | 4.3 | 0 | 0 | 0.002 | 0.001 | 0 | | | |
| P-1(24-26) | N | N | NO | 2.63 | 0.8 | 0.011 | 0 | 0.003 | 0.002 | 0 | | | |
| P-1(26-28) | N | N | NO | 0.66 | 0.18 | 0.016 | 0.002 | 0.007 | 0.005 | 2.2 | | | |
| P-1(6-8) | F | N | Y | 357.40 | 9.2 | 0 | 0 | 0 | 0 | 0 | | | |
| P-1(8-10) | F | H | Y | 65.22 | 19 | 0 | 0.001 | 0.002 | 0.002 | 1.0 | | | |
| P-2(0-2) | F | N | Y | 25.10 | 0 | 0 | 0 | 0.001 | 0.002 | 0 | 0.538 | 30.9 | 114 |
| P-2(10-12) | N | H | Y | 223.69 | 100 | 22 | 12 | 86 | 180 | 78000 | | | |
| P-2(12-14) | N | H | Y | 19.45 | 6.6 | 1.5 | 0.57 | 2.2 | 4.7 | 1800 | | | |
| P-2(14-16) | N | H | Y | 2.69 | 2.5 | 0.024 | 0.12 | 0.17 | 0.4 | 160 | | | |
| P-2(16-18) | N | H | Y | 6.80 | 2.5 | 0.047 | 0.072 | 0.016 | 0.035 | 24 | | | |
| P-2(18-20) | N | H | Y | 48.07 | 21 | 0.48 | 0.31 | 0.11 | 0.21 | 120 | | | |
| P-2(21-22) | N | H | Y | 22.00 | 13 | 5 | 7.9 | 4.4 | 10 | 4400 | | | |
| P-2(22-24) | N | N | NO | 0.94 | 0.77 | 0.03 | 0.011 | 0.016 | 0.029 | 13 | | | |
| P-2(2-4) | F | N | Y | 133.70 | 0 | 0 | 0 | 0.001 | 0.002 | 0 | 0.528 | 5.12 | 71.4 |
| P-2(24-26) | N | N | NO | 0.85 | 0.85 | 0.004 | 0.002 | 0.003 | 0.007 | 4.6 | | | |
| P-2(4-6) | F | H | Y | 1,218.00 | 23 | 0.008 | 0.002 | 0 | 0.002 | 12 | 0.284 | 9.76 | 88.1 |
| P-2(6-8) | F | H | Y | 7,097.00 | 40 | 0.64 | 0.4 | 0.62 | 1.2 | 430 | 0.075 | 7.71 | 17 |
| P-2(8-10) | N | H | Y | 2,180.44 | 960 | 25 | 8.7 | 97 | 190 | 86000 | 0.009 | 1.65 | 83.1 |
| P-3(0-2) | F | N | Y | 8.80 | 0 | 0 | 0 | 0 | 0 | 0 | 0.819 | 5.03 | 150 |
| P-3(10-12) | N | H | Y | 3,122.12 | 1,800 | 0 | 0.26 | 1.6 | 2.2 | 880 | | | |
| P-3(10-12) | N | H | Y | 528.17 | 1270 | 0 | 5.7 | 33 | 53 | 22000 | | | |
| P-3(12-14) | N | H | Y | 509.91 | 280 | 0 | 0.81 | 7.2 | 9.7 | 4200 | | | |
| P-3(14-16) | N | H | Y | 1,982.68 | 1,000 | 0.63 | 19 | 43 | 67 | 2800 | | | |
| P-3(16-18) | N | H | Y | 1,191.20 | 550 | 0.56 | 2.5 | 14 | 21 | 9000 | | | |
| P-3(18-20) | N | H | Y | 972.15 | 430 | 0.61 | 4 | 19 | 30 | 12000 | | | |
| P-3(20-22) | N | H | Y | 542.37 | 200 | 0.26 | 1.8 | 12 | 16 | 7600 | | | |
| P-3(22-24) | N | H | Y | 1,498.07 | 610 | 1.2 | 6.5 | 26 | 44 | 19000 | | | |
| P-3(2-4) | F | N | Y | 133.37 | 1.2 | 0 | 0 | 0 | 0 | 0 | 3.8 | 24.6 | 488 |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P-3(4-6) | F | N | Y | 197.94 | 0.88 | 0.001 | 0.002 | 0.002 | 0.003 | 1.2 | 0.362 | 3.66 | 42.9 |
| P-3(6-8) | F | H | Y | 706.11 | 1.8 | 0 | 1.3 | 13 | 17 | 7900 | 0.069 | 6.71 | 50.1 |
| P-3(8-10) | F | H | Y | 2,831.19 | 1,500 | 0 | 0 | 1.2 | 1.6 | 710 | | | |
| P-4(0-2) | F | N | Y | 284.80 | 5.5 | 0.003 | 0 | 0 | 0.002 | 0 | 0.402 | 2.24 | 71.8 |
| P-4(12-14) | N | H | Y | 7.98 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-4(14-16) | N | H | Y | 10.93 | 0.56 | 0.62 | 0.007 | 0.088 | 0.039 | 65 | | | |
| P-4(16-18) | N | N | Y | 65.38 | 1.2 | 0.05 | 0 | 0.94 | 0.22 | 170 | | | |
| P-4(18-20) | N | N | NO | 1.39 | 0.48 | 0.3 | 0 | 0.95 | 0.23 | 200 | | | |
| P-4(20-22) | N | N | NO | 7.37 | 5.9 | 0.081 | 0 | 0.35 | 0.53 | 130 | | | |
| P-4(22-24) | N | N | NO | 4.39 | 3.3 | 0.08 | 0 | 0.21 | 0.21 | 0 | | | |
| P-4(2-4) | F | N | Y | 13.24 | 0 | 0 | 0 | 0 | 0 | 0 | 2.6 | 8.23 | 118 |
| P-4(24-26) | N | N | NO | 4.59 | 3.9 | 0 | 0 | 0.23 | 0.52 | 220 | | | |
| P-4(26-28) | N | N | NO | 6.98 | 3.1 | 0 | 0 | 0.26 | 0.22 | 140 | | | |
| P-4(28-30) | N | N | NO | 0.41 | 0.2 | 0.006 | 0 | 0.01 | 0.004 | 1.7 | | | |
| P-4(4-6) | F | N | Y | 0.34 | 0 | 0 | 0 | 0 | 0 | 0 | 0.029 | 1.71 | 7.99 |
| P-4(8-10) | F | N | Y | 328.83 | 0 | 0.002 | 0 | 0.006 | 0.006 | 6.3 | | | |
| P-5(0-2) | F | N | Y | 0.81 | 0 | 0 | 0 | 0 | 0 | 0 | 0.28 | 2.75 | 52.1 |
| P-5(10-12) | N | N | Y | 0.08 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-5(12-14) | N | H | Y | 0.32 | 0 | 0.22 | 0.003 | 0.011 | 0.019 | 9.4 | | | |
| P-5(14-16) | N | H | Y | 2.54 | 0 | 7.3 | 0 | 2.1 | 2.2 | 960 | | | |
| P-5(16-18) | N | N | NO | 0.86 | 0.86 | 0.001 | 0 | 0.005 | 0.004 | 5.3 | | | |
| P-5(18-20) | N | N | NO | 0.1 | 0 | 0.002 | 0 | 0 | 0 | 0 | | | |
| P-5(20-22) | N | N | NO | 0.54 | 0.54 | 0.075 | 0 | 0.022 | 0.005 | 0 | | | |
| P-5(22-24) | N | N | NO | 0.72 | 0.63 | 0 | 0 | 0 | 0 | 0 | | | |
| P-5(2-4) | F | N | Y | 35.13 | 0 | 0 | 0 | 0 | 0 | 0 | 0.37 | 2.34 | 44.7 |
| P-5(24-26) | N | N | NO | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-5(28-30) | N | N | NO | 0.51 | 0.51 | 0.003 | 0 | 0 | 0 | 0 | | | |
| P-5(4-6) | F | N | Y | 7.19 | 3.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0.558 | 2.17 |
| P-5(6-8) | F | N | Y | 118.77 | 1.1 | 0 | 0 | 0 | 0 | 0 | 0.366 | 6.49 | 231 |
| P-5(8-10) | F | N | Y | 57.52 | 1 | 0 | 0 | 0 | 0 | 0 | | | |
| P-6(0-2) | F | N | Y | 60.70 | 0 | 0.004 | 0.002 | 0 | 0 | 0 | 1.3 | 5.56 | 109 |
| P-6(10-12) | N | H | Y | 1,673.58 | 890 | 0 | 6.9 | 53 | 510 | 260000 | | | |
| P-6(12-14) | N | H | Y | 329.37 | 140 | 0 | 0.45 | 4.6 | 37 | 0 | | | |
| P-6(14-16) | N | H | Y | 198.50 | 160 | 0 | 0 | 0 | 48 | 19000 | | | |
| P-6(20-22) | N | H | Y | 32.82 | 21 | 0 | 0 | 0 | 0 | 0 | | | |
| P-6(2-4) | F | N | Y | 112.19 | 2 | 0 | 0 | 0 | 0 | 0 | 0.974 | 5.38 | 87.6 |
| P-6(4-6) | F | N | Y | 99.60 | 4.1 | 0 | 0 | 0.001 | 0.005 | 3.7 | 0.233 | 14.1 | 60.4 |
| P-6(6-8) | F | H | Y | 8100 | 3.2 | 0 | 0.11 | 0 | 6.9 | 4100 | 0.319 | 5.11 | 347 |
| P-6(8-10) | N | H | Y | 109.26 | 6.6 | 0 | 0.7 | 0.10 | 49 | 24000 | 1.16 | 4.86 | 62 |
| P-7(0-2) | F | N | Y | 4.52 | 0 | 0.014 | 0.003 | 0.046 | 0.084 | 46 | 0.702 | 5.18 | 141 |
| P-7(10-12) | N | N | Y | 1.28 | 0 | 0.002 | 0 | 0 | 0 | 0 | | | |
| P-7(12-14) | N | N | Y | 1.31 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-7(14-16) | N | N | Y | 0.21 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-7(16-18) | N | N | NO | 0.71 | 0 | 0 | 0 | 0.001 | 0.002 | 0 | | | |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P-7(16-20) | N | N | Y | 0.00 | 0 | 0.001 | 0 | 0.002 | 0.003 | 0 | 0.086 | 3.51 | 3.17 |
| P-7(18-20) | N | N | NO | 3.49 | 0.099 | 0 | 0 | 0 | 0 | 0 | | | |
| P-7(20-22) | N | N | NO | 0.81 | 0.074 | 0 | 0 | 0 | 0 | 0 | | | |
| P-7(22-24) | N | N | NO | 1.10 | 0 | 0 | 0 | 0.001 | 0.004 | 0 | | | |
| P-7(2-4) | F | N | Y | 423.07 | 14 | 0 | 0 | 0.002 | 0 | 0 | 0.669 | 3.66 | 30.5 |
| [illegible] | | | | | | | | | | | | | |
| P-7(6-8) | F | N | Y | 282.86 | 5.5 | 0 | 0 | 0 | 0 | 0 | 7.3 | 9.92 | 97 |
| [illegible] | | | | | | | | | | | | | |
| P-8(0-2) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | 0.405 | 6.53 | 277 |
| P-8(10-12) | N | N | Y | 14.23 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| P-8(18-20) | N | N | NO | 0.00 | 0 | 0.033 | 0.004 | 0.022 | 0.023 | 0.013 | | | |
| P-8(20-22) | N | N | NO | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-8(22-24) | N | N | NO | 0.00 | 0 | 0.078 | 0 | 0 | 0 | 0 | | | |
| P-8(6-7) | F | N | Y | | | 0.002 | 0.002 | 0.001 | 0.003 | 0 | | | |
| P-9(0-2) | F | N | Y | 149.35 | 2.7 | 0 | 0 | 0 | 0 | 0 | 0.62 | 6.96 | 211 |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| P-9(2-4) | F | N | Y | 432.30 | 0 | 0.015 | 0.003 | 0.004 | 0.006 | 2.0 | 2.8 | 9.41 | 356 |
| P-9(24-25) | N | N | NO | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-9(4-6) | F | N | Y | 719.95 | 2.8 | 0.008 | 0.002 | 0.004 | 0.004 | 1.3 | 0.815 | 10.6 | 519 |
| P-9(6-8) | F | N | Y | 49.17 | 0 | 0.013 | 0 | 0 | 0 | 0 | | | |
| [illegible] | | | | | | | | | | | | | |
| P-10(0-2) | F | N | Y | 28.60 | 0 | 0.004 | 0.005 | 0.008 | 0.018 | 2.2 | 0.905 | 7.54 | 556 |
| P-10(10-12) | N | H | Y | 125.30 | 33 | 26 | 2.9 | 74 | 130 | 11000 | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| P-10(16-18) | N | N | Y | 6.31 | 1.4 | 0.004 | 0 | 0.009 | 0.006 | 1.3 | | | |
| P-10(2-4) | F | N | Y | 50.01 | 4.8 | 0.005 | 0 | 0.003 | 0.005 | 1.8 | 0.325 | 11.3 | 687 |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |
| [illegible] | | | | | | | | | | | | | |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P-11(22-24) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-12(0-2) | P | N | Y | 87.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-12(10-12) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-12(2-4) | F | N | Y | 16.00 | 0 | 0.014 | 0.007 | 0.007 | 0.031 | 11 | 0.374 | 4.39 | 457 |
| P-12(4-6) | F | N | Y | 1.10 | 0 | 0.11 | 0 | 0 | 0 | 0 | 0.374 | 4.39 | 457 |
| P-12(6-8) | F | N | Y | 51.30 | 0 | 0.014 | 0.002 | 0.002 | 0.005 | 1.1 | 0.374 | 4.39 | 457 |
| P-12(8-10) | P | N | Y | 3.71 | 0.87 | 0.012 | 0.012 | 0.016 | 0.04 | 0.79 | 0.374 | 4.39 | 457 |
| P-13(0-2) | P | N | Y | 50.90 | 0 | 0.005 | 0 | 0 | 0 | 0 | 0.374 | 4.39 | 457 |
| P-13(10-12) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-13(2-4) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-13(16-18) | F | N | Y | 10.61 | 1.2 | 0 | 0 | 0.29 | 0.19 | 0.0000 | 0.374 | 4.39 | 457 |
| P-13(18-20) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-13(20-22) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-13(22-24) | N | N | NO | 0.33 | 0.13 | 0.99 | 0.1 | 0.13 | 0.49 | 140 | 0.374 | 4.39 | 457 |
| P-13(2-4) | F | N | Y | | | 0.003 | 0 | 0 | 0 | 0 | 0.374 | 4.39 | 457 |
| P-13(24-26) | N | N | NO | 0.58 | 0 | 0.22 | 0.003 | 0.002 | 0.004 | 1.3 | 0.374 | 4.39 | 457 |
| P-13(4-6) | F | N | Y | 0.00 | 0 | 0.008 | 0.002 | 0.003 | 0.005 | 1.4 | 0.374 | 4.39 | 457 |
| P-13(6-8) | F | N | Y | 1.27 | 0.44 | 0.02 | 0.004 | 0.004 | 0.005 | 2.3 | 0.374 | 4.39 | 457 |
| P-13(8-10) | P | N | Y | 0.56 | 0.56 | 0.003 | 0.004 | 0.0049 | 0.005 | 0.0 | 0.374 | 4.39 | 457 |
| P-13(0-0) | N | N | NO | 2.39 | 0.14 | 0 | 0 | 0 | 0 | 0 | 0.374 | 4.39 | 457 |
| P-14(0-2) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | 0.374 | 4.39 | 457 |
| P-14(10-12) | F | N | Y | 15.16 | 0.15 | 0 | 0 | 0 | 0 | 1.4 | 0.374 | 4.39 | 457 |
| P-14(14-16) | N | N | NO | 0.00 | 0 | 0.002 | 0.002 | 0.002 | 0.001 | 4.1 | 0.374 | 4.39 | 457 |
| P-14(16-18) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-14(18-20) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-14(20-22) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-14(22-24) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | 0.374 | 4.39 | 457 |
| P-14(2-4) | P | N | Y | 208.82 | 2.5 | 0 | 0 | 0 | 0 | 0 | 0.366 | 10.4 | 207 |
| P-14(26-28) | N | N | NO | 0.00 | 0 | 0.007 | 0 | 0 | 0 | 0.002 | | | |
| P-14(4-6) | P | N | Y | 317.30 | 0 | 0 | 0 | 0 | 0 | 1 | | | |
| P-14(6-8) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | | | |
| P-14(8-10) | F | N | Y | 341.10 | 5.7 | 0.004 | 0 | 0.016 | 0.012 | 29 | | | |
| P-15(0-2) | F | N | Y | 0.63 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| P-15(10-12) | N | N | NO | 0.00 | 0 | 0.002 | 0.003 | 0.006 | 0.019 | 5.0 | | | |
| P-15(2-4) | F | N | Y | 0.00 | 0.01 | 0.02 | 0.0051 | 0.0006 | 0.001 | 0.0 | | | |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P-15(14-16) | N | H | NO | 3.40 | 1.0 | 0.32 | 0.027 | 0.021 | 0.09 | 2.1 | | | |
| P-15(16-18) | N | N | NO | 0.12 | 0 | 0.028 | 0.004 | 0 | 0.011 | 1.4 | | | |
| P-15(18-20) | N | N | NO | 0.18 | 0 | 0.015 | 0 | 0 | 0.002 | 0 | | | |
| P-15(20-22) | N | N | NO | 0.00 | 0 | 0.002 | 0 | 0 | 0 | 0 | | | |
| P-15(22-24) | N | N | NO | 0.69 | 0 | 0.001 | 0 | 0 | 0 | 0 | | | |
| P-15(2-4) | F | N | Y | 4.96 | 0 | 0.007 | 0.008 | 0.002 | 0.004 | 1.3 | | | |
| P-15(4-6) | F | N | Y | | | 0.031 | 0.049 | 0.009 | 0.016 | 0.007 | | | |
| P-15(6-8) | F | N | Y | 0.00 | 0 | 0.016 | 0.006 | 0 | 0 | 0 | | | |
| P-15(8-10) | F | H | Y | 355.62 | 6.3 | 0 | 0 | 2.7 | 14 | 2500 | | | |
| P-16(0-2) | F | N | Y | 6,712.00 | 64 | 0.0051 | 0.003 | 0.003 | 0.002 | 0 | | | |
| P-16(10-12) | N | N | NO | 57.63 | 0.47 | 0.002 | 0 | 0 | 0 | 0 | | | |
| P-16(12-14) | N | N | NO | 14.37 | 0 | 0.001 | 0 | 0 | 0 | 0 | | | |
| P-16(4-6) | F | N | NO | 283.50 | 0 | 0.007 | 0.004 | 0 | 0 | 0 | | | |
| P-16(6-8) | F | N | NO | 477.50 | 0 | 0.003 | 0 | 0 | 0 | 0 | | | |
| P-16(8-10) | F | N | NO | 135.60 | 0 | 0.006 | 0.002 | 0 | 0 | 0 | | | |
| P-17(0-2) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | | | |
| P-17(10-12) | N | N | Y | 25.97 | 2.4 | 0 | 0 | 0.019 | 0.027 | 40 | | | |
| P-17(12-14) | N | H | Y | 2,086.40 | 380 | 31 | 9 | 68 | 150 | 64000 | | | |
| P-17(14-16) | N | H | Y | 42.93 | 8.4 | 0.85 | 0 | 7.9 | 12 | 5600 | | | |
| P-17(14-16) | N | H | Y | 13.50 | 2.4 | 2 | 0 | 2.8 | 3.5 | 1600 | | | |
| P-17(20-22) | N | H | Y | 2.01 | 0.52 | 2.2 | 0 | 2 | 2.6 | 1200 | | | |
| P-17(22-24) | N | H | Y | 6.10 | 0.98 | 0.013 | 0.009 | 0.057 | 0.19 | 100 | | | |
| P-17(2-4) | F | N | Y | | | 0 | 0 | 0 | 0 | 0 | 0.845 | 3.28 | 44.7 |
| P-17(24-26) | N | H | Y | 3.51 | 1.1 | 0 | 0 | 0.001 | 0.002 | 1.1 | | | |
| P-17(26-28) | N | H | Y | 7.34 | 1.2 | 0 | 0 | 0 | 0 | 0 | | | |
| P-17(28-30) | N | H | Y | 8,062.90 | 2,600 | 0.035 | 0.07 | 0 | 5.8 | 4900 | | | |
| P-17(4-6) | F | N | Y | | | | | | | | 0.309 | 6.87 | 165 |
| P-17(8-10) | F | N | Y | 117.03 | 8.9 | 0 | 0 | 0 | 0 | 590 | | | |
| SB-1(16.5-17) | N | H | Y | 144.04 | 53 | 3.2 | 7.1 | 6.7 | 18 | 6100 | 0.019 | 0.666 | 7.5 |
| SB-1(25-25.5) | N | H | Y | 121.03 | 56 | 3.3 | 5.2 | 12 | 24 | 12000 | 0.039 | 0.931 | 9.44 |
| SB-1(9.5-10) | N | H | Y | 862.65 | 420 | 5.3 | 10 | 19 | 38 | 18000 | 0.018 | 1.14 | 58 |
| SB-2(13.5-14) | N | H | Y | 433.00 | 41 | 2.4 | 0.73 | 9.1 | 13 | 6700 | 0.112 | 1.29 | 8.36 |
| SB-2(32.5-33) | N | H | Y | 147.81 | 0.69 | 0.85 | 1.1 | 3.2 | 5.8 | 3200 | 0.016 | 2.11 | 4.86 |
| SB-2(9.5-10) | N | N | Y | 15.33 | 0 | 0.011 | 0.003 | 0.003 | 0.004 | 1.9 | 3.7 | 6.88 | 20.8 |
| SB-20(17-17.5) | N | H | Y | 0.20 | 0 | 20 | 22 | 0.91 | 1.4 | 610 | | | |
| SB-20(8-8.5) | F | H | Y | 26.13 | 3.7 | 3 | 0.9 | 49 | 140 | 52000 | | | |
| SB-21(12-12.5) | N | H | Y | 116.45 | 5.8 | 0.53 | 0.29 | 11 | 3.3 | 270 | | | |
| SB-21(20.5-21) | N | H | Y | 8.31 | 0.78 | 0.4 | 1.3 | 0.92 | 1.6 | 630 | | | |
| SB-21(9.5-10) | F | H | Y | 732.73 | 110 | 17 | 0.94 | 26 | 10 | 1000 | | | |
| SB-3(16-16.5) | N | H | Y | 14.63 | 0.72 | 0.66 | 0.76 | 3.1 | 5.2 | 3400 | 0.026 | 2.03 | 13 |
| SB-3(9.5-10) | N | H | Y | 59.63 | 0.41 | 1.3 | 0 | 0 | 1.3 | 2200 | 0.042 | 5.77 | 59.1 |
| SB-4(10-10.5) | N | H | Y | 244.94 | 75 | 0 | 0.056 | 0 | 8.1 | 6100 | 0.031 | 0 | 6.39 |
| SB-4(14.5-15) | N | N | Y | 3.02 | 0.43 | 0 | 0 | 0.004 | 0.004 | 1.3 | 0.016 | 0.496 | 7.21 |
| SB-5(17-17.5) | N | H | NO | 16.86 | 2.5 | 0.92 | 0.35 | 2.3 | 2.2 | 1100 | 0.042 | 1.19 | 8.26 |

## Queens West Development
### Analytical Data Summary

| Sample ID | Fill, Native or Pile | Hydrocarbon or Non | To Be Excavated? | Total SVOC | Naphthalene | Benzene | Toluene | Ethyl Benzene | m/p Xylenes | o-Xylene | Mercury | Arsenic | Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB-5(9-9.5) | F | N | Y | 12.88 | 1.9 | 0 | 0.002 | 0.016 | 0.037 | 13 | 0.018 | 1.56 | 6.65 |
| SB-6(11.5-12) | N | N | Y | 7.22 | 1.6 | 0.004 | 0.004 | 0.16 | 0.2 | 120 | 0.018 | 2.04 | 8.6 |
| SB-6(22.5-23) | N | N | NO | 0.25 | 0.16 | 0.007 | 0 | 0.012 | 0.005 | 2.6 | 0.017 | 0.55 | 5.09 |
| SB-7(20-20.5) | N | N | NO | 0.00 | 0 | 0.035 | 0 | 0 | 0 | 0 | 0.025 | 0 | 6.06 |
| SB-7(6.5-7) | F | N | Y | 115.98 | 0.51 | 0 | 0 | 0 | 0.16 | 0 | 0.093 | 7.8 | 123 |
| SB-8(12.5-13) | N | H | Y | 41.82 | 12 | 18 | 110 | 54 | 90 | 41000 | 0.1 | 0.47 | 7.3 |
| SB-8(18.5-19) | N | H | Y | 34.07 | 11 | 24 | 200 | 110 | 170 | 60000 | 0.053 | 1.4 | 7.1 |
| SB-8(7.5-8) | F | H | Y | 186.30 | 19 | 0 | 0 | 49 | 70 | 6100 | 0.008 | 1.3 | 5.9 |
| SB-9(14.5-15) | N | H | Y | 5.62 | 0.68 | 6.9 | 1.3 | 69 | 36 | 3500 | 0.021 | 1.6 | 6.8 |
| SB-9(18-18.5) | N | H | Y | 106.90 | 49 | 33 | 5.9 | 200 | 280 | 26000 | 0.007 | 1.2 | 5.6 |
| SB-9(20.5-21) | N | H | Y | 5.34 | 1.1 | 8.3 | 1.3 | 48 | 37 | 3000 | 0.035 | 0.98 | 28.3 |
| SB-10(22-22.5) | N | N | NO | 0.15 | 0.089 | 0.023 | 0 | 0.014 | 0.003 | 1.4 | 0.019 | 0.278 | 5.05 |
| SB-10(7.5-8) | F | N | NO | 2.75 | 0.22 | 0 | 0 | 0 | 0 | 0 | 0.046 | 3.73 | 28.5 |
| SB-11(18.5-19) | N | H | Y | 9.77 | 2.1 | 0.65 | 0 | 12 | 44 | 11000 | 0.286 | 10.1 | 48.1 |
| SB-11(9.5-10) | F | H | Y | 339.60 | 1.9 | 0.4 | 1.9 | 3.7 | 16 | 2700 | 0.31 | 164 | 434 |
| SB-12-(22-22.5) | N | N | NO | 0.11 | 0 | 0.029 | 0.002 | 0.007 | 0.011 | 1.6 | 0 | 0.38 | 7 |
| SB-12-(4.5-5) | F | N | NO | 1.50 | 0 | 0.005 | 0 | 0.002 | 0.005 | 0 | 0.012 | 0 | 4.2 |
| SB-13-(10-10.5) | N | N | NO | 2.69 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| SB-13-(21-21.5) | N | N | NO | 0.00 | 0 | 0.098 | 0.002 | 0.006 | 0.009 | 0.002 | | | |
| SB-14(19.5-20.0) | N | N | NO | 11.91 | 0.24 | 0.019 | 0 | 0.093 | 0.005 | 11 | 0.044 | 1.27 | 7.93 |
| SB-14(6.5-7) | F | N | Y | 11.39 | 0 | 0.007 | 0.002 | 0.003 | 0.003 | 0 | 0.203 | 7.42 | 27.9 |
| SB-15(11.5-12) | N | N | NO | 78.78 | 3.1 | 0.002 | 0 | 0.09 | 0.13 | 18 | | | |
| SB-15(20-20.5) | N | N | NO | 8.42 | 0.28 | 0.036 | 0 | 0.024 | 0.045 | 5.6 | | | |
| SB-16(17-17.5) | N | N | NO | 0.33 | 0 | 0.067 | 0.002 | 0 | 0 | 0 | | | |
| SB-16(21.5-22) | N | H | Y | 22.38 | 7.1 | 16 | 0.11 | 0.94 | 1.6 | 610 | | | |
| SB-16(28-28.5) | N | N | NO | 136.61 | 1.1 | 0.005 | 0.011 | 0.21 | 0.042 | 13 | | | |
| SB-17(12-12.5) | N | N | NO | 0.98 | 0 | 0.006 | 0.007 | 0.007 | 0.009 | 2.8 | | | |
| SB-17(24-24.5) | N | N | NO | 0.34 | 0.14 | 0.011 | 0 | 0.005 | 0 | 0 | | | |
| SB-18(12-12.5) | N | N | Y | 3.19 | 0.47 | 0 | 0.2 | 1.5 | 1.3 | 250 | | | |
| SB-18(9.5-10) | N | H | Y | 58.88 | 7 | 18 | 63 | 27 | 142 | 1100 | | | |
| SB-19(13-13.5) | N | H | Y | 64.27 | 17 | 28 | 35 | 150 | 250 | 26000 | | | |
| SB-19(7.5-8) | F | H | Y | 21.92 | 2 | 1.7 | 0.51 | 5.45 | 29 | 3100 | | | |

**LEGEND**

| | |
|---|---|
| (No Shading) | Soil location/interval that will not be disturbed during remediation |
| | Hydrocarbon (coal tar and/or petroleum) contaminated location/interval that will be remediated (excavation and off-site disposal) |
| | Material overlying hydrocarbon contaminated soil that will be disturbed during remediation (excavated, stockpiled, tested & reused, as applicable) |
| | Composite samples of soil pile collected on July 22, 2005. |
| **F** | Fill |
| **N** | Native soil |
| **P** | Pile located in center portion of site |

# Queens West Development-Parcel 9

## Composite Soil Pile Samples

Volatile Organic Compounds

| Sample ID | C-1 | C-2 | C-3 | C-4 |
|---|---|---|---|---|
| Lab Sample Number | 210307-001 | 210307-002 | 210307-003 | 210307-004 |
| Sampling Date | 7/22/2005 | 7/22/2005 | 7/22/2005 | 7/22/2005 |
| Matrix | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | 1.0 | 1.0 | 1.0 | 5.0 |
| Units | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | | | | |
| 1 1 1-Trichloroethane | 1.8 U | 1.9 U | 2 U | 2 U |
| 1 1 2 2-Tetrachloroethane | 0.57 U | 0.58 U | 0.63 U | 0.62 U |
| 1 1 2-Trichloroethane | 0.69 U | 0.7 U | 0.76 U | 0.74 U |
| 1 1-Dichloroethane | 1.5 U | 1.5 U | 1.6 U | 1.6 U |
| 1 1-Dichloroethene | 2.3 U | 2.3 U | 2.5 U | 2.5 U |
| 1 2-Dichloroethane | 2.1 U | 2.1 U | 2.3 U | 2.2 U |
| 1 2-Dichloropropane | 1.3 U | 1.3 U | 1.4 U | 1.4 U |
| 2-Butanone (MEK) | 2.6 U | 2.7 U | 2.9 U | 2.8 U |
| 2-Hexanone | 2.6 U | 2.7 U | 2.9 U | 2.8 U |
| 4-Methyl-2-pentanone (MIBK) | 1.1 U | 1.2 U | 1.3 U | 1.2 U |
| Acetone | 11 JB | 13 B | 12 JB | 10 JB |
| Benzene | 1.6 U | 1.6 U | 1.8 U | 1.7 U |
| Bromodichloromethane | 1 U | 1 U | 1.1 U | 1.1 U |
| Bromoform | 0.69 U | 0.7 U | 0.76 U | 0.74 U |
| Bromomethane | 2.5 U | 2.6 U | 2.8 U | 2.7 U |
| Carbon disulfide | 1.9 U | 2 U | 2.1 U | 2.1 U |
| Carbon tetrachloride | 2.4 U | 2.4 U | 2.6 U | 2.6 U |
| Chlorobenzene | 1.3 U | 1.3 U | 1.4 U | 1.4 U |
| Chloroethane | 3.3 U | 3.4 U | 3.7 U | 3.6 U |
| Chloroform | 1.3 U | 1.3 U | 1.4 U | 1.4 U |
| Chloromethane | 1.8 U | 1.9 U | 2 U | 2 U |
| cis-1 2-Dichloroethene | 1.4 U | 1.4 U | 1.5 U | 1.5 U |
| cis-1 3-Dichloropropene | 0.46 U | 0.47 U | 0.5 U | 0.49 U |
| Dibromochloromethane | 0.57 U | 0.58 U | 0.63 U | 0.62 U |
| Ethylbenzene | 2.1 U | 2.1 U | 2.3 U | 100 |
| Methylene chloride | 13 B | 15 B | 11 JB | 12 B |
| Styrene | 1.1 U | 1.2 U | 1.3 U | 1.2 U |
| Tetrachloroethene | 2.2 U | 2.2 U | 2.4 U | 2.3 U |
| Toluene | 1.9 U | 2 U | 2.1 U | 8.1 |
| trans-1 2-Dichloroethene | 1.6 U | 1.6 U | 1.8 U | 1.7 U |
| trans-1 3-Dichloropropene | 0.57 U | 0.58 U | 0.63 U | 0.62 U |
| Trichloroethene | 1.9 U | 2 U | 2.1 U | 2.1 U |
| Vinyl chloride | 2.3 U | 2.3 U | 2.5 U | 2.5 U |
| Xylenes (total) | 5.1 U | 5.2 U | 5.7 U | 1000 |

# Queens West Development-Parcel 9

## Composite Soil Pile Samples

Volatile Organic Compounds

| Sample ID | C-5 | C-6 | C-7 |
|---|---|---|---|
| Lab Sample Number | 210307-005 | 210307-006 | 210307-007 |
| Sampling Date | 7/22/2005 | 7/22/2005 | 7/22/2005 |
| Matrix | SOIL | SOIL | SOIL |
| Dilution Factor | 1.0 | 1.0 | 1.0 |
| Units | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | | | |
| 1 1 1-Trichloroethane | 1.8 U | 2.1 U | 1.7 U |
| 1 1 2 2-Tetrachloroethane | 0.55 U | 0.65 U | 0.53 U |
| 1 1 2-Trichloroethane | 0.66 U | 0.77 U | 0.64 U |
| 1 1-Dichloroethane | 1.4 U | 1.7 U | 1.4 U |
| 1 1-Dichloroethene | 2.2 U | 2.6 U | 2.1 U |
| 1 2-Dichloroethane | 2 U | 2.3 U | 1.9 U |
| 1 2-Dichloropropane | 1.2 U | 1.4 U | 1.2 U |
| 2-Butanone (MEK) | 2.5 U | 3 U | 2.4 U |
| 2-Hexanone | 2.5 U | 3 U | 2.4 U |
| 4-Methyl-2-pentanone (MIBK) | 1.1 U | 1.3 U | 1.1 U |
| Acetone | 11 JB | 9.3 JB | 9 JB |
| Benzene | 1.5 U | 1.8 U | 1.5 U |
| Bromodichloromethane | 0.99 U | 1.2 U | 0.96 U |
| Bromoform | 0.66 U | 0.77 U | 0.64 U |
| Bromomethane | 2.4 U | 2.8 U | 2.3 U |
| Carbon disulfide | 1.9 U | 2.2 U | 1.8 U |
| Carbon tetrachloride | 2.3 U | 2.7 U | 2.2 U |
| Chlorobenzene | 1.2 U | 1.4 U | 1.2 U |
| Chloroethane | 3.2 U | 3.7 U | 3.1 U |
| Chloroform | 1.2 U | 1.4 U | 1.2 U |
| Chloromethane | 1.8 U | 2.1 U | 1.7 U |
| cis-1 2-Dichloroethene | 1.3 U | 1.5 U | 1.3 U |
| cis-1 3-Dichloropropene | 0.44 U | 0.52 U | 0.43 U |
| Dibromochloromethane | 0.55 U | 0.65 U | 0.53 U |
| Ethylbenzene | 2 U | 2.3 U | 1.9 U |
| Methylene chloride | 12 B | 14 B | 15 B |
| Styrene | 1.1 U | 1.3 U | 1.1 U |
| Tetrachloroethene | 2.1 U | 2.5 U | 2 U |
| Toluene | 1.9 U | 2.2 U | 1.8 U |
| trans-1 2-Dichloroethene | 1.5 U | 1.8 U | 1.5 U |
| trans-1 3-Dichloropropene | 0.55 U | 0.65 U | 0.53 U |
| Trichloroethene | 1.9 U | 2.2 U | 1.8 U |
| Vinyl chloride | 2.2 U | 2.6 U | 2.1 U |
| Xylenes (total) | 5 U | 5.8 U | 4.8 U |

# Queens West Development-Parcel 9

## Composite Soil Pile Samples

Volatile Organic Compounds

| Sample ID | C-8 | C-9 | C-10 |
|---|---|---|---|
| Lab Sample Number | 210307-008 | 210307-009 | 210307-010 |
| Sampling Date | 7/22/2005 | 7/22/2005 | 7/22/2005 |
| Matrix | SOIL | SOIL | SOIL |
| Dilution Factor | 1.0 | 1.0 | 1.0 |
| Units | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | | | |
| 1 1 1-Trichloroethane | 1.7 U | 1.9 U | 1.8 U |
| 1 1 2 2-Tetrachloroethane | 0.54 U | 0.59 U | 0.55 U |
| 1 1 2-Trichloroethane | 0.65 U | 0.71 U | 0.66 U |
| 1 1-Dichloroethane | 1.4 U | 1.5 U | 1.4 U |
| 1 1-Dichloroethene | 2.2 U | 2.4 U | 2.2 U |
| 1 2-Dichloroethane | 2 U | 2.1 U | 2 U |
| 1 2-Dichloropropane | 1.2 U | 1.3 U | 1.2 U |
| 2-Butanone (MEK) | 2.5 U | 2.7 U | 2.5 U |
| 2-Hexanone | 2.5 U | 2.7 U | 2.5 U |
| 4-Methyl-2-pentanone (MIBK) | 1.1 U | 1.2 U | 1.1 U |
| Acetone | 7.4 JB | 5.8 JB | 6.6 JB |
| Benzene | 1.5 U | 1.7 U | 1.5 U |
| Bromodichloromethane | 0.98 U | 1.1 U | 0.99 U |
| Bromoform | 0.65 U | 0.71 U | 0.66 U |
| Bromomethane | 2.4 U | 2.6 U | 2.4 U |
| Carbon disulfide | 1.8 U | 2 U | 1.9 U |
| Carbon tetrachloride | 2.3 U | 2.5 U | 2.3 U |
| Chlorobenzene | 1.2 U | 1.3 U | 1.2 U |
| Chloroethane | 3.1 U | 3.4 U | 3.2 U |
| Chloroform | 1.2 U | 1.3 U | 1.2 U |
| Chloromethane | 1.7 U | 1.9 U | 1.8 U |
| cis-1 2-Dichloroethene | 1.3 U | 1.4 U | 1.3 U |
| cis-1 3-Dichloropropene | 0.43 U | 0.47 U | 0.44 U |
| Dibromochloromethane | 0.54 U | 0.59 U | 0.55 U |
| Ethylbenzene | 2 U | 2.1 U | 2 U |
| Methylene chloride | 12 B | 6 JB | 6.9 JB |
| Styrene | 1.1 U | 1.2 U | 1.1 U |
| Tetrachloroethene | 2.1 U | 2.2 U | 2.5 J |
| Toluene | 1.8 U | 2 U | 1.9 U |
| trans-1 2-Dichloroethene | 1.5 U | 1.7 U | 1.5 U |
| trans-1 3-Dichloropropene | 0.54 U | 0.59 U | 0.55 U |
| Trichloroethene | 1.8 U | 2 U | 1.9 U |
| Vinyl chloride | 2.2 U | 2.4 U | 2.2 U |
| Xylenes (total) | 4.9 U | 5.3 U | 5 U |

# Queens West Development-Parcel 9

**Composite Soil Pile Samples**

Semi-Volatile Organic Compounds

| Sample ID | C-1 | C-2 | C-3 | C-4 | C-5 | C-6 |
|---|---|---|---|---|---|---|
| Lab Sample Number | 210307-001 | 210307-002 | 210307-003 | 210307-004 | 210307-005 | 210307-006 |
| Sampling Date | 7/22/2005 | 7/22/2005 | 7/22/2005 | 7/22/2005 | 7/22/2005 | 7/22/2005 |
| Matrix | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | 50 | 10 | 1 | 50 | 50 | 10 |
| Units | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | | | | | | |
| 1 2 4-Trichlorobenzene | 3200 U | 640 U | 71 U | 3300 U | 3000 U | 710 U |
| 1 2-Dichlorobenzene | 3200 U | 640 U | 71 U | 3300 U | 3000 U | 710 U |
| 1 3-Dichlorobenzene | 2900 U | 580 U | 64 U | 3000 U | 2700 U | 640 U |
| 1 4-Dichlorobenzene | 3000 U | 600 U | 67 U | 3200 U | 2800 U | 670 U |
| 2 2-oxybis (1-chloropropane) | 2700 U | 540 U | 59 U | 2800 U | 2500 U | 590 U |
| 2 4 5-Trichlorophenol | 6900 U | 1400 U | 150 U | 7200 U | 6500 U | 1500 U |
| 2 4 6-Trichlorophenol | 4800 U | 970 U | 110 U | 5100 U | 4600 U | 1100 U |
| 2 4-Dichlorophenol | 6200 U | 1200 U | 140 U | 6500 U | 5900 U | 1400 U |
| 2 4-Dimethylphenol | 9700 U | 2000 U | 220 U | 10000 U | 9200 U | 2200 U |
| 2 4-Dinitrophenol | 6500 U | 1300 U | 150 U | 6800 U | 6200 U | 1500 U |
| 2 4-Dinitrotoluene | 3400 U | 680 U | 76 U | 3600 U | 3200 U | 760 U |
| 2 6-Dinitrotoluene | 3400 U | 700 U | 77 U | 3600 U | 3300 U | 770 U |
| 2-Chloronaphthalene | 2800 U | 560 U | 62 U | 2900 U | 2600 U | 620 U |
| 2-Chlorophenol | 4900 U | 980 U | 110 U | 5100 U | 4600 U | 1100 U |
| 2-Methylnaphthalene | 3000 U | 3500 J | 1300 | 26000 | 2800 U | 3800 J |
| 2-Methylphenol | 5000 U | 1000 U | 110 U | 5300 U | 4800 U | 1100 U |
| 2-Nitroaniline | 2400 U | 480 U | 53 U | 2500 U | 2300 U | 530 U |
| 2-Nitrophenol | 6500 U | 1300 U | 150 U | 6900 U | 6200 U | 1500 U |
| 3 3-Dichlorobenzidine | 5000 U | 1000 U | 110 U | 5300 U | 4800 U | 1100 U |
| 3-Nitroaniline | 3900 U | 790 U | 87 U | 4100 U | 3700 U | 870 U |
| 4 6-Dinitro-2-methylphenol | 13000 U | 2700 U | 300 U | 14000 U | 13000 U | 3000 U |
| 4-Bromophenyl phenyl ether | 2900 U | 580 U | 64 U | 3000 U | 2700 U | 640 U |
| 4-Chloro-3-methylphenol | 6400 U | 1300 U | 140 U | 6700 U | 6100 U | 1400 U |
| 4-Chloroaniline | 6000 U | 1200 U | 130 U | 6400 U | 5700 U | 1400 U |
| 4-Chlorophenyl phenyl ether | 2600 U | 520 U | 58 U | 2700 U | 2500 U | 580 U |
| 4-Methylphenol | 10000 U | 2000 U | 230 U | 11000 U | 9600 U | 2300 U |
| 4-Nitroaniline | 2700 U | 550 U | 61 U | 2900 U | 2600 U | 610 U |
| 4-Nitrophenol | 8000 U | 1600 U | 180 U | 8500 U | 7600 U | 1800 U |
| Acenaphthene | 5000 J | 14000 | 5000 | 24000 | 3000 U | 10000 |
| Acenaphthylene | 2300 U | 2100 J | 550 | 2400 U | 2200 U | 1100 J |
| Anthracene | 9600 J | 24000 | 7400 A | 17000 J | 3800 J | 19000 |
| Benzo(a)anthracene | 19000 J | 35000 | 10000 A | 19000 J | 9800 J | 26000 |
| Benzo(a)pyrene | 18000 J | 34000 | 7900 A | 17000 J | 9000 J | 21000 |
| Benzo(b)fluoranthene | 14000 J | 25000 | 5500 M | 16000 J | 7400 JH | 13000 |
| Benzo(ghi)perylene | 7600 J | 27000 | 5200 M | 13000 J | 6700 J | 12000 |
| Benzo(k)fluoranthene | 14000 J | 20000 | 4000 M | 9200 J | 5300 J | 13000 |
| Benzyl alcohol | 3600 U | 720 U | 79 U | 3800 U | 3400 U | 800 U |
| Bis(2-chloroethoxy)methane | 3200 U | 650 U | 72 U | 3400 U | 3100 U | 720 U |
| Bis(2-chloroethyl)ether | 2500 U | 510 U | 57 U | 2700 U | 2400 U | 570 U |
| Bis(2-ethylhexyl)phthalate | 2500 U | 500 U | 180 J | 2600 U | 2400 U | 560 U |
| Butyl benzyl phthalate | 2400 U | 490 U | 54 U | 2600 U | 2300 U | 540 U |
| Carbazole | 2800 U | 7300 | 3000 | 5900 J | 2600 U | 6800 |
| Chrysene | 19000 | 35000 | 10000 A | 19000 J | 9300 J | 24000 |
| Dibenzo(a h)anthracene | 2100 U | 9500 | 3200 M | 4800 J | 3200 J | 6900 M |
| Dibenzofuran | 3400 J | 9800 | 2900 | 21000 | 2800 U | 6800 |
| Diethyl phthalate | 2800 U | 560 U | 62 U | 2900 U | 2600 U | 620 U |
| Dimethyl phthalate | 2900 U | 580 U | 64 U | 3000 U | 2700 U | 640 U |
| Di-n-butyl phthalate | 2600 U | 500 U | 55 U | 2600 U | 2400 U | 560 U |
| Di-n-octyl phthalate | 2000 U | 400 U | 44 U | 2100 U | 1900 U | 440 U |
| Fluoranthene | 44000 | 68000 A | 12000 A | 56000 | 19000 | 52000 |
| Fluorene | 4700 J | 14000 | 4300 | 21000 | 2300 U | 11000 |
| Hexachlorobenzene | 2800 U | 560 U | 62 U | 2900 U | 2600 U | 620 U |
| Hexachlorobutadiene | 3800 U | 780 U | 86 U | 4000 U | 3700 U | 860 U |
| Hexachlorocyclopentadiene | 14000 U | 2800 U | 310 U | 15000 U | 13000 U | 3100 U |
| Hexachloroethane | 3300 U | 670 U | 74 U | 3500 U | 3200 U | 750 U |
| Indeno(1 2 3-cd)pyrene | 6700 J | 20000 | 5600 M | 11000 J | 6300 J | 11000 |
| Isophorone | 3400 U | 680 U | 76 U | 3600 U | 3200 U | 760 U |
| Naphthalene | 3300 J | 7600 | 2200 | 69000 | 3100 U | 11000 |
| Nitrobenzene | 2300 U | 460 U | 50 U | 2400 U | 2100 U | 510 U |
| n-Nitroso-di-n-propylamine | 2500 U | 510 U | 57 U | 2700 U | 2400 U | 570 U |
| n-Nitrosodiphenylamine | 2800 U | 570 U | 63 U | 3000 U | 2700 U | 630 U |
| Pentachlorophenol | 16000 U | 3300 U | 360 U | 17000 U | 15000 U | 3600 U |
| Phenanthrene | 33000 | 71000 A | 12000 A | 78000 | 13000 J | 59000 |
| Phenol | 5500 U | 1100 U | 120 U | 5800 U | 5200 U | 1200 U |
| Pyrene | 38000 | 64000 A | 8600 A | 43000 | 15000 J | 47000 |
| | | | | | | |
| | 240,300 | 487,200 | 109,530 | 443,900 | 107,600 | 349,600 |
| | 64,300 | 97,150 | 18,274 | 121,000 | 47,900 | 76,750 |

# Queens West Development-Parcel 9

## Composite Soil Pile Samples

Semi-Volatile Organic Compounds

| Sample ID | C-7 | C-8 | C-9 | C-10 |
|---|---|---|---|---|
| Lab Sample Number | 210307-007 | 210307-008 | 210307-009 | 210307-010 |
| Sampling Date | 7/22/2005 | 7/22/2005 | 7/22/2005 | 7/22/2005 |
| Matrix | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | 25 | 25 | 25 | 25 |
| Units | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | | | | |
| 1 2 4-Trichlorobenzene | 2900 U | 2900 U | 3200 U | 3100 U |
| 1 2-Dichlorobenzene | 2900 U | 2900 U | 3200 U | 3100 U |
| 1 3-Dichlorobenzene | 2700 U | 2700 U | 2900 U | 2800 U |
| 1 4-Dichlorobenzene | 2800 U | 2800 U | 3000 U | 2900 U |
| 2 2-oxybis (1-chloropropane) | 2500 U | 2500 U | 2700 U | 2600 U |
| 2 4 5-Trichlorophenol | 6300 U | 6300 U | 6900 U | 6600 U |
| 2 4 6-Trichlorophenol | 4400 U | 4400 U | 4900 U | 4700 U |
| 2 4-Dichlorophenol | 5700 U | 5700 U | 6200 U | 6000 U |
| 2 4-Dimethylphenol | 9000 U | 9000 U | 9800 U | 9400 U |
| 2 4-Dinitrophenol | 6000 U | 6000 U | 6600 U | 6300 U |
| 2 4-Dinitrotoluene | 3100 U | 3100 U | 3400 U | 3300 U |
| 2 6-Dinitrotoluene | 3200 U | 3200 U | 3500 U | 3300 U |
| 2-Chloronaphthalene | 2600 U | 2600 U | 2800 U | 2700 U |
| 2-Chlorophenol | 4500 U | 4500 U | 4900 U | 4700 U |
| 2-Methylnaphthalene | 2900 U | 2900 J | 3000 U | 2900 U |
| 2-Methylphenol | 4600 U | 4600 U | 5100 U | 4900 U |
| 2-Nitroaniline | 2200 U | 2200 U | 2400 U | 2300 U |
| 2-Nitrophenol | 6100 U | 6000 U | 6600 U | 6400 U |
| 3 3-Dichlorobenzidine | 4600 U | 4600 U | 5100 U | 4900 U |
| 3-Nitroaniline | 3600 U | 3600 U | 3900 U | 3800 U |
| 4 6-Dinitro-2-methylphenol | 12000 U | 12000 U | 14000 U | 13000 U |
| 4-Bromophenyl phenyl ether | 2700 U | 2700 U | 2900 U | 2800 U |
| 4-Chloro-3-methylphenol | 6000 U | 5900 U | 6500 U | 6200 U |
| 4-Chloroaniline | 5600 U | 5600 U | 6100 U | 5900 U |
| 4-Chlorophenyl phenyl ether | 2400 U | 2400 U | 2600 U | 2500 U |
| 4-Methylphenol | 9300 U | 9300 U | 10000 U | 9800 U |
| 4-Nitroaniline | 2500 U | 2500 U | 2700 U | 2600 U |
| 4-Nitrophenol | 7400 U | 7400 U | 8100 U | 7800 U |
| Acenaphthene | 2900 U | 7500 J | 3100 U | 3000 U |
| Acenaphthylene | 2100 U | 3200 J | 2300 U | 2200 U |
| Anthracene | 5200 J | 18000 | 3100 U | 3300 J |
| Benzo(a)anthracene | 10000 J | 27000 | 6700 J | 7000 J |
| Benzo(a)pyrene | 7800 JM | 26000 | 5900 J | 6300 J |
| Benzo(b)fluoranthene | 6900 J | 18000 | 5300 U | 5700 JM |
| Benzo(ghi)perylene | 5200 J | 17000 J | 4200 JM | 3400 J |
| Benzo(k)fluoranthene | 5300 J | 24000 | 6200 JM | 4800 J |
| Benzyl alcohol | 3300 U | 3300 U | 3600 U | 3500 U |
| Bis(2-chloroethoxy)methane | 3000 U | 3000 U | 3300 U | 3100 U |
| Bis(2-chloroethyl)ether | 2300 U | 2300 U | 2600 U | 2500 U |
| Bis(2-ethylhexyl)phthalate | 2300 U | 2300 U | 2500 U | 2400 U |
| Butyl benzyl phthalate | 2200 U | 2200 U | 2500 U | 2400 U |
| Carbazole | 2600 U | 8100 J | 2800 U | 2700 U |
| Chrysene | 9300 J | 27000 | 7000 J | 6800 J |
| Dibenzo(a h)anthracene | 1900 U | 3400 JM | 2100 U | 2000 U |
| Dibenzofuran | 2800 U | 7300 J | 3000 U | 2900 U |
| Diethyl phthalate | 2600 U | 2600 U | 2800 U | 2700 U |
| Dimethyl phthalate | 2700 U | 2700 U | 2900 U | 2800 U |
| Di-n-butyl phthalate | 2300 U | 2300 U | 2500 U | 2400 U |
| Di-n-octyl phthalate | 1800 U | 1800 U | 2000 U | 1900 U |
| Fluoranthene | 23000 | 74000 | 13000 J | 15000 J |
| Fluorene | 2200 U | 9000 J | 2600 U | 2400 U |
| Hexachlorobenzene | 2800 U | 2600 U | 2800 U | 2700 U |
| Hexachlorobutadiene | 3600 U | 3500 U | 3900 U | 3700 U |
| Hexachlorocyclopentadiene | 13000 U | 13000 U | 14000 U | 14000 U |
| Hexachloroethane | 3100 U | 3100 U | 3400 U | 3200 U |
| Indeno(1 2 3-cd)pyrene | 6100 JM | 18000 | 4500 J | 4000 J |
| Isophorone | 3100 U | 3100 U | 3400 U | 3300 U |
| Naphthalene | 3000 U | 5600 J | 3300 U | 3100 U |
| Nitrobenzene | 2100 U | 2100 U | 2300 U | 2200 U |
| n-Nitroso-di-n-propylamine | 2300 U | 2300 U | 2600 U | 2500 U |
| n-Nitrosodiphenylamine | 2600 U | 2600 U | 2900 U | 2700 U |
| Pentachlorophenol | 16000 U | 15000 U | 16000 U | 16000 U |
| Phenanthrene | 19000 | 73000 | 9700 J | 9400 J |
| Phenol | 5100 U | 5100 U | 5500 U | 5300 U |
| Pyrene | 19000 H | 65000 | 11000 J | 12000 J |
| | | | | |
| | 115,800 | 431,100 | 68,200 | 77,200 |
| | 47,100 | 119,100 | 36,500 | 37,800 |

# Queens West Development-Parcel 9

## Composite Soil Pile Samples

Metals

| Sample ID | C-1 | C-2 | C-3 | C-4 |
|---|---|---|---|---|
| Lab Sample Number | 210307-001 | 210307-002 | 210307-003 | 210307-004 |
| Sampling Date | 7/22/2005 | 7/22/2005 | 7/22/2005 | 7/22/2005 |
| Matrix | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | 1 | 1 | 1 | 1 |
| Units | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | | | | |
| Aluminum | 4930 | 5430 | 4990 | 5740 |
| Antimony | 1.6 U | 1.3 U | 1.4 U | 1.7 U |
| Arsenic | 9.5 B | 6.2 B | 8.1 B | 9.1 B |
| Barium | 186 | 86.9 | 93.3 | 87.8 |
| Beryllium | 0.7 U | 0.58 U | 0.63 U | 0.73 U |
| Cadmium | 1.4 U | 1.2 U | 1.3 U | 1.5 U |
| Calcium | 9240 | 12200 | 16300 | 20400 |
| Chromium | 13.9 | 13.5 | 12.7 | 16.5 |
| Cobalt | 5.8 | 5.2 | 5.6 | 5.9 |
| Copper | 68.2 | 50.7 | 65.2 | 69.7 |
| Iron | 16700 | 13700 | 15200 | 16000 |
| Lead | 356 | 178 | 187 | 115 |
| Magnesium | 2820 | 2770 | 6520 | 7130 |
| Manganese | 212 | 194 | 194 | 188 |
| Mercury | 1.3 | 1.1 | 0.99 | 2.4 |
| Mercury | 1.3 | 1.1 | 0.99 | 2.4 |
| Nickel | 17.3 | 14.8 | 14.5 | 17.1 |
| Potassium | 647 | 611 | 572 | 832 |
| Selenium | 2.2 U | 1.8 U | 2 U | 2.3 U |
| Silver | 0.45 U | 0.37 U | 0.4 U | 0.47 U |
| Sodium | 93.1 B | 114 | 103 B | 182 |
| Thallium | 3.4 B | 1.8 B | 1.7 U | 2.1 B |
| Vanadium | 24.4 | 19.8 | 24.1 | 25.3 |
| Zinc | 243 | 148 | 169 | 163 |

# Queens West Development-Parcel 9

## Composite Soil Pile Samples

Metals

| Sample ID | C-5 | C-6 | C-7 |
|---|---|---|---|
| Lab Sample Number | 210307-005 | 210307-006 | 210307-007 |
| Sampling Date | 7/22/2005 | 7/22/2005 | 7/22/2005 |
| Matrix | SOIL | SOIL | SOIL |
| Dilution Factor | 1 | 1 | 1 |
| Units | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | | | |
| Aluminum | 5240 | 5410 | 5430 |
| Antimony | 1.1 U | 1.4 U | 1.4 U |
| Arsenic | 9.5 | 9.9 | 8.2 B |
| Barium | 126 | 161 | 151 |
| Beryllium | 0.48 U | 0.62 U | 0.62 U |
| Cadmium | 0.96 U | 1.2 U | 1.2 U |
| Calcium | 24000 | 16900 | 19700 |
| Chromium | 14.8 | 16.2 | 18.1 |
| Cobalt | 5.3 | 6.6 | 6.2 |
| Copper | 72.2 | 83.2 | 73.6 |
| Iron | 22100 | 18200 | 16500 |
| Lead | 194 | 285 | 222 |
| Magnesium | 2460 | 3390 | 4470 |
| Manganese | 225 | 275 | 275 |
| Mercury | 0.8 | 0.64 | 0.56 |
| Mercury | 0.8 | 0.64 | 0.56 |
| Nickel | 16.4 | 19.2 | 22 |
| Potassium | 747 | 763 | 795 |
| Selenium | 1.5 U | 2 U | 2 U |
| Silver | 0.31 U | 0.39 U | 0.4 U |
| Sodium | 264 | 152 | 109 B |
| Thallium | 1.3 U | 1.7 B | 1.6 U |
| Vanadium | 23.7 | 34.9 | 44.5 |
| Zinc | 173 | 213 | 228 |

# Queens West Development-Parcel 9

## Composite Soil Pile Samples

Metals

| Sample ID | C-8 | C-9 | C-10 |
|---|---|---|---|
| Lab Sample Number | 210307-008 | 210307-009 | 210307-010 |
| Sampling Date | 7/22/2005 | 7/22/2005 | 7/22/2005 |
| Matrix | SOIL | SOIL | SOIL |
| Dilution Factor | 1 | 1 | 1 |
| Units | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | | | |
| Aluminum | 5530 | 5460 | 5190 |
| Antimony | 1.5 U | 1.7 U | 1.5 U |
| Arsenic | 13.6 | 8.4 B | 8.7 B |
| Barium | 163 | 140 | 151 |
| Beryllium | 0.66 U | 0.73 U | 0.66 U |
| Cadmium | 1.3 U | 1.5 U | 1.3 U |
| Calcium | 32200 | 54000 | 19500 |
| Chromium | 23.5 | 19.3 | 17.8 |
| Cobalt | 5 | 6.8 | 5.5 |
| Copper | 149 | 66.5 | 72.6 |
| Iron | 19000 | 16800 | 18800 |
| Lead | 340 | 196 | 260 |
| Magnesium | 4200 | 18200 | 5920 |
| Manganese | 320 | 295 | 249 |
| Mercury | 0.51 | 0.56 | 0.46 |
| Mercury | 0.51 | 0.56 | 0.46 |
| Nickel | 19.5 | 52.9 | 18.6 |
| Potassium | 695 | 968 | 749 |
| Selenium | 2.1 U | 2.3 U | 2.1 U |
| Silver | 0.43 U | 0.47 U | 0.42 U |
| Sodium | 262 | 194 | 117 B |
| Thallium | 2.8 B | 3 B | 1.8 U |
| Vanadium | 52.5 | 228 | 35.2 |
| Zinc | 377 | 218 | 253 |

## Queens West Development-Parcel 9
### Soil Gas Samples
Volatile Organic Compounds

| Sample ID | SG-1 | SG-2 | SG-3 | SG-3RE | SG-4 | SG-5 | SG-6 |
|---|---|---|---|---|---|---|---|
| Sampling Date | 7/12/05 | 7/11/05 | 7/12/05 | 7/12/05 | 7/11/05 | 7/11/05 | 7/11/05 |
| Matrix | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | 3 | 10.00 | 200.00 | 200.00 | 3.00 | 2.00 | 2.00 |
| Units | ug/m3 | ug/m3 | ug/m3 | ug/m3 | ug/m3 | ug/m3 | ug/m3 |
| COMPOUND | | | | | | | |
| 1,1,1-Trichloroethane | 3.3 U | 24 | 220 U | 220 U | 3.3 U | 5.5 | 3.1 |
| 1,1,2,2-Tetrachloroethane | 4.1 U | 14 U | 270 U | 270 U | 4.1 U | 2.7 U | 2.7 U |
| 1,1,2-Trichloroethane | 3.3 U | 11 U | 220 U | 220 U | 3.3 U | 2.2 U | 2.2 U |
| 1,1-Dichloroethane | 4.5 | 34 | 160 U | 160 U | 5.3 | 1.6 U | 1.6 U |
| 1,1-Dichloroethene | 2.4 U | 7.9 U | 160 U | 160 U | 2.4 U | 1.6 U | 1.6 U |
| 1,2,4-Trichlorobenzene | 11 U | 37 U | 740 U | 740 U | 11 U | 7.4 U | 7.4 U |
| 1,2,4-Trimethylbenzene | 4.5 | 19 | 200 U | 200 U | 12 | 14 | 18 |
| 1,2-Dibromoethane | 4.6 U | 15 U | 310 U | 310 U | 4.6 U | 3.1 U | 3.1 U |
| 1,2-Dichlorobenzene | 3.6 U | 12 U | 240 U | 240 U | 3.6 U | 2.4 U | 2.4 U |
| 1,2-Dichloroethane | 2.4 U | 8.1 U | 160 U | 160 U | 2.4 U | 1.6 U | 1.6 U |
| 1,2-Dichloroethene (total) | 4.4 | 7.9 U | 160 U | 160 U | 2.4 U | 1.6 U | 1.6 U |
| 1,2-Dichloropropane | 2.8 U | 9.2 U | 180 U | 180 U | 2.8 U | 1.8 U | 1.8 U |
| 1,2-Dichlorotetrafluoroethane | 4.2 U | 14 U | 280 U | 280 U | 4.2 U | 2.8 U | 2.8 U |
| 1,3,5-Trimethylbenzene | 4.5 | 9.8 U | 200 U | 200 U | 3.8 | 3.6 | 4.3 |
| 1,3-Butadiene | 1.3 U | 4.4 U | 88 U | 88 U | 1.3 U | 0.88 U | 0.88 U |
| 1,3-Dichlorobenzene | 3.6 U | 12 U | 240 U | 240 U | 10 | 2.4 U | 2.4 U |
| 1,4-Dichlorobenzene | 3.6 U | 12 U | 240 U | 240 U | 3.6 U | 5.4 | 7.2 |
| 1,4-Dioxane | 54 U | 180 U | 3600 U | 3600 U | 54 U | 36 U | 36 U |
| 2,2,4-Trimethylpentane | 2.8 U | 360 | 190 U | 190 U | 2.8 U | 1.9 U | 1.9 U |
| 2-Chlorotoluene | 3.1 U | 10 U | 210 U | 210 U | 3.1 U | 2.1 U | 2.1 U |
| 3-Chloropropene | 1.9 U | 6.3 U | 130 U | 130 U | 1.9 U | 1.3 U | 1.3 U |
| 4-Ethyltoluene | 4 | 9.8 U | 200 U | 200 U | 8.8 | 9.3 | 10 |
| Acetone | 230 | 500 | 3100 | 3100 | 160 | 100 | 150 |
| Benzene | 89 | 120 | 130 U | 130 U | 80 | 30 | 26 |
| Bromodichloromethane | 4 U | 13 U | 270 U | 270 U | 4 U | 2.7 U | 2.7 U |
| Bromoethene | 2.6 U | 8.7 U | 170 U | 170 U | 2.6 U | 1.7 U | 1.7 U |
| Bromoform | 6.2 U | 21 U | 410 U | 410 U | 6.2 U | 4.1 U | 4.1 U |
| Bromomethane | 2.3 U | 7.8 U | 160 U | 160 U | 2.3 U | 1.6 U | 1.6 U |
| Carbon Disulfide | 34 | 24 | 1300 | 1300 | 28 | 37 | 12 |
| Carbon Tetrachloride | 3.8 U | 13 U | 250 U | 250 U | 3.8 U | 2.5 U | 2.5 U |
| Chlorobenzene | 2.8 U | 9.2 U | 180 U | 180 U | 2.8 U | 1.8 U | 1.8 U |
| Chloroethane | 1.6 U | 5.9 | 110 U | 110 U | 1.6 U | 1.1 U | 1.1 U |
| Chloroform | 2.9 U | 9.8 U | 200 U | 200 U | 16 | 2 U | 2 U |
| Chloromethane | 3.1 U | 10 U | 210 U | 210 U | 3.1 U | 2.1 U | 2.1 U |
| cis-1,2-Dichloroethene | 4.4 | 7.9 U | 160 U | 160 U | 2.4 U | 1.6 U | 1.6 U |
| cis-1,3-Dichloropropene | 2.7 U | 9.1 U | 180 U | 180 U | 2.7 U | 1.8 U | 1.8 U |
| Cyclohexane | 86 | 200 | 22000 | 22000 | 120 | 89 | 69 |
| Dichlorodifluoromethane | 7.4 U | 25 U | 490 U | 490 U | 19 | 5.9 | 5.4 |
| Dibromochloromethane | 5.1 U | 17 U | 340 U | 340 U | 5.1 U | 3.4 U | 3.4 U |
| Ethylbenzene | 4.8 | 9.6 | 170 U | 170 U | 10 | 8.7 | 8.3 |
| Freon TF | 10 | 15 U | 310 U | 310 U | 74 | 74 | 3.1 U |
| Hexachlorobutadiene | 6.4 U | 21 U | 430 U | 430 U | 6.4 U | 4.3 U | 4.3 U |
| Isopropyl Alcohol | 37 U | 120 U | 6100 | 6100 | 37 U | 25 U | 25 U |
| Methyl Butyl Ketone | 6.1 U | 20 U | 410 U | 410 U | 6.1 U | 4.1 U | 4.1 U |
| Methyl Ethyl Ketone | 15 | 26 | 290 U | 290 U | 15 | 11 | 11 |
| Methyl Isobutyl Ketone | 6.1 U | 20 U | 410 U | 410 U | 6.1 U | 4.1 | 4.1 U |
| Methyl tert-Butyl Ether | 7.2 | 18 U | 360 U | 360 U | 7.2 | 24 | 3.6 U |
| Methylene Chloride | 5.2 U | 17 U | 350 | 350 U | 6.6 | 3.5 U | 3.5 U |
| n-Heptane | 17 | 8.2 U | 160 U | 160 U | 25 | 21 | 18 |
| n-Hexane | 70 | 35 | 3900 | 3900 | 20 | 17 | 7 |
| Styrene | 2.6 U | 8.5 U | 170 U | 170 U | 2.6 U | 2 | 1.7 U |
| tert-Butyl Alcohol | 45 U | 150 U | 3000 U | 3000 U | 110 | 76 | 73 |
| Tetrachloroethene | 8.8 | 24 | 270 U | 270 U | 29 | 15 | 17 |
| Tetrahydrofuran | 44 U | 150 U | 2900 U | 2900 U | 44 U | 29 U | 29 U |
| Toluene | 38 | 130 | 750 | 720 | 68 | 72 | 57 |
| trans-1,2-Dichloroethene | 2.4 U | 7.9 U | 160 U | 160 U | 2.4 U | 1.6 U | 1.6 U |
| trans-1,3-Dichloropropene | 2.7 U | 9.1 U | 180 U | 180 U | 2.7 U | 1.8 U | 1.8 U |
| Trichloroethene | 9.1 | 11 U | 210 U | 210 U | 8.1 | 3.8 | 2.1 U |
| Trichlorofluoromethane | 21 | 210 | 220 U | 220 U | 29 | 160 | 79 |
| Vinyl Chloride | 1.5 U | 5.1 U | 100 U | 100 U | 1.5 U | 1 U | 1 U |
| Xylene (m,p) | 15 | 27 | 200 | 190 | 33 | 26 | 28 |
| Xylene (o) | 6.9 | 9.6 | 170 U | 170 U | 13 | 9.1 | 11 |
| Xylene (total) | 22 | 38 | 200 | 190 | 48 | 36 | 40 |

## Queens West Development-Parcel 9
### Soil Gas Samples
Volatile Organic Compounds

| Sample ID | SG-7 | SG-8 | SG-9 | SG-10 | SG-11 | SG-12 | SG-13 |
|---|---|---|---|---|---|---|---|
| Sampling Date | 7/11/05 | 7/12/05 | 7/12/05 | 7/11/05 | 7/11/05 | 7/12/05 | 7/12/05 |
| Matrix | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | 3.00 | 5.00 | 10.00 | 10.00 | 65.40 | 1.50 | 5.00 |
| Units | ug/m3 | ug/m3 | ug/m3 | ug/m3 | ug/m3 | ug/m3 | ug/m3 |
| COMPOUND | | | | | | | |
| 1,1,1-Trichloroethane | 3.3 U | 16 | 17 | 11 U | 71 U | 1.6 U | 5.5 U |
| 1,1,2,2-Tetrachloroethane | 4.1 U | 6.9 U | 14 U | 14 U | 89 U | 2.1 U | 6.9 U |
| 1,1,2-Trichloroethane | 3.3 U | 5.5 U | 11 U | 11 U | 71 U | 1.6 U | 5.5 U |
| 1,1-Dichloroethane | 2.4 U | 4 U | 8.1 U | 8.1 U | 53 U | 1.2 U | 4 U |
| 1,1-Dichloroethene | 2.4 U | 4 U | 7.9 U | 7.9 U | 52 U | 1.2 U | 4 U |
| 1,2,4-Trichlorobenzene | 11 U | 19 U | 37 U | 37 U | 240 U | 5.6 U | 19 U |
| 1,2,4-Trimethylbenzene | 21 | 9.3 | 9.8 U | 79 | 64 U | 2.9 | 4.9 U |
| 1,2-Dibromoethane | 4.6 U | 7.7 U | 15 U | 15 U | 100 U | 2.3 U | 7.7 U |
| 1,2-Dichlorobenzene | 3.6 U | 6 U | 12 U | 12 U | 78 U | 1.8 U | 6 U |
| 1,2-Dichloroethane | 2.4 U | 4 U | 8.1 U | 8.1 U | 53 U | 1.2 U | 4 U |
| 1,2-Dichloroethene (total) | 2.4 U | 4 U | 7.9 U | 7.9 U | 3400 | 1.2 U | 4 U |
| 1,2-Dichloropropane | 2.8 U | 4.6 U | 9.2 U | 9.2 U | 60 U | 1.4 U | 4.6 U |
| 1,2-Dichlorotetrafluoroethane | 4.2 U | 7 U | 14 U | 14 U | 91 U | 2.1 U | 7 U |
| 1,3,5-Trimethylbenzene | 5.4 | 4.9 U | 9.8 U | 33 | 64 U | 1.5 U | 4.9 U |
| 1,3-Butadiene | 1.3 U | 2.2 U | 4.4 U | 4.4 U | 29 U | 0.66 U | 2.2 U |
| 1,3-Dichlorobenzene | 4.5 | 6 U | 12 U | 12 U | 78 U | 1.8 U | 6 U |
| 1,4-Dichlorobenzene | 8 | 6 U | 12 U | 12 U | 78 U | 1.8 U | 6 U |
| 1,4-Dioxane | 54 U | 90 U | 180 U | 180 U | 1200 U | 27 U | 90 U |
| 2,2,4-Trimethylpentane | 2.8 U | 4.7 U | 9.3 U | 9.3 U | 61 U | 1.4 U | 4.7 U |
| 2-Chlorotoluene | 3.1 U | 5.2 U | 10 U | 10 U | 67 U | 1.6 U | 5.2 U |
| 3-Chloropropene | 1.9 U | 3.1 U | 6.3 U | 6.3 U | 41 U | 0.94 U | 3.1 U |
| 4-Ethyltoluene | 11 | 9.3 | 9.8 U | 43 | 64 U | 2.8 | 4.9 U |
| Acetone | 160 | 310 | 780 | 550 | 780 U | 130 | 310 |
| Benzene | 3.2 | 19 | 100 | 8.9 | 42 U | 5.8 | 3.2 U |
| Bromodichloromethane | 4 U | 6.7 U | 13 U | 13 U | 87 U | 2 U | 6.7 U |
| Bromoethene | 2.6 U | 4.4 U | 8.7 U | 8.7 U | 57 U | 1.3 U | 4.4 U |
| Bromoform | 6.2 U | 10 U | 21 U | 21 U | 130 U | 3.1 U | 10 U |
| Bromomethane | 2.3 U | 3.9 U | 7.8 U | 7.8 U | 50 U | 1.2 U | 3.9 U |
| Carbon Disulfide | 11 | 47 | 75 | 62 | 100 U | 9.3 | 29 |
| Carbon Tetrachloride | 3.8 U | 6.3 U | 13 U | 13 U | 82 U | 1.9 U | 6.3 U |
| Chlorobenzene | 2.8 U | 4.6 U | 9.2 U | 9.2 U | 60 U | 1.4 U | 4.6 U |
| Chloroethane | 1.6 U | 2.6 U | 5.3 U | 5.3 U | 34 U | 0.79 U | 2.6 U |
| Chloroform | 3.8 | 27 | 59 | 39 | 63 U | 18 | 4.9 U |
| Chloromethane | 3.1 U | 5.2 U | 10 U | 10 U | 68 U | 1.5 U | 5.2 U |
| cis-1,2-Dichloroethene | 2.4 U | 4 U | 7.9 U | 7.9 U | 3100 | 1.2 U | 4 U |
| cis-1,3-Dichloropropene | 2.7 U | 4.5 U | 9.1 U | 9.1 U | 59 U | 1.4 U | 4.5 U |
| Cyclohexane | 65 | 160 | 55 | 29 | 59 | 15 | 55 |
| Dichlorodifluoromethane | 7.4 U | 45 | 25 U | 44 | 160 U | 120 | 320 |
| Dibromochloromethane | 5.1 U | 8.5 U | 17 U | 17 U | 110 U | 2.6 U | 8.5 U |
| Ethylbenzene | 7.8 | 14 | 14 | 12 | 56 U | 5.2 | 4.3 U |
| Freon TF | 4.6 U | 110 | 77 | 15 U | 100 U | 2.3 U | 7.7 U |
| Hexachlorobutadiene | 6.4 U | 11 U | 21 U | 21 U | 140 U | 3.2 U | 11 U |
| Isopropyl Alcohol | 37 U | 61 U | 120 U | 120 U | 810 U | 18 U | 61 U |
| Methyl Butyl Ketone | 6.1 U | 10 U | 20 U | 20 U | 140 U | 6.1 | 10 U |
| Methyl Ethyl Ketone | 10 | 21 | 23 | 22 | 97 U | 18 | 15 |
| Methyl Isobutyl Ketone | 6.1 U | 10 U | 20 U | 20 U | 140 U | 3.1 U | 10 U |
| Methyl tert-Butyl Ether | 5.4 U | 9 U | 18 U | 18 U | 120 U | 2.7 U | 9 U |
| Methylene Chloride | 5.2 U | 8.7 U | 17 U | 17 U | 110 U | 2.6 U | 8.7 U |
| n-Heptane | 19 | 78 | 45 | 49 | 120 | 26 | 12 |
| n-Hexane | 10 | 16 | 27 | 8.8 | 46 U | 6.7 | 6.3 |
| Styrene | 2.6 U | 8.5 | 8.5 U | 11 | 55 U | 2.4 | 4.3 U |
| tert-Butyl Alcohol | 67 | 150 | 150 U | 150 U | 1000 U | 23 U | 76 U |
| Tetrachloroethene | 290 | 35 | 15 | 22 | 3900 | 6 | 6.8 U |
| Tetrahydrofuran | 44 U | 74 U | 150 U | 150 U | 970 U | 22 U | 74 U |
| Toluene | 100 | 72 | 98 | 29 | 49 U | 35 | 45 |
| trans-1,2-Dichloroethene | 2.4 U | 4 U | 7.9 U | 7.9 U | 270 | 1.2 U | 4 U |
| trans-1,3-Dichloropropene | 2.7 U | 4.5 U | 9.1 U | 9.1 U | 59 U | 1.4 U | 4.5 U |
| Trichloroethene | 45 | 10 | 11 U | 11 U | 590 | 1.6 U | 5.4 U |
| Trichlorofluoromethane | 6.2 | 340 | 200 | 90 | 73 U | 84 | 17 |
| Vinyl Chloride | 1.5 U | 2.6 U | 5.1 U | 5.1 U | 33 U | 0.77 U | 2.6 U |
| Xylene (m,p) | 26 | 38 | 40 | 42 | 56 U | 13 | 10 |
| Xylene (o) | 9.8 | 13 | 20 | 33 | 56 U | 5.2 | 4.3 U |
| Xylene (total) | 36 | 52 | 61 | 78 | 56 U | 18 | 10 |

## Queens West Development-Parcel 9
### Soil Gas Samples
Volatile Organic Compounds

| Sample ID | AS-1 | AS-2 | SG-11-2 |
|---|---|---|---|
| Sampling Date | 7/11/05 | 7/12/05 | 8/2/05 |
| Matrix | SOIL | SOIL | SOIL |
| Dilution Factor | 1.00 | 1.00 | 65.8 |
| Units | ug/m3 | ug/m3 | ug/m3 |
| COMPOUND | | | |
| 1,1,1-Trichloroethane | 1.1 U | 1.1 U | 13 U |
| 1,1,2,2-Tetrachloroethane | 1.4 U | 1.4 U | 13 U |
| 1,1,2-Trichloroethane | 1.1 U | 1.1 U | 13 U |
| 1,1-Dichloroethane | 0.81 U | 0.81 U | 13 U |
| 1,1-Dichloroethene | 0.79 U | 0.79 U | 13 U |
| 1,2,4-Trichlorobenzene | 3.7 U | 3.7 U | 33 U |
| 1,2,4-Trimethylbenzene | 0.98 U | 1.8 | 13 U |
| 1,2-Dibromoethane | 1.5 U | 1.5 U | 13 U |
| 1,2-Dichlorobenzene | 1.2 U | 1.2 U | 13 U |
| 1,2-Dichloroethane | 0.81 U | 0.81 U | 13 U |
| 1,2-Dichloroethene (total) | 0.79 U | 0.79 U | 1500 |
| 1,2-Dichloropropane | 0.92 U | 0.92 U | 13 U |
| 1,2-Dichlorotetrafluoroethane | 1.4 U | 1.4 U | 13 U |
| 1,3,5-Trimethylbenzene | 0.98 U | 0.98 U | 13 U |
| 1,3-Butadiene | 0.44 U | 0.44 U | 13 U |
| 1,3-Dichlorobenzene | 1.2 U | 1.2 U | 13 U |
| 1,4-Dichlorobenzene | 1.2 U | 1.2 U | 13 U |
| 1,4-Dioxane | 18 U | 18 U | 330 U |
| 2,2,4-Trimethylpentane | 0.93 U | 0.93 U | 13 U |
| 2-Chlorotoluene | 1 U | 1 U | 13 U |
| 3-Chloropropene | 0.63 U | 0.63 U | 13 U |
| 4-Ethyltoluene | 0.98 U | 1.5 | 13 U |
| Acetone | 14 | 22 | 330 U |
| Benzene | 0.64 U | 0.93 | 13 U |
| Bromodichloromethane | 1.3 U | 1.3 U | 13 U |
| Bromoethene | 0.87 U | 0.87 U | 13 U |
| Bromoform | 2.1 U | 2.1 U | 13 U |
| Bromomethane | 0.78 U | 0.78 U | 13 U |
| Carbon Disulfide | 1.6 U | 1.6 U | 33 U |
| Carbon Tetrachloride | 1.3 U | 1.3 U | 13 U |
| Chlorobenzene | 0.92 U | 0.92 U | 13 U |
| Chloroethane | 0.53 U | 0.53 U | 33 U |
| Chloroform | 0.98 U | 0.98 U | 13 U |
| Chloromethane | 1.1 | 1.3 | 33 U |
| cis-1,2-Dichloroethene | 0.79 U | 0.79 U | 1400 |
| cis-1,3-Dichloropropene | 0.91 U | 0.91 U | 13 U |
| Cyclohexane | 0.69 U | 0.69 U | 13 U |
| Dichlorodifluoromethane | 2.7 | 3.1 | 33 U |
| Dibromochloromethane | 1.7 U | 1.7 U | 13 U |
| Ethylbenzene | 1.2 | 0.87 U | 13 U |
| Freon TF | 1.5 U | 1.5 U | 13 U |
| Hexachlorobutadiene | 2.1 U | 2.1 U | 13 U |
| Isopropyl Alcohol | 12 U | 12 U | 330 U |
| Methyl Butyl Ketone | 2 U | 5.3 | 33 U |
| Methyl Ethyl Ketone | 1.9 | 2.6 | 33 U |
| Methyl Isobutyl Ketone | 2 U | 3.9 | 33 U |
| Methyl tert-Butyl Ether | 1.8 U | 1.8 U | 33 U |
| Methylene Chloride | 2.1 | 4.2 | 33 U |
| n-Heptane | 1 | 1.1 | 13 U |
| n-Hexane | 1 | 2.4 | 13 U |
| Styrene | 0.85 U | 0.85 U | 13 U |
| tert-Butyl Alcohol | 15 U | 15 U | 330 U |
| Tetrachloroethene | 1.4 U | 5.5 | 480 |
| Tetrahydrofuran | 15 U | 15 U | 330 U |
| Toluene | 2.4 | 14 | 13 U |
| trans-1,2-Dichloroethene | 0.79 U | 0.79 U | 120 |
| trans-1,3-Dichloropropene | 0.91 U | 0.91 U | 13 U |
| Trichloroethene | 1.1 U | 1.5 | 160 |
| Trichlorofluoromethane | 1.7 | 2 | 13 U |
| Vinyl Chloride | 0.51 U | 0.51 U | 13 U |
| Xylene (m,p) | 3.7 | 2.4 | 13 U |
| Xylene (o) | 1.1 | 1 | 13 U |
| Xylene (total) | 4.8 | 3.5 | 13 U |

Qualifiers

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NR - Not analyzed

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-1(0-2) | P-1(6-8) | P-1(8-10) | P-1(8-10)DL |
|---|---|---|---|---|---|
| Lab Sample Number | | T2561-19 | T2561-20 | T2561-21 | T2561-21DL |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.42 U | 0.42 U | 0.42 U | 11 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.31 U | 0.31 U | 0.31 U | 7.9 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.29 U | 0.29 U | 0.29 U | 7.5 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.66 U | 0.66 U | 0.66 U | 17 U |
| 1,1-Dichloroethane | 75-34-3 | 0.27 U | 0.27 U | 0.27 U | 6.9 U |
| 1,1-Dichloroethene | 75-35-4 | 0.57 U | 0.57 U | 0.57 U | 15 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.68 U | 0.68 U | 0.68 U | 17 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 0.94 U | 0.94 U | 0.94 U | 24 U |
| 1,2-Dibromoethane | 106-93-4 | 0.40 U | 0.40 U | 0.40 U | 10 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.39 U | 0.38 U | 0.38 U | 9.8 U |
| 1,2-Dichloroethane | 107-06-2 | 0.31 U | 0.31 U | 0.31 U | 7.8 U |
| 1,2-Dichloropropane | 78-87-5 | 0.40 U | 0.39 U | 0.39 U | 10 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.56 U | 0.55 U | 0.55 U | 14 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.55 U | 0.54 U | 0.54 U | 14 U |
| 2-Butanone | 78-93-3 | 2.8 U | 2.8 U | 2.8 U | 72 U |
| 2-Hexanone | 591-78-6 | 3.6 U | 3.6 U | 3.6 U | 92 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.0 U | 2.0 U | 2.0 U | 50 U |
| Acetone | 67-64-1 | 11 J | 5.3 J | 14 J | 240 JD |
| Benzene | 71-43-2 | 0.40 U | 0.40 U | 0.40 U | 10 U |
| Bromodichloromethane | 75-27-4 | 0.34 U | 0.33 U | 0.33 U | 8.5 U |
| Bromoform | 75-25-2 | 0.31 U | 0.31 U | 0.31 U | 7.9 U |
| Bromomethane | 74-83-9 | 2.0 U | 2.0 U | 2.0 U | 52 U |
| Carbon Disulfide | 75-15-0 | 0.37 U | 0.37 U | 0.37 U | 9.4 U |
| Carbon Tetrachloride | 56-23-5 | 0.44 U | 0.44 U | 0.44 U | 11 U |
| Chlorobenzene | 108-90-7 | 0.36 U | 0.36 U | 0.36 U | 9.2 U |
| Chloroethane | 75-00-3 | 2.1 U | 2.1 U | 2.1 U | 54 U |
| Chloroform | 67-66-3 | 0.35 U | 0.35 U | 0.35 U | 8.9 U |
| Chloromethane | 74-87-3 | 0.85 U | 0.85 U | 0.85 U | 22 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.32 U | 0.32 U | 0.32 U | 8.3 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.33 U | 0.33 U | 0.33 U | 8.4 U |
| Cyclohexane | 110-82-7 | 0.32 U | 0.32 U | 18 | 60 JD |
| Dibromochloromethane | 124-48-1 | 0.23 U | 0.23 U | 0.23 U | 5.9 U |
| Dichlorodifluoromethane | 75-71-8 | 0.86 U | 0.85 U | 0.85 U | 22 U |
| Ethyl Benzene | 100-41-4 | 0.35 U | 0.35 U | 1.8 J | 9.0 U |
| Isopropylbenzene | 98-82-8 | 0.42 U | 0.41 U | 1.7 J | 11 U |
| m/p-Xylenes | 126777-61-2 | 0.86 U | 0.86 U | 2 J | 22 U |
| Methyl Acetate | 79-20-9 | 0.86 U | 0.86 U | 0.86 U | 22 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.37 U | 0.37 U | 0.37 U | 9.4 U |
| Methylcyclohexane | 108-87-2 | 0.42 U | 0.42 U | 60 | 340 D |
| Methylene Chloride | 75-09-2 | 1.8 U | 1.8 U | 1.9 J | 140 D |
| o-Xylene | 95-47-6 | 0.38 U | 0.38 U | 1.0 J | 9.8 U |
| Styrene | 100-42-5 | 0.46 U | 0.46 U | 0.46 U | 12 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.36 U | 0.36 U | 0.36 U | 9.3 U |
| Tetrachloroethene | 127-18-4 | 0.73 U | 0.73 U | 0.73 U | 19 U |
| Toluene | 108-88-3 | 0.40 U | 0.40 U | 1.0 J | 10 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.64 U | 0.64 U | 0.64 U | 16 U |
| Trichloroethene | 79-01-6 | 0.31 U | 0.31 U | 0.31 U | 7.9 U |
| Trichlorofluoromethane | 75-69-4 | 1.2 U | 1.2 U | 1.2 U | 32 U |
| Vinyl Chloride | 75-01-4 | 0.82 U | 0.82 U | 0.82 U | 21 U |

| | | | | |
|---|---|---|---|---|
| | 11 | 5.3 | 101.4 | 780 |
| | 59.7 | 0 | 3500 | 71900 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-1(10-12) | P-1(12-14) | P-1(14-16) | P-1(16-18) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2561-22 | T2561-23 | T2561-24 | T2561-25 |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.29 U | 0.29 U | 0.29 U | 0.29 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.66 U | 0.66 U | 0.66 U | 0.66 U |
| 1,1-Dichloroethane | 75-34-3 | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,1-Dichloroethene | 75-35-4 | 0.57 U | 0.57 U | 0.57 U | 0.57 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.68 U | 0.68 U | 0.68 U | 0.68 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 0.94 U | 0.94 U | 0.94 U | 0.94 U |
| 1,2-Dibromoethane | 106-93-4 | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.38 U | 0.38 U | 0.38 U | 0.38 U |
| 1,2-Dichloroethane | 107-06-2 | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| 1,2-Dichloropropane | 78-87-5 | 0.40 U | 0.39 U | 0.40 U | 0.39 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.56 U | 0.55 U | 0.56 U | 0.55 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| 2-Butanone | 78-93-3 | 2.8 U | 2.8 U | 2.8 U | 2.8 U |
| 2-Hexanone | 591-78-6 | 3.6 U | 3.6 U | 3.6 U | 3.6 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.0 U | 2.0 U | 2.0 U | 2.0 U |
| Acetone | 67-64-1 | 14 J | 18 J | 20 J | 23 J |
| Benzene | 71-43-2 | 0.40 U | 2.6 J | 43 | 60 |
| Bromodichloromethane | 75-27-4 | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Bromoform | 75-25-2 | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| Bromomethane | 74-83-9 | 2.0 U | 2.0 U | 2.0 U | 2.0 U |
| Carbon Disulfide | 75-15-0 | 0.37 U | 0.37 U | 4.1 J | 4.3 J |
| Carbon Tetrachloride | 56-23-5 | 0.44 U | 0.44 U | 0.44 U | 0.44 U |
| Chlorobenzene | 108-90-7 | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| Chloroethane | 75-00-3 | 2.1 U | 2.1 U | 2.1 U | 2.1 U |
| Chloroform | 67-66-3 | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| Chloromethane | 74-87-3 | 0.85 U | 0.85 U | 0.85 U | 0.85 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.32 U | 0.32 U | 0.32 U | 0.32 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Cyclohexane | 110-82-7 | 0.32 U | 0.32 U | 3.0 J | 0.32 U |
| Dibromochloromethane | 124-48-1 | 0.23 U | 0.23 U | 0.23 U | 0.23 U |
| Dichlorodifluoromethane | 75-71-8 | 0.85 U | 0.85 U | 0.85 U | 0.85 U |
| Ethyl Benzene | 100-41-4 | 0.35 U | 0.35 U | 46 | 25 |
| Isopropylbenzene | 98-82-8 | 0.41 U | 0.41 U | 7.1 | 2.8 J |
| m/p-Xylenes | 126777-61-2 | 0.86 U | 0.86 U | 11 | 5.3 |
| Methyl Acetate | 79-20-9 | 0.86 U | 0.86 U | 0.86 U | 0.86 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Methylcyclohexane | 108-87-2 | 0.42 U | 0.42 U | 6.0 | 0.42 U |
| Methylene Chloride | 75-09-2 | 2.4 J | 3.0 J | 2.6 J | 3.3 J |
| o-Xylene | 95-47-6 | 0.38 U | 0.38 U | 2.2 J | 0.38 U |
| Styrene | 100-42-5 | 0.46 U | 0.46 U | 0.46 U | 0.46 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| Tetrachloroethene | 127-18-4 | 0.73 U | 0.73 U | 0.73 U | 0.73 U |
| Toluene | 108-88-3 | 0.40 U | 0.40 U | 2.2 J | 0.40 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Trichloroethene | 79-01-6 | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| Trichlorofluoromethane | 75-69-4 | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| Vinyl Chloride | 75-01-4 | 0.82 U | 0.82 U | 0.82 U | 0.82 U |

| | | | | |
|---|---|---|---|---|
| | 16.4 | 23.6 | 147.2 | 123.7 |
| | 0 | 0 | 693 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-1(18-20) | P-1(22-24) | P-1(24-26) | P-1(26-28) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2561-25 | T2561-27 | T2561-28 | T2561-29 |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.29 U | 0.29 U | 0.30 U | 0.29 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.66 U | 0.67 U | 0.67 U | 0.67 U |
| 1,1-Dichloroethane | 75-34-3 | 0.27 U | 0.27 U | 0.27 U | 0.27 U |
| 1,1-Dichloroethene | 75-35-4 | 0.57 U | 0.57 U | 0.58 U | 0.57 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.68 U | 0.68 U | 0.69 U | 0.68 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 0.94 U | 0.94 U | 0.95 U | 0.94 U |
| 1,2-Dibromoethane | 106-93-4 | 0.40 U | 0.40 U | 0.41 U | 0.40 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.39 U | 0.39 U | 0.39 U | 0.39 U |
| 1,2-Dichloroethane | 107-06-2 | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| 1,2-Dichloropropane | 78-87-5 | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.56 U | 0.56 U | 0.56 U | 0.56 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.55 U | 0.55 U | 0.55 U | 0.55 U |
| 2-Butanone | 78-93-3 | 2.8 U | 2.8 U | 2.8 U | 2.8 U |
| 2-Hexanone | 591-78-6 | 3.6 U | 3.6 U | 3.6 U | 3.6 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.0 U | 2.0 U | 2.0 U | 2.0 U |
| Acetone | 67-64-1 | 12 J | 10 J | 9.7 J | 8.9 J |
| Benzene | 71-43-2 | 8.4 | 0.40 U | 11 | 16 |
| Bromodichloromethane | 75-27-4 | 0.34 U | 0.34 U | 0.34 U | 0.34 U |
| Bromoform | 75-25-2 | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| Bromomethane | 74-83-9 | 2.0 U | 2.0 U | 2.0 U | 2.0 U |
| Carbon Disulfide | 75-15-0 | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Carbon Tetrachloride | 56-23-5 | 0.44 U | 0.44 U | 0.45 U | 0.44 U |
| Chlorobenzene | 108-90-7 | 0.36 U | 0.36 U | 0.36 U | 0.36 U |
| Chloroethane | 75-00-3 | 2.1 U | 2.1 U | 2.2 U | 2.1 U |
| Chloroform | 67-66-3 | 0.35 U | 0.35 U | 0.35 U | 0.35 U |
| Chloromethane | 74-87-3 | 0.85 U | 0.85 U | 0.86 U | 0.85 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.32 U | 0.33 U | 0.33 U | 0.33 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Cyclohexane | 110-82-7 | 0.32 U | 0.32 U | 0.33 U | 0.32 U |
| Dibromochloromethane | 124-48-1 | 0.23 U | 0.23 U | 0.23 U | 0.23 U |
| Dichlorodifluoromethane | 75-71-8 | 0.86 U | 0.86 U | 0.86 U | 0.86 U |
| Ethyl Benzene | 100-41-4 | 5.8 | 2.1 J | 3.3 J | 7.5 |
| Isopropylbenzene | 98-82-8 | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| m/p-Xylenes | 126777-61-2 | 1.8 J | 1.2 J | 1.9 J | 5 |
| Methyl Acetate | 79-20-9 | 0.86 U | 0.87 U | 0.87 U | 0.87 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.37 U | 0.37 U | 0.37 U | 0.37 U |
| Methylcyclohexane | 108-87-2 | 0.42 U | 0.42 U | 0.42 U | 0.42 U |
| Methylene Chloride | 75-09-2 | 2.1 J | 2.8 J | 3.3 J | 1.8 U |
| o-Xylene | 95-47-6 | 0.38 U | 0.38 U | 0.39 U | 2.2 J |
| Styrene | 100-42-5 | 0.46 U | 0.46 U | 0.46 U | 0.46 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.36 U | 0.36 U | 0.37 U | 0.36 U |
| Tetrachloroethene | 127-18-4 | 0.73 U | 0.73 U | 0.74 U | 0.73 U |
| Toluene | 108-88-3 | 0.40 U | 0.41 U | 0.41 U | 1.6 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.64 U | 0.64 U | 0.64 U | 0.64 U |
| Trichloroethene | 79-01-6 | 0.31 U | 0.31 U | 0.31 U | 0.31 U |
| Trichlorofluoromethane | 75-69-4 | 1.2 U | 1.2 U | 1.3 U | 1.2 U |
| Vinyl Chloride | 75-01-4 | 0.82 U | 0.82 U | 0.83 U | 0.82 U |

| | | | | |
|---|---|---|---|---|
| | 30.1 | 16.1 | 29.2 | 41.2 |
| | 0 | 0 | 18.3 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-2(0-2) | P-2(2-4) | P-2(2-4)RE | P-2(4-6) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2581-01 | T2581-02 | T2581-02RE | T2581-03 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.46 U | 0.46 U | 0.46 U | 0.49 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.34 U | 0.34 U | 0.34 U | 0.37 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.32 U | 0.32 U | 0.32 U | 0.35 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.73 U | 0.73 U | 0.73 U | 0.78 U |
| 1,1-Dichloroethane | 75-34-3 | 0.30 U | 0.30 U | 0.30 U | 0.32 U |
| 1,1-Dichloroethene | 75-35-4 | 0.63 U | 0.63 U | 0.63 U | 0.67 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.75 U | 0.75 U | 0.75 U | 0.80 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.0 U | 1.0 U | 1.0 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.44 U | 0.44 U | 0.44 U | 0.47 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.42 U | 0.42 U | 0.42 U | 0.45 U |
| 1,2-Dichloroethane | 107-06-2 | 0.34 U | 0.34 U | 0.34 U | 0.36 U |
| 1,2-Dichloropropane | 78-87-5 | 0.44 U | 0.44 U | 0.44 U | 0.47 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.61 U | 0.61 U | 0.61 U | 0.66 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.60 U | 0.60 U | 0.60 U | 0.64 U |
| 2-Butanone | 78-93-3 | 3.1 U | 3.1 U | 3.1 U | 3.3 U |
| 2-Hexanone | 591-78-6 | 4.0 U | 4.0 U | 4.0 U | 4.2 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.2 U | 2.2 U | 2.2 U | 2.3 U |
| Acetone | 67-64-1 | 5.6 JB | 5.5 JB | 9.1 JB | 17 JB |
| Benzene | 71-43-2 | 0.44 U | 0.44 U | 0.44 U | 7.9 |
| Bromodichloromethane | 75-27-4 | 0.37 U | 0.37 U | 0.37 U | 0.39 U |
| Bromoform | 75-25-2 | 0.34 U | 0.34 U | 0.34 U | 0.36 U |
| Bromomethane | 74-83-9 | 2.2 U | 2.2 U | 2.2 U | 2.4 U |
| Carbon Disulfide | 75-15-0 | 0.40 U | 0.40 U | 0.40 U | 0.43 U |
| Carbon Tetrachloride | 56-23-5 | 0.49 U | 0.49 U | 0.49 U | 0.52 U |
| Chlorobenzene | 108-90-7 | 0.40 U | 0.40 U | 0.40 U | 0.43 U |
| Chloroethane | 75-00-3 | 2.3 U | 2.3 U | 2.3 U | 2.5 U |
| Chloroform | 67-66-3 | 0.38 U | 0.38 U | 0.38 U | 0.41 U |
| Chloromethane | 74-87-3 | 0.94 U | 0.94 U | 0.94 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.36 U | 0.36 U | 0.36 U | 0.38 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.36 U | 0.36 U | 0.36 U | 0.39 U |
| Cyclohexane | 110-82-7 | 0.36 U | 0.36 U | 0.36 U | 0.38 U |
| Dibromochloromethane | 124-48-1 | 0.25 U | 0.25 U | 0.25 U | 0.27 U |
| Dichlorodifluoromethane | 75-71-8 | 0.94 U | 0.94 U | 0.94 U | 1.0 U |
| Ethyl Benzene | 100-41-4 | 1.1 J | 1.4 J | 2.0 J | 0.42 U |
| Isopropylbenzene | 98-82-8 | 0.46 U | 0.46 U | 0.46 U | 0.49 U |
| m/p-Xylenes | 126777-61-2 | 1.7 J | 2.4 J | 4.1 J | 2.1 J |
| Methyl Acetate | 79-20-9 | 0.95 U | 0.95 U | 0.95 U | 1.0 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.40 U | 0.40 U | 0.40 U | 0.43 U |
| Methylcyclohexane | 108-87-2 | 0.46 U | 0.46 U | 0.46 U | 0.49 U |
| Methylene Chloride | 75-09-2 | 2.6 JB | 2.3 JB | 8.5 B | 3.4 JB |
| o-Xylene | 95-47-6 | 0.42 U | 0.42 U | 1.2 J | 1.2 J |
| Styrene | 100-42-5 | 0.51 U | 0.51 U | 0.51 U | 0.54 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.40 U | 0.40 U | 0.40 U | 0.43 U |
| Tetrachloroethene | 127-18-4 | 0.80 U | 0.80 U | 0.80 U | 0.86 U |
| Toluene | 108-88-3 | 0.45 U | 0.45 U | 1.1 J | 1.8 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.70 U | 0.70 U | 0.70 U | 0.75 U |
| Trichloroethene | 79-01-6 | 0.34 U | 0.34 U | 0.34 U | 0.36 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 1.4 U | 1.4 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 0.90 U | 0.90 U | 0.90 U | 0.97 U |

| | | | | |
|---|---|---|---|---|
| | 11 | 11.6 | 26 | 33.4 |
| | 0 | 64 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-2(6-8) | P-2(8-10) | P-2(10-12) | P-2(12-14) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2581-04 | T2581-05 | T2581-06 | T2581-07 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 5.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 2.5 U | 310 U | 300 U | 65 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1.9 U | 370 U | 370 U | 78 U |
| 1,1,2-Trichloroethane | 79-00-5 | 1.8 U | 390 U | 380 U | 82 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 4.0 U | 520 U | 520 U | 110 U |
| 1,1-Dichloroethane | 75-34-3 | 1.6 U | 160 U | 160 U | 34 U |
| 1,1-Dichloroethene | 75-35-4 | 3.5 U | 240 U | 240 U | 51 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 4.1 U | 220 U | 210 U | 45 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 5.7 U | 700 U | 700 U | 150 U |
| 1,2-Dibromoethane | 106-93-4 | 2.4 U | 480 U | 470 U | 100 U |
| 1,2-Dichlorobenzene | 95-50-1 | 2.3 U | 280 U | 270 U | 58 U |
| 1,2-Dichloroethane | 107-06-2 | 1.8 U | 240 U | 240 U | 51 U |
| 1,2-Dichloropropane | 78-87-5 | 2.4 U | 240 U | 240 U | 50 U |
| 1,3-Dichlorobenzene | 541-73-1 | 3.4 U | 280 U | 280 U | 59 U |
| 1,4-Dichlorobenzene | 106-46-7 | 3.3 U | 290 U | 290 U | 61 U |
| 2-Butanone | 78-93-3 | 17 U | 2100 U | 2100 U | 450 U |
| 2-Hexanone | 591-78-6 | 22 U | 500 U | 490 U | 100 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 12 U | 1000 U | 980 U | 210 U |
| Acetone | 67-64-1 | 55 JB | 2500 U | 2500 U | 520 U |
| Benzene | 71-43-2 | 640 | 25000 | 22000 | 1500 |
| Bromodichloromethane | 75-27-4 | 2.0 U | 260 U | 260 U | 55 U |
| Bromoform | 75-25-2 | 1.9 U | 190 U | 190 U | 40 U |
| Bromomethane | 74-83-9 | 12 U | 590 U | 580 U | 120 U |
| Carbon Disulfide | 75-15-0 | 2.2 U | 290 U | 290 U | 62 U |
| Carbon Tetrachloride | 56-23-5 | 2.7 U | 350 U | 350 U | 74 U |
| Chlorobenzene | 108-90-7 | 2.2 U | 280 U | 270 U | 58 U |
| Chloroethane | 75-00-3 | 13 U | 660 U | 660 U | 140 U |
| Chloroform | 67-66-3 | 2.1 U | 430 U | 430 U | 91 U |
| Chloromethane | 74-87-3 | 5.1 U | 510 U | 510 U | 110 U |
| cis-1,2-Dichloroethene | 156-59-2 | 2.0 U | 580 U | 570 U | 120 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 2.0 U | 110 U | 110 U | 24 U |
| Cyclohexane | 110-82-7 | 56 | 3900 | 3500 J | 58 U |
| Dibromochloromethane | 124-48-1 | 1.4 U | 280 U | 280 U | 60 U |
| Dichlorodifluoromethane | 75-71-8 | 5.2 U | 250 U | 250 U | 53 U |
| Ethyl Benzene | 100-41-4 | 520 | 97000 | 86000 | 2200 |
| Isopropylbenzene | 98-82-8 | 45 | 11000 | 8900 | 200 J |
| m/p-Xylenes | 126777-61-2 | 1200 | 190000 | 180000 | 4700 |
| Methyl Acetate | 79-20-9 | 5.2 U | 620 U | 620 U | 130 U |
| Methyl tert-butyl Ether | 1634-04-4 | 2.2 U | 270 U | 270 U | 57 U |
| Methylcyclohexane | 108-87-2 | 120 | 13000 | 11000 | 95 U |
| Methylene Chloride | 75-09-2 | 12 JB | 470 U | 460 U | 98 U |
| o-Xylene | 95-47-6 | 430 | 86000 | 78000 | 1800 |
| Styrene | 100-42-5 | 2.8 U | 260 U | 250 U | 54 U |
| t-1,3-Dichloropropene | 10061-02-6 | 2.2 U | 320 U | 320 U | 67 U |
| Tetrachloroethene | 127-18-4 | 4.4 U | 250 U | 250 U | 52 U |
| Toluene | 108-88-3 | 400 | 8700 | 12000 | 570 J |
| trans-1,2-Dichloroethene | 156-60-5 | 3.8 U | 390 U | 380 U | 81 U |
| Trichloroethene | 79-01-6 | 1.9 U | 500 U | 500 U | 110 U |
| Trichlorofluoromethane | 75-69-4 | 7.5 U | 430 U | 430 U | 91 U |
| Vinyl Chloride | 75-01-4 | 5.0 U | 200 U | 200 U | 42 U |

| | | | | |
|---|---|---|---|---|
| | 3478 | 434600 | 401400 | 10970 |
| | 12530 | 659000 | 622000 | 63400 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-2(14-16) | P-2(10-14) | P-2(14-16)DUP | P-2(16-18) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2581-08 | T2581-09 | T2581-10 | T2581-11 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.52 U | 61 U | 0.54 U | 0.52 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.38 U | 75 U | 0.40 U | 0.38 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.36 U | 78 U | 0.38 U | 0.36 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.82 U | 100 U | 0.85 U | 0.82 U |
| 1,1-Dichloroethane | 75-34-3 | 0.33 U | 32 U | 0.34 U | 0.33 U |
| 1,1-Dichloroethene | 75-35-4 | 0.71 U | 48 U | 0.73 U | 0.71 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.84 U | 43 U | 0.88 U | 0.84 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.2 U | 140 U | 1.2 U | 1.2 U |
| 1,2-Dibromoethane | 106-93-4 | 0.50 U | 95 U | 0.52 U | 0.50 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.48 U | 55 U | 0.49 U | 0.48 U |
| 1,2-Dichloroethane | 107-06-2 | 0.38 U | 48 U | 0.39 U | 0.38 U |
| 1,2-Dichloropropane | 78-87-5 | 0.49 U | 48 U | 0.51 U | 0.49 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.69 U | 56 U | 0.72 U | 0.69 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.67 U | 58 U | 0.70 U | 0.67 U |
| 2-Butanone | 78-93-3 | 3.5 U | 430 U | 3.6 U | 3.5 U |
| 2-Hexanone | 591-78-6 | 4.5 U | 99 U | 4.6 U | 4.5 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.4 U | 200 U | 2.5 U | 2.4 U |
| Acetone | 67-64-1 | 25 JB | 500 U | 16 JB | 22 JB |
| Benzene | 71-43-2 | 2.8 J | 6200 | 240 | 47 |
| Bromodichloromethane | 75-27-4 | 0.41 U | 52 U | 0.43 U | 0.41 U |
| Bromoform | 75-25-2 | 0.38 U | 38 U | 0.40 U | 0.38 U |
| Bromomethane | 74-83-9 | 2.5 U | 120 U | 2.6 U | 2.5 U |
| Carbon Disulfide | 75-15-0 | 0.45 U | 59 U | 0.47 U | 0.45 U |
| Carbon Tetrachloride | 56-23-5 | 0.55 U | 71 U | 0.57 U | 0.55 U |
| Chlorobenzene | 108-90-7 | 0.45 U | 55 U | 0.46 U | 0.45 U |
| Chloroethane | 75-00-3 | 2.6 U | 130 U | 2.7 U | 2.6 U |
| Chloroform | 67-66-3 | 0.43 U | 87 U | 0.45 U | 0.43 U |
| Chloromethane | 74-87-3 | 1.1 U | 100 U | 1.1 U | 1.1 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.40 U | 120 U | 0.42 U | 0.40 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.41 U | 23 U | 0.42 U | 0.41 U |
| Cyclohexane | 110-82-7 | 0.40 U | 6100 | 12 | 0.40 U |
| Dibromochloromethane | 124-48-1 | 0.28 U | 57 U | 0.29 U | 0.28 U |
| Dichlorodifluoromethane | 75-71-8 | 1.1 U | 50 U | 1.1 U | 1.1 U |
| Ethyl Benzene | 100-41-4 | 0.44 U | 31000 E | 170 | 16 |
| Isopropylbenzene | 98-82-8 | 0.51 U | 3200 | 20 | 0.51 U |
| m/p-Xylenes | 126777-61-2 | 7.9 | 63000 E | 400 | 35 |
| Methyl Acetate | 79-20-9 | 1.1 U | 120 U | 1.1 U | 1.1 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.45 U | 54 U | 0.47 U | 0.45 U |
| Methylcyclohexane | 108-87-2 | 8.9 | 7900 | 41 | 0.52 U |
| Methylene Chloride | 75-09-2 | 2.3 U | 91 U | 3.0 JB | 3.9 JB |
| o-Xylene | 95-47-6 | 5.4 J | 27000 | 180 | 24 |
| Styrene | 100-42-5 | 0.57 U | 52 U | 0.59 U | 0.57 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.45 U | 64 U | 0.47 U | 0.45 U |
| Tetrachloroethene | 127-18-4 | 0.90 U | 50 U | 0.94 U | 0.90 U |
| Toluene | 108-88-3 | 2.0 J | 2400 | 120 | 72 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.79 U | 77 U | 0.82 U | 0.79 U |
| Trichloroethene | 79-01-6 | 0.38 U | 100 U | 0.39 U | 0.38 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 87 U | 1.6 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 40 U | 1.1 U | 1.0 U |

| | | | | |
|---|---|---|---|---|
| | 52 | 146800 | 1202 | 219.9 |
| | 1690 | 119000 | 1156 | 1218 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-2(18-20) | P-2(18-20)DL | P-2(21-22) | P-2(22-24) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2581-12 | T2581-12DL | T2581-15 | T2581-16 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 10.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.51 U | 5.1 UD | 61 U | 0.48 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.38 U | 3.8 UD | 75 U | 0.36 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.36 U | 3.6 UD | 78 U | 0.34 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.81 U | 8.1 UD | 100 U | 0.76 U |
| 1,1-Dichloroethane | 75-34-3 | 0.33 U | 3.3 UD | 32 U | 0.31 U |
| 1,1-Dichloroethene | 75-35-4 | 0.70 U | 7.0 UD | 48 U | 0.66 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.83 U | 8.3 UD | 43 U | 0.79 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 11 UD | 140 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.49 U | 4.9 UD | 95 U | 0.46 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.47 U | 4.7 UD | 55 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 0.37 U | 3.7 UD | 48 U | 0.35 U |
| 1,2-Dichloropropane | 78-87-5 | 0.48 U | 4.8 UD | 48 U | 0.46 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.68 U | 6.8 UD | 56 U | 0.64 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.66 U | 6.6 UD | 58 U | 0.63 U |
| 2-Butanone | 78-93-3 | 9.4 J | 34 UD | 430 U | 3.2 U |
| 2-Hexanone | 591-78-6 | 4.4 U | 44 UD | 99 U | 4.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.4 U | 24 UD | 200 U | 2.3 U |
| Acetone | 67-64-1 | 37 B | 120 JD | 500 U | 18 JB |
| Benzene | 71-43-2 | 540 E | 480 D | 5000 | 30 |
| Bromodichloromethane | 75-27-4 | 0.41 U | 4.1 UD | 52 U | 0.39 U |
| Bromoform | 75-25-2 | 0.38 U | 3.8 UD | 38 U | 0.36 U |
| Bromomethane | 74-83-9 | 2.5 U | 25 UD | 120 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 2.9 J | 4.5 UD | 59 U | 0.42 U |
| Carbon Tetrachloride | 56-23-5 | 0.54 U | 5.4 UD | 71 U | 0.51 U |
| Chlorobenzene | 108-90-7 | 0.44 U | 4.4 UD | 55 U | 0.42 U |
| Chloroethane | 75-00-3 | 2.6 U | 26 UD | 130 U | 2.5 U |
| Chloroform | 67-66-3 | 0.42 U | 4.2 UD | 87 U | 0.40 U |
| Chloromethane | 74-87-3 | 1.0 U | 10 UD | 100 U | 0.98 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.40 U | 4.0 UD | 120 U | 0.37 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.40 U | 4.0 UD | 23 U | 0.38 U |
| Cyclohexane | 110-82-7 | 4.5 J | 4.0 UD | 55 U | 0.37 U |
| Dibromochloromethane | 124-48-1 | 0.28 U | 2.8 UD | 57 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 1.0 U | 10 UD | 50 U | 0.98 U |
| Ethyl Benzene | 100-41-4 | 470 E | 110 D | 4400 | 16 |
| Isopropylbenzene | 98-82-8 | 61 | 13 JD | 530 J | 1.6 J |
| m/p-Xylenes | 126777-61-2 | 770 E | 210 D | 10000 | 29 |
| Methyl Acetate | 79-20-9 | 1.1 U | 11 UD | 120 U | 0.99 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.45 U | 4.5 UD | 54 U | 0.42 U |
| Methylcyclohexane | 108-87-2 | 3.7 J | 5.1 UD | 90 U | 0.48 U |
| Methylene Chloride | 75-09-2 | 10 | 22 UD | 94 U | 2.2 JB |
| o-Xylene | 95-47-6 | 430 E | 120 D | 4400 | 13 |
| Styrene | 100-42-5 | 14 | 5.6 UD | 180 J | 0.53 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.44 U | 4.4 UD | 64 U | 0.42 U |
| Tetrachloroethene | 127-18-4 | 0.89 U | 8.9 UD | 50 U | 0.84 U |
| Toluene | 108-88-3 | 650 E | 310 D | 7900 | 11 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.78 U | 7.8 UD | 77 U | 0.73 U |
| Trichloroethene | 79-01-6 | 0.38 U | 3.8 UD | 100 U | 0.35 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 15 UD | 87 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 10 UD | 40 U | 0.95 U |

| | | | | |
|---|---|---|---|---|
| | 3002.5 | 1363 | 32410 | 120.8 |
| | 794 | 0 | 180400 | 539 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-2(24-26) | FIELDBLANK | TRIPBLANK | P-3(0-2) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2581-22 | T2581-17 | T2581-18 | T2543-01 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/26/05 |
| Matrix | | SOIL | WATER | WATER | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/L | ug/L | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.50 U | 0.32 U | 0.32 U | 0.47 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.37 U | 0.30 U | 0.30 U | 0.35 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.35 U | 0.41 U | 0.41 U | 0.33 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.80 U | 1.3 U | 1.3 U | 0.75 U |
| 1,1-Dichloroethane | 75-34-3 | 0.32 U | 0.38 U | 0.38 U | 0.30 U |
| 1,1-Dichloroethene | 75-35-4 | 0.69 U | 0.42 U | 0.42 U | 0.65 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.82 U | 0.46 U | 0.46 U | 0.77 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 0.38 U | 0.38 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.48 U | 0.32 U | 0.32 U | 0.45 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.47 U | 0.44 U | 0.44 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 0.37 U | 0.34 U | 0.34 U | 0.35 U |
| 1,2-Dichloropropane | 78-87-5 | 0.48 U | 0.40 U | 0.40 U | 0.45 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.67 U | 0.50 U | 0.50 U | 0.63 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.66 U | 0.54 U | 0.54 U | 0.62 U |
| 2-Butanone | 78-93-3 | 3.4 U | 1.1 U | 1.1 U | 3.2 U |
| 2-Hexanone | 591-78-6 | 4.3 U | 1.7 U | 1.7 U | 4.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.4 U | 1.6 U | 1.6 U | 2.2 U |
| Acetone | 67-64-1 | 20 JB | 2.3 U | 2.3 U | 11 JB |
| Benzene | 71-43-2 | 3.6 J | 0.39 U | 0.39 U | 0.45 U |
| Bromodichloromethane | 75-27-4 | 0.40 U | 0.33 U | 0.33 U | 0.38 U |
| Bromoform | 75-25-2 | 0.37 U | 0.32 U | 0.32 U | 0.35 U |
| Bromomethane | 74-83-9 | 2.4 U | 0.41 U | 0.41 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 0.44 U | 0.40 U | 0.40 U | 1.6 J |
| Carbon Tetrachloride | 56-23-5 | 0.53 U | 1.1 U | 1.1 U | 0.50 U |
| Chlorobenzene | 108-90-7 | 0.44 U | 0.47 U | 0.47 U | 0.41 U |
| Chloroethane | 75-00-3 | 2.6 U | 0.83 U | 0.83 U | 2.4 U |
| Chloroform | 67-66-3 | 0.42 U | 0.33 U | 0.33 U | 0.39 U |
| Chloromethane | 74-87-3 | 1.0 U | 0.34 U | 0.34 U | 0.96 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.39 U | 0.29 U | 0.29 U | 0.37 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.40 U | 0.36 U | 0.36 U | 0.37 U |
| Cyclohexane | 110-82-7 | 0.39 U | 0.36 U | 0.36 U | 0.37 U |
| Dibromochloromethane | 124-48-1 | 0.28 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 1.0 U | 0.17 U | 0.17 U | 0.97 U |
| Ethyl Benzene | 100-41-4 | 3.4 J | 0.45 U | 0.45 U | 0.40 U |
| Isopropylbenzene | 98-82-8 | 0.50 U | 0.44 U | 0.44 U | 0.47 U |
| m/p-Xylenes | 126777-61-2 | 6.5 | 1.2 U | 1.2 U | 0.98 U |
| Methyl Acetate | 79-20-9 | 1.0 U | 0.20 U | 0.20 U | 0.98 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.44 U | 0.28 U | 0.28 U | 0.42 U |
| Methylcyclohexane | 108-87-2 | 0.51 U | 0.34 U | 0.34 U | 0.47 U |
| Methylene Chloride | 75-09-2 | 2.4 JB | 0.43 U | 0.43 U | 3.1 JB |
| o-Xylene | 95-47-6 | 4.6 J | 0.46 U | 0.46 U | 0.43 U |
| Styrene | 100-42-5 | 0.55 U | 0.41 U | 0.41 U | 0.52 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.44 U | 0.32 U | 0.32 U | 0.41 U |
| Tetrachloroethene | 127-18-4 | 0.88 U | 0.48 U | 0.48 U | 0.82 U |
| Toluene | 108-88-3 | 2.2 J | 0.36 U | 0.36 U | 0.46 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.77 U | 0.40 U | 0.40 U | 0.72 U |
| Trichloroethene | 79-01-6 | 0.37 U | 0.46 U | 0.46 U | 0.35 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 0.22 U | 0.22 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 0.99 U | 0.33 U | 0.33 U | 0.93 U |

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|---|---|---|---|---|
| | 42.7 | 0 | 0 | 15.7 |
| | 0 | 0 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-3(2-4) | P-3(4-6) | P-3(4-6)RE | P-3(6-8) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2543-02 | T2543-03 | T2543-03RE | T2543-04 |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.45 U | 0.47 U | 0.47 U | 59 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.33 U | 0.35 U | 0.35 U | 71 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.32 U | 0.33 U | 0.33 U | 74 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.72 U | 0.75 U | 0.75 U | 100 U |
| 1,1-Dichloroethane | 75-34-3 | 0.29 U | 0.30 U | 0.30 U | 31 U |
| 1,1-Dichloroethene | 75-35-4 | 0.62 U | 0.65 U | 0.64 U | 46 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.73 U | 0.77 U | 0.77 U | 41 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.0 U | 1.1 U | 1.1 U | 130 U |
| 1,2-Dibromoethane | 106-93-4 | 0.43 U | 0.45 U | 0.45 U | 91 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.42 U | 0.44 U | 0.43 U | 53 U |
| 1,2-Dichloroethane | 107-06-2 | 0.33 U | 0.35 U | 0.34 U | 46 U |
| 1,2-Dichloropropane | 78-87-5 | 0.43 U | 0.45 U | 0.45 U | 46 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.60 U | 0.63 U | 0.63 U | 53 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.59 U | 0.61 U | 0.61 U | 56 U |
| 2-Butanone | 78-93-3 | 3.0 U | 3.2 U | 3.2 U | 410 U |
| 2-Hexanone | 591-78-6 | 3.9 U | 4.1 U | 4.1 U | 95 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.1 U | 2.2 U | 2.2 U | 190 U |
| Acetone | 67-64-1 | 5.3 JB | 12 JB | 11 JB | 480 U |
| Benzene | 71-43-2 | 0.43 U | 1.2 J | 3.8 J | 35 U |
| Bromodichloromethane | 75-27-4 | 0.36 U | 0.38 U | 0.38 U | 50 U |
| Bromoform | 75-25-2 | 0.33 U | 0.35 U | 0.35 U | 36 U |
| Bromomethane | 74-83-9 | 2.2 U | 2.3 U | 2.3 U | 110 U |
| Carbon Disulfide | 75-15-0 | 0.40 U | 2.8 J | 4.0 J | 56 U |
| Carbon Tetrachloride | 56-23-5 | 0.48 U | 0.50 U | 0.50 U | 68 U |
| Chlorobenzene | 108-90-7 | 0.39 U | 0.41 U | 0.41 U | 53 U |
| Chloroethane | 75-00-3 | 2.3 U | 2.4 U | 2.4 U | 130 U |
| Chloroform | 67-66-3 | 0.37 U | 0.39 U | 0.39 U | 83 U |
| Chloromethane | 74-87-3 | 0.92 U | 0.96 U | 0.96 U | 98 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.35 U | 0.37 U | 0.37 U | 110 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.36 U | 0.37 U | 0.37 U | 22 U |
| Cyclohexane | 110-82-7 | 0.35 U | 0.37 U | 0.36 U | 53 U |
| Dibromochloromethane | 124-48-1 | 0.25 U | 0.26 U | 0.26 U | 54 U |
| Dichlorodifluoromethane | 75-71-8 | 0.92 U | 0.97 U | 0.96 U | 48 U |
| Ethyl Benzene | 100-41-4 | 0.38 U | 2.2 J | 3.8 J | 13000 |
| Isopropylbenzene | 98-82-8 | 0.45 U | 0.47 U | 0.47 U | 3200 |
| m/p-Xylenes | 126777-61-2 | 0.93 U | 3.1 J | 6.4 | 17000 |
| Methyl Acetate | 79-20-9 | 0.93 U | 0.98 U | 0.97 U | 120 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.40 U | 0.42 U | 0.41 U | 52 U |
| Methylcyclohexane | 108-87-2 | 0.45 U | 0.47 U | 0.47 U | 86 U |
| Methylene Chloride | 75-09-2 | 2.5 JB | 2.1 U | 2.3 JB | 89 U |
| o-Xylene | 95-47-6 | 0.41 U | 1.2 J | 2.3 J | 7900 |
| Styrene | 100-42-5 | 0.49 U | 0.52 U | 0.52 U | 49 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.39 U | 0.41 U | 0.41 U | 61 U |
| Tetrachloroethene | 127-18-4 | 0.78 U | 0.82 U | 0.82 U | 47 U |
| Toluene | 108-88-3 | 0.44 U | 1.7 J | 7.0 | 1300 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.69 U | 0.72 U | 0.72 U | 74 U |
| Trichloroethene | 79-01-6 | 0.33 U | 0.35 U | 0.35 U | 96 U |
| Trichlorofluoromethane | 75-69-4 | 1.3 U | 1.4 U | 1.4 U | 83 U |
| Vinyl Chloride | 75-01-4 | 0.88 U | 0.93 U | 0.92 U | 38 U |

| | | | | |
|---|---|---|---|---|
| | 7.8 | 24.2 | 40.6 | 42400 |
| | 0 | 9 | 7.9 | 334000 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-3(8-10) | P-3(10-12) | P-3(12-14) | P-3(14-16) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2543-05 | T2543-06 | T2543-07 | T2543-08 |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 71 U | 63 U | 65 U | 81 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 86 U | 76 U | 78 U | 98 U |
| 1,1,2-Trichloroethane | 79-00-5 | 90 U | 80 U | 82 U | 100 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 120 U | 110 U | 110 U | 140 U |
| 1,1-Dichloroethane | 75-34-3 | 37 U | 33 U | 34 U | 43 U |
| 1,1-Dichloroethene | 75-35-4 | 56 U | 50 U | 51 U | 64 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 50 U | 44 U | 45 U | 57 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 160 U | 140 U | 150 U | 190 U |
| 1,2-Dibromoethane | 106-93-4 | 110 U | 98 U | 100 U | 130 U |
| 1,2-Dichlorobenzene | 95-50-1 | 64 U | 56 U | 58 U | 73 U |
| 1,2-Dichloroethane | 107-06-2 | 56 U | 49 U | 51 U | 63 U |
| 1,2-Dichloropropane | 78-87-5 | 55 U | 49 U | 6300 | 63 U |
| 1,3-Dichlorobenzene | 541-73-1 | 65 U | 57 U | 59 U | 74 U |
| 1,4-Dichlorobenzene | 106-46-7 | 67 U | 60 U | 61 U | 77 U |
| 2-Butanone | 78-93-3 | 490 U | 440 U | 450 U | 560 U |
| 2-Hexanone | 591-78-6 | 110 U | 100 U | 260 J | 130 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 230 U | 200 U | 210 U | 260 U |
| Acetone | 67-64-1 | 570 U | 510 U | 520 U | 660 U |
| Benzene | 71-43-2 | 42 U | 37 U | 38 U | 630 J |
| Bromodichloromethane | 75-27-4 | 60 U | 54 U | 55 U | 69 U |
| Bromoform | 75-25-2 | 44 U | 39 U | 40 U | 50 U |
| Bromomethane | 74-83-9 | 140 U | 120 U | 120 U | 160 U |
| Carbon Disulfide | 75-15-0 | 68 U | 60 U | 62 U | 77 U |
| Carbon Tetrachloride | 56-23-5 | 82 U | 73 U | 990 | 93 U |
| Chlorobenzene | 108-90-7 | 64 U | 57 U | 58 U | 73 U |
| Chloroethane | 75-00-3 | 150 U | 140 U | 140 U | 180 U |
| Chloroform | 67-66-3 | 100 U | 89 U | 91 U | 110 U |
| Chloromethane | 74-87-3 | 120 U | 110 U | 110 U | 140 U |
| cis-1,2-Dichloroethene | 156-59-2 | 130 U | 120 U | 120 U | 150 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 26 U | 23 U | 24 U | 30 U |
| Cyclohexane | 110-82-7 | 64 U | 57 U | 58 U | 73 U |
| Dibromochloromethane | 124-48-1 | 66 U | 58 U | 60 U | 75 U |
| Dichlorodifluoromethane | 75-71-8 | 58 U | 52 U | 53 U | 66 U |
| Ethyl Benzene | 100-41-4 | 1200 | 1600 | 7200 | 4300 |
| Isopropylbenzene | 98-82-8 | 270 J | 300 J | 1600 | 440 J |
| m/p-Xylenes | 126777-61-2 | 1600 J | 2200 | 9700 | 6700 |
| Methyl Acetate | 79-20-9 | 140 U | 130 U | 130 U | 160 U |
| Methyl tert-butyl Ether | 1634-04-4 | 62 U | 55 U | 57 U | 71 U |
| Methylcyclohexane | 108-87-2 | 100 U | 93 U | 390 J | 120 U |
| Methylene Chloride | 75-09-2 | 110 U | 96 U | 98 U | 120 U |
| o-Xylene | 95-47-6 | 710 J | 880 | 4200 | 2800 |
| Styrene | 100-42-5 | 59 U | 53 U | 54 U | 68 U |
| t-1,3-Dichloropropene | 10061-02-6 | 74 U | 66 U | 67 U | 84 U |
| Tetrachloroethene | 127-18-4 | 57 U | 51 U | 52 U | 65 U |
| Toluene | 108-88-3 | 67 U | 260 J | 810 | 1900 |
| trans-1,2-Dichloroethene | 156-60-5 | 89 U | 79 U | 81 U | 100 U |
| Trichloroethene | 79-01-6 | 120 U | 100 U | 110 U | 130 U |
| Trichlorofluoromethane | 75-69-4 | 100 U | 89 U | 91 U | 110 U |
| Vinyl Chloride | 75-01-4 | 46 U | 41 U | 42 U | 53 U |

| | | | | |
|---|---|---|---|---|
| | 3780 | 5240 | 31450 | 16770 |
| | 33400 | 92600 | 270900 | 112000 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-3(16-18) | P-3(18-20) | P-3(10-12)DUP | P-3(20-22) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2543-09 | T2543-10 | T2543-11 | T2543-12 |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 5.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 64 U | 320 U | 310 U | 65 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 77 U | 390 U | 380 U | 78 U |
| 1,1,2-Trichloroethane | 79-00-5 | 81 U | 400 U | 400 U | 82 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 110 U | 540 U | 530 U | 110 U |
| 1,1-Dichloroethane | 75-34-3 | 34 U | 170 U | 170 U | 34 U |
| 1,1-Dichloroethene | 75-35-4 | 50 U | 250 U | 250 U | 51 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 45 U | 220 U | 220 U | 45 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 150 U | 730 U | 720 U | 150 U |
| 1,2-Dibromoethane | 106-93-4 | 99 U | 490 U | 490 U | 100 U |
| 1,2-Dichlorobenzene | 95-50-1 | 57 U | 290 U | 280 U | 58 U |
| 1,2-Dichloroethane | 107-06-2 | 50 U | 250 U | 250 U | 51 U |
| 1,2-Dichloropropane | 78-87-5 | 50 U | 250 U | 240 U | 50 U |
| 1,3-Dichlorobenzene | 541-73-1 | 58 U | 290 U | 290 U | 59 U |
| 1,4-Dichlorobenzene | 106-46-7 | 60 U | 300 U | 300 U | 61 U |
| 2-Butanone | 78-93-3 | 440 U | 2200 U | 2200 U | 450 U |
| 2-Hexanone | 591-78-6 | 100 U | 510 U | 510 U | 100 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 210 U | 1000 U | 1000 U | 210 U |
| Acetone | 67-64-1 | 520 U | 2600 U | 2600 U | 520 U |
| Benzene | 71-43-2 | 560 J | 810 J | 190 U | 260 J |
| Bromodichloromethane | 75-27-4 | 54 U | 270 U | 270 U | 55 U |
| Bromoform | 75-25-2 | 39 U | 200 U | 190 U | 40 U |
| Bromomethane | 74-83-9 | 120 U | 610 U | 600 U | 120 U |
| Carbon Disulfide | 75-15-0 | 61 U | 300 U | 300 U | 62 U |
| Carbon Tetrachloride | 56-23-5 | 73 U | 370 U | 360 U | 74 U |
| Chlorobenzene | 108-90-7 | 58 U | 290 U | 280 U | 58 U |
| Chloroethane | 75-00-3 | 140 U | 690 U | 680 U | 140 U |
| Chloroform | 67-66-3 | 90 U | 450 U | 440 U | 91 U |
| Chloromethane | 74-87-3 | 110 U | 530 U | 530 U | 110 U |
| cis-1,2-Dichloroethene | 156-59-2 | 120 U | 600 U | 590 U | 120 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 24 U | 120 U | 120 U | 24 U |
| Cyclohexane | 110-82-7 | 57 U | 290 U | 280 U | 58 U |
| Dibromochloromethane | 124-48-1 | 59 U | 300 U | 290 U | 60 U |
| Dichlorodifluoromethane | 75-71-8 | 52 U | 260 U | 260 U | 53 U |
| Ethyl Benzene | 100-41-4 | 14000 | 19000 | 33000 | 12000 |
| Isopropylbenzene | 98-82-8 | 2400 | 2700 J | 4400 | 2000 |
| m/p-Xylenes | 126777-61-2 | 21000 | 30000 | 53000 | 18000 |
| Methyl Acetate | 79-20-9 | 130 U | 650 U | 640 U | 130 U |
| Methyl tert-butyl Ether | 1634-04-4 | 56 U | 280 U | 280 U | 57 U |
| Methylcyclohexane | 108-87-2 | 94 U | 470 U | 460 U | 95 U |
| Methylene Chloride | 75-09-2 | 97 U | 490 U | 480 U | 98 U |
| o-Xylene | 95-47-6 | 9000 | 12000 | 22000 | 7600 |
| Styrene | 100-42-5 | 53 U | 270 U | 260 U | 160 J |
| t-1,3-Dichloropropene | 10061-02-6 | 66 U | 330 U | 330 U | 67 U |
| Tetrachloroethene | 127-18-4 | 52 U | 260 U | 250 U | 52 U |
| Toluene | 108-88-3 | 2500 | 4000 | 5700 | 1800 |
| trans-1,2-Dichloroethene | 156-60-5 | 80 U | 400 U | 400 U | 81 U |
| Trichloroethene | 79-01-6 | 100 U | 520 U | 520 U | 110 U |
| Trichlorofluoromethane | 75-69-4 | 90 U | 450 U | 440 U | 91 U |
| Vinyl Chloride | 75-01-4 | 42 U | 210 U | 210 U | 42 U |

| | | | | |
|---|---|---|---|---|
| | 49460 | 68510 | 118100 | 41820 |
| | 258200 | 549000 | 1048000 | 179900 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-3(22-24) | P-4(0-2) | P-4(2-4) | P-4(4-6) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2543-13 | T2581-19 | T2581-20 | T2581-21 |
| Sampling Date | | 04/26/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 320 U | 0.50 U | 0.52 U | 0.58 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 390 U | 0.37 U | 0.39 U | 0.43 U |
| 1,1,2-Trichloroethane | 79-00-5 | 410 U | 0.35 U | 0.37 U | 0.41 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 550 U | 0.80 U | 0.83 U | 0.92 U |
| 1,1-Dichloroethane | 75-34-3 | 170 U | 0.32 U | 0.34 U | 0.37 U |
| 1,1-Dichloroethene | 75-35-4 | 250 U | 0.69 U | 0.72 U | 0.80 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 230 U | 0.82 U | 0.85 U | 0.95 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 740 U | 1.1 U | 1.2 U | 1.3 U |
| 1,2-Dibromoethane | 106-93-4 | 500 U | 0.48 U | 0.50 U | 0.56 U |
| 1,2-Dichlorobenzene | 95-50-1 | 290 U | 0.47 U | 0.48 U | 0.54 U |
| 1,2-Dichloroethane | 107-06-2 | 250 U | 0.37 U | 0.38 U | 0.43 U |
| 1,2-Dichloropropane | 78-87-5 | 250 U | 0.48 U | 0.50 U | 0.55 U |
| 1,3-Dichlorobenzene | 541-73-1 | 290 U | 0.67 U | 0.70 U | 0.78 U |
| 1,4-Dichlorobenzene | 106-46-7 | 310 U | 0.66 U | 0.68 U | 0.76 U |
| 2-Butanone | 78-93-3 | 2200 U | 3.4 U | 3.5 U | 3.9 U |
| 2-Hexanone | 591-78-6 | 520 U | 1.3 U | 4.5 U | 5.0 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1000 U | 2.4 U | 2.5 U | 2.7 U |
| Acetone | 67-64-1 | 2600 U | 12 JB | 6.9 JB | 4.7 U |
| Benzene | 71-43-2 | 1200 J | 2.8 J | 0.50 U | 0.55 U |
| Bromodichloromethane | 75-27-4 | 280 U | 0.40 U | 0.42 U | 0.47 U |
| Bromoform | 75-25-2 | 200 U | 0.37 U | 0.39 U | 0.43 U |
| Bromomethane | 74-83-9 | 620 U | 2.4 U | 2.5 U | 2.8 U |
| Carbon Disulfide | 75-15-0 | 310 U | 0.44 U | 0.46 U | 0.51 U |
| Carbon Tetrachloride | 56-23-5 | 370 U | 0.53 U | 0.55 U | 0.62 U |
| Chlorobenzene | 108-90-7 | 290 U | 0.44 U | 0.45 U | 0.50 U |
| Chloroethane | 75-00-3 | 700 U | 2.6 U | 2.7 U | 3.0 U |
| Chloroform | 67-66-3 | 450 U | 0.42 U | 0.44 U | 0.48 U |
| Chloromethane | 74-87-3 | 540 U | 1.0 U | 1.1 U | 1.2 U |
| cis-1,2-Dichloroethene | 156-59-2 | 610 U | 0.39 U | 0.41 U | 0.45 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 120 U | 0.40 U | 0.41 U | 0.46 U |
| Cyclohexane | 110-82-7 | 290 U | 0.39 U | 0.40 U | 0.45 U |
| Dibromochloromethane | 124-48-1 | 300 U | 0.28 U | 0.29 U | 0.32 U |
| Dichlorodifluoromethane | 75-71-8 | 260 U | 1.0 U | 1.1 U | 1.2 U |
| Ethyl Benzene | 100-41-4 | 26000 | 0.43 U | 0.44 U | 0.49 U |
| Isopropylbenzene | 98-82-8 | 3400 J | 0.50 U | 0.52 U | 0.58 U |
| m/p-Xylenes | 126777-61-2 | 44000 | 2 J | 1.1 U | 1.2 U |
| Methyl Acetate | 79-20-9 | 660 U | 1.0 U | 1.1 U | 1.2 U |
| Methyl tert-butyl Ether | 1634-04-4 | 280 U | 0.44 U | 0.46 U | 0.51 U |
| Methylcyclohexane | 108-87-2 | 470 U | 0.51 U | 0.52 U | 0.58 U |
| Methylene Chloride | 75-09-2 | 490 U | 3.6 JB | 2.3 U | 2.5 U |
| o-Xylene | 95-47-6 | 19000 | 0.46 U | 0.48 U | 0.53 U |
| Styrene | 100-42-5 | 270 U | 0.55 U | 0.57 U | 0.64 U |
| t-1,3-Dichloropropene | 10061-02-6 | 340 U | 0.44 U | 0.45 U | 0.50 U |
| Tetrachloroethene | 127-18-4 | 260 U | 0.88 U | 0.91 U | 1.0 U |
| Toluene | 108-88-3 | 6500 | 0.49 U | 0.51 U | 0.56 U |
| trans-1,2-Dichloroethene | 156-60-5 | 410 U | 0.77 U | 0.80 U | 0.89 U |
| Trichloroethene | 79-01-6 | 530 U | 0.37 U | 0.38 U | 0.43 U |
| Trichlorofluoromethane | 75-69-4 | 460 U | 1.5 U | 1.6 U | 1.7 U |
| Vinyl Chloride | 75-01-4 | 210 U | 0.99 U | 1.0 U | 1.1 U |

| | | | | |
|---|---|---|---|---|
| | 100100 | 20.4 | 6.9 | 0 |
| | 797000 | 379 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-4(4-6)RE | P-4(8-10) | P-4(8-10)RE | P-4(12-14) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2581-21RE | T2582-01 | T2582-01RE | T2582-02 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.58 U | 0.54 U | 2.7 U | 63 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.43 U | 0.40 U | 2.0 U | 76 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.41 U | 0.38 U | 1.9 U | 80 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.92 U | 0.86 U | 4.3 U | 110 U |
| 1,1-Dichloroethane | 75-34-3 | 0.37 U | 0.35 U | 1.7 U | 33 U |
| 1,1-Dichloroethene | 75-35-4 | 0.80 U | 0.74 U | 3.7 U | 50 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.95 U | 0.89 U | 4.4 U | 44 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.3 U | 1.2 U | 6.1 U | 140 U |
| 1,2-Dibromoethane | 106-93-4 | 0.56 U | 0.52 U | 2.6 U | 98 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.54 U | 0.50 U | 2.5 U | 56 U |
| 1,2-Dichloroethane | 107-06-2 | 0.43 U | 0.40 U | 2.0 U | 49 U |
| 1,2-Dichloropropane | 78-87-5 | 0.55 U | 0.51 U | 2.6 U | 49 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.78 U | 0.72 U | 3.6 U | 57 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.76 U | 0.71 U | 3.5 U | 60 U |
| 2-Butanone | 78-93-3 | 3.9 U | 3.7 U | 18 U | 440 U |
| 2-Hexanone | 591-78-6 | 5.0 U | 4.7 U | 23 U | 100 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.7 U | 2.6 U | 13 U | 200 U |
| Acetone | 67-64-1 | 9.1 JB | 13 JB | 47 JB | 510 U |
| Benzene | 71-43-2 | 0.55 U | 2.2 J | 2.6 U | 37 U |
| Bromodichloromethane | 75-27-4 | 0.47 U | 0.43 U | 2.2 U | 54 U |
| Bromoform | 75-25-2 | 0.43 U | 0.40 U | 2.0 U | 39 U |
| Bromomethane | 74-83-9 | 2.8 U | 2.6 U | 13 U | 120 U |
| Carbon Disulfide | 75-15-0 | 0.51 U | 0.48 U | 2.4 U | 60 U |
| Carbon Tetrachloride | 56-23-5 | 0.62 U | 0.57 U | 2.9 U | 73 U |
| Chlorobenzene | 108-90-7 | 0.50 U | 0.47 U | 2.4 U | 57 U |
| Chloroethane | 75-00-3 | 3.0 U | 2.8 U | 14 U | 140 U |
| Chloroform | 67-66-3 | 0.48 U | 0.45 U | 2.3 U | 89 U |
| Chloromethane | 74-87-3 | 1.2 U | 1.1 U | 5.5 U | 110 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.45 U | 0.42 U | 2.1 U | 120 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.46 U | 0.43 U | 2.1 U | 23 U |
| Cyclohexane | 110-82-7 | 0.45 U | 0.42 U | 2.1 U | 57 U |
| Dibromochloromethane | 124-48-1 | 0.32 U | 0.30 U | 1.5 U | 58 U |
| Dichlorodifluoromethane | 75-71-8 | 1.2 U | 1.1 U | 5.6 U | 52 U |
| Ethyl Benzene | 100-41-4 | 0.49 U | 5.9 J | 9.5 J | 63 U |
| Isopropylbenzene | 98-82-8 | 0.58 U | 2.5 J | 2.7 U | 51 U |
| m/p-Xylenes | 126777-61-2 | 1.2 U | 5.8 J | 11 J | 150 U |
| Methyl Acetate | 79-20-9 | 1.2 U | 1.1 U | 5.6 U | 130 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.51 U | 0.48 U | 2.4 U | 55 U |
| Methylcyclohexane | 108-87-2 | 0.58 U | 0.54 U | 2.7 U | 93 U |
| Methylene Chloride | 75-09-2 | 2.5 U | 10 B | 41 B | 96 U |
| o-Xylene | 95-47-6 | 0.53 U | 6.3 J | 9.7 J | 57 U |
| Styrene | 100-42-5 | 0.64 U | 0.60 U | 3.0 U | 53 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.50 U | 0.47 U | 2.4 U | 66 U |
| Tetrachloroethene | 127-18-4 | 1.0 U | 0.95 U | 4.7 U | 51 U |
| Toluene | 108-88-3 | 0.56 U | 0.52 U | 2.6 U | 60 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.89 U | 0.83 U | 4.1 U | 79 U |
| Trichloroethene | 79-01-6 | 0.43 U | 0.40 U | 2.0 U | 100 U |
| Trichlorofluoromethane | 75-69-4 | 1.7 U | 1.6 U | 8.1 U | 89 U |
| Vinyl Chloride | 75-01-4 | 1.1 U | 1.1 U | 5.3 U | 41 U |

| | | | | |
|---|---|---|---|---|
| | 9.1 | 45.7 | 118.2 | 0 |
| | 0 | 0 | 1820 | 12840 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-4(14-16) | P-4(14-16)DL | P-4(16-18) | P-4(18-20) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2582-03 | T2582-03DL | T2582-04 | T2582-05 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 5.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.68 U | 3.4 UD | 66 U | 65 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.51 U | 2.5 UD | 80 U | 78 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.48 U | 2.4 UD | 84 U | 82 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 1.1 U | 5.5 UD | 110 U | 110 U |
| 1,1-Dichloroethane | 75-34-3 | 0.44 U | 2.2 UD | 35 U | 34 U |
| 1,1-Dichloroethene | 75-35-4 | 0.94 U | 4.7 UD | 52 U | 51 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1.1 U | 5.6 UD | 47 U | 45 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.5 U | 7.7 UD | 150 U | 150 U |
| 1,2-Dibromoethane | 106-93-4 | 0.66 U | 3.3 UD | 100 U | 100 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.63 U | 3.2 UD | 59 U | 58 U |
| 1,2-Dichloroethane | 107-06-2 | 0.50 U | 2.5 UD | 52 U | 51 U |
| 1,2-Dichloropropane | 78-87-5 | 0.65 U | 3.3 UD | 51 U | 50 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.91 U | 4.6 UD | 60 U | 59 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.89 U | 4.5 UD | 63 U | 61 U |
| 2-Butanone | 78-93-3 | 4.6 U | 23 UD | 460 U | 450 U |
| 2-Hexanone | 591-78-6 | 5.9 U | 30 UD | 110 U | 100 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 3.2 U | 16 UD | 210 U | 210 U |
| Acetone | 67-64-1 | 38 JB | 100 JD | 540 U | 520 U |
| Benzene | 71-43-2 | 350 E | 620 D | 50 J | 300 J |
| Bromodichloromethane | 75-27-4 | 0.55 U | 2.7 UD | 56 U | 55 U |
| Bromoform | 75-25-2 | 0.51 U | 2.5 UD | 41 U | 40 U |
| Bromomethane | 74-83-9 | 3.3 U | 17 UD | 130 U | 120 U |
| Carbon Disulfide | 75-15-0 | 6.2 J | 23 JD | 63 U | 62 U |
| Carbon Tetrachloride | 56-23-5 | 0.72 U | 3.6 UD | 76 U | 74 U |
| Chlorobenzene | 108-90-7 | 0.59 U | 3.0 UD | 60 U | 58 U |
| Chloroethane | 75-00-3 | 3.5 U | 17 UD | 140 U | 140 U |
| Chloroform | 67-66-3 | 0.57 U | 2.9 UD | 93 U | 91 U |
| Chloromethane | 74-87-3 | 1.4 U | 7.0 UD | 110 U | 110 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.53 U | 2.7 UD | 120 U | 120 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.54 U | 2.7 UD | 25 U | 24 U |
| Cyclohexane | 110-82-7 | 0.53 U | 2.7 UD | 60 U | 58 U |
| Dibromochloromethane | 124-48-1 | 0.38 U | 1.9 UD | 61 U | 60 U |
| Dichlorodifluoromethane | 75-71-8 | 1.4 U | 7.0 UD | 54 U | 53 U |
| Ethyl Benzene | 100-41-4 | 88 | 420 D | 940 | 950 |
| Isopropylbenzene | 98-82-8 | 5.5 J | 31 JD | 130 J | 100 J |
| m/p-Xylenes | 126777-61-2 | 39 | 74 D | 220 J | 230 J |
| Methyl Acetate | 79-20-9 | 1.4 U | 7.1 UD | 130 U | 130 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.60 U | 3.0 UD | 58 U | 57 U |
| Methylcyclohexane | 108-87-2 | 0.69 U | 3.4 UD | 97 U | 95 U |
| Methylene Chloride | 75-09-2 | 3.0 U | 130 DB | 100 U | 98 U |
| o-Xylene | 95-47-6 | 65 | 170 D | 170 J | 200 J |
| Styrene | 100-42-5 | 0.75 U | 3.8 UD | 56 U | 54 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.59 U | 3.0 UD | 69 U | 67 U |
| Tetrachloroethene | 127-18-4 | 1.2 U | 6.0 UD | 54 U | 52 U |
| Toluene | 108-88-3 | 7.2 J | 17 JD | 63 U | 61 U |
| trans-1,2-Dichloroethene | 156-60-5 | 1.0 U | 5.2 UD | 83 U | 81 U |
| Trichloroethene | 79-01-6 | 0.50 U | 2.5 UD | 110 U | 110 U |
| Trichlorofluoromethane | 75-69-4 | 2.0 U | 10 UD | 94 U | 91 U |
| Vinyl Chloride | 75-01-4 | 1.3 U | 6.7 UD | 43 U | 42 U |

| | | | | |
|---|---|---|---|---|
| | 598.9 | 1585 | 1510 | 1780 |
| | 0 | 2103 | 36100 | 18610 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-4(20-22) | P-4(22-24) | P-4(24-26) | P-4(26-28) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2582-06 | T2582-07 | T2582-08 | T2582-09 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 62 U | 65 U | 61 U | 59 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 75 U | 79 U | 74 U | 72 U |
| 1,1,2-Trichloroethane | 79-00-5 | 79 U | 83 U | 77 U | 75 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 110 U | 110 U | 100 U | 100 U |
| 1,1-Dichloroethane | 75-34-3 | 33 U | 34 U | 32 U | 31 U |
| 1,1-Dichloroethene | 75-35-4 | 49 U | 52 U | 48 U | 47 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 44 U | 46 U | 43 U | 42 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 140 U | 150 U | 140 U | 140 U |
| 1,2-Dibromoethane | 106-93-4 | 96 U | 100 U | 94 U | 92 U |
| 1,2-Dichlorobenzene | 95-50-1 | 56 U | 59 U | 54 U | 53 U |
| 1,2-Dichloroethane | 107-06-2 | 49 U | 51 U | 48 U | 47 U |
| 1,2-Dichloropropane | 78-87-5 | 48 U | 51 U | 47 U | 46 U |
| 1,3-Dichlorobenzene | 541-73-1 | 57 U | 60 U | 55 U | 54 U |
| 1,4-Dichlorobenzene | 106-46-7 | 59 U | 62 U | 58 U | 56 U |
| 2-Butanone | 78-93-3 | 430 U | 450 U | 420 U | 410 U |
| 2-Hexanone | 591-78-6 | 100 U | 110 U | 98 U | 96 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 200 U | 210 U | 200 U | 190 U |
| Acetone | 67-64-1 | 500 U | 530 U | 490 U | 480 U |
| Benzene | 71-43-2 | 81 J | 80 J | 36 U | 35 U |
| Bromodichloromethane | 75-27-4 | 53 U | 56 U | 52 U | 51 U |
| Bromoform | 75-25-2 | 38 U | 40 U | 38 U | 37 U |
| Bromomethane | 74-83-9 | 120 U | 130 U | 120 U | 110 U |
| Carbon Disulfide | 75-15-0 | 59 U | 62 U | 58 U | 57 U |
| Carbon Tetrachloride | 56-23-5 | 72 U | 75 U | 70 U | 68 U |
| Chlorobenzene | 108-90-7 | 56 U | 59 U | 55 U | 53 U |
| Chloroethane | 75-00-3 | 130 U | 140 U | 130 U | 130 U |
| Chloroform | 67-66-3 | 88 U | 92 U | 86 U | 84 U |
| Chloromethane | 74-87-3 | 100 U | 110 U | 100 U | 99 U |
| cis-1,2-Dichloroethene | 156-59-2 | 120 U | 120 U | 110 U | 110 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 23 U | 24 U | 23 U | 22 U |
| Cyclohexane | 110-82-7 | 56 U | 59 U | 55 U | 53 U |
| Dibromochloromethane | 124-48-1 | 58 U | 61 U | 56 U | 55 U |
| Dichlorodifluoromethane | 75-71-8 | 51 U | 54 U | 50 U | 49 U |
| Ethyl Benzene | 100-41-4 | 350 J | 210 J | 230 J | 260 J |
| Isopropylbenzene | 98-82-8 | 51 U | 53 U | 50 U | 48 U |
| m/p-Xylenes | 126777-61-2 | 530 J | 210 J | 520 J | 220 J |
| Methyl Acetate | 79-20-9 | 130 U | 130 U | 120 U | 120 U |
| Methyl tert-butyl Ether | 1634-04-4 | 55 U | 58 U | 53 U | 52 U |
| Methylcyclohexane | 108-87-2 | 91 U | 96 U | 89 U | 87 U |
| Methylene Chloride | 75-09-2 | 95 U | 100 U | 93 U | 90 U |
| o-Xylene | 95-47-6 | 130 J | 59 U | 220 J | 140 J |
| Styrene | 100-42-5 | 52 U | 55 U | 51 U | 50 U |
| t-1,3-Dichloropropene | 10061-02-6 | 65 U | 68 U | 63 U | 62 U |
| Tetrachloroethene | 127-18-4 | 50 U | 53 U | 49 U | 48 U |
| Toluene | 108-88-3 | 59 U | 62 U | 58 U | 56 U |
| trans-1,2-Dichloroethene | 156-60-5 | 78 U | 82 U | 76 U | 75 U |
| Trichloroethene | 79-01-6 | 100 U | 110 U | 100 U | 97 U |
| Trichlorofluoromethane | 75-69-4 | 88 U | 92 U | 86 U | 84 U |
| Vinyl Chloride | 75-01-4 | 41 U | 43 U | 40 U | 39 U |

| | | | | |
|---|---|---|---|---|
| | 1091 | 500 | 970 | 620 |
| | 6180 | 11400 | 25990 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-4(28-30) | P-5(0-2) | P-5(2-4) | P-5(4-6) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2582-10 | T2582-11 | T2582-12 | T2582-13 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.54 U | 0.56 U | 0.48 U | 61 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.40 U | 0.41 U | 0.36 U | 74 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.38 U | 0.39 U | 0.34 U | 77 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.85 U | 0.88 U | 0.76 U | 100 U |
| 1,1-Dichloroethane | 75-34-3 | 0.31 U | 0.36 U | 0.31 U | 32 U |
| 1,1-Dichloroethene | 75-35-4 | 0.73 U | 0.76 U | 0.66 U | 48 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.88 U | 0.91 U | 0.78 U | 43 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.2 U | 1.3 U | 1.1 U | 140 U |
| 1,2-Dibromoethane | 106-93-4 | 0.52 U | 0.53 U | 0.46 U | 94 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.49 U | 0.51 U | 0.44 U | 54 U |
| 1,2-Dichloroethane | 107-06-2 | 0.39 U | 0.41 U | 0.35 U | 48 U |
| 1,2-Dichloropropane | 78-87-5 | 0.51 U | 0.53 U | 0.45 U | 47 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.72 U | 0.74 U | 0.64 U | 55 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.70 U | 0.72 U | 0.62 U | 58 U |
| 2-Butanone | 78-93-3 | 3.6 U | 3.7 U | 3.2 U | 420 U |
| 2-Hexanone | 591-78-6 | 4.6 U | 4.8 U | 4.1 U | 98 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.5 U | 2.6 U | 2.3 U | 200 U |
| Acetone | 67-64-1 | 31 JB | 7.9 JB | 15 JB | 490 U |
| Benzene | 71-43-2 | 6.2 J | 0.53 U | 0.46 U | 36 U |
| Bromodichloromethane | 75-27-4 | 0.43 U | 0.44 U | 0.38 U | 52 U |
| Bromoform | 75-25-2 | 0.40 U | 0.41 U | 0.35 U | 38 U |
| Bromomethane | 74-83-9 | 2.6 U | 2.7 U | 2.3 U | 120 U |
| Carbon Disulfide | 75-15-0 | 0.47 U | 0.49 U | 0.42 U | 58 U |
| Carbon Tetrachloride | 56-23-5 | 0.57 U | 0.59 U | 0.51 U | 70 U |
| Chlorobenzene | 108-90-7 | 0.46 U | 0.48 U | 0.41 U | 55 U |
| Chloroethane | 75-00-3 | 2.7 U | 2.8 U | 2.4 U | 130 U |
| Chloroform | 67-66-3 | 0.45 U | 0.46 U | 0.40 U | 86 U |
| Chloromethane | 74-87-3 | 1.1 U | 1.1 U | 0.98 U | 100 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.42 U | 0.43 U | 0.37 U | 110 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.42 U | 0.44 U | 0.38 U | 23 U |
| Cyclohexane | 110-82-7 | 0.42 U | 0.43 U | 0.37 U | 55 U |
| Dibromochloromethane | 124-48-1 | 0.29 U | 0.31 U | 0.26 U | 56 U |
| Dichlorodifluoromethane | 75-71-8 | 1.1 U | 1.1 U | 0.98 U | 50 U |
| Ethyl Benzene | 100-41-4 | 9.5 | 0.47 U | 0.40 U | 61 U |
| Isopropylbenzene | 98-82-8 | 1.4 J | 0.55 U | 0.48 U | 50 U |
| m/p-Xylenes | 126777-61-2 | 3.5 J | 1.1 U | 0.99 U | 140 U |
| Methyl Acetate | 79-20-9 | 1.1 U | 1.1 U | 0.99 U | 120 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.47 U | 0.49 U | 0.42 U | 53 U |
| Methylcyclohexane | 108-87-2 | 0.54 U | 0.56 U | 0.48 U | 89 U |
| Methylene Chloride | 75-09-2 | 2.3 U | 7.3 B | 2.1 U | 93 U |
| o-Xylene | 95-47-6 | 1.7 J | 0.51 U | 0.44 U | 55 U |
| Styrene | 100-42-5 | 0.59 U | 0.61 U | 0.53 U | 51 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.47 U | 0.48 U | 0.41 U | 63 U |
| Tetrachloroethene | 127-18-4 | 0.94 U | 0.97 U | 0.83 U | 49 U |
| Toluene | 108-88-3 | 0.52 U | 0.54 U | 0.46 U | 58 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.82 U | 0.85 U | 0.73 U | 76 U |
| Trichloroethene | 79-01-6 | 0.39 U | 0.41 U | 0.35 U | 100 U |
| Trichlorofluoromethane | 75-69-4 | 1.6 U | 1.7 U | 1.4 U | 86 U |
| Vinyl Chloride | 75-01-4 | 1.1 U | 1.1 U | 0.94 U | 40 U |

| | | | | |
|---|---|---|---|---|
| | 53.3 | 15.2 | 15 | 0 |
| | 350 | 0 | 0 | 1500 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-5(6-8) | P-5(8-10) | P-5(10-12) | P-5(12-14) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2582-14 | T2582-15 | T2582-16 | T2582-17 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.52 U | 0.50 U | 0.51 U | 0.98 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.38 U | 0.37 U | 0.38 U | 0.73 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.36 U | 0.35 U | 0.36 U | 0.69 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.82 U | 0.80 U | 0.82 U | 1.6 U |
| 1,1-Dichloroethane | 75-34-3 | 0.33 U | 0.32 U | 0.33 U | 0.63 U |
| 1,1-Dichloroethene | 75-35-4 | 0.71 U | 0.69 U | 0.70 U | 1.3 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.84 U | 0.82 U | 0.84 U | 1.6 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.2 U | 1.1 U | 1.2 U | 2.2 U |
| 1,2-Dibromoethane | 106-93-4 | 0.50 U | 0.48 U | 0.49 U | 0.94 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.48 U | 0.46 U | 0.47 U | 0.90 U |
| 1,2-Dichloroethane | 107-06-2 | 0.38 U | 0.37 U | 0.38 U | 0.72 U |
| 1,2-Dichloropropane | 78-87-5 | 0.49 U | 0.48 U | 0.49 U | 0.93 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.69 U | 0.67 U | 0.69 U | 1.3 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.67 U | 0.66 U | 0.67 U | 1.3 U |
| 2-Butanone | 78-93-3 | 3.5 U | 3.4 U | 3.5 U | 13 J |
| 2-Hexanone | 591-78-6 | 4.5 U | 4.3 U | 4.4 U | 8.5 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.4 U | 2.4 U | 2.4 U | 4.6 U |
| Acetone | 67-64-1 | 7.8 JB | 7.1 JB | 16 JB | 62 B |
| Benzene | 71-43-2 | 0.49 U | 0.48 U | 0.49 U | 220 |
| Bromodichloromethane | 75-27-4 | 0.41 U | 0.40 U | 0.41 U | 0.79 U |
| Bromoform | 75-25-2 | 0.38 U | 0.37 U | 0.38 U | 0.73 U |
| Bromomethane | 74-83-9 | 2.5 U | 2.4 U | 2.5 U | 4.8 U |
| Carbon Disulfide | 75-15-0 | 0.45 U | 0.44 U | 0.45 U | 20 |
| Carbon Tetrachloride | 56-23-5 | 0.55 U | 0.53 U | 0.54 U | 1.0 U |
| Chlorobenzene | 108-90-7 | 0.45 U | 0.44 U | 0.45 U | 0.85 U |
| Chloroethane | 75-00-3 | 2.6 U | 2.6 U | 2.6 U | 5.0 U |
| Chloroform | 67-66-3 | 0.43 U | 0.42 U | 0.43 U | 0.82 U |
| Chloromethane | 74-87-3 | 1.1 U | 1.0 U | 1.0 U | 2.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.40 U | 0.39 U | 0.40 U | 0.76 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.41 U | 0.40 U | 0.41 U | 0.78 U |
| Cyclohexane | 110-82-7 | 0.40 U | 0.39 U | 0.40 U | 4.5 J |
| Dibromochloromethane | 124-48-1 | 0.28 U | 0.28 U | 0.28 U | 0.54 U |
| Dichlorodifluoromethane | 75-71-8 | 1.6 J | 3.4 J | 1.1 U | 2.0 U |
| Ethyl Benzene | 100-41-4 | 0.44 U | 0.43 U | 0.44 U | 11 J |
| Isopropylbenzene | 98-82-8 | 0.51 U | 0.50 U | 0.51 U | 0.98 U |
| m/p-Xylenes | 126777-61-2 | 1.1 U | 1.0 U | 1.1 U | 19 |
| Methyl Acetate | 79-20-9 | 1.1 U | 1.0 U | 1.1 U | 2.0 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.45 U | 0.44 U | 0.45 U | 0.86 U |
| Methylcyclohexane | 108-87-2 | 0.52 U | 0.51 U | 0.52 U | 0.98 U |
| Methylene Chloride | 75-09-2 | 2.3 U | 2.2 U | 2.2 U | 4.3 U |
| o-Xylene | 95-47-6 | 0.47 U | 0.46 U | 0.47 U | 9.4 J |
| Styrene | 100-42-5 | 0.57 U | 0.55 U | 0.57 U | 1.1 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.45 U | 0.44 U | 0.45 U | 0.85 U |
| Tetrachloroethene | 127-18-4 | 0.90 U | 0.88 U | 0.90 U | 1.7 U |
| Toluene | 108-88-3 | 0.50 U | 0.49 U | 0.50 U | 3.0 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.79 U | 0.77 U | 0.79 U | 1.5 U |
| Trichloroethene | 79-01-6 | 0.38 U | 0.37 U | 0.38 U | 0.72 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 1.5 U | 1.5 U | 2.9 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 0.99 U | 1.0 U | 1.9 U |

| | | | | |
|---|---|---|---|---|
| | 9.4 | 10.5 | 16 | 361.9 |
| | 0 | 0 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-5(14-16) | P-5(16-18) | P-5(18-20) | P-5(20-22) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2582-18 | T2582-19 | T2582-21 | T2582-22 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 89 U | 0.50 U | 0.51 U | 0.50 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 110 U | 0.37 U | 0.38 U | 0.37 U |
| 1,1,2-Trichloroethane | 79-00-5 | 110 U | 0.35 U | 0.36 U | 0.35 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 150 U | 0.79 U | 0.80 U | 0.80 U |
| 1,1-Dichloroethane | 75-34-3 | 47 U | 0.32 U | 0.33 U | 0.32 U |
| 1,1-Dichloroethene | 75-35-4 | 71 U | 0.68 U | 0.69 U | 0.69 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 63 U | 0.82 U | 0.83 U | 0.82 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 210 U | 1.1 U | 1.1 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 140 U | 0.48 U | 0.49 U | 0.48 U |
| 1,2-Dichlorobenzene | 95-50-1 | 80 U | 0.46 U | 0.47 U | 0.46 U |
| 1,2-Dichloroethane | 107-06-2 | 70 U | 0.37 U | 0.37 U | 0.37 U |
| 1,2-Dichloropropane | 78-87-5 | 70 U | 0.47 U | 0.48 U | 0.48 U |
| 1,3-Dichlorobenzene | 541-73-1 | 82 U | 0.67 U | 0.68 U | 0.67 U |
| 1,4-Dichlorobenzene | 106-46-7 | 85 U | 0.65 U | 0.66 U | 0.66 U |
| 2-Butanone | 78-93-3 | 620 U | 3.4 U | 3.4 U | 3.4 U |
| 2-Hexanone | 591-78-6 | 140 U | 4.3 U | 4.4 U | 4.3 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 290 U | 2.4 U | 2.4 U | 2.4 U |
| Acetone | 67-64-1 | 730 U | 12 JB | 13 JB | 15 JB |
| Benzene | 71-43-2 | 7300 | 1.4 J | 2.2 J | 75 |
| Bromodichloromethane | 75-27-4 | 76 U | 0.40 U | 0.41 U | 0.40 U |
| Bromoform | 75-25-2 | 55 U | 0.37 U | 0.38 U | 0.37 U |
| Bromomethane | 74-83-9 | 170 U | 2.4 U | 2.5 U | 2.4 U |
| Carbon Disulfide | 75-15-0 | 86 U | 3.1 J | 5.6 J | 13 |
| Carbon Tetrachloride | 56-23-5 | 100 U | 0.53 U | 0.54 U | 0.53 U |
| Chlorobenzene | 108-90-7 | 81 U | 0.43 U | 0.44 U | 0.44 U |
| Chloroethane | 75-00-3 | 190 U | 2.5 U | 2.6 U | 2.6 U |
| Chloroform | 67-66-3 | 130 U | 0.42 U | 0.42 U | 0.42 U |
| Chloromethane | 74-87-3 | 150 U | 1.0 U | 1.0 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 170 U | 0.39 U | 0.39 U | 0.39 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 33 U | 0.40 U | 0.40 U | 0.40 U |
| Cyclohexane | 110-82-7 | 80 U | 0.39 U | 0.39 U | 0.39 U |
| Dibromochloromethane | 124-48-1 | 83 U | 0.27 U | 0.28 U | 0.28 U |
| Dichlorodifluoromethane | 75-71-8 | 73 U | 1.0 U | 1.5 J | 1.0 U |
| Ethyl Benzene | 100-41-4 | 2100 | 5.2 J | 0.43 U | 22 |
| Isopropylbenzene | 98-82-8 | 99 J | 0.50 U | 0.50 U | 2.7 J |
| m/p-Xylenes | 126777-61-2 | 2200 | 3.9 J | 1.0 U | 5.3 J |
| Methyl Acetate | 79-20-9 | 180 U | 1.0 U | 1.0 U | 1.0 U |
| Methyl tert-butyl Ether | 1634-04-4 | 79 U | 0.44 U | 0.45 U | 0.44 U |
| Methylcyclohexane | 108-87-2 | 130 U | 0.50 U | 0.51 U | 0.51 U |
| Methylene Chloride | 75-09-2 | 140 U | 6.5 B | 2.2 U | 2.2 U |
| o-Xylene | 95-47-6 | 960 J | 5.3 J | 0.46 U | 0.46 U |
| Styrene | 100-42-5 | 75 U | 0.55 U | 0.56 U | 0.55 U |
| t-1,3-Dichloropropene | 10061-02-6 | 93 U | 0.43 U | 0.44 U | 0.44 U |
| Tetrachloroethene | 127-18-4 | 72 U | 0.87 U | 0.88 U | 0.88 U |
| Toluene | 108-88-3 | 85 U | 0.48 U | 0.49 U | 0.49 U |
| trans-1,2-Dichloroethene | 156-60-5 | 110 U | 0.76 U | 0.77 U | 0.77 U |
| Trichloroethene | 79-01-6 | 150 U | 0.37 U | 0.37 U | 0.37 U |
| Trichlorofluoromethane | 75-69-4 | 130 U | 1.5 U | 1.5 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 59 U | 0.98 U | 1.0 U | 0.99 U |

| | | | | |
|---|---|---|---|---|
| | 12659 | 37.4 | 22.3 | 133 |
| | 2000 | 132.6 | 0 | 22 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-5(22-24) | P-5(24-26) | P-5(28-30) | P-6(0-2) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2582-23 | T2582-24 | T2582-25 | T2582-15 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.49 U | 0.52 U | 0.55 U | 0.48 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.37 U | 0.38 U | 0.41 U | 0.35 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.35 U | 0.36 U | 0.39 U | 0.33 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.79 U | 0.82 U | 0.88 U | 0.76 U |
| 1,1-Dichloroethane | 75-34-3 | 0.32 U | 0.33 U | 0.35 U | 0.31 U |
| 1,1-Dichloroethene | 75-35-4 | 0.68 U | 0.71 U | 0.75 U | 0.65 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.81 U | 0.84 U | 0.90 U | 0.78 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 1.2 U | 1.2 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.47 U | 0.50 U | 0.53 U | 0.46 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.46 U | 0.48 U | 0.51 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 0.36 U | 0.38 U | 0.40 U | 0.35 U |
| 1,2-Dichloropropane | 78-87-5 | 0.47 U | 0.49 U | 0.52 U | 0.45 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.66 U | 0.69 U | 0.73 U | 0.63 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.64 U | 0.67 U | 0.72 U | 0.62 U |
| 2-Butanone | 78-93-3 | 3.3 U | 3.5 U | 3.7 U | 3.2 U |
| 2-Hexanone | 591-78-6 | 4.3 U | 4.5 U | 4.7 U | 4.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 2.4 U | 2.6 U | 2.2 U |
| Acetone | 67-64-1 | 15 JB | 27 JB | 21 JB | 7.1 JB |
| Benzene | 71-43-2 | 0.47 U | 0.49 U | 3.1 J | 3.8 J |
| Bromodichloromethane | 75-27-4 | 0.40 U | 0.41 U | 0.44 U | 0.38 U |
| Bromoform | 75-25-2 | 0.37 U | 0.38 U | 0.41 U | 0.35 U |
| Bromomethane | 74-83-9 | 2.4 U | 2.5 U | 2.7 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 4.3 J | 0.46 U | 0.48 U | 0.42 U |
| Carbon Tetrachloride | 56-23-5 | 0.52 U | 0.55 U | 0.58 U | 0.50 U |
| Chlorobenzene | 108-90-7 | 0.43 U | 0.45 U | 0.48 U | 0.41 U |
| Chloroethane | 75-00-3 | 2.5 U | 2.6 U | 2.8 U | 2.4 U |
| Chloroform | 67-66-3 | 0.41 U | 0.43 U | 0.46 U | 0.40 U |
| Chloromethane | 74-87-3 | 1.0 U | 1.1 U | 1.1 U | 0.97 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.38 U | 0.40 U | 0.43 U | 0.37 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.39 U | 0.41 U | 0.44 U | 0.38 U |
| Cyclohexane | 110-82-7 | 0.38 U | 0.40 U | 0.43 U | 0.37 U |
| Dibromochloromethane | 124-48-1 | 0.27 U | 0.28 U | 0.30 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 1.0 U | 1.1 U | 1.1 U | 0.97 U |
| Ethyl Benzene | 100-41-4 | 0.42 U | 0.44 U | 0.47 U | 0.40 U |
| Isopropylbenzene | 98-82-8 | 0.49 U | 0.51 U | 0.55 U | 0.47 U |
| m/p-Xylenes | 126777-61-2 | 1.0 U | 1.1 U | 1.1 U | 0.98 U |
| Methyl Acetate | 79-20-9 | 1.0 U | 1.1 U | 1.1 U | 0.98 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.43 U | 0.46 U | 0.48 U | 0.42 U |
| Methylcyclohexane | 108-87-2 | 0.50 U | 0.52 U | 0.55 U | 0.48 U |
| Methylene Chloride | 75-09-2 | 2.2 U | 2.3 U | 2.4 U | 2.6 JB |
| o-Xylene | 95-47-6 | 0.45 U | 0.48 U | 0.51 U | 0.44 U |
| Styrene | 100-42-5 | 0.54 U | 0.57 U | 0.61 U | 0.52 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.43 U | 0.45 U | 0.48 U | 0.41 U |
| Tetrachloroethene | 127-18-4 | 0.86 U | 0.90 U | 0.96 U | 0.83 U |
| Toluene | 108-88-3 | 0.48 U | 0.50 U | 0.53 U | 2.3 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.75 U | 0.79 U | 0.84 U | 0.73 U |
| Trichloroethene | 79-01-6 | 0.36 U | 0.38 U | 0.41 U | 0.35 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 1.5 U | 1.6 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 0.97 U | 1.0 U | 1.1 U | 0.94 U |

| | | | | |
|---|---|---|---|---|
| | 19.3<br>0 | 27<br>0 | 24.1<br>0 | 15.8<br>0 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-6(2-4) | P-6(4-6) | P-6(4-6)RE | P-6(6-8) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-16 | T2528-17 | T2528-17RE | T2528-18 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 57 U | 0.47 U | 0.46 U | 59 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 69 U | 0.35 U | 0.35 U | 71 U |
| 1,1,2-Trichloroethane | 79-00-5 | 72 U | 0.33 U | 0.33 U | 74 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 96 U | 0.74 U | 0.74 U | 100 U |
| 1,1-Dichloroethane | 75-34-3 | 30 U | 0.30 U | 0.30 U | 31 U |
| 1,1-Dichloroethene | 75-35-4 | 45 U | 0.64 U | 0.64 U | 46 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 40 U | 0.76 U | 0.76 U | 41 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 130 U | 1.1 U | 1.0 U | 130 U |
| 1,2-Dibromoethane | 106-93-4 | 88 U | 0.45 U | 0.45 U | 91 U |
| 1,2-Dichlorobenzene | 95-50-1 | 51 U | 0.43 U | 0.43 U | 53 U |
| 1,2-Dichloroethane | 107-06-2 | 44 U | 0.34 U | 0.34 U | 46 U |
| 1,2-Dichloropropane | 78-87-5 | 44 U | 0.44 U | 0.44 U | 46 U |
| 1,3-Dichlorobenzene | 541-73-1 | 52 U | 0.62 U | 0.62 U | 53 U |
| 1,4-Dichlorobenzene | 106-46-7 | 54 U | 0.61 U | 0.61 U | 56 U |
| 2-Butanone | 78-93-3 | 390 U | 4.6 J | 3.1 U | 410 U |
| 2-Hexanone | 591-78-6 | 92 U | 4.0 U | 4.0 U | 95 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 180 U | 2.2 U | 2.2 U | 190 U |
| Acetone | 67-64-1 | 460 U | 36 B | 20 JB | 480 U |
| Benzene | 71-43-2 | 33 U | 0.45 U | 0.44 U | 35 U |
| Bromodichloromethane | 75-27-4 | 48 U | 0.37 U | 0.37 U | 50 U |
| Bromoform | 75-25-2 | 35 U | 0.35 U | 0.34 U | 36 U |
| Bromomethane | 74-83-9 | 110 U | 2.3 U | 2.3 U | 110 U |
| Carbon Disulfide | 75-15-0 | 54 U | 0.41 U | 0.41 U | 56 U |
| Carbon Tetrachloride | 56-23-5 | 65 U | 0.50 U | 0.49 U | 68 U |
| Chlorobenzene | 108-90-7 | 51 U | 0.40 U | 0.40 U | 53 U |
| Chloroethane | 75-00-3 | 120 U | 2.4 U | 2.4 U | 130 U |
| Chloroform | 67-66-3 | 80 U | 0.39 U | 0.39 U | 83 U |
| Chloromethane | 74-87-3 | 95 U | 0.95 U | 0.95 U | 98 U |
| cis-1,2-Dichloroethene | 156-59-2 | 110 U | 0.36 U | 0.36 U | 110 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 21 U | 0.37 U | 0.37 U | 22 U |
| Cyclohexane | 110-82-7 | 51 U | 0.36 U | 0.36 U | 53 U |
| Dibromochloromethane | 124-48-1 | 52 U | 0.26 U | 0.26 U | 54 U |
| Dichlorodifluoromethane | 75-71-8 | 46 U | 0.96 U | 0.95 U | 48 U |
| Ethyl Benzene | 100-41-4 | 57 U | 1.1 J | 0.39 U | 59 U |
| Isopropylbenzene | 98-82-8 | 46 U | 0.47 U | 0.46 U | 9900 |
| m/p-Xylenes | 126777-61-2 | 130 U | 5.1 J | 0.96 U | 6900 |
| Methyl Acetate | 79-20-9 | 120 U | 0.97 U | 0.96 U | 120 U |
| Methyl tert-butyl Ether | 1634-04-4 | 50 U | 0.41 U | 0.41 U | 52 U |
| Methylcyclohexane | 108-87-2 | 83 U | 0.47 U | 0.47 U | 86 U |
| Methylene Chloride | 75-09-2 | 86 U | 2.5 JB | 2.1 JB | 89 U |
| o-Xylene | 95-47-6 | 51 U | 3.7 J | 0.43 U | 4100 |
| Styrene | 100-42-5 | 48 U | 0.51 U | 0.51 U | 49 U |
| t-1,3-Dichloropropene | 10061-02-6 | 59 U | 0.41 U | 0.40 U | 61 U |
| Tetrachloroethene | 127-18-4 | 46 U | 0.82 U | 0.81 U | 47 U |
| Toluene | 108-88-3 | 54 U | 0.45 U | 0.45 U | 110 J |
| trans-1,2-Dichloroethene | 156-60-5 | 71 U | 0.71 U | 0.71 U | 74 U |
| Trichloroethene | 79-01-6 | 93 U | 0.34 U | 0.34 U | 96 U |
| Trichlorofluoromethane | 75-69-4 | 80 U | 1.4 U | 1.4 U | 83 U |
| Vinyl Chloride | 75-01-4 | 37 U | 0.92 U | 0.91 U | 38 U |

| | | | | |
|---|---|---|---|---|
| | 0 | 53 | 22.1 | 21010 |
| | 77720 | 984 | 0 | 304900 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-6(8-10) | P-6(10-12) | P-6(12-14) | P-6(14-16) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-19 | T2528-20 | T2528-21 | T2528-22 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 25.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 64 U | 1600 U | 64 U | 62 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 77 U | 1900 U | 77 U | 75 U |
| 1,1,2-Trichloroethane | 79-00-5 | 81 U | 2000 U | 81 U | 79 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 110 U | 2700 U | 110 U | 110 U |
| 1,1-Dichloroethane | 75-34-3 | 34 U | 840 U | 34 U | 33 U |
| 1,1-Dichloroethene | 75-35-4 | 50 U | 1300 U | 50 U | 49 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 45 U | 1100 U | 45 U | 44 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 150 U | 3700 U | 150 U | 140 U |
| 1,2-Dibromoethane | 106-93-4 | 99 U | 2500 U | 99 U | 96 U |
| 1,2-Dichlorobenzene | 95-50-1 | 57 U | 1400 U | 57 U | 56 U |
| 1,2-Dichloroethane | 107-06-2 | 50 U | 1200 U | 50 U | 49 U |
| 1,2-Dichloropropane | 78-87-5 | 50 U | 1200 U | 50 U | 48 U |
| 1,3-Dichlorobenzene | 541-73-1 | 58 U | 1500 U | 58 U | 57 U |
| 1,4-Dichlorobenzene | 106-46-7 | 60 U | 1500 U | 60 U | 59 U |
| 2-Butanone | 78-93-3 | 440 U | 11000 U | 440 U | 430 U |
| 2-Hexanone | 591-78-6 | 100 U | 2600 U | 100 U | 100 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 210 U | 5200 U | 210 U | 200 U |
| Acetone | 67-64-1 | 520 U | 13000 U | 520 U | 500 U |
| Benzene | 71-43-2 | 38 U | 940 U | 38 U | 37 U |
| Bromodichloromethane | 75-27-4 | 54 U | 1400 U | 54 U | 53 U |
| Bromoform | 75-25-2 | 39 U | 980 U | 39 U | 38 U |
| Bromomethane | 74-83-9 | 120 U | 3100 U | 120 U | 120 U |
| Carbon Disulfide | 75-15-0 | 61 U | 1500 U | 61 U | 59 U |
| Carbon Tetrachloride | 56-23-5 | 73 U | 1800 U | 73 U | 72 U |
| Chlorobenzene | 108-90-7 | 58 U | 1400 U | 58 U | 56 U |
| Chloroethane | 75-00-3 | 140 U | 3400 U | 140 U | 130 U |
| Chloroform | 67-66-3 | 90 U | 2200 U | 90 U | 88 U |
| Chloromethane | 74-87-3 | 110 U | 2700 U | 110 U | 100 U |
| cis-1,2-Dichloroethene | 156-59-2 | 120 U | 3000 U | 120 U | 120 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 24 U | 590 U | 24 U | 23 U |
| Cyclohexane | 110-82-7 | 57 U | 1400 U | 57 U | 56 U |
| Dibromochloromethane | 124-48-1 | 59 U | 1500 U | 59 U | 58 U |
| Dichlorodifluoromethane | 75-71-8 | 52 U | 1300 U | 52 U | 51 U |
| Ethyl Benzene | 100-41-4 | 64 U | 53000 | 4600 | 62 U |
| Isopropylbenzene | 98-82-8 | 2200 | 1300 U | 2100 | 5600 |
| m/p-Xylenes | 126777-61-2 | 49000 | 510000 | 37000 | 48000 |
| Methyl Acetate | 79-20-9 | 130 U | 3200 U | 130 U | 130 U |
| Methyl tert-butyl Ether | 1634-04-4 | 56 U | 1400 U | 56 U | 55 U |
| Methylcyclohexane | 108-87-2 | 460 J | 2300 U | 580 J | 91 U |
| Methylene Chloride | 75-09-2 | 97 U | 2400 U | 97 U | 95 U |
| o-Xylene | 95-47-6 | 24000 | 260000 | 57 U | 19000 |
| Styrene | 100-42-5 | 53 U | 1300 U | 53 U | 52 U |
| t-1,3-Dichloropropene | 10061-02-6 | 66 U | 1700 U | 66 U | 65 U |
| Tetrachloroethene | 127-18-4 | 52 U | 1300 U | 52 U | 50 U |
| Toluene | 108-88-3 | 700 J | 6900 J | 450 J | 59 U |
| trans-1,2-Dichloroethene | 156-60-5 | 80 U | 2000 U | 80 U | 78 U |
| Trichloroethene | 79-01-6 | 100 U | 2600 U | 100 U | 100 U |
| Trichlorofluoromethane | 75-69-4 | 90 U | 2200 U | 90 U | 88 U |
| Vinyl Chloride | 75-01-4 | 42 U | 1000 U | 42 U | 41 U |

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|---|---|---|---|---|
| | 76360 | 829900 | 44730 | 72600 |
| | 690000 | 8890000 | 769000 | 241500 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-6(20-22) | TRIPBLANK | FIELDBLANK | P-7(0-2) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-25 | T2528-26 | T2528-27 | T2527-25 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | WATER | WATER | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/L | ug/L | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.48 U | 0.32 U | 0.32 U | 0.45 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.36 U | 0.30 U | 0.30 U | 0.34 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.34 U | 0.41 U | 0.41 U | 0.32 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.77 U | 1.3 U | 1.3 U | 0.72 U |
| 1,1-Dichloroethane | 75-34-3 | 0.31 U | 0.38 U | 0.38 U | 0.29 U |
| 1,1-Dichloroethene | 75-35-4 | 0.66 U | 0.42 U | 0.42 U | 0.62 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.79 U | 0.46 U | 0.46 U | 0.74 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 0.38 U | 0.38 U | 1.0 U |
| 1,2-Dibromoethane | 106-93-4 | 0.46 U | 0.32 U | 0.32 U | 0.44 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.45 U | 0.44 U | 0.44 U | 0.42 U |
| 1,2-Dichloroethane | 107-06-2 | 0.35 U | 0.34 U | 0.34 U | 0.33 U |
| 1,2-Dichloropropane | 78-87-5 | 0.46 U | 0.40 U | 0.40 U | 0.43 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.64 U | 0.50 U | 0.50 U | 0.61 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.63 U | 0.54 U | 0.54 U | 0.59 U |
| 2-Butanone | 78-93-3 | 4.0 J | 1.1 U | 1.1 U | 3.1 U |
| 2-Hexanone | 591-78-6 | 4.2 U | 1.7 U | 1.7 U | 3.9 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 1.6 U | 1.6 U | 2.1 U |
| Acetone | 67-64-1 | 30 B | 2.3 U | 2.3 U | 7.7 JB |
| Benzene | 71-43-2 | 0.46 U | 0.39 U | 0.39 U | 14 |
| Bromodichloromethane | 75-27-4 | 0.39 U | 0.33 U | 0.33 U | 0.36 U |
| Bromoform | 75-25-2 | 0.36 U | 0.32 U | 0.32 U | 0.34 U |
| Bromomethane | 74-83-9 | 2.3 U | 0.41 U | 0.41 U | 2.2 U |
| Carbon Disulfide | 75-15-0 | 5.1 J | 0.40 U | 0.40 U | 0.40 U |
| Carbon Tetrachloride | 56-23-5 | 0.51 U | 1.1 U | 1.1 U | 0.48 U |
| Chlorobenzene | 108-90-7 | 0.42 U | 0.47 U | 0.47 U | 0.39 U |
| Chloroethane | 75-00-3 | 2.5 U | 0.83 U | 0.83 U | 2.3 U |
| Chloroform | 67-66-3 | 0.40 U | 0.33 U | 0.33 U | 0.38 U |
| Chloromethane | 74-87-3 | 0.99 U | 0.34 U | 0.34 U | 0.93 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.38 U | 0.29 U | 0.29 U | 0.35 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.38 U | 0.36 U | 0.36 U | 0.36 U |
| Cyclohexane | 110-82-7 | 0.37 U | 0.36 U | 0.36 U | 1.8 J |
| Dibromochloromethane | 124-48-1 | 0.27 U | 0.26 U | 0.26 U | 0.25 U |
| Dichlorodifluoromethane | 75-71-8 | 0.99 U | 0.17 U | 0.17 U | 0.93 U |
| Ethyl Benzene | 100-41-4 | 0.41 U | 0.45 U | 0.45 U | 46 |
| Isopropylbenzene | 98-82-8 | 0.48 U | 0.44 U | 0.44 U | 9.5 |
| m/p-Xylenes | 126777-61-2 | 1 U | 1.2 U | 1.2 U | 84 |
| Methyl Acetate | 79-20-9 | 1.0 U | 0.20 U | 0.20 U | 0.94 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.43 U | 0.28 U | 0.28 U | 0.40 U |
| Methylcyclohexane | 108-87-2 | 0.49 U | 0.34 U | 0.34 U | 6.0 |
| Methylene Chloride | 75-09-2 | 2.5 JB | 0.43 U | 0.43 U | 2.2 JB |
| o-Xylene | 95-47-6 | 0.44 U | 0.46 U | 0.46 U | 46 |
| Styrene | 100-42-5 | 0.53 U | 0.41 U | 0.41 U | 0.50 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.42 U | 0.32 U | 0.32 U | 0.39 U |
| Tetrachloroethene | 127-18-4 | 0.84 U | 0.48 U | 0.48 U | 0.79 U |
| Toluene | 108-88-3 | 0.47 U | 0.36 U | 0.36 U | 3.2 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.74 U | 0.40 U | 0.40 U | 0.69 U |
| Trichloroethene | 79-01-6 | 0.36 U | 0.46 U | 0.46 U | 0.33 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 0.22 U | 0.22 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 0.95 U | 0.33 U | 0.33 U | 0.89 U |

| | | | | |
|---|---|---|---|---|
| | 41.6 | 0 | 0 | |
| | 680 | 0 | 0 | |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-7(2-4) | P-7(4-6) | P-7(6-8) | P-7(8-10) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-26 | T2528-01 | T2528-02 | T2528-03 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.46 U | 0.50 U | 0.49 U | 0.52 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.34 U | 0.37 U | 0.37 U | 0.38 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.32 U | 0.35 U | 0.35 U | 0.36 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.73 U | 0.79 U | 0.79 U | 0.82 U |
| 1,1-Dichloroethane | 75-34-3 | 0.30 U | 0.32 U | 0.32 U | 0.33 U |
| 1,1-Dichloroethene | 75-35-4 | 0.63 U | 0.68 U | 0.68 U | 0.71 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.75 U | 0.81 U | 0.81 U | 0.84 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.0 U | 1.1 U | 1.1 U | 1.2 U |
| 1,2-Dibromoethane | 106-93-4 | 0.44 U | 0.48 U | 0.48 U | 0.50 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.42 U | 0.46 U | 0.46 U | 0.48 U |
| 1,2-Dichloroethane | 107-06-2 | 0.34 U | 0.36 U | 0.36 U | 0.38 U |
| 1,2-Dichloropropane | 78-87-5 | 0.44 U | 0.47 U | 0.47 U | 0.49 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.61 U | 0.66 U | 0.66 U | 0.69 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.60 U | 0.65 U | 0.65 U | 0.67 U |
| 2-Butanone | 78-93-3 | 3.1 U | 3.4 U | 3.3 U | 3.5 U |
| 2-Hexanone | 591-78-6 | 4.0 U | 4.3 U | 4.3 U | 4.5 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.2 U | 2.3 U | 2.3 U | 2.4 U |
| Acetone | 67-64-1 | 14 JB | 23 JB | 14 JB | 24 JB |
| Benzene | 71-43-2 | 0.44 U | 3.2 J | 0.47 U | 0.49 U |
| Bromodichloromethane | 75-27-4 | 0.37 U | 0.40 U | 0.40 U | 0.41 U |
| Bromoform | 75-25-2 | 0.34 U | 0.37 U | 0.37 U | 0.38 U |
| Bromomethane | 74-83-9 | 2.2 U | 2.4 U | 2.4 U | 2.5 U |
| Carbon Disulfide | 75-15-0 | 0.40 U | 0.44 U | 0.44 U | 0.45 U |
| Carbon Tetrachloride | 56-23-5 | 0.49 U | 0.53 U | 0.52 U | 0.55 U |
| Chlorobenzene | 108-90-7 | 0.40 U | 0.43 U | 0.43 U | 0.45 U |
| Chloroethane | 75-00-3 | 2.3 U | 2.5 U | 2.5 U | 2.6 U |
| Chloroform | 67-66-3 | 0.38 U | 0.41 U | 0.41 U | 0.43 U |
| Chloromethane | 74-87-3 | 0.94 U | 1.0 U | 1.0 U | 1.1 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.36 U | 0.39 U | 0.38 U | 0.40 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.36 U | 0.39 U | 0.39 U | 0.41 U |
| Cyclohexane | 110-82-7 | 0.36 U | 0.38 U | 0.38 U | 0.40 U |
| Dibromochloromethane | 124-48-1 | 0.25 U | 0.27 U | 0.27 U | 0.28 U |
| Dichlorodifluoromethane | 75-71-8 | 0.94 U | 1.0 U | 1.0 U | 1.1 U |
| Ethyl Benzene | 100-41-4 | 1.6 J | 40 | 0.42 U | 0.44 U |
| Isopropylbenzene | 98-82-8 | 0.46 U | 10 | 0.49 U | 0.51 U |
| m/p-Xylenes | 126777-61-2 | 0.95 U | 52 | 1 U | 1.1 U |
| Methyl Acetate | 79-20-9 | 0.95 U | 1.0 U | 1.0 U | 1.1 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.40 U | 0.44 U | 0.44 U | 0.45 U |
| Methylcyclohexane | 108-87-2 | 0.46 U | 0.50 U | 0.50 U | 0.52 U |
| Methylene Chloride | 75-09-2 | 2.6 JB | 3.6 JB | 2.2 U | 3.4 JB |
| o-Xylene | 95-47-6 | 0.42 U | 25 | 0.45 U | 0.47 U |
| Styrene | 100-42-5 | 0.51 U | 0.55 U | 0.54 U | 0.57 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.40 U | 0.43 U | 0.43 U | 0.45 U |
| Tetrachloroethene | 127-18-4 | 0.80 U | 0.87 U | 0.86 U | 0.90 U |
| Toluene | 108-88-3 | 0.45 U | 10 | 0.48 U | 0.50 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.70 U | 0.76 U | 0.76 U | 0.79 U |
| Trichloroethene | 79-01-6 | 0.34 U | 0.37 U | 0.36 U | 0.38 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 1.5 U | 1.5 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 0.90 U | 0.98 U | 0.97 U | 1.0 U |

| | | | | |
|---|---|---|---|---|
| | | 166.8 | 14 | 27.4 |
| | | 2084 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-7(8-10)DUP | P-7(10-12) | P-7(12-14) | P-7(14-16) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-04 | T2528-05 | T2528-06 | T2528-07 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.51 U | 0.57 U | 0.52 U | 0.56 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.38 U | 0.42 U | 0.38 U | 0.42 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.36 U | 0.40 U | 0.36 U | 0.40 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.82 U | 0.90 U | 0.82 U | 0.90 U |
| 1,1-Dichloroethane | 75-34-3 | 0.33 U | 0.36 U | 0.33 U | 0.36 U |
| 1,1-Dichloroethene | 75-35-4 | 0.70 U | 0.78 U | 0.71 U | 0.77 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.84 U | 0.92 U | 0.84 U | 0.92 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.2 U | 1.3 U | 1.2 U | 1.3 U |
| 1,2-Dibromoethane | 106-93-4 | 0.49 U | 0.54 U | 0.50 U | 0.54 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.47 U | 0.52 U | 0.48 U | 0.52 U |
| 1,2-Dichloroethane | 107-06-2 | 0.38 U | 0.42 U | 0.38 U | 0.41 U |
| 1,2-Dichloropropane | 78-87-5 | 0.49 U | 0.54 U | 0.49 U | 0.53 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.69 U | 0.76 U | 0.69 U | 0.75 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.67 U | 0.74 U | 0.67 U | 0.73 U |
| 2-Butanone | 78-93-3 | 6.2 J | 7.5 J | 3.5 U | 4.3 J |
| 2-Hexanone | 591-78-6 | 4.4 U | 4.9 U | 4.4 U | 4.9 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.4 U | 2.7 U | 2.4 U | 2.7 U |
| Acetone | 67-64-1 | 29 JB | 39 B | 19 JB | 26 JB |
| Benzene | 71-43-2 | 0.49 U | 1.5 J | 0.49 U | 0.54 U |
| Bromodichloromethane | 75-27-4 | 0.41 U | 0.45 U | 0.41 U | 0.45 U |
| Bromoform | 75-25-2 | 0.38 U | 0.42 U | 0.38 U | 0.42 U |
| Bromomethane | 74-83-9 | 2.5 U | 2.7 U | 2.5 U | 2.7 U |
| Carbon Disulfide | 75-15-0 | 0.45 U | 3.1 J | 0.45 U | 5.4 J |
| Carbon Tetrachloride | 56-23-5 | 0.54 U | 0.60 U | 0.55 U | 0.60 U |
| Chlorobenzene | 108-90-7 | 0.45 U | 0.49 U | 0.45 U | 0.49 U |
| Chloroethane | 75-00-3 | 2.6 U | 2.9 U | 2.6 U | 2.9 U |
| Chloroform | 67-66-3 | 0.43 U | 0.47 U | 0.43 U | 0.47 U |
| Chloromethane | 74-87-3 | 1.0 U | 1.2 U | 1.1 U | 1.1 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.40 U | 0.44 U | 0.40 U | 0.44 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.41 U | 0.45 U | 0.41 U | 0.45 U |
| Cyclohexane | 110-82-7 | 0.40 U | 0.44 U | 0.40 U | 0.44 U |
| Dibromochloromethane | 124-48-1 | 0.28 U | 0.31 U | 0.28 U | 0.31 U |
| Dichlorodifluoromethane | 75-71-8 | 1.1 U | 1.2 U | 1.1 U | 1.2 U |
| Ethyl Benzene | 100-41-4 | 0.44 U | 0.48 U | 0.44 U | 0.48 U |
| Isopropylbenzene | 98-82-8 | 0.51 U | 1.7 J | 0.51 U | 2.0 J |
| m/p-Xylenes | 126777-61-2 | 1.1 U | 1.2 U | 1.1 U | 1.2 U |
| Methyl Acetate | 79-20-9 | 1.1 U | 1.2 U | 1.1 U | 1.2 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.45 U | 0.50 U | 0.45 U | 0.50 U |
| Methylcyclohexane | 108-87-2 | 0.52 U | 0.57 U | 0.52 U | 0.57 U |
| Methylene Chloride | 75-09-2 | 2.8 JB | 3.8 JB | 2.2 U | 2.9 JB |
| o-Xylene | 95-47-6 | 0.47 U | 0.52 U | 0.47 U | 0.52 U |
| Styrene | 100-42-5 | 0.57 U | 0.62 U | 0.57 U | 0.62 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.45 U | 0.49 U | 0.45 U | 0.49 U |
| Tetrachloroethene | 127-18-4 | 0.90 U | 0.99 U | 0.90 U | 0.98 U |
| Toluene | 108-88-3 | 0.50 U | 0.55 U | 0.50 U | 0.55 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.79 U | 0.87 U | 0.79 U | 0.86 U |
| Trichloroethene | 79-01-6 | 0.38 U | 0.42 U | 0.38 U | 0.41 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 1.7 U | 1.5 U | 1.7 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 1.1 U | 1.0 U | 1.1 U |

| | | | | |
|---|---|---|---|---|
| | 38 | 56.6 | 19 | 40.6 |
| | 0 | 0 | 0 | 0 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-7(16-18) | P-7(18-20) | P-7(20-22) | P-7(22-24) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-08 | T2528-09 | T2528-10 | T2528-11 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.52 U | 0.52 U | 0.51 U | 0.53 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.39 U | 0.39 U | 0.38 U | 0.39 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.36 U | 0.37 U | 0.36 U | 0.37 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.82 U | 0.83 U | 0.82 U | 0.84 U |
| 1,1-Dichloroethane | 75-34-3 | 0.33 U | 0.34 U | 0.33 U | 0.34 U |
| 1,1-Dichloroethene | 75-35-4 | 0.71 U | 0.72 U | 0.70 U | 0.72 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.85 U | 0.85 U | 0.84 U | 0.86 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 1,2-Dibromoethane | 106-93-4 | 0.50 U | 0.50 U | 0.49 U | 0.51 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.48 U | 0.48 U | 0.47 U | 0.49 U |
| 1,2-Dichloroethane | 107-06-2 | 0.38 U | 0.38 U | 0.38 U | 0.39 U |
| 1,2-Dichloropropane | 78-87-5 | 0.49 U | 0.50 U | 0.49 U | 0.50 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.69 U | 0.70 U | 0.69 U | 0.70 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.68 U | 0.68 U | 0.67 U | 0.69 U |
| 2-Butanone | 78-93-3 | 3.5 U | 8.3 J | 4.0 J | 3.6 U |
| 2-Hexanone | 591-78-6 | 4.5 U | 4.5 U | 4.4 U | 4.5 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.4 U | 2.5 U | 2.4 U | 2.5 U |
| Acetone | 67-64-1 | 17 JB | 51 B | 38 B | 15 JB |
| Benzene | 71-43-2 | 0.49 U | 0.50 U | 0.49 U | 0.50 U |
| Bromodichloromethane | 75-27-4 | 0.42 U | 0.42 U | 0.41 U | 0.42 U |
| Bromoform | 75-25-2 | 0.38 U | 0.39 U | 0.38 U | 0.39 U |
| Bromomethane | 74-83-9 | 2.5 U | 2.5 U | 2.5 U | 2.5 U |
| Carbon Disulfide | 75-15-0 | 1.7 J | 3.1 J | 2.1 J | 2.1 J |
| Carbon Tetrachloride | 56-23-5 | 0.55 U | 0.55 U | 0.54 U | 0.56 U |
| Chlorobenzene | 108-90-7 | 0.45 U | 0.45 U | 0.45 U | 0.46 U |
| Chloroethane | 75-00-3 | 2.6 U | 2.7 U | 2.6 U | 2.7 U |
| Chloroform | 67-66-3 | 0.43 U | 0.44 U | 0.43 U | 0.44 U |
| Chloromethane | 74-87-3 | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.40 U | 0.41 U | 0.40 U | 0.41 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.41 U | 0.41 U | 0.41 U | 0.42 U |
| Cyclohexane | 110-82-7 | 0.40 U | 0.40 U | 0.40 U | 0.41 U |
| Dibromochloromethane | 124-48-1 | 0.29 U | 0.29 U | 0.28 U | 0.29 U |
| Dichlorodifluoromethane | 75-71-8 | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Ethyl Benzene | 100-41-4 | 1.3 J | 0.44 U | 0.44 U | 1.4 J |
| Isopropylbenzene | 98-82-8 | 0.52 U | 0.52 U | 0.51 U | 0.52 U |
| m/p-Xylenes | 126777-61-2 | 1.6 J | 1.1 U | 1.1 U | 3.5 J |
| Methyl Acetate | 79-20-9 | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.46 U | 0.46 U | 0.45 U | 0.46 U |
| Methylcyclohexane | 108-87-2 | 0.52 U | 0.52 U | 0.52 U | 0.53 U |
| Methylene Chloride | 75-09-2 | 2.9 JB | 3.2 JB | 2.9 JB | 6.1 B |
| o-Xylene | 95-47-6 | 0.48 U | 0.48 U | 0.47 U | 0.48 U |
| Styrene | 100-42-5 | 0.57 U | 0.57 U | 0.57 U | 0.58 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.45 U | 0.45 U | 0.45 U | 0.46 U |
| Tetrachloroethene | 127-18-4 | 0.90 U | 0.91 U | 0.90 U | 0.92 U |
| Toluene | 108-88-3 | 0.50 U | 0.51 U | 0.50 U | 0.51 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.79 U | 0.80 U | 0.79 U | 0.80 U |
| Trichloroethene | 79-01-6 | 0.38 U | 0.38 U | 0.38 U | 0.39 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 1.6 U | 1.5 U | 1.6 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 1.0 U | 1.0 U | 1.0 U |

| | | | | |
|---|---|---|---|---|
| | 24.5 | 65.6 | 47 | 28.4 |
| | 0 | 0 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-7(16-20) | P-8(0-2) | FIELDBLANK | TRIPBLANK |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-12 | T2603-01 | T2603-02 | T2603-03 |
| Sampling Date | | 04/25/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | WATER | WATER |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/L | ug/L |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.58 U | 0.46 U | 0.32 U | 0.32 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.43 U | 0.34 U | 0.30 U | 0.30 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.41 U | 0.32 U | 0.41 U | 0.41 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.92 U | 0.73 U | 1.3 U | 1.3 U |
| 1,1-Dichloroethane | 75-34-3 | 0.37 U | 0.30 U | 0.38 U | 0.38 U |
| 1,1-Dichloroethene | 75-35-4 | 0.79 U | 0.63 U | 0.42 U | 0.42 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.95 U | 0.75 U | 0.46 U | 0.46 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.3 U | 1.0 U | 0.38 U | 0.38 U |
| 1,2-Dibromoethane | 106-93-4 | 0.56 U | 0.44 U | 0.32 U | 0.32 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.54 U | 0.42 U | 0.44 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 0.43 U | 0.34 U | 0.34 U | 0.34 U |
| 1,2-Dichloropropane | 78-87-5 | 0.55 U | 0.44 U | 0.40 U | 0.40 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.77 U | 0.61 U | 0.50 U | 0.50 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.76 U | 0.60 U | 0.54 U | 0.54 U |
| 2-Butanone | 78-93-3 | 3.9 U | 3.1 U | 1.1 U | 1.1 U |
| 2-Hexanone | 591-78-6 | 5.0 U | 4.0 U | 1.7 U | 1.7 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.7 U | 2.2 U | 1.6 U | 1.6 U |
| Acetone | 67-64-1 | 26 JB | 3.7 U | 2.3 U | 2.3 U |
| Benzene | 71-43-2 | 1.4 J | 0.44 U | 0.39 U | 0.39 U |
| Bromodichloromethane | 75-27-4 | 0.46 U | 0.37 U | 0.33 U | 0.33 U |
| Bromoform | 75-25-2 | 0.43 U | 0.34 U | 0.32 U | 0.32 U |
| Bromomethane | 74-83-9 | 2.8 U | 2.2 U | 0.41 U | 0.41 U |
| Carbon Disulfide | 75-15-0 | 3.7 J | 0.40 U | 0.40 U | 0.40 U |
| Carbon Tetrachloride | 56-23-5 | 0.61 U | 0.49 U | 1.1 U | 1.1 U |
| Chlorobenzene | 108-90-7 | 0.50 U | 0.40 U | 0.47 U | 0.47 U |
| Chloroethane | 75-00-3 | 3.0 U | 2.3 U | 0.83 U | 0.83 U |
| Chloroform | 67-66-3 | 0.48 U | 0.38 U | 0.33 U | 0.33 U |
| Chloromethane | 74-87-3 | 1.2 U | 0.94 U | 0.34 U | 0.34 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.45 U | 0.36 U | 0.29 U | 0.29 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.46 U | 0.36 U | 0.36 U | 0.36 U |
| Cyclohexane | 110-82-7 | 0.45 U | 0.36 U | 0.36 U | 0.36 U |
| Dibromochloromethane | 124-48-1 | 0.32 U | 0.25 U | 0.26 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 1.2 U | 0.94 U | 0.17 U | 0.17 U |
| Ethyl Benzene | 100-41-4 | 2.1 J | 0.39 U | 0.45 U | 0.45 U |
| Isopropylbenzene | 98-82-8 | 0.58 U | 0.46 U | 0.44 U | 0.44 U |
| m/p-Xylenes | 126777-61-2 | 3 J | 0.95 U | 1.2 U | 1.2 U |
| Methyl Acetate | 79-20-9 | 1.2 U | 0.95 U | 0.20 U | 0.20 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.51 U | 0.40 U | 0.28 U | 0.28 U |
| Methylcyclohexane | 108-87-2 | 0.58 U | 0.46 U | 0.34 U | 0.34 U |
| Methylene Chloride | 75-09-2 | 2.5 U | 2.0 U | 0.43 U | 0.43 U |
| o-Xylene | 95-47-6 | 0.53 U | 0.42 U | 0.46 U | 0.46 U |
| Styrene | 100-42-5 | 0.64 U | 0.50 U | 0.41 U | 0.41 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.50 U | 0.40 U | 0.32 U | 0.32 U |
| Tetrachloroethene | 127-18-4 | 1.0 U | 0.80 U | 0.48 U | 0.48 U |
| Toluene | 108-88-3 | 0.56 U | 0.44 U | 0.36 U | 0.36 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.89 U | 0.70 U | 0.40 U | 0.40 U |
| Trichloroethene | 79-01-6 | 0.43 U | 0.34 U | 0.46 U | 0.46 U |
| Trichlorofluoromethane | 75-69-4 | 1.7 U | 1.4 U | 0.22 U | 0.22 U |
| Vinyl Chloride | 75-01-4 | 1.1 U | 0.90 U | 0.33 U | 0.33 U |

| | | | | |
|---|---|---|---|---|
| | 36.2 | 0 | 0 | 0 |
| | 0 | 11.9 | 0 | 0 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-8(6-7) | P-8(6-7)RE | P-8(10-12) | P-8(14-16) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2603-04 | T2603-04RE | T2603-05 | T2603-06 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.52 U | 0.52 U | 0.55 U | 0.83 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.39 U | 0.39 U | 0.41 U | 0.62 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.37 U | 0.37 U | 0.39 U | 0.58 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.83 U | 0.83 U | 0.87 U | 1.3 U |
| 1,1-Dichloroethane | 75-34-3 | 0.34 U | 0.34 U | 0.35 U | 0.53 U |
| 1,1-Dichloroethene | 75-35-4 | 0.71 U | 0.71 U | 0.75 U | 1.1 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.85 U | 0.85 U | 0.90 U | 1.4 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.2 U | 1.2 U | 1.2 U | 1.9 U |
| 1,2-Dibromoethane | 106-93-4 | 0.50 U | 0.50 U | 0.53 U | 0.80 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.48 U | 0.48 U | 0.51 U | 0.77 U |
| 1,2-Dichloroethane | 107-06-2 | 0.38 U | 0.38 U | 0.40 U | 0.61 U |
| 1,2-Dichloropropane | 78-87-5 | 0.50 U | 0.50 U | 0.52 U | 0.79 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.70 U | 0.70 U | 0.73 U | 1.1 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.68 U | 0.68 U | 0.72 U | 1.1 U |
| 2-Butanone | 78-93-3 | 3.5 U | 3.5 U | 3.7 U | 5.6 U |
| 2-Hexanone | 591-78-6 | 4.5 U | 4.5 U | 4.7 U | 7.2 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.5 U | 2.5 U | 2.6 U | 3.9 U |
| Acetone | 67-64-1 | 4.2 U | 26 J | 4.4 U | 42 J |
| Benzene | 71-43-2 | 1.7 J | 0.86 J | 0.52 U | 3100 E |
| Bromodichloromethane | 75-27-4 | 0.42 U | 0.42 U | 0.44 U | 0.67 U |
| Bromoform | 75-25-2 | 0.39 U | 0.39 U | 0.41 U | 0.62 U |
| Bromomethane | 74-83-9 | 2.5 U | 2.5 U | 2.7 U | 4.0 U |
| Carbon Disulfide | 75-15-0 | 0.46 U | 0.46 U | 0.48 U | 0.73 U |
| Carbon Tetrachloride | 56-23-5 | 0.55 U | 0.55 U | 0.58 U | 0.88 U |
| Chlorobenzene | 108-90-7 | 0.45 U | 0.45 U | 0.48 U | 0.72 U |
| Chloroethane | 75-00-3 | 2.7 U | 2.7 U | 2.8 U | 4.2 U |
| Chloroform | 67-66-3 | 0.43 U | 0.43 U | 0.46 U | 0.69 U |
| Chloromethane | 74-87-3 | 1.1 U | 1.1 U | 1.1 U | 1.7 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.41 U | 0.41 U | 0.43 U | 0.65 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.41 U | 0.41 U | 0.43 U | 0.66 U |
| Cyclohexane | 110-82-7 | 0.40 U | 0.40 U | 0.43 U | 7.7 J |
| Dibromochloromethane | 124-48-1 | 0.29 U | 0.29 U | 0.30 U | 0.46 U |
| Dichlorodifluoromethane | 75-71-8 | 1.1 U | 1.1 U | 1.1 U | 1.7 U |
| Ethyl Benzene | 100-41-4 | 1.3 J | 0.44 U | 0.46 U | 470 E |
| Isopropylbenzene | 98-82-8 | 1.4 J | 0.52 U | 0.55 U | 26 |
| m/p-Xylenes | 126777-61-2 | 2.6 J | 1.3 J | 1.1 U | 500 |
| Methyl Acetate | 79-20-9 | 1.1 U | 1.1 U | 1.1 U | 1.7 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.46 U | 0.46 U | 0.48 U | 0.73 U |
| Methylcyclohexane | 108-87-2 | 0.52 U | 0.52 U | 0.55 U | 0.83 U |
| Methylene Chloride | 75-09-2 | 6.7 | 15 B | 2.4 U | 7.6 JB |
| o-Xylene | 95-47-6 | 0.48 U | 0.48 U | 0.50 U | 270 |
| Styrene | 100-42-5 | 0.57 U | 0.57 U | 0.60 U | 0.91 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.45 U | 0.45 U | 0.48 U | 0.72 U |
| Tetrachloroethene | 127-18-4 | 2.2 J | 1.9 J | 0.96 U | 1.5 U |
| Toluene | 108-88-3 | 2.1 J | 0.51 U | 0.53 U | 130 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.80 U | 0.80 U | 0.84 U | 1.3 U |
| Trichloroethene | 79-01-6 | 0.38 U | 0.38 U | 0.40 U | 0.61 U |
| Trichlorofluoromethane | 75-69-4 | 1.6 U | 1.6 U | 1.6 U | 2.5 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 1.0 U | 1.1 U | 1.6 U |

| | | | | |
|---|---|---|---|---|
| | 18 | 45.06 | 0 | 4553.3 |
| | 197.5 | 0 | 45.4 | 0 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-8(14-16)DL | P-8(14-16)DUP | P-8(14-16)DUPDL | P-8(16-18) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2603-06DL | T2603-07 | T2603-07DL | T2603-08 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 100 UD | 0.50 U | 2.5 UD | 0.57 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 120 UD | 0.37 U | 1.9 UD | 0.43 U |
| 1,1,2-Trichloroethane | 79-00-5 | 130 UD | 0.35 U | 1.8 UD | 0.40 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 170 UD | 0.80 U | 4.0 UD | 0.91 U |
| 1,1-Dichloroethane | 75-34-3 | 54 UD | 0.32 U | 1.6 UD | 0.37 U |
| 1,1-Dichloroethene | 75-35-4 | 80 UD | 0.69 U | 3.4 UD | 0.78 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 72 UD | 0.82 U | 4.1 UD | 0.93 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 230 UD | 1.1 U | 5.7 UD | 1.3 U |
| 1,2-Dibromoethane | 106-93-4 | 160 UD | 0.48 U | 2.4 UD | 0.55 U |
| 1,2-Dichlorobenzene | 95-50-1 | 91 UD | 0.46 U | 2.3 UD | 0.53 U |
| 1,2-Dichloroethane | 107-06-2 | 80 UD | 0.37 U | 1.8 UD | 0.42 U |
| 1,2-Dichloropropane | 78-87-5 | 79 UD | 0.48 U | 2.4 UD | 0.54 U |
| 1,3-Dichlorobenzene | 541-73-1 | 93 UD | 0.67 U | 3.3 UD | 0.76 U |
| 1,4-Dichlorobenzene | 106-46-7 | 97 UD | 0.65 U | 3.3 UD | 0.75 U |
| 2-Butanone | 78-93-3 | 710 UD | 3.4 U | 17 UD | 3.9 U |
| 2-Hexanone | 591-78-6 | 160 UD | 4.3 U | 22 UD | 4.9 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 330 UD | 2.4 U | 12 UD | 2.7 U |
| Acetone | 67-64-1 | 830 UD | 4.0 U | 46 JD | 4.6 U |
| Benzene | 71-43-2 | 1500 D | 790 E | 890 D | 230 |
| Bromodichloromethane | 75-27-4 | 87 UD | 0.40 U | 2.0 UD | 0.46 U |
| Bromoform | 75-25-2 | 63 UD | 0.37 U | 1.9 UD | 0.42 U |
| Bromomethane | 74-83-9 | 200 UD | 2.4 U | 12 UD | 2.8 U |
| Carbon Disulfide | 75-15-0 | 97 UD | 13 | 2.2 UD | 0.50 U |
| Carbon Tetrachloride | 56-23-5 | 120 UD | 0.53 U | 2.7 UD | 0.61 U |
| Chlorobenzene | 108-90-7 | 92 UD | 0.43 U | 2.2 UD | 0.49 U |
| Chloroethane | 75-00-3 | 220 UD | 2.6 U | 13 UD | 2.9 U |
| Chloroform | 67-66-3 | 140 UD | 0.42 U | 2.1 UD | 0.48 U |
| Chloromethane | 74-87-3 | 170 UD | 1.0 U | 5.1 UD | 1.2 U |
| cis-1,2-Dichloroethene | 156-59-2 | 190 UD | 0.39 U | 2.0 UD | 0.44 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 38 UD | 0.40 U | 2.0 UD | 0.45 U |
| Cyclohexane | 110-82-7 | 92 UD | 2.3 J | 1.9 UD | 0.44 U |
| Dibromochloromethane | 124-48-1 | 94 UD | 0.28 U | 1.4 UD | 0.31 U |
| Dichlorodifluoromethane | 75-71-8 | 83 UD | 1.0 U | 5.1 UD | 1.2 U |
| Ethyl Benzene | 100-41-4 | 190 JD | 7.6 | 27 JD | 30 |
| Isopropylbenzene | 98-82-8 | 83 UD | 3.7 J | 2.5 UD | 6.6 J |
| m/p-Xylenes | 126777-61-2 | 320 JD | 15 | 36 D | 35 |
| Methyl Acetate | 79-20-9 | 210 UD | 1.0 U | 5.2 UD | 1.2 U |
| Methyl tert-butyl Ether | 1634-04-4 | 90 UD | 0.44 U | 2.2 UD | 0.50 U |
| Methylcyclohexane | 108-87-2 | 150 UD | 0.50 U | 2.5 UD | 0.57 U |
| Methylene Chloride | 75-09-2 | 160 UD | 3.2 JB | 11 UD | 4.3 JB |
| o-Xylene | 95-47-6 | 190 JD | 9.2 | 24 JD | 13 |
| Styrene | 100-42-5 | 86 UD | 0.55 U | 2.8 UD | 0.63 U |
| t-1,3-Dichloropropene | 10061-02-6 | 110 UD | 0.44 U | 2.2 UD | 0.50 U |
| Tetrachloroethene | 127-18-4 | 83 UD | 0.88 U | 4.4 UD | 1.0 U |
| Toluene | 108-88-3 | 97 UD | 12 | 20 JD | 3.0 J |
| trans-1,2-Dichloroethene | 156-60-5 | 130 UD | 0.77 U | 3.8 UD | 0.87 U |
| Trichloroethene | 79-01-6 | 170 UD | 0.37 U | 1.8 UD | 0.42 U |
| Trichlorofluoromethane | 75-69-4 | 140 UD | 1.5 U | 7.5 UD | 1.7 U |
| Vinyl Chloride | 75-01-4 | 67 UD | 0.99 U | 4.9 UD | 1.1 U |

| | | | | |
|---|---|---|---|---|
| | 2200 | 856 | 1043 | 321.9 |
| | 1900 | 358.6 | 370 | 109.9 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-8(18-20) | P-8(20-22) | P-8(22-24) |
|---|---|---|---|---|
| Lab Sample Number | | T2603-09 | T2603-10 | T2603-11 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.49 U | 0.50 U | 0.51 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.37 U | 0.37 U | 0.38 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.35 U | 0.35 U | 0.36 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.79 U | 0.80 U | 0.81 U |
| 1,1-Dichloroethane | 75-34-3 | 0.32 U | 0.32 U | 0.33 U |
| 1,1-Dichloroethene | 75-35-4 | 0.68 U | 0.69 U | 0.70 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.81 U | 0.82 U | 0.83 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 1.1 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.47 U | 0.48 U | 0.49 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.46 U | 0.46 U | 0.47 U |
| 1,2-Dichloroethane | 107-06-2 | 0.36 U | 0.37 U | 0.37 U |
| 1,2-Dichloropropane | 78-87-5 | 0.47 U | 0.48 U | 0.48 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.66 U | 0.67 U | 0.68 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.64 U | 0.66 U | 0.66 U |
| 2-Butanone | 78-93-3 | 3.3 U | 3.4 U | 3.4 U |
| 2-Hexanone | 591-78-6 | 4.3 U | 4.3 U | 4.4 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 2.4 U | 2.4 U |
| Acetone | 67-64-1 | 23 JB | 15 JB | 4.1 U |
| Benzene | 71-43-2 | 33 | 0.48 U | 78 |
| Bromodichloromethane | 75-27-4 | 0.40 U | 0.40 U | 0.41 U |
| Bromoform | 75-25-2 | 0.37 U | 0.37 U | 0.38 U |
| Bromomethane | 74-83-9 | 2.4 U | 2.4 U | 2.5 U |
| Carbon Disulfide | 75-15-0 | 21 | 6.8 | 0.45 U |
| Carbon Tetrachloride | 56-23-5 | 0.52 U | 0.53 U | 0.54 U |
| Chlorobenzene | 108-90-7 | 0.43 U | 0.44 U | 0.44 U |
| Chloroethane | 75-00-3 | 2.5 U | 2.6 U | 2.6 U |
| Chloroform | 67-66-3 | 0.41 U | 0.42 U | 0.42 U |
| Chloromethane | 74-87-3 | 1.0 U | 1.0 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.38 U | 0.39 U | 0.39 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.39 U | 0.40 U | 0.40 U |
| Cyclohexane | 110-82-7 | 2.8 J | 0.39 U | 0.39 U |
| Dibromochloromethane | 124-48-1 | 0.27 U | 0.28 U | 0.28 U |
| Dichlorodifluoromethane | 75-71-8 | 1.0 U | 1.0 U | 1.0 U |
| Ethyl Benzene | 100-41-4 | 22 | 0.43 U | 0.43 U |
| Isopropylbenzene | 98-82-8 | 5.7 J | 0.50 U | 1.7 J |
| m/p-Xylenes | 126777-61-2 | 23 | 1.0 U | 1.1 U |
| Methyl Acetate | 79-20-9 | 1.0 U | 1.0 U | 1.1 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.43 U | 0.44 U | 0.45 U |
| Methylcyclohexane | 108-87-2 | 3.0 J | 0.51 U | 0.51 U |
| Methylene Chloride | 75-09-2 | 2.4 JB | 2.2 U | 5.4 JB |
| o-Xylene | 95-47-6 | 13 | 0.46 U | 0.47 U |
| Styrene | 100-42-5 | 0.54 U | 0.55 U | 0.56 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.43 U | 0.44 U | 0.44 U |
| Tetrachloroethene | 127-18-4 | 0.86 U | 0.88 U | 0.89 U |
| Toluene | 108-88-3 | 3.7 J | 0.49 U | 0.49 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.75 U | 0.77 U | 0.78 U |
| Trichloroethene | 79-01-6 | 0.36 U | 0.37 U | 0.37 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 1.5 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 0.97 U | 0.99 U | 1.0 U |

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|---|---|---|---|
| | 152.6 | 21.8 | 85.1 |
| | 41 | 0 | 103.1 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-8(24-26) | P-9(0-2) | P-9(0-2) | P-9(2-4) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2603-12 | T2527-01 | T2603-13 | T2527-02 |
| Sampling Date | | 04/29/05 | 04/25/05 | 04/29/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.48 U | 0.46 U | 0.47 U | 0.49 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.36 U | 0.35 U | 0.35 U | 0.37 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.34 U | 0.33 U | 0.33 U | 0.35 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.77 U | 0.76 U | 0.75 U | 0.78 U |
| 1,1-Dichloroethane | 75-34-3 | 0.31 U | 0.31 U | 0.30 U | 0.32 U |
| 1,1-Dichloroethene | 75-35-4 | 0.66 U | 0.65 U | 0.64 U | 0.67 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.79 U | 0.78 U | 0.77 U | 0.80 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.46 U | 0.46 U | 0.45 U | 0.47 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.45 U | 0.44 U | 0.43 U | 0.45 U |
| 1,2-Dichloroethane | 107-06-2 | 0.35 U | 0.35 U | 0.34 U | 0.36 U |
| 1,2-Dichloropropane | 78-87-5 | 0.46 U | 0.45 U | 0.45 U | 0.47 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.64 U | 0.63 U | 0.63 U | 0.66 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.63 U | 0.62 U | 0.61 U | 0.64 U |
| 2-Butanone | 78-93-3 | 3.3 U | 3.2 U | 3.2 U | 5.9 J |
| 2-Hexanone | 591-78-6 | 4.2 U | 4.1 U | 4.0 U | 4.2 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 2.2 U | 2.2 U | 2.3 U |
| Acetone | 67-64-1 | 3.9 U | 11 JB | 3.8 U | 34 B |
| Benzene | 71-43-2 | 0.46 U | 0.45 U | 0.45 U | 15 |
| Bromodichloromethane | 75-27-4 | 0.39 U | 0.38 U | 0.38 U | 0.39 U |
| Bromoform | 75-25-2 | 0.36 U | 0.35 U | 0.35 U | 0.36 U |
| Bromomethane | 74-83-9 | 2.3 U | 2.3 U | 2.3 U | 2.4 U |
| Carbon Disulfide | 75-15-0 | 0.43 U | 0.42 U | 0.41 U | 0.43 U |
| Carbon Tetrachloride | 56-23-5 | 0.51 U | 0.50 U | 0.50 U | 0.52 U |
| Chlorobenzene | 108-90-7 | 0.42 U | 0.41 U | 0.41 U | 0.43 U |
| Chloroethane | 75-00-3 | 2.5 U | 2.4 U | 2.4 U | 2.5 U |
| Chloroform | 67-66-3 | 0.40 U | 0.40 U | 0.39 U | 0.41 U |
| Chloromethane | 74-87-3 | 0.99 U | 0.97 U | 0.96 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.38 U | 0.37 U | 0.36 U | 0.38 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.38 U | 0.38 U | 0.37 U | 0.39 U |
| Cyclohexane | 110-82-7 | 0.37 U | 0.37 U | 0.36 U | 5.8 J |
| Dibromochloromethane | 124-48-1 | 0.27 U | 0.26 U | 0.26 U | 0.27 U |
| Dichlorodifluoromethane | 75-71-8 | 0.99 U | 0.97 U | 0.96 U | 1.0 U |
| Ethyl Benzene | 100-41-4 | 0.41 U | 2.3 J | 0.40 U | 4.3 J |
| Isopropylbenzene | 98-82-8 | 0.48 U | 0.47 U | 0.47 U | 3.0 J |
| m/p-Xylenes | 126777-61-2 | 1.0 U | 3.5 J | 0.97 U | 5.6 J |
| Methyl Acetate | 79-20-9 | 1.0 U | 0.98 U | 0.97 U | 1.0 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.43 U | 0.42 U | 0.41 U | 0.43 U |
| Methylcyclohexane | 108-87-2 | 0.49 U | 0.48 U | 0.47 U | 8.2 |
| Methylene Chloride | 75-09-2 | 6.6 B | 2.1 U | 11 B | 2.1 U |
| o-Xylene | 95-47-6 | 0.44 U | 1.3 J | 0.43 U | 2.0 J |
| Styrene | 100-42-5 | 0.53 U | 0.52 U | 0.52 U | 0.54 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.42 U | 0.41 U | 0.41 U | 0.43 U |
| Tetrachloroethene | 127-18-4 | 0.84 U | 0.83 U | 0.82 U | 0.86 U |
| Toluene | 108-88-3 | 0.47 U | 1.7 J | 0.45 U | 3.4 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.74 U | 0.73 U | 0.72 U | 0.75 U |
| Trichloroethene | 79-01-6 | 0.36 U | 0.35 U | 0.35 U | 0.36 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 1.4 U | 1.4 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 0.95 U | 0.94 U | 0.92 U | 0.97 U |

| | | | | |
|---|---|---|---|---|
| | 6.6<br>59.1 | | 11<br>182 | |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-9(2-4) | P-9(4-6) | P-9(4-6) | P-9(6-8) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2603-14 | T2527-03 | T2603-15 | T2603-16 |
| Sampling Date | | 04/29/05 | 04/25/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 5.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 59 U | 0.52 U | 2.5 U | 2.5 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 71 U | 0.38 U | 1.8 U | 1.9 U |
| 1,1,2-Trichloroethane | 79-00-5 | 74 U | 0.36 U | 1.7 U | 1.8 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 100 U | 0.82 U | 3.9 U | 4.0 U |
| 1,1-Dichloroethane | 75-34-3 | 31 U | 0.33 U | 1.6 U | 1.6 U |
| 1,1-Dichloroethene | 75-35-4 | 46 U | 0.71 U | 3.4 U | 3.4 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 41 U | 0.84 U | 4.0 U | 4.1 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 130 U | 1.2 U | 5.5 U | 5.7 U |
| 1,2-Dibromoethane | 106-93-4 | 91 U | 0.50 U | 2.4 U | 2.4 U |
| 1,2-Dichlorobenzene | 95-50-1 | 53 U | 0.48 U | 2.3 U | 2.3 U |
| 1,2-Dichloroethane | 107-06-2 | 46 U | 0.38 U | 1.8 U | 1.8 U |
| 1,2-Dichloropropane | 78-87-5 | 46 U | 0.49 U | 2.3 U | 2.4 U |
| 1,3-Dichlorobenzene | 541-73-1 | 53 U | 0.69 U | 3.3 U | 3.4 U |
| 1,4-Dichlorobenzene | 106-46-7 | 56 U | 0.67 U | 3.2 U | 3.3 U |
| 2-Butanone | 78-93-3 | 410 U | 3.5 U | 17 U | 17 U |
| 2-Hexanone | 591-78-6 | 95 U | 4.5 U | 21 U | 22 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 190 U | 2.4 U | 12 U | 12 U |
| Acetone | 67-64-1 | 480 U | 15 JB | 20 U | 20 U |
| Benzene | 71-43-2 | 1200 | 7.7 | 2.3 U | 13 J |
| Bromodichloromethane | 75-27-4 | 50 U | 0.41 U | 2.0 U | 2.0 U |
| Bromoform | 75-25-2 | 36 U | 0.38 U | 1.8 U | 1.9 U |
| Bromomethane | 74-83-9 | 110 U | 2.5 U | 12 U | 12 U |
| Carbon Disulfide | 75-15-0 | 56 U | 0.45 U | 2.2 U | 2.2 U |
| Carbon Tetrachloride | 56-23-5 | 68 U | 0.55 U | 2.6 U | 2.7 U |
| Chlorobenzene | 108-90-7 | 53 U | 0.45 U | 2.1 U | 2.2 U |
| Chloroethane | 75-00-3 | 130 U | 2.6 U | 13 U | 13 U |
| Chloroform | 67-66-3 | 83 U | 0.43 U | 2.0 U | 2.1 U |
| Chloromethane | 74-87-3 | 98 U | 1.1 U | 5.0 U | 5.1 U |
| cis-1,2-Dichloroethene | 156-59-2 | 110 U | 0.40 U | 1.9 U | 2.0 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 22 U | 0.41 U | 1.9 U | 2.0 U |
| Cyclohexane | 110-82-7 | 53 U | 30 | 1.9 U | 1.9 U |
| Dibromochloromethane | 124-48-1 | 54 U | 0.28 U | 1.4 U | 1.4 U |
| Dichlorodifluoromethane | 75-71-8 | 48 U | 1.1 U | 5.0 U | 5.1 U |
| Ethyl Benzene | 100-41-4 | 420 J | 4.1 J | 2.1 U | 2.1 U |
| Isopropylbenzene | 98-82-8 | 48 U | 4.2 J | 2.4 U | 170 |
| m/p-Xylenes | 126777-61-2 | 850 J | 3.5 J | 5.1 U | 5.2 U |
| Methyl Acetate | 79-20-9 | 120 U | 1.1 U | 5.1 U | 5.2 U |
| Methyl tert-butyl Ether | 1634-04-4 | 52 U | 0.45 U | 2.2 U | 2.2 U |
| Methylcyclohexane | 108-87-2 | 170 J | 47 | 2.5 U | 180 |
| Methylene Chloride | 75-09-2 | 89 U | 2.3 U | 22 J | 11 U |
| o-Xylene | 95-47-6 | 440 J | 1.3 J | 2.3 U | 2.3 U |
| Styrene | 100-42-5 | 49 U | 0.57 U | 2.7 U | 2.8 U |
| t-1,3-Dichloropropene | 10061-02-6 | 61 U | 0.45 U | 2.1 U | 2.2 U |
| Tetrachloroethene | 127-18-4 | 47 U | 0.90 U | 4.3 U | 4.4 U |
| Toluene | 108-88-3 | 510 J | 1.7 J | 2.4 U | 2.4 U |
| trans-1,2-Dichloroethene | 156-60-5 | 74 U | 0.79 U | 3.8 U | 3.8 U |
| Trichloroethene | 79-01-6 | 96 U | 0.38 U | 1.8 U | 1.9 U |
| Trichlorofluoromethane | 75-69-4 | 83 U | 1.5 U | 7.3 U | 7.5 U |
| Vinyl Chloride | 75-01-4 | 38 U | 1.0 U | 4.8 U | 4.9 U |

| | | | | |
|---|---|---|---|---|
| 3590<br>36900 | | 22<br>6700 | 363<br>23100 | |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-9(8-10) | P-9(10-12) | P-9(10-12)DL |
|---|---|---|---|---|
| Lab Sample Number | | T2603-17 | T2603-18 | T2603-18DL |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 69 U | 68 U | 680 UD |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 84 U | 83 U | 830 UD |
| 1,1,2-Trichloroethane | 79-00-5 | 87 U | 86 U | 860 UD |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 120 U | 120 U | 1200 UD |
| 1,1-Dichloroethane | 75-34-3 | 36 U | 36 U | 360 UD |
| 1,1-Dichloroethene | 75-35-4 | 54 U | 54 U | 540 UD |
| 1,2,4-Trichlorobenzene | 120-82-1 | 48 U | 48 U | 480 UD |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 160 U | 160 U | 1600 UD |
| 1,2-Dibromoethane | 106-93-4 | 110 U | 110 U | 1100 UD |
| 1,2-Dichlorobenzene | 95-50-1 | 62 U | 61 U | 610 UD |
| 1,2-Dichloroethane | 107-06-2 | 54 U | 53 U | 530 UD |
| 1,2-Dichloropropane | 78-87-5 | 54 U | 53 U | 530 UD |
| 1,3-Dichlorobenzene | 541-73-1 | 63 U | 62 U | 620 UD |
| 1,4-Dichlorobenzene | 106-46-7 | 65 U | 64 U | 640 UD |
| 2-Butanone | 78-93-3 | 480 U | 470 U | 4700 UD |
| 2-Hexanone | 591-78-6 | 110 U | 110 U | 1100 UD |
| 4-Methyl-2-Pentanone | 108-10-1 | 220 U | 220 U | 2200 UD |
| Acetone | 67-64-1 | 560 U | 550 U | 5500 UD |
| Benzene | 71-43-2 | 1300 | 8900 | 9300 D |
| Bromodichloromethane | 75-27-4 | 59 U | 58 U | 580 UD |
| Bromoform | 75-25-2 | 43 U | 42 U | 420 UD |
| Bromomethane | 74-83-9 | 130 U | 130 U | 1300 UD |
| Carbon Disulfide | 75-15-0 | 66 U | 65 U | 650 UD |
| Carbon Tetrachloride | 56-23-5 | 79 U | 78 U | 780 UD |
| Chlorobenzene | 108-90-7 | 62 U | 61 U | 610 UD |
| Chloroethane | 75-00-3 | 150 U | 150 U | 1500 UD |
| Chloroform | 67-66-3 | 97 U | 96 U | 960 UD |
| Chloromethane | 74-87-3 | 120 U | 110 U | 1100 UD |
| cis-1,2-Dichloroethene | 156-59-2 | 130 U | 130 U | 1300 UD |
| cis-1,3-Dichloropropene | 10061-01-5 | 26 U | 25 U | 250 UD |
| Cyclohexane | 110-82-7 | 2100 | 2500 | 3200 JD |
| Dibromochloromethane | 124-48-1 | 64 U | 63 U | 630 UD |
| Dichlorodifluoromethane | 75-71-8 | 56 U | 56 U | 560 UD |
| Ethyl Benzene | 100-41-4 | 2600 | 49000 E | 56000 D |
| Isopropylbenzene | 98-82-8 | 3900 | 6100 | 6400 JD |
| m/p-Xylenes | 126777-61-2 | 160 U | 46000 | 55000 D |
| Methyl Acetate | 79-20-9 | 140 U | 140 U | 1400 UD |
| Methyl tert-butyl Ether | 1634-04-4 | 61 U | 60 U | 600 UD |
| Methylcyclohexane | 108-87-2 | 6000 | 5100 | 7800 JD |
| Methylene Chloride | 75-09-2 | 110 U | 100 U | 1000 UD |
| o-Xylene | 95-47-6 | 62 U | 21000 | 25000 D |
| Styrene | 100-42-5 | 58 U | 57 U | 570 UD |
| t-1,3-Dichloropropene | 10061-02-6 | 72 U | 71 U | 710 UD |
| Tetrachloroethene | 127-18-4 | 56 U | 55 U | 550 UD |
| Toluene | 108-88-3 | 65 U | 2300 | 2600 JD |
| trans-1,2-Dichloroethene | 156-60-5 | 87 U | 86 U | 860 UD |
| Trichloroethene | 79-01-6 | 110 U | 110 U | 1100 UD |
| Trichlorofluoromethane | 75-69-4 | 97 U | 96 U | 960 UD |
| Vinyl Chloride | 75-01-4 | 45 U | 44 U | 440 UD |
| | | 15900 | 140900 | 165300 |
| | | 353000 | 152000 | 471000 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-9(12-14) | P-9(14-16) | P-9(16-18) | P-9(18-20) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2603-19 | T2603-20 | T2603-21 | T2603-22 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 64 U | 64 U | 2.5 U | 0.50 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 77 U | 77 U | 1.9 U | 0.37 U |
| 1,1,2-Trichloroethane | 79-00-5 | 81 U | 81 U | 1.8 U | 0.35 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 110 U | 110 U | 4.0 U | 0.80 U |
| 1,1-Dichloroethane | 75-34-3 | 34 U | 34 U | 1.6 U | 0.32 U |
| 1,1-Dichloroethene | 75-35-4 | 50 U | 50 U | 3.5 U | 0.69 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 45 U | 45 U | 4.1 U | 0.82 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 150 U | 150 U | 5.7 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 99 U | 99 U | 2.4 U | 0.48 U |
| 1,2-Dichlorobenzene | 95-50-1 | 57 U | 57 U | 2.3 U | 0.46 U |
| 1,2-Dichloroethane | 107-06-2 | 50 U | 50 U | 1.9 U | 0.37 U |
| 1,2-Dichloropropane | 78-87-5 | 50 U | 50 U | 2.4 U | 0.48 U |
| 1,3-Dichlorobenzene | 541-73-1 | 58 U | 58 U | 3.4 U | 0.67 U |
| 1,4-Dichlorobenzene | 106-46-7 | 60 U | 60 U | 3.3 U | 0.66 U |
| 2-Butanone | 78-93-3 | 440 U | 440 U | 17 U | 3.4 U |
| 2-Hexanone | 591-78-6 | 100 U | 100 U | 22 U | 4.3 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 210 U | 210 U | 12 U | 2.4 U |
| Acetone | 67-64-1 | 520 U | 520 U | 20 U | 4.0 U |
| Benzene | 71-43-2 | 4800 | 1000 | 310 | 300 E |
| Bromodichloromethane | 75-27-4 | 54 U | 54 U | 2.0 U | 0.40 U |
| Bromoform | 75-25-2 | 39 U | 39 U | 1.9 U | 0.37 U |
| Bromomethane | 74-83-9 | 120 U | 120 U | 12 U | 2.4 U |
| Carbon Disulfide | 75-15-0 | 61 U | 61 U | 2.2 U | 0.44 U |
| Carbon Tetrachloride | 56-23-5 | 73 U | 73 U | 2.7 U | 0.53 U |
| Chlorobenzene | 108-90-7 | 58 U | 58 U | 2.2 U | 0.44 U |
| Chloroethane | 75-00-3 | 140 U | 140 U | 13 U | 2.6 U |
| Chloroform | 67-66-3 | 90 U | 90 U | 2.1 U | 0.42 U |
| Chloromethane | 74-87-3 | 110 U | 110 U | 5.2 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 120 U | 120 U | 2.0 U | 0.39 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 24 U | 24 U | 2.0 U | 0.40 U |
| Cyclohexane | 110-82-7 | 1700 | 800 | 2.0 U | 3.9 J |
| Dibromochloromethane | 124-48-1 | 59 U | 59 U | 1.4 U | 0.28 U |
| Dichlorodifluoromethane | 75-71-8 | 52 U | 52 U | 5.2 U | 1.0 U |
| Ethyl Benzene | 100-41-4 | 26000 | 11000 | 160 | 76 |
| Isopropylbenzene | 98-82-8 | 3900 | 2200 | 12 J | 4.4 J |
| m/p-Xylenes | 126777-61-2 | 30000 | 6200 | 110 | 35 |
| Methyl Acetate | 79-20-9 | 130 U | 130 U | 5.2 U | 1.0 U |
| Methyl tert-butyl Ether | 1634-04-4 | 56 U | 56 U | 2.2 U | 0.44 U |
| Methylcyclohexane | 108-87-2 | 2700 | 1300 | 2.5 U | 2.6 J |
| Methylene Chloride | 75-09-2 | 97 U | 97 U | 33 | 2.9 J |
| o-Xylene | 95-47-6 | 4200 | 670 J | 9.4 J | 6.2 |
| Styrene | 100-42-5 | 53 U | 53 U | 2.8 U | 0.55 U |
| t-1,3-Dichloropropene | 10061-02-6 | 66 U | 66 U | 2.2 U | 0.44 U |
| Tetrachloroethene | 127-18-4 | 52 U | 52 U | 4.4 U | 0.88 U |
| Toluene | 108-88-3 | 1000 | 60 U | 26 J | 7.8 |
| trans-1,2-Dichloroethene | 156-60-5 | 80 U | 80 U | 3.9 U | 0.77 U |
| Trichloroethene | 79-01-6 | 100 U | 100 U | 1.9 U | 0.37 U |
| Trichlorofluoromethane | 75-69-4 | 90 U | 90 U | 7.5 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 42 U | 42 U | 5.0 U | 0.99 U |
| | | | | | |
| | | 74300 | 23170 | 660.4 | 438.8 |
| | | 127500 | 110500 | 915 | 464 |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-9(18-20)DL | P-9(24-25) | P-10(0-2) | P-10(2-4) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2603-22DL | T2603-25 | T2527-15 | T2527-16 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 2.5 UD | 0.47 U | 0.48 U | 0.49 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1.9 UD | 0.35 U | 0.35 U | 0.37 U |
| 1,1,2-Trichloroethane | 79-00-5 | 1.8 UD | 0.33 U | 0.33 U | 0.35 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 4.0 UD | 0.74 U | 0.76 U | 0.78 U |
| 1,1-Dichloroethane | 75-34-3 | 1.6 UD | 0.30 U | 0.31 U | 0.32 U |
| 1,1-Dichloroethene | 75-35-4 | 3.4 UD | 0.64 U | 0.65 U | 0.67 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 4.1 UD | 0.76 U | 0.78 U | 0.80 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 5.7 UD | 1.1 U | 1.1 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 2.4 UD | 0.45 U | 0.46 U | 0.47 U |
| 1,2-Dichlorobenzene | 95-50-1 | 2.3 UD | 0.43 U | 0.44 U | 0.45 U |
| 1,2-Dichloroethane | 107-06-2 | 1.8 UD | 0.34 U | 0.35 U | 0.36 U |
| 1,2-Dichloropropane | 78-87-5 | 2.4 UD | 0.44 U | 0.45 U | 0.47 U |
| 1,3-Dichlorobenzene | 541-73-1 | 3.4 UD | 0.62 U | 0.63 U | 0.66 U |
| 1,4-Dichlorobenzene | 106-46-7 | 3.3 UD | 0.61 U | 0.62 U | 0.64 U |
| 2-Butanone | 78-93-3 | 17 UD | 3.2 U | 4.6 J | 3.3 U |
| 2-Hexanone | 591-78-6 | 22 UD | 4.0 U | 4.1 U | 4.2 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 12 UD | 2.2 U | 2.2 U | 2.3 U |
| Acetone | 67-64-1 | 20 UD | 8.5 J | 27 JB | 6.1 JB |
| Benzene | 71-43-2 | 160 D | 0.45 U | 3.7 J | 5.1 J |
| Bromodichloromethane | 75-27-4 | 2.0 UD | 0.37 U | 0.38 U | 0.39 U |
| Bromoform | 75-25-2 | 1.9 UD | 0.35 U | 0.35 U | 0.36 U |
| Bromomethane | 74-83-9 | 12 UD | 2.3 U | 2.3 U | 2.4 U |
| Carbon Disulfide | 75-15-0 | 2.2 UD | 0.41 U | 0.42 U | 0.43 U |
| Carbon Tetrachloride | 56-23-5 | 2.7 UD | 0.49 U | 0.50 U | 0.52 U |
| Chlorobenzene | 108-90-7 | 2.2 UD | 0.40 U | 0.41 U | 0.43 U |
| Chloroethane | 75-00-3 | 13 UD | 2.4 U | 2.4 U | 2.5 U |
| Chloroform | 67-66-3 | 2.1 UD | 0.39 U | 0.40 U | 0.41 U |
| Chloromethane | 74-87-3 | 5.1 UD | 0.95 U | 0.97 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 2.0 UD | 0.36 U | 0.37 U | 0.38 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 2.0 UD | 0.37 U | 0.38 U | 0.39 U |
| Cyclohexane | 110-82-7 | 1.9 UD | 0.36 U | 5.4 J | 2.8 J |
| Dibromochloromethane | 124-48-1 | 1.4 UD | 0.26 U | 0.26 U | 0.27 U |
| Dichlorodifluoromethane | 75-71-8 | 5.1 UD | 0.96 U | 0.97 U | 1.0 U |
| Ethyl Benzene | 100-41-4 | 39 D | 0.40 U | 7.5 | 2.9 J |
| Isopropylbenzene | 98-82-8 | 2.5 UD | 0.46 U | 0.47 U | 0.49 U |
| m/p-Xylenes | 126777-61-2 | 19 JD | 0.97 U | 18 | 5.3 J |
| Methyl Acetate | 79-20-9 | 5.2 UD | 0.97 U | 0.98 U | 1.0 U |
| Methyl tert-butyl Ether | 1634-04-4 | 2.2 UD | 0.41 U | 0.42 U | 0.43 U |
| Methylcyclohexane | 108-87-2 | 2.5 UD | 0.47 U | 10 | 6.2 |
| Methylene Chloride | 75-09-2 | 12 JD | 3.2 J | 3.1 JB | 2.1 U |
| o-Xylene | 95-47-6 | 2.3 UD | 0.43 U | 2.2 J | 1.8 J |
| Styrene | 100-42-5 | 2.8 UD | 0.51 U | 0.52 U | 0.54 U |
| t-1,3-Dichloropropene | 10061-02-6 | 2.2 UD | 0.41 U | 0.41 U | 0.43 U |
| Tetrachloroethene | 127-18-4 | 4.4 UD | 0.82 U | 0.83 U | 0.86 U |
| Toluene | 108-88-3 | 2.4 UD | 0.45 U | 4.5 J | 0.48 U |
| trans-1,2-Dichloroethene | 156-60-5 | 3.8 UD | 0.71 U | 0.73 U | 0.75 U |
| Trichloroethene | 79-01-6 | 1.9 UD | 0.34 U | 0.35 U | 0.36 U |
| Trichlorofluoromethane | 75-69-4 | 7.5 UD | 1.4 U | 1.4 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 4.9 UD | 0.92 U | 0.94 U | 0.97 U |
| | | | | | |
| | | 230 | 11.7 | | |
| | | 100 | 28.8 | | |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-10(2-4)RE | P-10(4-6) | P-10(6-8) | P-10(8-10) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-15RE | T2527-17 | T2527-18 | T2527-19 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 5.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.49 U | 58 U | 2.4 U | 310 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.37 U | 70 U | 1.8 U | 380 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.35 U | 73 U | 1.7 U | 400 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.78 U | 98 U | 3.8 U | 530 U |
| 1,1-Dichloroethane | 75-34-3 | 0.32 U | 31 U | 1.5 U | 170 U |
| 1,1-Dichloroethene | 75-35-4 | 0.67 U | 46 U | 3.3 U | 250 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.80 U | 41 U | 3.9 U | 220 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 130 U | 5.4 U | 720 U |
| 1,2-Dibromoethane | 106-93-4 | 0.47 U | 90 U | 2.3 U | 490 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.45 U | 52 U | 2.2 U | 280 U |
| 1,2-Dichloroethane | 107-06-2 | 0.36 U | 45 U | 1.7 U | 250 U |
| 1,2-Dichloropropane | 78-87-5 | 0.47 U | 45 U | 2.3 U | 240 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.66 U | 53 U | 3.2 U | 290 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.64 U | 55 U | 3.1 U | 300 U |
| 2-Butanone | 78-93-3 | 3.3 U | 400 U | 16 U | 2200 U |
| 2-Hexanone | 591-78-6 | 4.2 U | 94 U | 20 U | 510 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 190 U | 11 U | 1000 U |
| Acetone | 67-64-1 | 5.0 JB | 1900 J | 130 JB | 10000 J |
| Benzene | 71-43-2 | 2.4 J | 3200 | 74 | 30000 |
| Bromodichloromethane | 75-27-4 | 0.39 U | 49 U | 1.9 U | 270 U |
| Bromoform | 75-25-2 | 0.36 U | 36 U | 1.8 U | 190 U |
| Bromomethane | 74-83-9 | 2.4 U | 110 U | 12 U | 600 U |
| Carbon Disulfide | 75-15-0 | 0.43 U | 55 U | 2.1 U | 300 U |
| Carbon Tetrachloride | 56-23-5 | 0.52 U | 67 U | 2.5 U | 360 U |
| Chlorobenzene | 108-90-7 | 0.43 U | 52 U | 2.1 U | 280 U |
| Chloroethane | 75-00-3 | 2.5 U | 130 U | 12 U | 680 U |
| Chloroform | 67-66-3 | 0.41 U | 82 U | 2.0 U | 440 U |
| Chloromethane | 74-87-3 | 1.0 U | 97 U | 4.8 U | 530 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.38 U | 110 U | 1.8 U | 590 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.39 U | 22 U | 1.9 U | 120 U |
| Cyclohexane | 110-82-7 | 0.38 U | 52 U | 59 | 19000 |
| Dibromochloromethane | 124-48-1 | 0.27 U | 54 U | 1.3 U | 290 U |
| Dichlorodifluoromethane | 75-71-8 | 1.0 U | 47 U | 4.9 U | 260 U |
| Ethyl Benzene | 100-41-4 | 0.42 U | 5000 | 2000 E | 93000 |
| Isopropylbenzene | 98-82-8 | 0.49 U | 280 J | 1400 E | 6000 |
| m/p-Xylenes | 126777-61-2 | 1.8 J | 5000 | 1200 | 140000 |
| Methyl Acetate | 79-20-9 | 1.0 U | 120 U | 4.9 U | 640 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.43 U | 51 U | 2.1 U | 280 U |
| Methylcyclohexane | 108-87-2 | 2.5 J | 990 | 380 | 25000 |
| Methylene Chloride | 75-09-2 | 2.1 U | 88 U | .13 JB | 480 U |
| o-Xylene | 95-47-6 | 0.45 U | 1000 | 290 | 11000 |
| Styrene | 100-42-5 | 0.54 U | 49 U | 2.6 U | 260 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.43 U | 60 U | 2.1 U | 330 U |
| Tetrachloroethene | 127-18-4 | 0.86 U | 47 U | 4.1 U | 250 U |
| Toluene | 108-88-3 | 0.48 U | 1400 | 47 | 3000 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.75 U | 73 U | 3.6 U | 400 U |
| Trichloroethene | 79-01-6 | 0.36 U | 95 U | 1.8 U | 520 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 82 U | 7.1 U | 440 U |
| Vinyl Chloride | 75-01-4 | 0.97 U | 38 U | 4.7 U | 210 U |

# Queens West Development-Parcel 9

**Soil Samples**

Volatile Organic Compounds

| Sample ID | | P-10(10-12) | P-10(12-14) | P-10(14-16) | P-10(16-18) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-20 | T2527-21 | T2527-22 | T2527-23 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 300 U | 63 U | 310 U | 0.50 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 370 U | 76 U | 380 U | 0.37 U |
| 1,1,2-Trichloroethane | 79-00-5 | 380 U | 80 U | 400 U | 0.35 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 520 U | 110 U | 530 U | 0.80 U |
| 1,1-Dichloroethane | 75-34-3 | 160 U | 33 U | 170 U | 0.32 U |
| 1,1-Dichloroethene | 75-35-4 | 240 U | 50 U | 250 U | 0.69 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 210 U | 44 U | 220 U | 0.82 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 700 U | 140 U | 720 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 470 U | 98 U | 490 U | 0.48 U |
| 1,2-Dichlorobenzene | 95-50-1 | 270 U | 56 U | 280 U | 0.47 U |
| 1,2-Dichloroethane | 107-06-2 | 240 U | 49 U | 250 U | 0.37 U |
| 1,2-Dichloropropane | 78-87-5 | 240 U | 49 U | 240 U | 0.48 U |
| 1,3-Dichlorobenzene | 541-73-1 | 280 U | 57 U | 290 U | 0.67 U |
| 1,4-Dichlorobenzene | 106-46-7 | 290 U | 60 U | 300 U | 0.66 U |
| 2-Butanone | 78-93-3 | 2100 U | 440 U | 2200 U | 4.1 J |
| 2-Hexanone | 591-78-6 | 490 U | 100 U | 510 U | 4.3 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 980 U | 200 U | 1000 U | 2.4 U |
| Acetone | 67-64-1 | 2500 U | 2400 J | 8100 J | 38 B |
| Benzene | 71-43-2 | 26000 | 550 J | 27000 | 4.1 J |
| Bromodichloromethane | 75-27-4 | 260 U | 54 U | 270 U | 0.40 U |
| Bromoform | 75-25-2 | 190 U | 39 U | 190 U | 0.37 U |
| Bromomethane | 74-83-9 | 580 U | 120 U | 600 U | 2.4 U |
| Carbon Disulfide | 75-15-0 | 290 U | 60 U | 300 U | 0.44 U |
| Carbon Tetrachloride | 56-23-5 | 350 U | 73 U | 360 U | 0.53 U |
| Chlorobenzene | 108-90-7 | 270 U | 57 U | 280 U | 0.44 U |
| Chloroethane | 75-00-3 | 660 U | 140 U | 680 U | 2.6 U |
| Chloroform | 67-66-3 | 430 U | 89 U | 440 U | 0.42 U |
| Chloromethane | 74-87-3 | 510 U | 110 U | 530 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 570 U | 120 U | 590 U | 0.39 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 110 U | 23 U | 120 U | 0.40 U |
| Cyclohexane | 110-82-7 | 15000 | 1500 | 15000 | 0.39 U |
| Dibromochloromethane | 124-48-1 | 280 U | 58 U | 290 U | 0.28 U |
| Dichlorodifluoromethane | 75-71-8 | 250 U | 52 U | 260 U | 1.0 U |
| Ethyl Benzene | 100-41-4 | 74000 | 10000 | 74000 | 8.9 |
| Isopropylbenzene | 98-82-8 | 4000 | 830 | 5300 | 0.50 U |
| m/p-Xylenes | 126777-61-2 | 130000 | 8000 | 110000 | 6.4 |
| Methyl Acetate | 79-20-9 | 620 U | 130 U | 640 U | 1.0 U |
| Methyl tert-butyl Ether | 1634-04-4 | 270 U | 55 U | 280 U | 0.44 U |
| Methylcyclohexane | 108-87-2 | 20000 | 1200 | 22000 | 0.51 U |
| Methylene Chloride | 75-09-2 | 460 U | 96 U | 480 U | 2.8 JB |
| o-Xylene | 95-47-6 | 11000 | 1300 | 10000 | 1.3 J |
| Styrene | 100-42-5 | 250 U | 53 U | 260 U | 0.55 U |
| t-1,3-Dichloropropene | 10061-02-6 | 320 U | 66 U | 330 U | 0.44 U |
| Tetrachloroethene | 127-18-4 | 250 U | 51 U | 250 U | 0.88 U |
| Toluene | 108-88-3 | 2900 J | 220 J | 2800 J | 0.49 U |
| trans-1,2-Dichloroethene | 156-60-5 | 380 U | 79 U | 400 U | 0.77 U |
| Trichloroethene | 79-01-6 | 500 U | 100 U | 520 U | 0.37 U |
| Trichlorofluoromethane | 75-69-4 | 430 U | 89 U | 440 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 200 U | 41 U | 210 U | 0.99 U |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-11(0-2) | P-11(2-4) | P-11(4-6) | P-11(6-8) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-04 | T2527-05 | T2527-06 | T2527-07 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.45 U | 0.46 U | 0.48 U | 59 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.34 U | 0.35 U | 0.36 U | 72 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.32 U | 0.33 U | 0.34 U | 75 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.72 U | 0.74 U | 0.76 U | 100 U |
| 1,1-Dichloroethane | 75-34-3 | 0.29 U | 0.30 U | 0.31 U | 31 U |
| 1,1-Dichloroethene | 75-35-4 | 0.62 U | 0.64 U | 0.66 U | 47 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.74 U | 0.76 U | 0.79 U | 42 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.0 U | 1.0 U | 1.1 U | 140 U |
| 1,2-Dibromoethane | 106-93-4 | 0.44 U | 0.45 U | 0.46 U | 92 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.42 U | 0.43 U | 0.44 U | 53 U |
| 1,2-Dichloroethane | 107-06-2 | 0.33 U | 0.34 U | 0.35 U | 47 U |
| 1,2-Dichloropropane | 78-87-5 | 0.43 U | 0.44 U | 0.46 U | 46 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.61 U | 0.62 U | 0.64 U | 54 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.59 U | 0.61 U | 0.63 U | 56 U |
| 2-Butanone | 78-93-3 | 3.1 U | 3.1 U | 3.2 U | 410 U |
| 2-Hexanone | 591-78-6 | 3.9 U | 4.0 U | 4.1 U | 96 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.1 U | 2.2 U | 2.3 U | 190 U |
| Acetone | 67-64-1 | 12 JB | 16 JB | 3.9 U | 480 U |
| Benzene | 71-43-2 | 21 | 2.8 J | 2.5 J | 320 J |
| Bromodichloromethane | 75-27-4 | 0.36 U | 0.37 U | 0.39 U | 51 U |
| Bromoform | 75-25-2 | 0.34 U | 0.34 U | 0.36 U | 37 U |
| Bromomethane | 74-83-9 | 2.2 U | 2.3 U | 2.3 U | 110 U |
| Carbon Disulfide | 75-15-0 | 0.40 U | 0.41 U | 0.42 U | 57 U |
| Carbon Tetrachloride | 56-23-5 | 0.48 U | 0.49 U | 0.51 U | 68 U |
| Chlorobenzene | 108-90-7 | 0.39 U | 0.40 U | 0.42 U | 53 U |
| Chloroethane | 75-00-3 | 2.3 U | 2.4 U | 2.5 U | 130 U |
| Chloroform | 67-66-3 | 0.38 U | 0.39 U | 0.40 U | 84 U |
| Chloromethane | 74-87-3 | 0.93 U | 0.95 U | 0.98 U | 99 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.35 U | 0.36 U | 0.37 U | 110 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.36 U | 0.37 U | 0.38 U | 22 U |
| Cyclohexane | 110-82-7 | 0.35 U | 0.36 U | 0.37 U | 53 U |
| Dibromochloromethane | 124-48-1 | 0.25 U | 0.26 U | 0.26 U | 55 U |
| Dichlorodifluoromethane | 75-71-8 | 0.93 U | 0.95 U | 0.98 U | 49 U |
| Ethyl Benzene | 100-41-4 | 17 | 0.39 U | 13 | 4600 |
| Isopropylbenzene | 98-82-8 | 3.9 J | 0.46 U | 3.5 J | 510 J |
| m/p-Xylenes | 126777-61-2 | 21 | 1.4 J | 35 | 4300 |
| Methyl Acetate | 79-20-9 | 0.94 U | 0.96 U | 0.99 U | 120 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.40 U | 0.41 U | 0.42 U | 52 U |
| Methylcyclohexane | 108-87-2 | 0.46 U | 0.47 U | 0.48 U | 860 |
| Methylene Chloride | 75-09-2 | 2.3 JB | 2.3 JB | 2.1 U | 90 U |
| o-Xylene | 95-47-6 | 10 | 0.43 U | 28 | 2300 |
| Styrene | 100-42-5 | 0.50 U | 0.51 U | 0.53 U | 50 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.39 U | 0.40 U | 0.42 U | 62 U |
| Tetrachloroethene | 127-18-4 | 0.79 U | 0.81 U | 0.84 U | 48 U |
| Toluene | 108-88-3 | 37 | 4.3 J | 8.1 | 240 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.69 U | 0.71 U | 0.73 U | 75 U |
| Trichloroethene | 79-01-6 | 0.33 U | 0.34 U | 0.35 U | 97 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 1.4 U | 1.4 U | 84 U |
| Vinyl Chloride | 75-01-4 | 0.89 U | 0.91 U | 0.95 U | 39 U |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-11(8-10) | P-11(10-12) | P-11(10-12)DL | P-11(12-14) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-08 | T2527-09 | T2527-09DL | T2527-10 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 1.0 | 10.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 620 U | 62 U | 620 UD | 640 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 750 U | 75 U | 750 UD | 770 U |
| 1,1,2-Trichloroethane | 79-00-5 | 790 U | 79 U | 790 UD | 810 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 1100 U | 110 U | 1100 UD | 1100 U |
| 1,1-Dichloroethane | 75-34-3 | 330 U | 33 U | 330 UD | 340 U |
| 1,1-Dichloroethene | 75-35-4 | 490 U | 49 U | 490 UD | 500 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 440 U | 44 U | 440 UD | 450 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1400 U | 140 U | 1400 UD | 1500 U |
| 1,2-Dibromoethane | 106-93-4 | 960 U | 96 U | 960 UD | 990 U |
| 1,2-Dichlorobenzene | 95-50-1 | 560 U | 56 U | 560 UD | 570 U |
| 1,2-Dichloroethane | 107-06-2 | 490 U | 49 U | 490 UD | 500 U |
| 1,2-Dichloropropane | 78-87-5 | 480 U | 48 U | 480 UD | 500 U |
| 1,3-Dichlorobenzene | 541-73-1 | 570 U | 57 U | 570 UD | 580 U |
| 1,4-Dichlorobenzene | 106-46-7 | 590 U | 59 U | 590 UD | 600 U |
| 2-Butanone | 78-93-3 | 4300 U | 430 U | 4300 UD | 4400 U |
| 2-Hexanone | 591-78-6 | 1000 U | 100 U | 1000 UD | 1000 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2000 U | 200 U | 2000 UD | 2100 U |
| Acetone | 67-64-1 | 22000 J | 500 U | 9900 JD | 5200 U |
| Benzene | 71-43-2 | 15000 | 37 U | 5500 JD | 30000 |
| Bromodichloromethane | 75-27-4 | 530 U | 53 U | 530 UD | 540 U |
| Bromoform | 75-25-2 | 380 U | 38 U | 380 UD | 390 U |
| Bromomethane | 74-83-9 | 1200 U | 120 U | 1200 UD | 1200 U |
| Carbon Disulfide | 75-15-0 | 590 U | 59 U | 590 UD | 610 U |
| Carbon Tetrachloride | 56-23-5 | 720 U | 72 U | 720 UD | 730 U |
| Chlorobenzene | 108-90-7 | 560 U | 56 U | 560 UD | 580 U |
| Chloroethane | 75-00-3 | 1300 U | 130 U | 1300 UD | 1400 U |
| Chloroform | 67-66-3 | 880 U | 88 U | 880 UD | 900 U |
| Chloromethane | 74-87-3 | 1000 U | 100 U | 1000 UD | 1100 U |
| cis-1,2-Dichloroethene | 156-59-2 | 1200 U | 120 U | 1200 UD | 1200 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 230 U | 23 U | 230 UD | 240 U |
| Cyclohexane | 110-82-7 | 12000 | 3800 | 560 UD | 570 U |
| Dibromochloromethane | 124-48-1 | 580 U | 58 U | 580 UD | 590 U |
| Dichlorodifluoromethane | 75-71-8 | 510 U | 51 U | 510 UD | 520 U |
| Ethyl Benzene | 100-41-4 | 170000 | 54000 E | 62000 D | 200000 |
| Isopropylbenzene | 98-82-8 | 14000 | 5500 | 6500 JD | 15000 |
| m/p-Xylenes | 126777-61-2 | 360000 | 76000 E | 96000 D | 330000 |
| Methyl Acetate | 79-20-9 | 1300 U | 130 U | 1300 UD | 1300 U |
| Methyl tert-butyl Ether | 1634-04-4 | 550 U | 55 U | 550 UD | 560 U |
| Methylcyclohexane | 108-87-2 | 16000 | 6800 | 11000 D | 26000 |
| Methylene Chloride | 75-09-2 | 950 U | 95 U | 950 UD | 970 U |
| o-Xylene | 95-47-6 | 150000 | 28000 | 33000 D | 130000 |
| Styrene | 100-42-5 | 520 U | 52 U | 520 UD | 530 U |
| t-1,3-Dichloropropene | 10061-02-6 | 650 U | 65 U | 650 UD | 660 U |
| Tetrachloroethene | 127-18-4 | 500 U | 50 U | 500 UD | 520 U |
| Toluene | 108-88-3 | 6100 J | 1000 | 590 UD | 7900 |
| trans-1,2-Dichloroethene | 156-60-5 | 780 U | 78 U | 780 UD | 800 U |
| Trichloroethene | 79-01-6 | 1000 U | 100 U | 1000 UD | 1000 U |
| Trichlorofluoromethane | 75-69-4 | 880 U | 88 U | 880 UD | 900 U |
| Vinyl Chloride | 75-01-4 | 410 U | 41 U | 410 UD | 420 U |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-11(14-16) | P-11(14-16)DL | P-11(16-18) | P-11(18-20) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-11 | T2527-11DL | T2527-12 | T2527-13 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 50.0 | 200.0 | 10.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 3000 U | 12000 UD | 620 U | 2.6 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 3600 U | 15000 UD | 750 U | 1.9 U |
| 1,1,2-Trichloroethane | 79-00-5 | 3800 U | 15000 UD | 790 U | 1.8 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 5100 U | 20000 UD | 1100 U | 4.1 U |
| 1,1-Dichloroethane | 75-34-3 | 1600 U | 6300 UD | 330 U | 1.7 U |
| 1,1-Dichloroethene | 75-35-4 | 2400 U | 9500 UD | 490 U | 3.5 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2100 U | 8400 UD | 440 U | 4.2 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 6900 U | 28000 UD | 1400 U | 5.8 U |
| 1,2-Dibromoethane | 106-93-4 | 4600 U | 19000 UD | 960 U | 2.5 U |
| 1,2-Dichlorobenzene | 95-50-1 | 2700 U | 11000 UD | 560 U | 2.4 U |
| 1,2-Dichloroethane | 107-06-2 | 2400 U | 9400 UD | 490 U | 1.9 U |
| 1,2-Dichloropropane | 78-87-5 | 2300 U | 9300 UD | 480 U | 2.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | 2700 U | 11000 UD | 570 U | 3.4 U |
| 1,4-Dichlorobenzene | 106-46-7 | 2800 U | 11000 UD | -- 590 U | 3.4 U |
| 2-Butanone | 78-93-3 | 21000 U | 83000 UD | 4300 U | 17 U |
| 2-Hexanone | 591-78-6 | 4800 U | 19000 UD | 1000 U | 22 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 9700 U | 39000 UD | 2000 U | 12 U |
| Acetone | 67-64-1 | 85000 J | 97000 UD | 12000 JB | 95 JB |
| Benzene | 71-43-2 | 270000 | 270000 D | 24000 | 1900 E |
| Bromodichloromethane | 75-27-4 | 2600 U | 10000 UD | 530 U | 2.1 U |
| Bromoform | 75-25-2 | 1900 U | 7400 UD | 380 U | 1.9 U |
| Bromomethane | 74-83-9 | 5800 U | 23000 UD | 1200 U | 13 U |
| Carbon Disulfide | 75-15-0 | 2900 U | 11000 UD | 590 U | 2.3 U |
| Carbon Tetrachloride | 56-23-5 | 3500 U | 14000 UD | 720 U | 2.7 U |
| Chlorobenzene | 108-90-7 | 2700 U | 11000 UD | 560 U | 2.2 U |
| Chloroethane | 75-00-3 | 6500 U | 26000 UD | 1300 U | 13 U |
| Chloroform | 67-66-3 | 4200 U | 17000 UD | 880 U | 2.1 U |
| Chloromethane | 74-87-3 | 5000 U | 20000 UD | 1000 U | 5.3 U |
| cis-1,2-Dichloroethene | 156-59-2 | 5700 U | 23000 UD | 1200 U | 2.0 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 1100 U | 4500 UD | 230 U | 2.0 U |
| Cyclohexane | 110-82-7 | 27000 J | 11000 UD | 1800 J | 23 J |
| Dibromochloromethane | 124-48-1 | 2800 U | 11000 UD | 580 U | 1.4 U |
| Dichlorodifluoromethane | 75-71-8 | 2500 U | 9800 UD | 510 U | 5.3 U |
| Ethyl Benzene | 100-41-4 | 420000 | 480000 D | 49000 | 630 |
| Isopropylbenzene | 98-82-8 | 15000 J | 9800 UD | 3100 J | 42 |
| m/p-Xylenes | 126777-61-2 | 800000 | 900000 D | 95000 | 1100 |
| Methyl Acetate | 79-20-9 | 6100 U | 24000 UD | 1300 U | 5.3 U |
| Methyl tert-butyl Ether | 1634-04-4 | 2600 U | 11000 UD | 550 U | 2.3 U |
| Methylcyclohexane | 108-87-2 | 20000 J | 18000 UD | 4000 JB | 36 |
| Methylene Chloride | 75-09-2 | 4600 U | 18000 UD | 950 U | 14 JB |
| o-Xylene | 95-47-6 | 370000 | 400000 D | 41000 | 410 |
| Styrene | 100-42-5 | 2500 U | 10000 UD | 520 U | 2.8 U |
| t-1,3-Dichloropropene | 10061-02-6 | 3100 U | 13000 UD | 650 U | 2.2 U |
| Tetrachloroethene | 127-18-4 | 2400 U | 9700 UD | 500 U | 4.5 U |
| Toluene | 108-88-3 | 1700000 E | 2000000 D | 74000 | 480 |
| trans-1,2-Dichloroethene | 156-60-5 | 3800 U | 15000 UD | 780 U | 3.9 U |
| Trichloroethene | 79-01-6 | 4900 U | 20000 UD | 1000 U | 1.9 U |
| Trichlorofluoromethane | 75-69-4 | 4200 U | 17000 UD | 880 U | 7.7 U |
| Vinyl Chloride | 75-01-4 | 2000 U | 7900 UD | 410 U | 5.1 U |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-11(18-20)DL | P-11(21-22) | P-11(21-22)DL | P-11(22-23) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-13DL | T2543-14 | T2543-14DL | T2543-15 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 2.0 | 1.0 | 100.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 100 UD | 63 U | 6300 U | 62 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 120 UD | 76 U | 7600 U | 75 U |
| 1,1,2-Trichloroethane | 79-00-5 | 130 UD | 80 U | 8000 U | 79 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 170 UD | 110 U | 11000 U | 110 U |
| 1,1-Dichloroethane | 75-34-3 | 53 UD | 33 U | 3300 U | 33 U |
| 1,1-Dichloroethene | 75-35-4 | 80 UD | 50 U | 5000 U | 49 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 71 UD | 44 U | 23000 JD | 44 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 230 UD | 140 U | 14000 U | 140 U |
| 1,2-Dibromoethane | 106-93-4 | 160 UD | 98 U | 9800 U | 96 U |
| 1,2-Dichlorobenzene | 95-50-1 | 90 UD | 56 U | 5600 U | 56 U |
| 1,2-Dichloroethane | 107-06-2 | 79 UD | 49 U | 4900 U | 49 U |
| 1,2-Dichloropropane | 78-87-5 | 78 UD | 49 U | 4900 U | 48 U |
| 1,3-Dichlorobenzene | 541-73-1 | 92 UD | 57 U | 5700 U | 57 U |
| 1,4-Dichlorobenzene | 106-46-7 | 96 UD | 60 U | 6000 U | 59 U |
| 2-Butanone | 78-93-3 | 700 UD | 440 U | 44000 U | 430 U |
| 2-Hexanone | 591-78-6 | 160 UD | 100 U | 37000 JD | 100 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 330 UD | 200 U | 20000 U | 200 U |
| Acetone | 67-64-1 | 3200 JD | 510 U | 51000 U | 500 U |
| Benzene | 71-43-2 | 670 JD | 120000 E | 280000 D | 2000 |
| Bromodichloromethane | 75-27-4 | 86 UD | 310 J | 5400 U | 53 U |
| Bromoform | 75-25-2 | 62 UD | 39 U | 3900 U | 38 U |
| Bromomethane | 74-83-9 | 190 UD | 120 U | 12000 U | 120 U |
| Carbon Disulfide | 75-15-0 | 96 UD | 60 U | 6000 U | 59 U |
| Carbon Tetrachloride | 56-23-5 | 120 UD | 73 U | 7300 U | 72 U |
| Chlorobenzene | 108-90-7 | 91 UD | 57 U | 5700 U | 56 U |
| Chloroethane | 75-00-3 | 220 UD | 140 U | 14000 U | 130 U |
| Chloroform | 67-66-3 | 140 UD | 89 U | 8900 U | 88 U |
| Chloromethane | 74-87-3 | 170 UD | 110 U | 11000 U | 100 U |
| cis-1,2-Dichloroethene | 156-59-2 | 190 UD | 120 U | 12000 U | 120 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 38 UD | 23 U | 2300 U | 23 U |
| Cyclohexane | 110-82-7 | 91 UD | 57 U | 5700 U | 56 U |
| Dibromochloromethane | 124-48-1 | 93 UD | 58 U | 5800 U | 58 U |
| Dichlorodifluoromethane | 75-71-8 | 82 UD | 52 U | 5200 U | 51 U |
| Ethyl Benzene | 100-41-4 | 100 UD | 160000 E | 370000 D | 2000 |
| Isopropylbenzene | 98-82-8 | 82 UD | 9200 | 29000 JD | 51 U |
| m/p-Xylenes | 126777-61-2 | 290 JD | 260000 E | 700000 D | 3200 |
| Methyl Acetate | 79-20-9 | 200 UD | 130 U | 13000 U | 130 U |
| Methyl tert-butyl Ether | 1634-04-4 | 89 UD | 55 U | 5500 U | 55 U |
| Methylcyclohexane | 108-87-2 | 150 UD | 93 U | 9300 U | 91 U |
| Methylene Chloride | 75-09-2 | 150 UD | 96 U | 9600 U | 95 U |
| o-Xylene | 95-47-6 | 91 UD | 120000 E | 320000 D | 1300 |
| Styrene | 100-42-5 | 84 UD | 53 U | 5300 U | 52 U |
| t-1,3-Dichloropropene | 10061-02-6 | 100 UD | 66 U | 6600 U | 65 U |
| Tetrachloroethene | 127-18-4 | 81 UD | 51 U | 5100 U | 50 U |
| Toluene | 108-88-3 | 96 UD | 340000 E | 1500000 D | 4500 |
| trans-1,2-Dichloroethene | 156-60-5 | 130 UD | 79 U | 7900 U | 78 U |
| Trichloroethene | 79-01-6 | 170 UD | 100 U | 10000 U | 100 U |
| Trichlorofluoromethane | 75-69-4 | 140 UD | 89 U | 8900 U | 88 U |
| Vinyl Chloride | 75-01-4 | 66 UD | 41 U | 4100 U | 41 U |
| | | | 1009510 | 3259000 | 13000 |
| | | | 555000 | 1295000 | 22300 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | FIELDBLANK2 | TRIPBLANK2 | P-12(0-2) | P-12(2-4) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2543-16 | T2543-17 | T2631-14 | T2631-15 |
| Sampling Date | | 04/26/05 | 04/26/05 | 05/02/05 | 05/02/05 |
| Matrix | | WATER | WATER | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/L | ug/L | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.32 U | 0.32 U | 0.46 U | 0.45 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.30 U | 0.30 U | 0.34 U | 0.33 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.41 U | 0.41 U | 0.33 U | 0.32 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 1.3 U | 1.3 U | 0.74 U | 0.71 U |
| 1,1-Dichloroethane | 75-34-3 | 0.38 U | 0.38 U | 0.30 U | 0.29 U |
| 1,1-Dichloroethene | 75-35-4 | 0.42 U | 0.42 U | 0.63 U | 0.61 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.46 U | 0.46 U | 0.76 U | 0.73 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 0.38 U | 0.38 U | 1.0 U | 1.0 U |
| 1,2-Dibromoethane | 106-93-4 | 0.32 U | 0.32 U | 0.44 U | 0.43 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.44 U | 0.44 U | 0.43 U | 0.41 U |
| 1,2-Dichloroethane | 107-06-2 | 0.34 U | 0.34 U | 0.34 U | 0.33 U |
| 1,2-Dichloropropane | 78-87-5 | 0.40 U | 0.40 U | 0.44 U | 0.43 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.50 U | 0.50 U | 0.62 U | 0.60 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.54 U | 0.54 U | 0.60 U | 0.58 U |
| 2-Butanone | 78-93-3 | 1.1 U | 1.1 U | 3.1 U | 3.0 U |
| 2-Hexanone | 591-78-6 | 1.7 U | 1.7 U | 4.0 U | 3.9 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 1.6 U | 1.6 U | 2.2 U | 2.1 U |
| Acetone | 67-64-1 | 2.3 U | 2.3 U | 12 JB | 20 JB |
| Benzene | 71-43-2 | 0.39 U | 0.39 U | 1.5 J | 14 |
| Bromodichloromethane | 75-27-4 | 0.33 U | 0.33 U | 0.37 U | 0.36 U |
| Bromoform | 75-25-2 | 0.32 U | 0.32 U | 0.34 U | 0.33 U |
| Bromomethane | 74-83-9 | 0.41 U | 0.41 U | 2.2 U | 2.2 U |
| Carbon Disulfide | 75-15-0 | 0.40 U | 0.40 U | 0.41 U | 4.4 J |
| Carbon Tetrachloride | 56-23-5 | 1.1 U | 1.1 U | 0.49 U | 0.48 U |
| Chlorobenzene | 108-90-7 | 0.47 U | 0.47 U | 0.40 U | 0.39 U |
| Chloroethane | 75-00-3 | 0.83 U | 0.83 U | 2.4 U | 2.3 U |
| Chloroform | 67-66-3 | 0.33 U | 0.33 U | 0.39 U | 0.37 U |
| Chloromethane | 74-87-3 | 0.34 U | 0.34 U | 0.94 U | 0.92 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.29 U | 0.29 U | 0.36 U | 0.35 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.36 U | 0.36 U | 0.37 U | 0.36 U |
| Cyclohexane | 110-82-7 | 0.36 U | 0.36 U | 2.5 J | 1.9 J |
| Dibromochloromethane | 124-48-1 | 0.26 U | 0.26 U | 0.25 U | 0.25 U |
| Dichlorodifluoromethane | 75-71-8 | 0.17 U | 0.17 U | 0.95 U | 0.92 U |
| Ethyl Benzene | 100-41-4 | 0.45 U | 0.45 U | 6.1 | 6.9 |
| Isopropylbenzene | 98-82-8 | 0.44 U | 0.44 U | 0.46 U | 2.3 J |
| m/p-Xylenes | 126777-61-2 | 1.2 U | 1.2 U | 19 | 31 |
| Methyl Acetate | 79-20-9 | 0.20 U | 0.20 U | 0.96 U | 0.93 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.28 U | 0.28 U | 0.41 U | 0.39 U |
| Methylcyclohexane | 108-87-2 | 0.34 U | 0.34 U | 12 | 9.4 |
| Methylene Chloride | 75-09-2 | 0.43 U | 0.43 U | 12 B | 9.4 B |
| o-Xylene | 95-47-6 | 0.46 U | 0.46 U | 5.0 J | 11 |
| Styrene | 100-42-5 | 0.41 U | 0.41 U | 0.51 U | 0.49 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.32 U | 0.32 U | 0.40 U | 0.39 U |
| Tetrachloroethene | 127-18-4 | 0.48 U | 0.48 U | 0.81 U | 0.78 U |
| Toluene | 108-88-3 | 0.36 U | 0.36 U | 3.3 J | 6.6 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.40 U | 0.40 U | 0.71 U | 0.69 U |
| Trichloroethene | 79-01-6 | 0.46 U | 0.46 U | 0.34 U | 0.33 U |
| Trichlorofluoromethane | 75-69-4 | 0.22 U | 0.22 U | 1.4 U | 1.3 U |
| Vinyl Chloride | 75-01-4 | 0.33 U | 0.33 U | 0.91 U | 0.88 U |
| | | 0 | 0 | 73.4 | 116.9 |
| | | 0 | 0 | 65.1 | 283 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-12(4-6) | P-12(6-8) | P-12(8-10) | P-12(10-12) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2631-16 | T2631-17 | T2631-18 | T2631-19 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 5.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 74 U | 0.45 U | 2.5 U | 2.6 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 90 U | 0.34 U | 1.8 U | 1.9 U |
| 1,1,2-Trichloroethane | 79-00-5 | 94 U | 0.32 U | 1.7 U | 1.8 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 130 U | 0.72 U | 3.9 U | 4.1 U |
| 1,1-Dichloroethane | 75-34-3 | 39 U | 0.29 U | 1.6 U | 1.7 U |
| 1,1-Dichloroethene | 75-35-4 | 58 U | 0.62 U | 3.4 U | 3.5 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 52 U | 0.74 U | 4.0 U | 4.2 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 170 U | 1.0 U | 5.5 U | 5.8 U |
| 1,2-Dibromoethane | 106-93-4 | 110 U | 0.44 U | 2.4 U | 2.5 U |
| 1,2-Dichlorobenzene | 95-50-1 | 66 U | 0.42 U | 2.3 U | 2.4 U |
| 1,2-Dichloroethane | 107-06-2 | 58 U | 0.33 U | 1.8 U | 1.9 U |
| 1,2-Dichloropropane | 78-87-5 | 57 U | 0.43 U | 2.3 U | 2.5 U |
| 1,3-Dichlorobenzene | 541-73-1 | 67 U | 0.61 U | 3.3 U | 3.4 U |
| 1,4-Dichlorobenzene | 106-46-7 | 70 U | 0.59 U | 3.2 U | 3.4 U |
| 2-Butanone | 78-93-3 | 510 U | 3.1 U | 17 U | 17 U |
| 2-Hexanone | 591-78-6 | 120 U | 3.9 U | 21 U | 22 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 240 U | 2.1 U | 12 U | 12 U |
| Acetone | 67-64-1 | 600 U | 15 JB | 270 B | 75 JB |
| Benzene | 71-43-2 | 110 J | 14 | 120 | 67 |
| Bromodichloromethane | 75-27-4 | 63 U | 0.36 U | 2.0 U | 2.1 U |
| Bromoform | 75-25-2 | 46 U | 0.34 U | 1.8 U | 1.9 U |
| Bromomethane | 74-83-9 | 140 U | 2.2 U | 12 U | 13 U |
| Carbon Disulfide | 75-15-0 | 71 U | 0.40 U | 2.2 U | 2.3 U |
| Carbon Tetrachloride | 56-23-5 | 85 U | 0.48 U | 2.6 U | 2.7 U |
| Chlorobenzene | 108-90-7 | 67 U | 0.39 U | 2.1 U | 2.2 U |
| Chloroethane | 75-00-3 | 160 U | 2.3 U | 13 U | 13 U |
| Chloroform | 67-66-3 | 100 U | 0.38 U | 2.0 U | 2.1 U |
| Chloromethane | 74-87-3 | 120 U | 0.93 U | 5.0 U | 5.3 U |
| cis-1,2-Dichloroethene | 156-59-2 | 140 U | 0.35 U | 1.9 U | 2.0 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 28 U | 0.36 U | 1.9 U | 2.0 U |
| Cyclohexane | 110-82-7 | 66 U | 0.35 U | 79 | 11 J |
| Dibromochloromethane | 124-48-1 | 68 U | 0.25 U | 1.4 U | 1.4 U |
| Dichlorodifluoromethane | 75-71-8 | 61 U | 0.93 U | 5.0 U | 5.3 U |
| Ethyl Benzene | 100-41-4 | 74 U | 1.6 J | 510 | 19 J |
| Isopropylbenzene | 98-82-8 | 2200 | 0.45 U | 390 | 13 J |
| m/p-Xylenes | 126777-61-2 | 170 U | 4.6 J | 830 | 15 J |
| Methyl Acetate | 79-20-9 | 150 U | 0.94 U | 5.1 U | 5.3 U |
| Methyl tert-butyl Ether | 1634-04-4 | 65 U | 0.40 U | 2.2 U | 2.3 U |
| Methylcyclohexane | 108-87-2 | 3200 | 3.2 J | 890 | 42 |
| Methylene Chloride | 75-09-2 | 110 U | 6.8 B | 78 B | 73 B |
| o-Xylene | 95-47-6 | 66 U | 1.1 J | 140 | 2.4 U |
| Styrene | 100-42-5 | 62 U | 0.50 U | 2.7 U | 2.8 U |
| t-1,3-Dichloropropene | 10061-02-6 | 77 U | 0.39 U | 2.1 U | 2.2 U |
| Tetrachloroethene | 127-18-4 | 60 U | 0.79 U | 4.3 U | 4.5 U |
| Toluene | 108-88-3 | 70 U | 2.4 J | 12 J | 2.5 U |
| trans-1,2-Dichloroethene | 156-60-5 | 93 U | 0.69 U | 3.8 U | 3.9 U |
| Trichloroethene | 79-01-6 | 120 U | 0.33 U | 1.8 U | 1.9 U |
| Trichlorofluoromethane | 75-69-4 | 100 U | 1.4 U | 7.3 U | 7.7 U |
| Vinyl Chloride | 75-01-4 | 48 U | 0.89 U | 4.8 U | 5.1 U |
| | | 5510 | 48.7 | 3319 | 315 |
| | | 269000 | 0 | 4700 | 1910 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-12(12-14) | P-12(14-16) | P-12(14-16)DL | P-12(16-18) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2631-20 | T2632-02 | T2632-02DL | T2632-03 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 68 U | 0.70 U | 86 UD | 0.59 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 83 U | 0.52 U | 100 UD | 0.44 U |
| 1,1,2-Trichloroethane | 79-00-5 | 86 U | 0.50 U | 110 UD | 0.42 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 120 U | 1.1 U | 150 UD | 0.94 U |
| 1,1-Dichloroethane | 75-34-3 | 36 U | 0.45 U | 46 UD | 0.38 U |
| 1,1-Dichloroethene | 75-35-4 | 54 U | 0.97 U | 68 UD | 0.81 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 48 U | 1.2 U | 61 UD | 0.97 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 160 U | 1.6 U | 200 UD | 1.3 U |
| 1,2-Dibromoethane | 106-93-4 | 110 U | 0.68 U | 130 UD | 0.57 U |
| 1,2-Dichlorobenzene | 95-50-1 | 61 U | 0.65 U | 78 UD | 0.55 U |
| 1,2-Dichloroethane | 107-06-2 | 53 U | 0.52 U | 68 UD | 0.44 U |
| 1,2-Dichloropropane | 78-87-5 | 53 U | 0.67 U | 67 UD | 0.56 U |
| 1,3-Dichlorobenzene | 541-73-1 | 62 U | 0.94 U | 79 UD | 0.79 U |
| 1,4-Dichlorobenzene | 106-46-7 | 64 U | 0.92 U | 82 UD | 0.77 U |
| 2-Butanone | 78-93-3 | 470 U | 4.8 U | 600 UD | 4.0 U |
| 2-Hexanone | 591-78-6 | 110 U | 6.1 U | 140 UD | 5.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 220 U | 3.3 U | 280 UD | 2.8 U |
| Acetone | 67-64-1 | 550 U | 5.7 U | 700 UD | 4.8 U |
| Benzene | 71-43-2 | 9700 | 3400 E | 2400 D | 1900 E |
| Bromodichloromethane | 75-27-4 | 58 U | 0.56 U | 74 UD | 0.48 U |
| Bromoform | 75-25-2 | 42 U | 0.52 U | 53 UD | 0.44 U |
| Bromomethane | 74-83-9 | 130 U | 3.4 U | 170 UD | 2.9 U |
| Carbon Disulfide | 75-15-0 | 65 U | 0.62 U | 83 UD | 0.52 U |
| Carbon Tetrachloride | 56-23-5 | 78 U | 0.75 U | 100 UD | 0.63 U |
| Chlorobenzene | 108-90-7 | 61 U | 0.61 U | 78 UD | 0.51 U |
| Chloroethane | 75-00-3 | 150 U | 3.6 U | 190 UD | 3.0 U |
| Chloroform | 67-66-3 | 96 U | 0.59 U | 120 UD | 0.49 U |
| Chloromethane | 74-87-3 | 110 U | 1.4 U | 140 UD | 1.2 U |
| cis-1,2-Dichloroethene | 156-59-2 | 130 U | 0.55 U | 160 UD | 0.46 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 25 U | 0.56 U | 32 UD | 0.47 U |
| Cyclohexane | 110-82-7 | 61 U | 0.55 U | 78 UD | 0.46 U |
| Dibromochloromethane | 124-48-1 | 63 U | 0.39 U | 80 UD | 0.33 U |
| Dichlorodifluoromethane | 75-71-8 | 56 U | 1.4 U | 71 UD | 1.2 U |
| Ethyl Benzene | 100-41-4 | 4300 | 1400 E | 220 JD | 2200 E |
| Isopropylbenzene | 98-82-8 | 340 J | 25 | 71 UD | 83 |
| m/p-Xylenes | 126777-61-2 | 3200 | 1600 E | 220 JD | 3100 E |
| Methyl Acetate | 79-20-9 | 140 U | 1.5 U | 180 UD | 1.2 U |
| Methyl tert-butyl Ether | 1634-04-4 | 60 U | 0.62 U | 76 UD | 0.52 U |
| Methylcyclohexane | 108-87-2 | 100 U | 0.71 U | 130 UD | 0.60 U |
| Methylene Chloride | 75-09-2 | 100 U | 3.1 U | 380 JD | 2.6 U |
| o-Xylene | 95-47-6 | 1000 | 790 E | 120 JD | 1400 E |
| Styrene | 100-42-5 | 57 U | 0.78 U | 72 UD | 130 |
| t-1,3-Dichloropropene | 10061-02-6 | 71 U | 0.61 U | 90 UD | 0.52 U |
| Tetrachloroethene | 127-18-4 | 55 U | 1.2 U | 70 UD | 1.0 U |
| Toluene | 108-88-3 | 5000 | 4800 E | 2600 D | 4900 E |
| trans-1,2-Dichloroethene | 156-60-5 | 86 U | 1.1 U | 110 UD | 0.91 U |
| Trichloroethene | 79-01-6 | 110 U | 0.52 U | 140 UD | 0.44 U |
| Trichlorofluoromethane | 75-69-4 | 96 U | 2.1 U | 120 UD | 1.8 U |
| Vinyl Chloride | 75-01-4 | 44 U | 1.4 U | 57 UD | 1.2 U |
| | | 23540 | 12015 | 5940 | 13713 |
| | | 24140 | 1468 | 0 | 5850 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-12(16-18)DI | FIELDBLANK | P-12(18-20) | P-12(22-24) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2632-03DL | T2632-04 | T2632-07 | T2632-08 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | WATER | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/L | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 73 UD | 0.32 U | 58 U | 0.47 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 88 UD | 0.30 U | 70 U | 0.35 U |
| 1,1,2-Trichloroethane | 79-00-5 | 92 UD | 0.41 U | 73 U | 0.33 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 120 UD | 1.3 U | 98 U | 0.75 U |
| 1,1-Dichloroethane | 75-34-3 | 38 UD | 0.38 U | 31 U | 0.30 U |
| 1,1-Dichloroethene | 75-35-4 | 57 UD | 0.42 U | 46 U | 0.65 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 51 UD | 0.46 U | 41 U | 0.77 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 170 UD | 0.38 U | 130 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 110 UD | 0.32 U | 90 U | 0.45 U |
| 1,2-Dichlorobenzene | 95-50-1 | 65 UD | 0.44 U | 52 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 57 UD | 0.34 U | 45 U | 0.35 U |
| 1,2-Dichloropropane | 78-87-5 | 57 UD | 0.40 U | 45 U | 0.45 U |
| 1,3-Dichlorobenzene | 541-73-1 | 66 UD | 0.50 U | 53 U | 0.63 U |
| 1,4-Dichlorobenzene | 106-46-7 | 69 UD | 0.54 U | 55 U | 0.61 U |
| 2-Butanone | 78-93-3 | 510 UD | 1.1 U | 400 U | 3.2 U |
| 2-Hexanone | 591-78-6 | 120 UD | 1.7 U | 94 U | 4.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 240 UD | 1.6 U | 190 U | 2.2 U |
| Acetone | 67-64-1 | 590 UD | 2.3 U | 470 U | 3.8 U |
| Benzene | 71-43-2 | 2200 D | 0.39 U | 830 | 120 |
| Bromodichloromethane | 75-27-4 | 62 UD | 0.33 U | 49 U | 0.38 U |
| Bromoform | 75-25-2 | 45 UD | 0.32 U | 36 U | 0.35 U |
| Bromomethane | 74-83-9 | 140 UD | 0.41 U | 110 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 70 UD | 0.40 U | 55 U | 0.41 U |
| Carbon Tetrachloride | 56-23-5 | 84 UD | 1.1 U | 67 U | 0.50 U |
| Chlorobenzene | 108-90-7 | 66 UD | 0.47 U | 52 U | 0.41 U |
| Chloroethane | 75-00-3 | 160 UD | 0.83 U | 130 U | 2.4 U |
| Chloroform | 67-66-3 | 100 UD | 0.33 U | 82 U | 0.39 U |
| Chloromethane | 74-87-3 | 120 UD | 0.34 U | 97 U | 0.96 U |
| cis-1,2-Dichloroethene | 156-59-2 | 140 UD | 0.29 U | 110 U | 0.37 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 27 UD | 0.36 U | 22 U | 0.37 U |
| Cyclohexane | 110-82-7 | 66 UD | 0.36 U | 52 U | 0.37 U |
| Dibromochloromethane | 124-48-1 | 67 UD | 0.26 U | 54 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 60 UD | 0.17 U | 47 U | 0.97 U |
| Ethyl Benzene | 100-41-4 | 500 JD | 0.45 U | 1000 | 98 |
| Isopropylbenzene | 98-82-8 | 59 UD | 0.44 U | 130 J | 13 |
| m/p-Xylenes | 126777-61-2 | 820 JD | 1.2 U | 1700 | 140 |
| Methyl Acetate | 79-20-9 | 150 UD | 0.20 U | 120 U | 0.98 U |
| Methyl tert-butyl Ether | 1634-04-4 | 64 UD | 0.28 U | 51 U | 0.41 U |
| Methylcyclohexane | 108-87-2 | 110 UD | 0.34 U | 260 J | 0.47 U |
| Methylene Chloride | 75-09-2 | 380 JD | 0.43 U | 88 U | 2.1 U |
| o-Xylene | 95-47-6 | 420 JD | 0.46 U | 800 | 61 |
| Styrene | 100-42-5 | 61 UD | 0.41 U | 49 U | 0.52 U |
| t-1,3-Dichloropropene | 10061-02-6 | 76 UD | 0.32 U | 60 U | 0.41 U |
| Tetrachloroethene | 127-18-4 | 59 UD | 0.48 U | 47 U | 0.82 U |
| Toluene | 108-88-3 | 3800 D | 0.36 U | 3000 | 72 |
| trans-1,2-Dichloroethene | 156-60-5 | 92 UD | 0.40 U | 73 U | 0.72 U |
| Trichloroethene | 79-01-6 | 120 UD | 0.46 U | 95 U | 0.35 U |
| Trichlorofluoromethane | 75-69-4 | 100 UD | 0.22 U | 82 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 48 UD | 0.33 U | 38 U | 0.93 U |
| | | | | | |
| | | 8120 | 0 | 7720 | 504 |
| | | 0 | 0 | 17000 | 1406 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-13(0-2) | P-13(2-4) | P-13(4-6) | P-13(6-8) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2631-01 | T2631-02 | T2631-03 | T2631-04 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.47 U | 0.47 U | 0.49 U | 0.48 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.35 U | 0.35 U | 0.36 U | 0.35 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.33 U | 0.33 U | 0.34 U | 0.33 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.74 U | 0.75 U | 0.77 U | 0.76 U |
| 1,1-Dichloroethane | 75-34-3 | 0.30 U | 0.30 U | 0.31 U | 0.31 U |
| 1,1-Dichloroethene | 75-35-4 | 0.64 U | 0.65 U | 0.67 U | 0.65 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.76 U | 0.77 U | 0.79 U | 0.78 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.45 U | 0.45 U | 0.47 U | 0.46 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.43 U | 0.44 U | 0.45 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 0.34 U | 0.35 U | 0.36 U | 0.35 U |
| 1,2-Dichloropropane | 78-87-5 | 0.44 U | 0.45 U | 0.46 U | 0.45 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.62 U | 0.63 U | 0.65 U | 0.64 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.61 U | 0.62 U | 0.63 U | 0.62 U |
| 2-Butanone | 78-93-3 | 3.2 U | 3.2 U | 9.1 J | 11 J |
| 2-Hexanone | 591-78-6 | 4.0 U | 4.1 U | 4.2 U | 4.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.2 U | 2.2 U | 2.3 U | 2.2 U |
| Acetone | 67-64-1 | 10 JB | 26 JB | 58 B | 60 B |
| Benzene | 71-43-2 | 5.4 J | 2.7 J | 8.3 | 20 |
| Bromodichloromethane | 75-27-4 | 0.37 U | 0.38 U | 0.39 U | 0.38 U |
| Bromoform | 75-25-2 | 0.35 U | 0.35 U | 0.36 U | 0.35 U |
| Bromomethane | 74-83-9 | 2.3 U | 2.3 U | 2.4 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 0.41 U | 0.42 U | 2.4 J | 6.2 |
| Carbon Tetrachloride | 56-23-5 | 0.50 U | 0.50 U | 0.52 U | 0.50 U |
| Chlorobenzene | 108-90-7 | 0.40 U | 0.41 U | 0.42 U | 0.41 U |
| Chloroethane | 75-00-3 | 2.4 U | 2.4 U | 2.5 U | 2.4 U |
| Chloroform | 67-66-3 | 0.39 U | 0.39 U | 0.40 U | 0.40 U |
| Chloromethane | 74-87-3 | 0.95 U | 0.97 U | 0.99 U | 0.97 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.36 U | 0.37 U | 0.38 U | 0.37 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.37 U | 0.37 U | 0.38 U | 0.38 U |
| Cyclohexane | 110-82-7 | 1.1 J | 0.37 U | 3.4 J | 0.37 U |
| Dibromochloromethane | 124-48-1 | 0.26 U | 0.26 U | 0.27 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 0.96 U | 0.97 U | 1.0 U | 0.97 U |
| Ethyl Benzene | 100-41-4 | 0.40 U | 0.40 U | 2.8 J | 3.7 J |
| Isopropylbenzene | 98-82-8 | 0.47 U | 0.47 U | 0.48 U | 1.9 J |
| m/p-Xylenes | 126777-61-2 | 0.97 U | 0.98 U | 5.4 J | 5 J |
| Methyl Acetate | 79-20-9 | 0.97 U | 0.98 U | 1.0 U | 0.98 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.41 U | 0.42 U | 0.43 U | 0.42 U |
| Methylcyclohexane | 108-87-2 | 3.3 J | 0.48 U | 11 | 6.8 |
| Methylene Chloride | 75-09-2 | 9.9 B | 13 B | 11 B | 13 B |
| o-Xylene | 95-47-6 | 0.43 U | 0.43 U | 1.4 J | 2.3 J |
| Styrene | 100-42-5 | 0.51 U | 0.52 U | 0.53 U | 0.52 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.41 U | 0.41 U | 0.42 U | 0.41 U |
| Tetrachloroethene | 127-18-4 | 0.82 U | 0.83 U | 0.85 U | 0.83 U |
| Toluene | 108-88-3 | 0.45 U | 0.46 U | 2.2 J | 3.9 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.71 U | 0.72 U | 0.74 U | 0.73 U |
| Trichloroethene | 79-01-6 | 0.34 U | 0.35 U | 0.36 U | 0.35 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 5.9 | 1.4 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 0.92 U | 0.93 U | 0.96 U | 0.94 U |
| | | | | | |
| | | 29.7 | 47.6 | 115 | 133.8 |
| | | 0 | 0 | 14 | 415 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-13(8-10) | P-13(10-12) | P-13(12-14) | P-13(12-14)DL |
|---|---|---|---|---|---|
| Lab Sample Number | | T2631-05 | T2631-06 | T2631-07 | T2631-07DL |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 10.0 | 100.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 56 U | 62 U | 630 U | 6300 UD |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 68 U | 75 U | 760 U | 7600 UD |
| 1,1,2-Trichloroethane | 79-00-5 | 71 U | 79 U | 800 U | 8000 UD |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 95 U | 110 U | 1100 U | 11000 UD |
| 1,1-Dichloroethane | 75-34-3 | 30 U | 33 U | 330 U | 3300 UD |
| 1,1-Dichloroethene | 75-35-4 | 44 U | 49 U | 500 U | 5000 UD |
| 1,2,4-Trichlorobenzene | 120-82-1 | 39 U | 44 U | 440 U | 4400 UD |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 130 U | 140 U | 1400 U | 14000 UD |
| 1,2-Dibromoethane | 106-93-4 | 87 U | 96 U | 980 U | 9800 UD |
| 1,2-Dichlorobenzene | 95-50-1 | 50 U | 56 U | 560 U | 5600 UD |
| 1,2-Dichloroethane | 107-06-2 | 44 U | 49 U | 490 U | 4900 UD |
| 1,2-Dichloropropane | 78-87-5 | 44 U | 48 U | 490 U | 4900 UD |
| 1,3-Dichlorobenzene | 541-73-1 | 51 U | 57 U | 570 U | 5700 UD |
| 1,4-Dichlorobenzene | 106-46-7 | 53 U | 59 U | 600 U | 6000 UD |
| 2-Butanone | 78-93-3 | 390 U | 430 U | 4400 U | 44000 UD |
| 2-Hexanone | 591-78-6 | 91 U | 100 U | 1000 U | 10000 UD |
| 4-Methyl-2-Pentanone | 108-10-1 | 180 U | 200 U | 2000 U | 20000 UD |
| Acetone | 67-64-1 | 450 U | 500 U | 5100 U | 51000 UD |
| Benzene | 71-43-2 | 33 U | 37 U | 370 U | 3700 UD |
| Bromodichloromethane | 75-27-4 | 48 U | 53 U | 540 U | 5400 UD |
| Bromoform | 75-25-2 | 35 U | 38 U | 390 U | 3900 UD |
| Bromomethane | 74-83-9 | 110 U | 120 U | 1200 U | 12000 UD |
| Carbon Disulfide | 75-15-0 | 54 U | 59 U | 600 U | 6000 UD |
| Carbon Tetrachloride | 56-23-5 | 65 U | 72 U | 730 U | 7300 UD |
| Chlorobenzene | 108-90-7 | 51 U | 56 U | 570 U | 5700 UD |
| Chloroethane | 75-00-3 | 120 U | 130 U | 1400 U | 14000 UD |
| Chloroform | 67-66-3 | 79 U | 88 U | 890 U | 8900 UD |
| Chloromethane | 74-87-3 | 94 U | 100 U | 1100 U | 11000 UD |
| cis-1,2-Dichloroethene | 156-59-2 | 110 U | 120 U | 1200 U | 12000 UD |
| cis-1,3-Dichloropropene | 10061-01-5 | 21 U | 23 U | 230 U | 2300 UD |
| Cyclohexane | 110-82-7 | 50 U | 2300 | 570 U | 5700 UD |
| Dibromochloromethane | 124-48-1 | 52 U | 58 U | 580 U | 5800 UD |
| Dichlorodifluoromethane | 75-71-8 | 46 U | 51 U | 520 U | 5200 UD |
| Ethyl Benzene | 100-41-4 | 56 U | 12000 | 240000 | 220000 D |
| Isopropylbenzene | 98-82-8 | 1900 | 1600 | 25000 | 23000 JD |
| m/p-Xylenes | 126777-61-2 | 1000 J | 43000 | 1000000 E | 960000 D |
| Methyl Acetate | 79-20-9 | 110 U | 130 U | 1300 U | 13000 UD |
| Methyl tert-butyl Ether | 1634-04-4 | 49 U | 55 U | 550 U | 5500 UD |
| Methylcyclohexane | 108-87-2 | 4800 | 25000 | 220000 | 250000 D |
| Methylene Chloride | 75-09-2 | 85 U | 95 U | 960 U | 9600 UD |
| o-Xylene | 95-47-6 | 50 U | 9300 | 240000 | 230000 D |
| Styrene | 100-42-5 | 47 U | 52 U | 530 U | 5300 UD |
| t-1,3-Dichloropropene | 10061-02-6 | 58 U | 65 U | 660 U | 6600 UD |
| Tetrachloroethene | 127-18-4 | 45 U | 50 U | 510 U | 5100 UD |
| Toluene | 108-88-3 | 53 U | 59 U | 60000 | 61000 JD |
| trans-1,2-Dichloroethene | 156-60-5 | 71 U | 78 U | 790 U | 7900 UD |
| Trichloroethene | 79-01-6 | 92 U | 100 U | 1000 U | 10000 UD |
| Trichlorofluoromethane | 75-69-4 | 79 U | 88 U | 890 U | 8900 UD |
| Vinyl Chloride | 75-01-4 | 37 U | 41 U | 410 U | 4100 UD |
| | | 7700 | 93200 | 1785000 | 1744000 |
| | | 233000 | 448000 | 3954000 | 4860000 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-13(16-18) | P-13(16-18)DL | P-13(18-20) | P-13(8-10)DUP |
|---|---|---|---|---|---|
| Lab Sample Number | | T2631-08 | T2631-08DL | T2631-09 | T2631-10 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 50.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 110 U | 5500 UD | 86 U | 0.47 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 130 U | 6700 UD | 100 U | 0.35 U |
| 1,1,2-Trichloroethane | 79-00-5 | 140 U | 7000 UD | 110 U | 0.33 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 190 U | 9400 UD | 150 U | 0.75 U |
| 1,1-Dichloroethane | 75-34-3 | 58 U | 2900 UD | 46 U | 0.30 U |
| 1,1-Dichloroethene | 75-35-4 | 87 U | 4400 UD | 68 U | 0.65 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 78 U | 3900 UD | 61 U | 0.77 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 250 U | 13000 UD | 200 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 170 U | 8600 UD | 130 U | 0.45 U |
| 1,2-Dichlorobenzene | 95-50-1 | 99 U | 5000 UD | 78 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 87 U | 4300 UD | 68 U | 0.35 U |
| 1,2-Dichloropropane | 78-87-5 | 86 U | 4300 UD | 67 U | 0.45 U |
| 1,3-Dichlorobenzene | 541-73-1 | 100 U | 5100 UD | 79 U | 0.63 U |
| 1,4-Dichlorobenzene | 106-46-7 | 110 U | 5300 UD | 82 U | 0.62 U |
| 2-Butanone | 78-93-3 | 770 U | 38000 UD | 600 U | 3.2 U |
| 2-Hexanone | 591-78-6 | 180 U | 9000 UD | 140 U | 4.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 360 U | 18000 UD | 280 U | 2.2 U |
| Acetone | 67-64-1 | 900 U | 45000 UD | 700 U | 26 JB |
| Benzene | 71-43-2 | 65 U | 3300 UD | 51 U | 3.4 J |
| Bromodichloromethane | 75-27-4 | 95 U | 4700 UD | 74 U | 0.38 U |
| Bromoform | 75-25-2 | 68 U | 3400 UD | 53 U | 0.35 U |
| Bromomethane | 74-83-9 | 210 U | 11000 UD | 170 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 110 U | 5300 UD | 83 U | 0.42 U |
| Carbon Tetrachloride | 56-23-5 | 130 U | 6400 UD | 100 U | 0.50 U |
| Chlorobenzene | 108-90-7 | 100 U | 5000 UD | 78 U | 0.41 U |
| Chloroethane | 75-00-3 | 240 U | 12000 UD | 190 U | 2.4 U |
| Chloroform | 67-66-3 | 160 U | 7800 UD | 120 U | 0.39 U |
| Chloromethane | 74-87-3 | 190 U | 9300 UD | 140 U | 0.97 U |
| cis-1,2-Dichloroethene | 156-59-2 | 210 U | 10000 UD | 160 U | 0.37 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 41 U | 2100 UD | 32 U | 0.37 U |
| Cyclohexane | 110-82-7 | 100 U | 5000 UD | 2900 | 0.37 U |
| Dibromochloromethane | 124-48-1 | 100 U | 5100 UD | 80 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 91 U | 4500 UD | 71 U | 0.97 U |
| Ethyl Benzene | 100-41-4 | 230000 E | 290000 D | 12000 | 250 E |
| Isopropylbenzene | 98-82-8 | 23000 | 29000 JD | 1500 | 120 |
| m/p-Xylenes | 126777-61-2 | 750000 E | 1300000 D | 62000 | 460 E |
| Methyl Acetate | 79-20-9 | 230 U | 11000 UD | 180 U | 0.98 U |
| Methyl tert-butyl Ether | 1634-04-4 | 98 U | 4900 UD | 76 U | 0.42 U |
| Methylcyclohexane | 108-87-2 | 410000 E | 520000 D | 25000 | 28 |
| Methylene Chloride | 75-09-2 | 170 U | 8500 UD | 130 U | 12 B |
| o-Xylene | 95-47-6 | 230000 E | 330000 D | 15000 | 23 |
| Styrene | 100-42-5 | 93 U | 4600 UD | 72 U | 0.52 U |
| t-1,3-Dichloropropene | 10061-02-6 | 120 U | 5800 UD | 90 U | 0.41 U |
| Tetrachloroethene | 127-18-4 | 90 U | 4500 UD | 70 U | 0.83 U |
| Toluene | 108-88-3 | 110 U | 5300 UD | 82 U | 4.0 J |
| trans-1,2-Dichloroethene | 156-60-5 | 140 U | 7000 UD | 110 U | 0.72 U |
| Trichloroethene | 79-01-6 | 180 U | 9100 UD | 140 U | 0.35 U |
| Trichlorofluoromethane | 75-69-4 | 160 U | 7800 UD | 120 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 73 U | 3600 UD | 57 U | 0.93 U |
| | | 1643000 | 2469000 | 118400 | 926.4 |
| | | 235000 | 6380000 | 363700 | 1863 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-13(8-10)DUPDL | P-13(20-22) | P-13(22-24) | P-13(24-26) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2631-10DL | T2631-11 | T2631-12 | T2631-13 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 4.8 UD | 85 U | 3.4 U | 0.46 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 3.5 UD | 100 U | 2.5 U | 0.35 U |
| 1,1,2-Trichloroethane | 79-00-5 | 3.3 UD | 110 U | 2.4 U | 0.33 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 7.6 UD | 140 U | 5.4 U | 0.74 U |
| 1,1-Dichloroethane | 75-34-3 | 3.1 UD | 45 U | 2.2 U | 0.30 U |
| 1,1-Dichloroethene | 75-35-4 | 6.5 UD | 67 U | 4.6 U | 0.64 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 7.8 UD | 60 U | 5.5 U | 0.76 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 11 UD | 190 U | 7.6 U | 1.0 U |
| 1,2-Dibromoethane | 106-93-4 | 4.6 UD | 130 U | 3.2 U | 0.45 U |
| 1,2-Dichlorobenzene | 95-50-1 | 4.4 UD | 76 U | 3.1 U | 0.43 U |
| 1,2-Dichloroethane | 107-06-2 | 3.5 UD | 67 U | 2.5 U | 0.34 U |
| 1,2-Dichloropropane | 78-87-5 | 4.5 UD | 66 U | 3.2 U | 0.44 U |
| 1,3-Dichlorobenzene | 541-73-1 | 6.3 UD | 78 U | 4.5 U | 0.62 U |
| 1,4-Dichlorobenzene | 106-46-7 | 6.2 UD | 81 U | 4.4 U | 0.61 U |
| 2-Butanone | 78-93-3 | 32 UD | 590 U | 23 U | 3.1 U |
| 2-Hexanone | 591-78-6 | 41 UD | 140 U | 29 U | 4.0 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 22 UD | 280 U | 16 U | 2.2 U |
| Acetone | 67-64-1 | 170 JD | 690 U | 120 JB | 17 JB |
| Benzene | 71-43-2 | 4.5 UD | 310 J | 990 | 220 |
| Bromodichloromethane | 75-27-4 | 3.8 UD | 72 U | 2.7 U | 0.37 U |
| Bromoform | 75-25-2 | 3.5 UD | 53 U | 2.5 U | 0.34 U |
| Bromomethane | 74-83-9 | 23 UD | 160 U | 16 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 4.2 UD | 81 U | 18 J | 0.41 U |
| Carbon Tetrachloride | 56-23-5 | 5.0 UD | 98 U | 3.6 U | 0.49 U |
| Chlorobenzene | 108-90-7 | 4.1 UD | 77 U | 2.9 U | 0.40 U |
| Chloroethane | 75-00-3 | 24 UD | 180 U | 17 U | 2.4 U |
| Chloroform | 67-66-3 | 4.0 UD | 120 U | 2.8 U | 0.39 U |
| Chloromethane | 74-87-3 | 9.7 UD | 140 U | 6.9 U | 0.95 U |
| cis-1,2-Dichloroethene | 156-59-2 | 3.7 UD | 160 U | 2.6 U | 0.36 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 3.8 UD | 32 U | 2.7 U | 0.37 U |
| Cyclohexane | 110-82-7 | 3.7 UD | 76 U | 36 J | 0.36 U |
| Dibromochloromethane | 124-48-1 | 2.6 UD | 79 U | 1.9 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 9.7 UD | 70 U | 6.9 U | 0.95 U |
| Ethyl Benzene | 100-41-4 | 320 D | 910 J | 130 | 2.0 J |
| Isopropylbenzene | 98-82-8 | 160 D | 110 J | 15 J | 0.46 U |
| m/p-Xylenes | 126777-61-2 | 640 D | 4200 | 490 | 4.3 J |
| Methyl Acetate | 79-20-9 | 9.8 UD | 170 U | 7.0 U | 0.96 U |
| Methyl tert-butyl Ether | 1634-04-4 | 4.2 UD | 75 U | 3.0 U | 0.41 U |
| Methylcyclohexane | 108-87-2 | 24 JD | 1200 | 270 | 0.47 U |
| Methylene Chloride | 75-09-2 | 110 DB | 130 U | 72 B | 2.0 U |
| o-Xylene | 95-47-6 | 33 JD | 1100 | 140 | 1.3 J |
| Styrene | 100-42-5 | 5.2 UD | 71 U | 3.7 U | 0.51 U |
| t-1,3-Dichloropropene | 10061-02-6 | 4.1 UD | 89 U | 2.9 U | 0.40 U |
| Tetrachloroethene | 127-18-4 | 8.3 UD | 69 U | 5.9 U | 0.81 U |
| Toluene | 108-88-3 | 4.6 UD | 210 J | 100 | 2.8 J |
| trans-1,2-Dichloroethene | 156-60-5 | 7.3 UD | 110 U | 5.2 U | 0.71 U |
| Trichloroethene | 79-01-6 | 3.5 UD | 140 U | 2.5 U | 0.34 U |
| Trichlorofluoromethane | 75-69-4 | 14 UD | 120 U | 10 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 9.4 UD | 56 U | 6.6 U | 0.91 U |
| | | | | | |
| | | 1457 | 8040 | 2381 | 247.4 |
| | | 6560 | 29200 | 5850 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-14(0-2) | P-14(2-4) | P-14(4-6) | P-14(6-8) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2604-01 | T2604-02 | T2604-03 | T2604-04 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.48 U | 0.47 U | 0.49 U | 0.46 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.36 U | 0.35 U | 0.36 U | 0.34 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.34 U | 0.33 U | 0.34 U | 0.32 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.76 U | 0.74 U | 0.78 U | 0.73 U |
| 1,1-Dichloroethane | 75-34-3 | 0.31 U | 0.30 U | 0.31 U | 0.29 U |
| 1,1-Dichloroethene | 75-35-4 | 0.66 U | 0.64 U | 0.67 U | 0.63 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.78 U | 0.76 U | 0.80 U | 0.75 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 1.1 U | 1.1 U | 1.0 U |
| 1,2-Dibromoethane | 106-93-4 | 0.46 U | 0.45 U | 0.47 U | 0.44 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.41 U | 0.43 U | 0.45 U | 0.42 U |
| 1,2-Dichloroethane | 107-06-2 | 0.35 U | 0.34 U | 0.36 U | 0.34 U |
| 1,2-Dichloropropane | 78-87-5 | 0.46 U | 0.44 U | 0.46 U | 0.43 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.64 U | 0.62 U | 0.65 U | 0.61 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.63 U | 0.61 U | 0.64 U | 0.60 U |
| 2-Butanone | 78-93-3 | 3.2 U | 3.2 U | 3.3 U | 3.1 U |
| 2-Hexanone | 591-78-6 | 4.1 U | 4.0 U | 4.2 U | 3.9 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 2.2 U | 2.3 U | 2.2 U |
| Acetone | 67-64-1 | 8.2 JB | 8.4 JB | 8.2 JB | 9.3 JB |
| Benzene | 71-43-2 | 0.46 U | 0.45 U | 0.47 U | 0.44 U |
| Bromodichloromethane | 75-27-4 | 0.38 U | 0.37 U | 0.39 U | 0.37 U |
| Bromoform | 75-25-2 | 0.36 U | 0.35 U | 0.36 U | 0.34 U |
| Bromomethane | 74-83-9 | 2.3 U | 2.3 U | 2.4 U | 2.2 U |
| Carbon Disulfide | 75-15-0 | 0.42 U | 0.41 U | 0.43 U | 0.40 U |
| Carbon Tetrachloride | 56-23-5 | 0.51 U | 0.50 U | 0.52 U | 0.48 U |
| Chlorobenzene | 108-90-7 | 0.42 U | 0.41 U | 0.42 U | 0.40 U |
| Chloroethane | 75-00-3 | 2.4 U | 2.4 U | 2.5 U | 2.3 U |
| Chloroform | 67-66-3 | 0.40 U | 0.39 U | 0.41 U | 0.38 U |
| Chloromethane | 74-87-3 | 0.98 U | 0.95 U | 1.0 U | 0.93 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.37 U | 0.36 U | 0.38 U | 0.36 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.38 U | 0.37 U | 0.39 U | 0.36 U |
| Cyclohexane | 110-82-7 | 0.37 U | 0.36 U | 0.38 U | 0.35 U |
| Dibromochloromethane | 124-48-1 | 0.26 U | 0.26 U | 0.27 U | 0.25 U |
| Dichlorodifluoromethane | 75-71-8 | 0.98 U | 0.96 U | 1.0 U | 0.94 U |
| Ethyl Benzene | 100-41-4 | 0.41 U | 0.40 U | 0.41 U | 0.39 U |
| Isopropylbenzene | 98-82-8 | 0.48 U | 0.47 U | 0.49 U | 0.45 U |
| m/p-Xylenes | 126777-61-2 | 0.44 U | 0.43 U | 0.45 U | 0.42 U |
| Methyl Acetate | 79-20-9 | 0.99 U | 0.97 U | 1.0 U | 0.94 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.42 U | 0.41 U | 0.43 U | 0.40 U |
| Methylcyclohexane | 108-87-2 | 0.48 U | 0.47 U | 0.49 U | 0.46 U |
| Methylene Chloride | 75-09-2 | 8.2 B | 7.0 B | 6.9 B | 7.4 B |
| o-Xylene | 95-47-6 | 0.99 U | 0.97 U | 1 U | 0.94 U |
| Styrene | 100-42-5 | 0.53 U | 0.51 U | 0.54 U | 0.50 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.42 U | 0.41 U | 0.42 U | 0.40 U |
| Tetrachloroethene | 127-18-4 | 0.84 U | 0.82 U | 0.85 U | 0.80 U |
| Toluene | 108-88-3 | 0.46 U | 0.45 U | 0.47 U | 0.44 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.73 U | 0.72 U | 0.75 U | 0.70 U |
| Trichloroethene | 79-01-6 | 0.35 U | 0.34 U | 0.36 U | 0.34 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 1.4 U | 1.5 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 0.94 U | 0.92 U | 0.96 U | 0.90 U |
| | | | | | |
| | | 16.4 | 15.4 | 15.1 | 16.7 |
| | | 0 | 0 | 0 | 132.3 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-14(8-10) | P-14(8-10)DL | P-14(10-12) | P-14(14-16) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2604-05 | T2604-05DL | T2604-06 | T2604-07 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 5.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.48 U | 2.4 U | 0.48 U | 0.52 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.36 U | 1.8 U | 0.36 U | 0.39 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.34 U | 1.7 U | 0.34 U | 0.37 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.77 U | 3.8 U | 0.77 U | 0.83 U |
| 1,1-Dichloroethane | 75-34-3 | 0.31 U | 1.5 U | 0.31 U | 0.34 U |
| 1,1-Dichloroethene | 75-35-4 | 0.66 U | 3.3 U | 0.66 U | 0.72 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.79 U | 3.9 U | 0.79 U | 0.85 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 5.4 U | 1.1 U | 1.2 U |
| 1,2-Dibromoethane | 106-93-4 | 0.46 U | 2.3 U | 0.47 U | 0.50 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.44 U | 2.2 U | 0.45 U | 0.48 U |
| 1,2-Dichloroethane | 107-06-2 | 0.35 U | 1.8 U | 0.36 U | 0.38 U |
| 1,2-Dichloropropane | 78-87-5 | 0.46 U | 2.3 U | 0.46 U | 0.50 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.64 U | 3.2 U | 0.65 U | 0.70 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.63 U | 3.1 U | 0.63 U | 0.68 U |
| 2-Butanone | 78-93-3 | 3.3 U | 16 U | 6.2 J | 3.5 U |
| 2-Hexanone | 591-78-6 | 4.2 U | 21 U | 4.2 U | 4.5 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 11 U | 2.3 U | 2.5 U |
| Acetone | 67-64-1 | 210 B | 320 B | 38 B | 40 B |
| Benzene | 71-43-2 | 3.8 J | 13 J | 0.46 U | 2.4 J |
| Bromodichloromethane | 75-27-4 | 0.39 U | 1.9 U | 0.39 U | 0.42 U |
| Bromoform | 75-25-2 | 0.36 U | 1.8 U | 0.36 U | 0.39 U |
| Bromomethane | 74-83-9 | 2.3 U | 12 U | 2.3 U | 2.5 U |
| Carbon Disulfide | 75-15-0 | 20 | 40 | 0.43 U | 0.46 U |
| Carbon Tetrachloride | 56-23-5 | 0.51 U | 2.5 U | 0.51 U | 0.55 U |
| Chlorobenzene | 108-90-7 | 0.42 U | 2.1 U | 0.42 U | 0.45 U |
| Chloroethane | 75-00-3 | 2.5 U | 12 U | 2.5 U | 2.7 U |
| Chloroform | 67-66-3 | 0.40 U | 2.0 U | 0.40 U | 0.44 U |
| Chloromethane | 74-87-3 | 0.98 U | 4.9 U | 0.99 U | 1.1 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.37 U | 1.9 U | 0.38 U | 0.41 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.38 U | 1.9 U | 0.38 U | 0.41 U |
| Cyclohexane | 110-82-7 | 0.37 U | 1.9 U | 0.38 U | 6.8 |
| Dibromochloromethane | 124-48-1 | 0.26 U | 1.3 U | 0.27 U | 0.29 U |
| Dichlorodifluoromethane | 75-71-8 | 0.99 U | 4.9 U | 0.99 U | 1.1 U |
| Ethyl Benzene | 100-41-4 | 16 | 34 | 0.41 U | 1.7 J |
| Isopropylbenzene | 98-82-8 | 80 | 190 | 5.5 J | 40 |
| m/p-Xylenes | 126777-61-2 | 12 | 26 J | 0.44 U | 1.3 J |
| Methyl Acetate | 79-20-9 | 1.0 U | 5.0 U | 1.0 U | 1.1 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.42 U | 2.1 U | 0.43 U | 0.46 U |
| Methylcyclohexane | 108-87-2 | 280 E | 500 | 7.0 | 46 |
| Methylene Chloride | 75-09-2 | 12 B | 44 B | 11 B | 14 B |
| o-Xylene | 95-47-6 | 29 | 65 | 1.4 J | 4.1 J |
| Styrene | 100-42-5 | 0.53 U | 2.6 U | 0.53 U | 0.57 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.42 U | 2.1 U | 0.42 U | 0.45 U |
| Tetrachloroethene | 127-18-4 | 0.84 U | 4.2 U | 0.85 U | 0.91 U |
| Toluene | 108-88-3 | 0.47 U | 2.3 U | 0.47 U | 2.4 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.74 U | 3.7 U | 0.74 U | 0.80 U |
| Trichloroethene | 79-01-6 | 0.35 U | 1.8 U | 0.36 U | 0.38 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 7.2 U | 1.4 U | 1.6 U |
| Vinyl Chloride | 75-01-4 | 0.95 U | 4.7 U | 0.95 U | 1.0 U |
| | | 662.8 | 1232 | 69.1 | 158.7 |
| | | 1298 | 5370 | 2120 | 1234 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-14(16-18) | P-14(16-18)DL | P-14(18-20) | P-14(20-22) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2604-08 | T2604-08DL | T2604-09 | T2604-10 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 5.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.82 U | 4.1 UD | 0.80 U | 0.50 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.61 U | 3.0 UD | 0.59 U | 0.37 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.58 U | 2.9 UD | 0.56 U | 0.35 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 1.3 U | 6.5 UD | 1.3 U | 0.80 U |
| 1,1-Dichloroethane | 75-34-3 | 0.53 U | 2.6 UD | 0.51 U | 0.32 U |
| 1,1-Dichloroethene | 75-35-4 | 1.1 U | 5.6 UD | 1.1 U | 0.69 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 1.3 U | 6.7 UD | 1.3 U | 0.82 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.8 U | 9.2 UD | 1.8 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.79 U | 3.9 UD | 0.77 U | 0.48 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.76 U | 3.8 UD | 0.74 U | 0.47 U |
| 1,2-Dichloroethane | 107-06-2 | 0.60 U | 3.0 UD | 0.59 U | 0.37 U |
| 1,2-Dichloropropane | 78-87-5 | 0.78 U | 3.9 UD | 0.76 U | 0.48 U |
| 1,3-Dichlorobenzene | 541-73-1 | 1.1 U | 5.5 UD | 1.1 U | 0.67 U |
| 1,4-Dichlorobenzene | 106-46-7 | 1.1 U | 5.3 UD | 1.0 U | 0.66 U |
| 2-Butanone | 78-93-3 | 46 J | 71 JD | 5.4 U | 3.4 U |
| 2-Hexanone | 591-78-6 | 7.1 U | 35 UD | 6.9 U | 4.3 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 3.9 U | 19 UD | 3.8 U | 2.4 U |
| Acetone | 67-64-1 | 170 B | 350 DB | 31 JB | 16 JB |
| Benzene | 71-43-2 | 400 E | 320 D | 2800 D | 52 |
| Bromodichloromethane | 75-27-4 | 0.66 U | 3.3 UD | 0.64 U | 0.40 U |
| Bromoform | 75-25-2 | 0.61 U | 3.0 UD | 0.59 U | 0.37 U |
| Bromomethane | 74-83-9 | 4.0 U | 20 UD | 3.9 U | 2.4 U |
| Carbon Disulfide | 75-15-0 | 0.72 U | 3.6 UD | 25 | 3.2 J |
| Carbon Tetrachloride | 56-23-5 | 0.87 U | 4.3 UD | 0.85 U | 0.53 U |
| Chlorobenzene | 108-90-7 | 0.71 U | 3.5 UD | 0.69 U | 0.44 U |
| Chloroethane | 75-00-3 | 4.2 U | 21 UD | 4.1 U | 2.6 U |
| Chloroform | 67-66-3 | 0.68 U | 3.4 UD | 0.66 U | 0.42 U |
| Chloromethane | 74-87-3 | 1.7 U | 8.4 UD | 1.6 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.64 U | 3.2 UD | 0.62 U | 0.39 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.65 U | 3.2 UD | 0.63 U | 0.40 U |
| Cyclohexane | 110-82-7 | 27 | 3.2 UD | 12 | 0.39 U |
| Dibromochloromethane | 124-48-1 | 0.45 U | 2.3 UD | 0.44 U | 0.28 U |
| Dichlorodifluoromethane | 75-71-8 | 1.7 U | 8.4 UD | 1.6 U | 1.0 U |
| Ethyl Benzene | 100-41-4 | 10 | 28 JD | 6.6 J | 0.43 U |
| Isopropylbenzene | 98-82-8 | 81 | 210 D | 0.79 U | 0.50 U |
| m/p-Xylenes | 126777-61-2 | 14 | 40 JD | 6.7 J | 0.46 U |
| Methyl Acetate | 79-20-9 | 1.7 U | 8.5 UD | 1.7 U | 1.0 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.72 U | 3.6 UD | 0.70 U | 0.44 U |
| Methylcyclohexane | 108-87-2 | 150 | 73 D | 4.4 J | 0.51 U |
| Methylene Chloride | 75-09-2 | 20 B | 120 DB | 6.9 JB | 7.3 B |
| o-Xylene | 95-47-6 | 37 | 99 D | 7.4 J | 2.4 J |
| Styrene | 100-42-5 | 0.90 U | 4.5 UD | 0.88 U | 0.55 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.71 U | 3.6 UD | 0.69 U | 0.44 U |
| Tetrachloroethene | 127-18-4 | 1.4 U | 7.2 UD | 1.4 U | 0.88 U |
| Toluene | 108-88-3 | 11 | 32 JD | 59 | 2.1 J |
| trans-1,2-Dichloroethene | 156-60-5 | 1.3 U | 6.3 UD | 1.2 U | 0.77 U |
| Trichloroethene | 79-01-6 | 0.60 U | 3.0 UD | 0.59 U | 0.37 U |
| Trichlorofluoromethane | 75-69-4 | 2.4 U | 12 UD | 2.4 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 1.6 U | 8.1 UD | 1.6 U | 0.99 U |
| | | 966 | 1343 | 2159 | 83 |
| | | 1885 | 5620 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-14(22-24) | P-14(26-28) | P-15(0-2) | P-15(2-4) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2604-11 | T2604-12 | T2632-09 | T2632-10 |
| Sampling Date | | 04/29/05 | 04/29/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.52 U | 0.47 U | 0.47 U | 0.48 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.39 U | 0.35 U | 0.35 U | 0.36 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.37 U | 0.33 U | 0.33 U | 0.34 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.83 U | 0.74 U | 0.75 U | 0.76 U |
| 1,1-Dichloroethane | 75-34-3 | 0.34 U | 0.30 U | 0.30 U | 0.31 U |
| 1,1-Dichloroethene | 75-35-4 | 0.71 U | 0.64 U | 0.64 U | 0.66 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.85 U | 0.76 U | 0.77 U | 0.78 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.2 U | 1.1 U | 1.1 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.50 U | 0.45 U | 0.45 U | 0.46 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.48 U | 0.43 U | 0.43 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 0.38 U | 0.34 U | 0.34 U | 0.35 U |
| 1,2-Dichloropropane | 78-87-5 | 0.50 U | 0.44 U | 0.45 U | 0.45 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.70 U | 0.62 U | 0.63 U | 0.64 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.68 U | 0.61 U | 0.61 U | 0.62 U |
| 2-Butanone | 78-93-3 | 3.5 U | 3.2 U | 3.2 U | 3.2 U |
| 2-Hexanone | 591-78-6 | 4.5 U | 4.0 U | 4.0 U | 4.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.5 U | 2.2 U | 2.2 U | 2.3 U |
| Acetone | 67-64-1 | 16 JB | 15 JB | 3.8 U | 24 J |
| Benzene | 71-43-2 | 250 | 7.1 | 0.45 U | 7.2 |
| Bromodichloromethane | 75-27-4 | 0.42 U | 0.37 U | 0.38 U | 0.38 U |
| Bromoform | 75-25-2 | 0.39 U | 0.35 U | 0.35 U | 0.35 U |
| Bromomethane | 74-83-9 | 2.5 U | 2.3 U | 2.3 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 0.46 U | 0.41 U | 0.41 U | 0.42 U |
| Carbon Tetrachloride | 56-23-5 | 0.55 U | 0.50 U | 0.50 U | 0.51 U |
| Chlorobenzene | 108-90-7 | 0.45 U | 0.41 U | 0.41 U | 0.41 U |
| Chloroethane | 75-00-3 | 2.7 U | 2.4 U | 2.4 U | 2.4 U |
| Chloroform | 67-66-3 | 0.43 U | 0.39 U | 0.39 U | 0.40 U |
| Chloromethane | 74-87-3 | 1.1 U | 0.95 U | 0.96 U | 0.98 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.41 U | 0.36 U | 0.36 U | 0.37 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.41 U | 0.37 U | 0.37 U | 0.38 U |
| Cyclohexane | 110-82-7 | 14 | 0.36 U | 0.36 U | 0.37 U |
| Dibromochloromethane | 124-48-1 | 0.29 U | 0.26 U | 0.26 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 1.1 U | 0.96 U | 0.96 U | 0.98 U |
| Ethyl Benzene | 100-41-4 | 3.9 J | 0.40 U | 0.40 U | 1.7 J |
| Isopropylbenzene | 98-82-8 | 6.3 | 0.47 U | 0.47 U | 0.48 U |
| m/p-Xylenes | 126777-61-2 | 4.7 J | 0.43 U | 0.97 U | 4.3 J |
| Methyl Acetate | 79-20-9 | 1.1 U | 0.97 U | 0.97 U | 0.99 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.46 U | 0.41 U | 0.41 U | 0.42 U |
| Methylcyclohexane | 108-87-2 | 30 | 0.47 U | 0.47 U | 0.48 U |
| Methylene Chloride | 75-09-2 | 10 B | 10 B | 1.8 J | 2.3 J |
| o-Xylene | 95-47-6 | 13 | 1.8 J | 0.43 U | 1.3 J |
| Styrene | 100-42-5 | 0.57 U | 0.51 U | 0.52 U | 0.53 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.45 U | 0.41 U | 0.41 U | 0.42 U |
| Tetrachloroethene | 127-18-4 | 0.91 U | 0.82 U | 0.82 U | 0.84 U |
| Toluene | 108-88-3 | 5.5 J | 0.45 U | 0.45 U | 8.2 |
| trans-1,2-Dichloroethene | 156-60-5 | 0.80 U | 0.72 U | 0.72 U | 0.73 U |
| Trichloroethene | 79-01-6 | 0.38 U | 0.34 U | 0.35 U | 0.35 U |
| Trichlorofluoromethane | 75-69-4 | 1.6 U | 1.4 U | 1.4 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 0.92 U | 0.92 U | 0.94 U |
| | | | | | |
| | | 353.4 | 33.9 | 4.8 | 49 |
| | | 610 | 0 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-15(4-6) | P-15(6-8) | P-15(8-10) | P-15(10-12) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2632-11 | T2632-12 | T2632-13 | T2632-14 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.49 U | 0.49 U | 64 U | 63 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.37 U | 0.37 U | 77 U | 76 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.35 U | 0.35 U | 81 U | 80 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.79 U | 0.79 U | 110 U | 110 U |
| 1,1-Dichloroethane | 75-34-3 | 0.32 U | 0.32 U | 34 U | 33 U |
| 1,1-Dichloroethene | 75-35-4 | 0.68 U | 0.68 U | 50 U | 50 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.81 U | 0.81 U | 45 U | 44 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 1.1 U | 150 U | 140 U |
| 1,2-Dibromoethane | 106-93-4 | 0.47 U | 0.48 U | 99 U | 98 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.46 U | 0.46 U | 57 U | 56 U |
| 1,2-Dichloroethane | 107-06-2 | 0.36 U | 0.36 U | 50 U | 49 U |
| 1,2-Dichloropropane | 78-87-5 | 0.47 U | 0.47 U | 50 U | 49 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.66 U | 0.66 U | 58 U | 57 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.64 U | 0.64 U | 60 U | 60 U |
| 2-Butanone | 78-93-3 | 3.3 U | 3.3 U | 440 U | 440 U |
| 2-Hexanone | 591-78-6 | 4.3 U | 4.3 U | 100 U | 100 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 2.3 U | 210 U | 200 U |
| Acetone | 67-64-1 | 4.0 U | 10 J | 520 U | 510 U |
| Benzene | 71-43-2 | 31 | 16 | 38 U | 37 U |
| Bromodichloromethane | 75-27-4 | 0.40 U | 0.40 U | 54 U | 54 U |
| Bromoform | 75-25-2 | 0.37 U | 0.37 U | 39 U | 39 U |
| Bromomethane | 74-83-9 | 2.4 U | 2.4 U | 120 U | 120 U |
| Carbon Disulfide | 75-15-0 | 0.43 U | 0.44 U | 61 U | 60 U |
| Carbon Tetrachloride | 56-23-5 | 0.52 U | 0.52 U | 73 U | 73 U |
| Chlorobenzene | 108-90-7 | 0.43 U | 0.43 U | 58 U | 57 U |
| Chloroethane | 75-00-3 | 2.5 U | 2.5 U | 140 U | 140 U |
| Chloroform | 67-66-3 | 0.41 U | 0.41 U | 90 U | 89 U |
| Chloromethane | 74-87-3 | 1.0 U | 1.0 U | 110 U | 110 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.38 U | 0.38 U | 120 U | 120 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.39 U | 0.39 U | 24 U | 23 U |
| Cyclohexane | 110-82-7 | 0.38 U | 0.38 U | 180 J | 57 U |
| Dibromochloromethane | 124-48-1 | 0.27 U | 0.27 U | 59 U | 58 U |
| Dichlorodifluoromethane | 75-71-8 | 1.0 U | 1.0 U | 52 U | 52 U |
| Ethyl Benzene | 100-41-4 | 9.4 | 0.42 U | 2700 | 560 J |
| Isopropylbenzene | 98-82-8 | 0.49 U | 0.49 U | 390 J | 97 J |
| m/p-Xylenes | 126777-61-2 | 16 | 1.0 U | 14000 | 2900 |
| Methyl Acetate | 79-20-9 | 1.0 U | 1.0 U | 130 U | 130 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.43 U | 0.44 U | 56 U | 55 U |
| Methylcyclohexane | 108-87-2 | 0.50 U | 0.50 U | 3200 | 890 |
| Methylene Chloride | 75-09-2 | 4.1 J | 4.1 J | 97 U | 96 U |
| o-Xylene | 95-47-6 | 6.9 | 0.45 U | 2500 | 480 J |
| Styrene | 100-42-5 | 0.54 U | 0.54 U | 53 U | 53 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.43 U | 0.43 U | 66 U | 66 U |
| Tetrachloroethene | 127-18-4 | 0.86 U | 0.86 U | 52 U | 51 U |
| Toluene | 108-88-3 | 49 | 6.3 | 60 U | 60 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.75 U | 0.76 U | 80 U | 79 U |
| Trichloroethene | 79-01-6 | 0.36 U | 0.36 U | 100 U | 100 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 1.5 U | 90 U | 89 U |
| Vinyl Chloride | 75-01-4 | 0.97 U | 0.97 U | 42 U | 41 U |
| | | 116.4 | 36.4 | 22970 | 4927 |
| | | 81.4 | 86.5 | 179700 | 35000 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-15(12-14) | P-15(12-14)DL | P-15(14-16) | P-15(14-16)DL |
|---|---|---|---|---|---|
| Lab Sample Number | | T2632-16 | T2632-16DL | T2632-17 | T2632-17DL |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 5.0 | 1.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 1.5 U | 7.7 UD | 0.56 U | 2.8 UD |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 1.1 U | 5.8 UD | 0.42 U | 2.1 UD |
| 1,1,2-Trichloroethane | 79-00-5 | 1.1 U | 5.4 UD | 0.39 U | 2.0 UD |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 2.5 U | 12 UD | 0.89 U | 4.4 UD |
| 1,1-Dichloroethane | 75-34-3 | 0.99 U | 5.0 UD | 0.36 U | 1.8 UD |
| 1,1-Dichloroethene | 75-35-4 | 2.1 U | 11 UD | 0.77 U | 3.8 UD |
| 1,2,4-Trichlorobenzene | 120-82-1 | 2.5 U | 13 UD | 0.91 U | 4.6 UD |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 3.5 U | 17 UD | 1.3 U | 6.3 UD |
| 1,2-Dibromoethane | 106-93-4 | 1.5 U | 7.4 UD | 0.54 U | 2.7 UD |
| 1,2-Dichlorobenzene | 95-50-1 | 1.4 U | 7.1 UD | 0.52 U | 2.6 UD |
| 1,2-Dichloroethane | 107-06-2 | 1.1 U | 5.7 UD | 0.41 U | 2.0 UD |
| 1,2-Dichloropropane | 78-87-5 | 1.5 U | 7.4 UD | 0.53 U | 2.6 UD |
| 1,3-Dichlorobenzene | 541-73-1 | 2.1 U | 10 UD | 0.75 U | 3.7 UD |
| 1,4-Dichlorobenzene | 106-46-7 | 2.0 U | 10 UD | 0.73 U | 3.6 UD |
| 2-Butanone | 78-93-3 | 10 U | 52 UD | 3.8 U | 19 UD |
| 2-Hexanone | 591-78-6 | 13 U | 67 UD | 4.8 U | 24 UD |
| 4-Methyl-2-Pentanone | 108-10-1 | 7.3 U | 37 UD | 2.6 U | 13 UD |
| Acetone | 67-64-1 | 66 J | 62 UD | 4.5 U | 65 JD |
| Benzene | 71-43-2 | 780 E | 700 D | 400 E | 420 D |
| Bromodichloromethane | 75-27-4 | 1.2 U | 6.2 UD | 0.45 U | 2.2 UD |
| Bromoform | 75-25-2 | 1.1 U | 5.7 UD | 0.41 U | 2.1 UD |
| Bromomethane | 74-83-9 | 7.5 U | 38 UD | 2.7 U | 14 UD |
| Carbon Disulfide | 75-15-0 | 17 J | 6.8 UD | 0.49 U | 2.5 UD |
| Carbon Tetrachloride | 56-23-5 | 1.6 U | 8.2 UD | 0.59 U | 3.0 UD |
| Chlorobenzene | 108-90-7 | 1.3 U | 6.7 UD | 0.48 U | 2.4 UD |
| Chloroethane | 75-00-3 | 7.9 U | 40 UD | 2.9 U | 14 UD |
| Chloroform | 67-66-3 | 1.3 U | 6.4 UD | 0.47 U | 2.3 UD |
| Chloromethane | 74-87-3 | 3.1 U | 16 UD | 1.1 U | 5.7 UD |
| cis-1,2-Dichloroethene | 156-59-2 | 1.2 U | 6.0 UD | 0.44 U | 2.2 UD |
| cis-1,3-Dichloropropene | 10061-01-5 | 1.2 U | 6.1 UD | 0.44 U | 2.2 UD |
| Cyclohexane | 110-82-7 | 30 | 6.0 UD | 26 | 2.2 UD |
| Dibromochloromethane | 124-48-1 | 0.85 U | 4.3 UD | 0.31 U | 1.5 UD |
| Dichlorodifluoromethane | 75-71-8 | 3.2 U | 16 UD | 1.1 U | 5.7 UD |
| Ethyl Benzene | 100-41-4 | 5.0 J | 22 JD | 21 | 43 D |
| Isopropylbenzene | 98-82-8 | 1.5 U | 7.7 UD | 27 | 150 D |
| m/p-Xylenes | 126777-61-2 | 18 J | 54 JD | 90 | 180 D |
| Methyl Acetate | 79-20-9 | 3.2 U | 16 UD | 1.2 U | 5.8 UD |
| Methyl tert-butyl Ether | 1634-04-4 | 1.4 U | 6.8 UD | 0.49 U | 2.5 UD |
| Methylcyclohexane | 108-87-2 | 1.5 U | 7.8 UD | 58 | 90 D |
| Methylene Chloride | 75-09-2 | 11 J | 52 JD | 5.0 J | 21 JD |
| o-Xylene | 95-47-6 | 4.8 J | 7.1 UD | 21 | 43 D |
| Styrene | 100-42-5 | 1.7 U | 8.5 UD | 0.62 U | 3.1 UD |
| t-1,3-Dichloropropene | 10061-02-6 | 1.3 U | 6.7 UD | 0.49 U | 2.4 UD |
| Tetrachloroethene | 127-18-4 | 2.7 U | 14 UD | 0.98 U | 4.9 UD |
| Toluene | 108-88-3 | 65 | 94 D | 27 | 41 D |
| trans-1,2-Dichloroethene | 156-60-5 | 2.4 U | 12 UD | 0.86 U | 4.3 UD |
| Trichloroethene | 79-01-6 | 1.1 U | 5.7 UD | 0.41 U | 2.1 UD |
| Trichlorofluoromethane | 75-69-4 | 4.6 U | 23 UD | 1.7 U | 8.3 UD |
| Vinyl Chloride | 75-01-4 | 3.0 U | 15 UD | 1.1 U | 5.5 UD |
| | | 996.8 | 922 | 675 | 1053 |
| | | 92 | 0 | 741 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-15(16-18) | P-15(18-20) | P-15(20-22) | P-15(22-24) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2632-18 | T2632-19 | T2632-20 | T2632-21 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.51 U | 0.51 U | 0.47 U | 0.48 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.38 U | 0.38 U | 0.35 U | 0.36 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.36 U | 0.36 U | 0.33 U | 0.34 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.81 U | 0.81 U | 0.74 U | 0.76 U |
| 1,1-Dichloroethane | 75-34-3 | 0.33 U | 0.33 U | 0.30 U | 0.31 U |
| 1,1-Dichloroethene | 75-35-4 | 0.70 U | 0.69 U | 0.64 U | 0.66 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.83 U | 0.83 U | 0.76 U | 0.78 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 1.1 U | 1.0 U | 1.1 U |
| 1,2-Dibromoethane | 106-93-4 | 0.49 U | 0.49 U | 0.45 U | 0.46 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.47 U | 0.47 U | 0.43 U | 0.44 U |
| 1,2-Dichloroethane | 107-06-2 | 0.37 U | 0.37 U | 0.34 U | 0.35 U |
| 1,2-Dichloropropane | 78-87-5 | 0.48 U | 0.48 U | 0.44 U | 50 |
| 1,3-Dichlorobenzene | 541-73-1 | 0.68 U | 0.68 U | 0.62 U | 0.64 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.66 U | 0.66 U | 0.61 U | 0.62 U |
| 2-Butanone | 78-93-3 | 3.4 U | 3.4 U | 3.1 U | 3.2 U |
| 2-Hexanone | 591-78-6 | 4.4 U | 4.4 U | 4.0 U | 4.1 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.4 U | 2.4 U | 2.2 U | 2.3 U |
| Acetone | 67-64-1 | 4.1 U | 4.1 U | 3.7 U | 3.8 U |
| Benzene | 71-43-2 | 28 | 15 | 2.2 J | 1.3 J |
| Bromodichloromethane | 75-27-4 | 0.41 U | 0.41 U | 0.37 U | 0.38 U |
| Bromoform | 75-25-2 | 0.38 U | 0.38 U | 0.35 U | 0.35 U |
| Bromomethane | 74-83-9 | 2.5 U | 2.5 U | 2.3 U | 2.3 U |
| Carbon Disulfide | 75-15-0 | 0.45 U | 0.45 U | 0.41 U | 0.42 U |
| Carbon Tetrachloride | 56-23-5 | 0.54 U | 0.54 U | 0.49 U | 0.51 U |
| Chlorobenzene | 108-90-7 | 0.44 U | 0.44 U | 0.40 U | 0.41 U |
| Chloroethane | 75-00-3 | 2.6 U | 2.6 U | 2.4 U | 2.4 U |
| Chloroform | 67-66-3 | 0.42 U | 0.42 U | 0.39 U | 0.40 U |
| Chloromethane | 74-87-3 | 1.0 U | 1.0 U | 0.95 U | 0.98 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.40 U | 0.39 U | 0.36 U | 0.37 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.40 U | 0.40 U | 0.37 U | 0.38 U |
| Cyclohexane | 110-82-7 | 0.40 U | 0.39 U | 0.36 U | 0.37 U |
| Dibromochloromethane | 124-48-1 | 0.28 U | 0.28 U | 0.26 U | 0.26 U |
| Dichlorodifluoromethane | 75-71-8 | 1.0 U | 1.0 U | 0.95 U | 0.98 U |
| Ethyl Benzene | 100-41-4 | 0.43 U | 0.43 U | 0.39 U | 0.40 U |
| Isopropylbenzene | 98-82-8 | 5.3 J | 0.50 U | 0.46 U | 0.48 U |
| m/p-Xylenes | 126777-61-2 | 11 | 1.6 J | 0.96 U | 0.99 U |
| Methyl Acetate | 79-20-9 | 1.1 U | 1.0 U | 0.96 U | 0.99 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.45 U | 0.45 U | 0.41 U | 0.42 U |
| Methylcyclohexane | 108-87-2 | 7.1 | 0.51 U | 0.47 U | 0.48 U |
| Methylene Chloride | 75-09-2 | 3.3 J | 2.5 J | 1.3 J | 2.3 J |
| o-Xylene | 95-47-6 | 1.4 J | 0.47 U | 0.43 U | 0.44 U |
| Styrene | 100-42-5 | 0.56 U | 0.56 U | 0.51 U | 0.53 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.44 U | 0.44 U | 0.40 U | 0.41 U |
| Tetrachloroethene | 127-18-4 | 0.89 U | 0.88 U | 0.81 U | 0.83 U |
| Toluene | 108-88-3 | 3.7 J | 0.49 U | 0.45 U | 0.46 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.78 U | 0.77 U | 0.71 U | 0.73 U |
| Trichloroethene | 79-01-6 | 0.38 U | 0.37 U | 0.34 U | 0.35 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 1.5 U | 1.4 U | 1.4 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 1.0 U | 0.92 U | 0.94 U |
| | | | | | |
| | | 59.8<br>317 | 19.1<br>130.7 | 6.5<br>5.7 | 53.6<br>0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-16(0-2) | P-16(4-6) | P-16(6-8) | P-16(8-10) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2632-22 | T2632-23 | T2632-24 | T2632-25 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.49 U | 0.49 U | 0.51 U | 0.52 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.36 U | 0.36 U | 0.38 U | 0.39 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.34 U | 0.34 U | 0.36 U | 0.36 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.77 U | 0.77 U | 0.82 U | 0.82 U |
| 1,1-Dichloroethane | 75-34-3 | 0.31 U | 0.31 U | 0.33 U | 0.33 U |
| 1,1-Dichloroethene | 75-35-4 | 0.67 U | 0.67 U | 0.70 U | 0.71 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.79 U | 0.79 U | 0.84 U | 0.85 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.1 U | 1.1 U | 1.2 U | 1.2 U |
| 1,2-Dibromoethane | 106-93-4 | 0.47 U | 0.47 U | 0.49 U | 0.50 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.45 U | 0.45 U | 0.47 U | 0.48 U |
| 1,2-Dichloroethane | 107-06-2 | 0.36 U | 0.36 U | 0.38 U | 0.38 U |
| 1,2-Dichloropropane | 78-87-5 | 0.46 U | 0.46 U | 0.49 U | 0.49 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.65 U | 0.65 U | 0.69 U | 0.69 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.63 U | 0.63 U | 0.67 U | 0.68 U |
| 2-Butanone | 78-93-3 | 3.3 U | 3.3 U | 3.5 U | 3.5 U |
| 2-Hexanone | 591-78-6 | 4.2 U | 4.2 U | 4.4 U | 4.5 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.3 U | 2.3 U | 2.4 U | 2.4 U |
| Acetone | 67-64-1 | 3.9 U | 3.9 U | 4.1 U | 4.2 U |
| Benzene | 71-43-2 | 5.1 J | 7.3 | 3.0 J | 5.9 J |
| Bromodichloromethane | 75-27-4 | 0.39 U | 0.39 U | 0.41 U | 0.42 U |
| Bromoform | 75-25-2 | 0.36 U | 0.36 U | 0.38 U | 0.38 U |
| Bromomethane | 74-83-9 | 2.4 U | 2.4 U | 2.5 U | 2.5 U |
| Carbon Disulfide | 75-15-0 | 0.43 U | 0.43 U | 0.45 U | 0.46 U |
| Carbon Tetrachloride | 56-23-5 | 0.52 U | 0.52 U | 0.54 U | 0.55 U |
| Chlorobenzene | 108-90-7 | 0.42 U | 0.42 U | 0.45 U | 0.45 U |
| Chloroethane | 75-00-3 | 2.5 U | 2.5 U | 2.6 U | 2.6 U |
| Chloroform | 67-66-3 | 0.40 U | 0.40 U | 0.43 U | 0.43 U |
| Chloromethane | 74-87-3 | 0.99 U | 0.99 U | 1.0 U | 1.1 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.38 U | 0.38 U | 0.40 U | 0.40 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.38 U | 0.38 U | 0.41 U | 0.41 U |
| Cyclohexane | 110-82-7 | 0.38 U | 0.38 U | 0.40 U | 0.40 U |
| Dibromochloromethane | 124-48-1 | 0.27 U | 0.27 U | 0.28 U | 0.29 U |
| Dichlorodifluoromethane | 75-71-8 | 1.0 U | 1.0 U | 1.1 U | 1.1 U |
| Ethyl Benzene | 100-41-4 | 2.6 J | 0.41 U | 0.44 U | 0.44 U |
| Isopropylbenzene | 98-82-8 | 0.48 U | 0.48 U | 0.51 U | 0.52 U |
| m/p-Xylenes | 126777-61-2 | 1.6 J | 1.0 U | 1.1 U | 1.1 U |
| Methyl Acetate | 79-20-9 | 1.0 U | 1.0 U | 1.1 U | 1.1 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.43 U | 0.43 U | 0.45 U | 0.46 U |
| Methylcyclohexane | 108-87-2 | 0.49 U | 0.49 U | 0.52 U | 0.52 U |
| Methylene Chloride | 75-09-2 | 3.1 J | 4.8 J | 2.2 U | 3.0 J |
| o-Xylene | 95-47-6 | 0.45 U | 0.45 U | 0.47 U | 0.48 U |
| Styrene | 100-42-5 | 0.53 U | 0.53 U | 0.57 U | 0.57 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.42 U | 0.42 U | 0.45 U | 0.45 U |
| Tetrachloroethene | 127-18-4 | 0.85 U | 0.85 U | 0.90 U | 0.91 U |
| Toluene | 108-88-3 | 2.5 J | 3.7 J | 0.50 U | 2.4 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.74 U | 0.74 U | 0.79 U | 0.79 U |
| Trichloroethene | 79-01-6 | 0.36 U | 0.36 U | 0.38 U | 0.38 U |
| Trichlorofluoromethane | 75-69-4 | 1.4 U | 1.4 U | 1.5 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 0.96 U | 0.96 U | 1.0 U | 1.0 U |
| | | 14.9 | 15.8 | 3 | 11.3 |
| | | 510 | 42.7 | 15.3 | 23 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-16(10-12) | P-16(12-14) | P-16(12-14)RE | P-16(18-20) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2632-26 | T2632-27 | T2632-27RE | T2632-28 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.51 U | 0.55 U | 0.55 U | 0.51 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.38 U | 0.41 U | 0.41 U | 0.38 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.36 U | 0.39 U | 0.38 U | 0.36 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.82 U | 0.87 U | 0.87 U | 0.82 U |
| 1,1-Dichloroethane | 75-34-3 | 0.33 U | 0.35 U | 0.35 U | 0.33 U |
| 1,1-Dichloroethene | 75-35-4 | 0.70 U | 0.75 U | 0.75 U | 0.70 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.84 U | 0.90 U | 0.89 U | 0.84 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 1,2-Dibromoethane | 106-93-4 | 0.49 U | 0.53 U | 0.52 U | 0.49 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.47 U | 0.51 U | 0.50 U | 0.47 U |
| 1,2-Dichloroethane | 107-06-2 | 0.38 U | 0.40 U | 0.40 U | 0.38 U |
| 1,2-Dichloropropane | 78-87-5 | 0.49 U | 0.52 U | 0.52 U | 0.49 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.68 U | 0.73 U | 0.73 U | 0.68 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.67 U | 0.72 U | 0.71 U | 0.67 U |
| 2-Butanone | 78-93-3 | 3.5 U | 3.7 U | 3.7 U | 3.5 U |
| 2-Hexanone | 591-78-6 | 4.4 U | 4.7 U | 4.7 U | 4.4 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.4 U | 2.6 U | 2.6 U | 2.4 U |
| Acetone | 67-64-1 | 4.1 U | 4.4 U | 4.4 U | 13 J |
| Benzene | 71-43-2 | 2.1 J | 1.4 J | 0.52 U | 4.2 J |
| Bromodichloromethane | 75-27-4 | 0.41 U | 0.44 U | 0.44 U | 0.41 U |
| Bromoform | 75-25-2 | 0.38 U | 0.41 U | 0.40 U | 0.38 U |
| Bromomethane | 74-83-9 | 2.5 U | 2.7 U | 2.6 U | 2.5 U |
| Carbon Disulfide | 75-15-0 | 0.45 U | 0.48 U | 0.48 U | 0.45 U |
| Carbon Tetrachloride | 56-23-5 | 0.54 U | 0.58 U | 0.58 U | 0.54 U |
| Chlorobenzene | 108-90-7 | 0.44 U | 0.48 U | 0.47 U | 0.44 U |
| Chloroethane | 75-00-3 | 2.6 U | 2.8 U | 2.8 U | 2.6 U |
| Chloroform | 67-66-3 | 0.43 U | 0.46 U | 0.45 U | 0.43 U |
| Chloromethane | 74-87-3 | 1.0 U | 1.1 U | 1.1 U | 1.0 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.40 U | 0.43 U | 0.42 U | 0.40 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.41 U | 0.43 U | 0.43 U | 0.41 U |
| Cyclohexane | 110-82-7 | 0.40 U | 0.43 U | 0.42 U | 3.8 J |
| Dibromochloromethane | 124-48-1 | 0.28 U | 0.30 U | 0.30 U | 0.28 U |
| Dichlorodifluoromethane | 75-71-8 | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Ethyl Benzene | 100-41-4 | 0.43 U | 0.46 U | 0.46 U | 0.43 U |
| Isopropylbenzene | 98-82-8 | 12 | 16 | 4.9 J | 2.8 J |
| m/p-Xylenes | 126777-61-2 | 1.1 U | 1.1 U | 1.1 U | 1.7 J |
| Methyl Acetate | 79-20-9 | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| Methyl tert-butyl Ether | 1634-04-4 | 45 | 160 | 27 | 17 |
| Methylcyclohexane | 108-87-2 | 0.52 U | 0.55 U | 0.55 U | 9.9 |
| Methylene Chloride | 75-09-2 | 5.4 J | 6.6 | 2.4 U | 2.2 U |
| o-Xylene | 95-47-6 | 0.47 U | 0.50 U | 0.50 U | 0.47 U |
| Styrene | 100-42-5 | 0.56 U | 0.60 U | 0.60 U | 0.56 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.45 U | 0.48 U | 0.47 U | 0.45 U |
| Tetrachloroethene | 127-18-4 | 0.90 U | 0.96 U | 0.95 U | 0.90 U |
| Toluene | 108-88-3 | 0.50 U | 0.53 U | 0.53 U | 5.8 J |
| trans-1,2-Dichloroethene | 156-60-5 | 0.78 U | 0.84 U | 0.83 U | 0.78 U |
| Trichloroethene | 79-01-6 | 0.38 U | 0.40 U | 0.40 U | 0.38 U |
| Trichlorofluoromethane | 75-69-4 | 1.5 U | 1.6 U | 1.6 U | 1.5 U |
| Vinyl Chloride | 75-01-4 | 1.0 U | 1.1 U | 1.1 U | 1.0 U |
| | | | | | |
| | | 64.5 | 184 | 31.9 | 58.2 |
| | | 48.3 | 194 | 53.8 | 87.1 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-17(0-2) | P-17(2-4) | P-17(8-10) | P-17(10-12) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2561-01 | T2561-02 | T2561-04 | T2561-05 |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 10.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.42 U | 0.42 U | 640 U | 0.42 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.31 U | 0.31 U | 770 U | 0.31 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.29 U | 0.30 U | 810 U | 0.29 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.67 U | 0.67 U | 1100 U | 0.66 U |
| 1,1-Dichloroethane | 75-34-3 | 0.27 U | 0.27 U | 340 U | 0.27 U |
| 1,1-Dichloroethene | 75-35-4 | 0.57 U | 0.58 U | 500 U | 0.57 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.68 U | 0.69 U | 450 U | 0.68 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 0.94 U | 0.95 U | 1500 U | 0.94 U |
| 1,2-Dibromoethane | 106-93-4 | 0.40 U | 0.41 U | 990 U | 0.40 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.39 U | 0.39 U | 570 U | 0.39 U |
| 1,2-Dichloroethane | 107-06-2 | 0.31 U | 0.31 U | 500 U | 0.31 U |
| 1,2-Dichloropropane | 78-87-5 | 0.40 U | 0.40 U | 500 U | 0.40 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.56 U | 0.56 U | 580 U | 0.56 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.55 U | 0.55 U | 600 U | 0.55 U |
| 2-Butanone | 78-93-3 | 2.8 U | 2.8 U | 4400 U | 2.8 U |
| 2-Hexanone | 591-78-6 | 3.6 U | 3.6 U | 1700 J | 3.6 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.0 U | 2.0 U | 2100 U | 2.0 U |
| Acetone | 67-64-1 | 9.1 J | 20 J | 5200 U | 18 J |
| Benzene | 71-43-2 | 0.40 U | 0.40 U | 380 U | 0.40 U |
| Bromodichloromethane | 75-27-4 | 0.34 U | 0.34 U | 540 U | 0.34 U |
| Bromoform | 75-25-2 | 0.31 U | 0.31 U | 390 U | 0.31 U |
| Bromomethane | 74-83-9 | 2.0 U | 2.0 U | 1200 U | 2.0 U |
| Carbon Disulfide | 75-15-0 | 0.37 U | 2.1 J | 610 U | 0.37 U |
| Carbon Tetrachloride | 56-23-5 | 0.44 U | 0.45 U | 730 U | 0.44 U |
| Chlorobenzene | 108-90-7 | 0.36 U | 0.36 U | 580 U | 0.36 U |
| Chloroethane | 75-00-3 | 2.1 U | 2.2 U | 1400 U | 2.1 U |
| Chloroform | 67-66-3 | 0.35 U | 0.35 U | 900 U | 0.35 U |
| Chloromethane | 74-87-3 | 0.85 U | 0.86 U | 1100 U | 0.85 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.33 U | 0.33 U | 1200 U | 0.32 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.33 U | 0.33 U | 240 U | 0.33 U |
| Cyclohexane | 110-82-7 | 0.32 U | 0.33 U | 570 U | 0.32 U |
| Dibromochloromethane | 124-48-1 | 0.23 U | 0.23 U | 590 U | 0.23 U |
| Dichlorodifluoromethane | 75-71-8 | 0.86 U | 0.86 U | 520 U | 0.86 U |
| Ethyl Benzene | 100-41-4 | 0.35 U | 0.36 U | 640 U | 19 |
| Isopropylbenzene | 98-82-8 | 0.42 U | 0.42 U | 670 J | 21 |
| m/p-Xylenes | 126777-61-2 | 0.87 U | 0.87 U | 1500 U | 27 |
| Methyl Acetate | 79-20-9 | 0.87 U | 0.87 U | 1300 U | 0.86 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.37 U | 0.37 U | 560 U | 0.37 U |
| Methylcyclohexane | 108-87-2 | 0.42 U | 0.42 U | 940 U | 15 |
| Methylene Chloride | 75-09-2 | 1.9 J | 2.3 J | 970 U | 2.0 J |
| o-Xylene | 95-47-6 | 0.38 U | 0.39 U | 590 J | 40 |
| Styrene | 100-42-5 | 0.46 U | 0.46 U | 530 U | 0.46 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.36 U | 0.37 U | 660 U | 0.36 U |
| Tetrachloroethene | 127-18-4 | 0.73 U | 0.74 U | 520 U | 0.73 U |
| Toluene | 108-88-3 | 0.41 U | 0.41 U | 600 U | 0.40 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.64 U | 0.64 U | 800 U | 0.64 U |
| Trichloroethene | 79-01-6 | 0.31 U | 0.31 U | 1000 U | 0.31 U |
| Trichlorofluoromethane | 75-69-4 | 1.2 U | 1.3 U | 900 U | 1.2 U |
| Vinyl Chloride | 75-01-4 | 0.82 U | 0.83 U | 420 U | 0.82 U |
| | | | | | |
| | | 11 | 24.4 | 2960 | 142 |
| | | 0 | 138.3 | 183400 | 505 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-17(12-14) | P-17(14-16) | P-17(14-16)DUP | P-17(20-22) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2561-06 | T2561-07 | T2561-08 | T2561-09 |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 10.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 640 U | 770 U | 76 U | 61 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 770 U | 940 U | 92 U | 75 U |
| 1,1,2-Trichloroethane | 79-00-5 | 810 U | 980 U | 96 U | 78 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 1100 U | 1300 U | 130 U | 100 U |
| 1,1-Dichloroethane | 75-34-3 | 340 U | 410 U | 40 U | 32 U |
| 1,1-Dichloroethene | 75-35-4 | 500 U | 610 U | 60 U | 48 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 450 U | 540 U | 54 U | 43 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 1500 U | 1800 U | 170 U | 140 U |
| 1,2-Dibromoethane | 106-93-4 | 990 U | 1200 U | 120 U | 95 U |
| 1,2-Dichlorobenzene | 95-50-1 | 570 U | 690 U | 68 U | 55 U |
| 1,2-Dichloroethane | 107-06-2 | 500 U | 610 U | 60 U | 48 U |
| 1,2-Dichloropropane | 78-87-5 | 500 U | 600 U | 59 U | 48 U |
| 1,3-Dichlorobenzene | 541-73-1 | 580 U | 700 U | 69 U | 56 U |
| 1,4-Dichlorobenzene | 106-46-7 | 600 U | 730 U | 72 U | 58 U |
| 2-Butanone | 78-93-3 | 4400 U | 5400 U | 530 U | 430 U |
| 2-Hexanone | 591-78-6 | 1000 U | 1200 U | 120 U | 99 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2100 U | 2500 U | 250 U | 200 U |
| Acetone | 67-64-1 | 5200 U | 6300 U | 620 U | 500 U |
| Benzene | 71-43-2 | 31000 | 850 J | 2000 | 2200 |
| Bromodichloromethane | 75-27-4 | 540 U | 660 U | 65 U | 52 U |
| Bromoform | 75-25-2 | 390 U | 480 U | 47 U | 38 U |
| Bromomethane | 74-83-9 | 1200 U | 1500 U | 150 U | 120 U |
| Carbon Disulfide | 75-15-0 | 610 U | 740 U | 73 U | 59 U |
| Carbon Tetrachloride | 56-23-5 | 730 U | 890 U | 88 U | 71 U |
| Chlorobenzene | 108-90-7 | 580 U | 700 U | 69 U | 55 U |
| Chloroethane | 75-00-3 | 1400 U | 1700 U | 160 U | 130 U |
| Chloroform | 67-66-3 | 900 U | 1100 U | 110 U | 87 U |
| Chloromethane | 74-87-3 | 1100 U | 1300 U | 130 U | 100 U |
| cis-1,2-Dichloroethene | 156-59-2 | 1200 U | 1500 U | 140 U | 120 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 240 U | 290 U | 28 U | 23 U |
| Cyclohexane | 110-82-7 | 570 U | 700 U | 68 U | 55 U |
| Dibromochloromethane | 124-48-1 | 590 U | 720 U | 71 U | 57 U |
| Dichlorodifluoromethane | 75-71-8 | 520 U | 630 U | 62 U | 50 U |
| Ethyl Benzene | 100-41-4 | 68000 | 7900 J | 2800 | 2000 |
| Isopropylbenzene | 98-82-8 | 6500 J | 1100 J | 210 J | 50 U |
| m/p-Xylenes | 126777-61-2 | 150000 | 12000 J | 3500 | 2500 |
| Methyl Acetate | 79-20-9 | 1300 U | 1600 U | 150 U | 120 U |
| Methyl tert-butyl Ether | 1634-04-4 | 560 U | 680 U | 67 U | 54 U |
| Methylcyclohexane | 108-87-2 | 940 U | 1100 U | 110 U | 90 U |
| Methylene Chloride | 75-09-2 | 970 U | 1200 U | 120 U | 94 U |
| o-Xylene | 95-47-6 | 64000 | 5600 J | 1600 | 1200 |
| Styrene | 100-42-5 | 530 U | 650 U | 64 U | 52 U |
| t-1,3-Dichloropropene | 10061-02-6 | 660 U | 800 U | 79 U | 64 U |
| Tetrachloroethene | 127-18-4 | 520 U | 630 U | 62 U | 50 U |
| Toluene | 108-88-3 | 9000 | 730 U | 72 U | 58 U |
| trans-1,2-Dichloroethene | 156-60-5 | 800 U | 970 U | 96 U | 77 U |
| Trichloroethene | 79-01-6 | 1000 U | 1300 U | 130 U | 100 U |
| Trichlorofluoromethane | 75-69-4 | 900 U | 1100 U | 110 U | 87 U |
| Vinyl Chloride | 75-01-4 | 420 U | 510 U | 50 U | 40 U |
| | | 328500 | 27450 | 10110 | 7900 |
| | | 969000 | 476000 | 78400 | 41510 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-17(22-24) | FIELDBLANK-3 | TRIPBLANK-3 | P-17(24-26) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2561-11 | T2561-12 | T2561-13 | T2561-14 |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | WATER | WATER | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/L | ug/L | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.42 U | 0.32 U | 0.32 U | 0.42 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.31 U | 0.30 U | 0.30 U | 0.31 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.29 U | 0.41 U | 0.41 U | 0.29 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.66 U | 1.3 U | 1.3 U | 0.66 U |
| 1,1-Dichloroethane | 75-34-3 | 0.27 U | 0.38 U | 0.38 U | 0.27 U |
| 1,1-Dichloroethene | 75-35-4 | 0.57 U | 0.42 U | 0.42 U | 0.57 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.68 U | 0.46 U | 0.46 U | 0.68 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 0.94 U | 0.38 U | 0.38 U | 0.94 U |
| 1,2-Dibromoethane | 106-93-4 | 0.40 U | 0.32 U | 0.32 U | 0.40 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.38 U | 0.44 U | 0.44 U | 0.39 U |
| 1,2-Dichloroethane | 107-06-2 | 0.31 U | 0.34 U | 0.34 U | 0.31 U |
| 1,2-Dichloropropane | 78-87-5 | 0.40 U | 0.40 U | 0.40 U | 0.40 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.56 U | 0.50 U | 0.50 U | 0.56 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.54 U | 0.54 U | 0.54 U | 0.54 U |
| 2-Butanone | 78-93-3 | 2.8 U | 1.1 U | 1.1 U | 2.8 U |
| 2-Hexanone | 591-78-6 | 3.6 U | 1.7 U | 1.7 U | 3.6 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.0 U | 1.6 U | 1.6 U | 2.0 U |
| Acetone | 67-64-1 | 14 J | 2.3 U | 2.3 U | 12 J |
| Benzene | 71-43-2 | 13 | 0.39 U | 0.39 U | 0.40 U |
| Bromodichloromethane | 75-27-4 | 0.33 U | 0.33 U | 0.33 U | 0.33 U |
| Bromoform | 75-25-2 | 0.31 U | 0.32 U | 0.32 U | 0.31 U |
| Bromomethane | 74-83-9 | 2.0 U | 0.41 U | 0.41 U | 2.0 U |
| Carbon Disulfide | 75-15-0 | 2.7 J | 0.40 U | 0.40 U | 1.6 J |
| Carbon Tetrachloride | 56-23-5 | 0.44 U | 1.1 U | 1.1 U | 0.44 U |
| Chlorobenzene | 108-90-7 | 0.36 U | 0.47 U | 0.47 U | 0.36 U |
| Chloroethane | 75-00-3 | 2.1 U | 0.83 U | 0.83 U | 2.1 U |
| Chloroform | 67-66-3 | 0.35 U | 0.33 U | 0.33 U | 0.35 U |
| Chloromethane | 74-87-3 | 0.85 U | 0.34 U | 0.34 U | 0.85 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.32 U | 0.29 U | 0.29 U | 0.32 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.33 U | 0.36 U | 0.36 U | 0.33 U |
| Cyclohexane | 110-82-7 | 1.4 J | 0.36 U | 0.36 U | 0.32 U |
| Dibromochloromethane | 124-48-1 | 0.23 U | 0.26 U | 0.26 U | 0.23 U |
| Dichlorodifluoromethane | 75-71-8 | 0.85 U | 0.17 U | 0.17 U | 0.85 U |
| Ethyl Benzene | 100-41-4 | 57 | 0.45 U | 0.45 U | 1.3 J |
| Isopropylbenzene | 98-82-8 | 19 | 0.44 U | 0.44 U | 0.42 U |
| m/p-Xylenes | 126777-61-2 | 190 | 1.2 U | 1.2 U | 1.5 J |
| Methyl Acetate | 79-20-9 | 0.86 U | 0.20 U | 0.20 U | 0.86 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.37 U | 0.28 U | 0.28 U | 0.37 U |
| Methylcyclohexane | 108-87-2 | 5.5 | 0.34 U | 0.34 U | 0.42 U |
| Methylene Chloride | 75-09-2 | 1.8 U | 0.43 U | 0.43 U | 2.9 J |
| o-Xylene | 95-47-6 | 100 | 0.46 U | 0.46 U | 1.1 J |
| Styrene | 100-42-5 | 0.46 U | 0.41 U | 0.41 U | 0.46 U |
| t-1,3-Dichloropropene | 10061-02-6 | 0.36 U | 0.32 U | 0.32 U | 0.36 U |
| Tetrachloroethene | 127-18-4 | 0.73 U | 0.48 U | 0.48 U | 0.73 U |
| Toluene | 108-88-3 | 8.7 | 0.36 U | 0.36 U | 0.40 U |
| trans-1,2-Dichloroethene | 156-60-5 | 0.64 U | 0.40 U | 0.40 U | 0.64 U |
| Trichloroethene | 79-01-6 | 0.31 U | 0.46 U | 0.46 U | 0.31 U |
| Trichlorofluoromethane | 75-69-4 | 1.2 U | 0.22 U | 0.22 U | 1.2 U |
| Vinyl Chloride | 75-01-4 | 0.82 U | 0.33 U | 0.33 U | 0.82 U |
| | | | | | |
| | | 411.3 | 0 | 0 | 20.4 |
| | | 756 | 5.1 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Volatile Organic Compounds

| Sample ID | | P-17(26-28) | P-17(28-30) | P-17(28-30)DL |
|---|---|---|---|---|
| Lab Sample Number | | T2561-15 | T2561-16 | T2561-16DL |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 0.42 U | 0.42 U | 37 U |
| 1,1,2,2-Tetrachloroethane | 79-34-5 | 0.31 U | 0.31 U | 28 U |
| 1,1,2-Trichloroethane | 79-00-5 | 0.29 U | 0.29 U | 26 U |
| 1,1,2-Trichlorotrifluoroethane | 76-13-1 | 0.66 U | 0.67 U | 59 U |
| 1,1-Dichloroethane | 75-34-3 | 0.27 U | 0.27 U | 24 U |
| 1,1-Dichloroethene | 75-35-4 | 0.57 U | 0.57 U | 51 U |
| 1,2,4-Trichlorobenzene | 120-82-1 | 0.68 U | 0.68 U | 61 U |
| 1,2-Dibromo-3-Chloropropane | 96-12-8 | 0.94 U | 0.94 U | 84 U |
| 1,2-Dibromoethane | 106-93-4 | 0.40 U | 0.40 U | 36 U |
| 1,2-Dichlorobenzene | 95-50-1 | 0.38 U | 0.39 U | 34 U |
| 1,2-Dichloroethane | 107-06-2 | 0.31 U | 0.31 U | 27 U |
| 1,2-Dichloropropane | 78-87-5 | 0.40 U | 0.40 U | 35 U |
| 1,3-Dichlorobenzene | 541-73-1 | 0.56 U | 0.56 U | 50 U |
| 1,4-Dichlorobenzene | 106-46-7 | 0.54 U | 0.55 U | 49 U |
| 2-Butanone | 78-93-3 | 2.8 U | 2.8 U | 250 U |
| 2-Hexanone | 591-78-6 | 3.6 U | 3.6 U | 320 U |
| 4-Methyl-2-Pentanone | 108-10-1 | 2.0 U | 2.0 U | 180 U |
| Acetone | 67-64-1 | 11 J | 6.9 J | 1100 JD |
| Benzene | 71-43-2 | 0.40 U | 35 | 260 JD |
| Bromodichloromethane | 75-27-4 | 0.33 U | 0.34 U | 30 U |
| Bromoform | 75-25-2 | 0.31 U | 0.31 U | 28 U |
| Bromomethane | 74-83-9 | 2.0 U | 2.0 U | 180 U |
| Carbon Disulfide | 75-15-0 | 8.2 | 0.37 U | 33 U |
| Carbon Tetrachloride | 56-23-5 | 0.44 U | 0.44 U | 40 U |
| Chlorobenzene | 108-90-7 | 0.36 U | 0.36 U | 32 U |
| Chloroethane | 75-00-3 | 2.1 U | 2.1 U | 190 U |
| Chloroform | 67-66-3 | 0.35 U | 0.35 U | 31 U |
| Chloromethane | 74-87-3 | 0.85 U | 0.85 U | 76 U |
| cis-1,2-Dichloroethene | 156-59-2 | 0.32 U | 0.33 U | 29 U |
| cis-1,3-Dichloropropene | 10061-01-5 | 0.33 U | 0.33 U | 30 U |
| Cyclohexane | 110-82-7 | 0.32 U | 2.4 J | 29 U |
| Dibromochloromethane | 124-48-1 | 0.23 U | 0.23 U | 21 U |
| Dichlorodifluoromethane | 75-71-8 | 0.85 U | 0.86 U | 76 U |
| Ethyl Benzene | 100-41-4 | 0.35 U | 0.35 U | 4700 D |
| Isopropylbenzene | 98-82-8 | 0.41 U | 290 E | 1500 D |
| m/p-Xylenes | 126777-61-2 | 0.86 U | 800 E | 5800 D |
| Methyl Acetate | 79-20-9 | 0.86 U | 0.87 U | 77 U |
| Methyl tert-butyl Ether | 1634-04-4 | 0.37 U | 0.37 U | 33 U |
| Methylcyclohexane | 108-87-2 | 0.42 U | 8.7 | 38 U |
| Methylene Chloride | 75-09-2 | 2.0 J | 3.3 J | 340 JD |
| o-Xylene | 95-47-6 | 0.38 U | 290 E | 4900 D |
| Styrene | 100-42-5 | 0.46 U | 15 | 100 JD |
| t-1,3-Dichloropropene | 10061-02-6 | 0.36 U | 0.36 U | 32 U |
| Tetrachloroethene | 127-18-4 | 0.73 U | 0.73 U | 65 U |
| Toluene | 108-88-3 | 0.40 U | 70 | 320 JD |
| trans-1,2-Dichloroethene | 156-60-5 | 0.64 U | 0.64 U | 57 U |
| Trichloroethene | 79-01-6 | 0.31 U | 0.31 U | 28 U |
| Trichlorofluoromethane | 75-69-4 | 1.2 U | 1.2 U | 110 U |
| Vinyl Chloride | 75-01-4 | 0.82 U | 0.82 U | 73 U |
| | | | | |
| | | 21.2 | 1521.3 | 19020 |
| | | 0 | 433.9 | 76500 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-1(0-2) | P-1(6-8) | P-1(9-10) | P-1(8-10)DL | P-1(10-12) | P-1(10-12)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2561-19 | T2561-20 | T2561-21 | T2561-21DL | T2561-22 | T2561-22DL |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 10.0 | 1.0 | 10.0 | 1.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 640 U | 1200 U | 65 U | 650 UD | 64 U | 320 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 620 U | 1200 U | 63 U | 630 UD | 63 U | 310 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 590 U | 1100 U | 60 U | 600 UD | 60 U | 300 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 570 U | 1100 U | 58 U | 580 UD | 57 U | 290 UD |
| 2,4-Dichlorophenol | 120-83-2 | 720 U | 1400 U | 73 U | 730 UD | 72 U | 360 UD |
| 2,4-Dimethylphenol | 105-67-9 | 620 U | 1200 U | 62 U | 620 UD | 62 U | 310 UD |
| 2,4-Dinitrophenol | 51-28-5 | 3300 U | 6400 U | 340 U | 3400 UD | 330 U | 1700 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 56 U | 58 U | 58 U | 1200 U | 1200 U | 12000 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 54 U | 56 U | 58 U | 1100 U | 1100 U | 11000 UD |
| 2-Chloronaphthalene | 91-58-7 | 640 U | 1200 U | 65 U | 650 UD | 65 U | 320 UD |
| 2-Chlorophenol | 95-57-8 | 620 U | 1200 U | 63 U | 630 UD | 62 U | 310 UD |
| 2-Methylnaphthalene | 91-57-6 | 650 U | 5000 J | 1800 E | 6600 D | 1600 | 1700 JD |
| 2-Methylphenol | 95-48-7 | 640 U | 1200 U | 65 U | 650 UD | 65 U | 320 UD |
| 2-Nitroaniline | 88-74-4 | 490 U | 950 U | 50 U | 500 UD | 50 U | 250 UD |
| 2-Nitrophenol | 88-75-5 | 600 U | 1100 U | 60 U | 600 UD | 60 U | 300 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 660 U | 1300 U | 67 U | 670 UD | 67 U | 330 UD |
| 3+4-Methylphenols | 106-44-5 | 610 U | 1200 U | 62 U | 620 UD | 62 U | 310 UD |
| 3-Nitroaniline | 99-09-2 | 510 U | 970 U | 51 U | 510 UD | 51 U | 250 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 750 U | 1400 U | 76 U | 760 UD | 76 U | 380 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 580 U | 1100 U | 59 U | 590 UD | 58 U | 290 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 540 U | 1000 U | 54 U | 540 UD | 54 U | 270 UD |
| 4-Chloroaniline | 106-47-8 | 460 U | 890 U | 47 U | 470 UD | 46 U | 230 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 610 U | 1200 U | 62 U | 620 UD | 62 U | 310 UD |
| 4-Nitroaniline | 100-01-6 | 660 U | 1300 U | 67 U | 670 UD | 67 U | 330 UD |
| 4-Nitrophenol | 100-02-7 | 480 U | 920 U | 49 U | 490 UD | 48 U | 240 UD |
| Acenaphthene | 83-32-9 | 1100 J | 12000 | 1500 E | 8000 D | 2000 | 2200 D |
| Acenaphthylene | 208-96-8 | 630 U | 1200 U | 64 U | 640 UD | 63 U | 320 UD |
| Acetophenone | 98-86-2 | 570 U | 1100 U | 58 U | 580 UD | 57 U | 290 UD |
| Anthracene | 120-12-7 | 1700 J | 17000 | 2200 | 2600 JD | 700 | 620 JD |
| Atrazine | 1912-24-9 | 590 U | 1100 U | 60 U | 600 UD | 60 U | 300 UD |
| Benzaldehyde | 100-52-7 | 800 U | 1500 U | 81 U | 810 UD | 80 U | 400 UD |
| Benzo(a)anthracene | 56-55-3 | 2800 J | 27000 | 1500 | 1900 JD | 380 J | 330 JD |
| Benzo(a)pyrene | 50-32-8 | 2400 J | 24000 | 910 | 770 JD | 230 J | 310 UD |
| Benzo(b)fluoranthene | 205-99-2 | 3000 J | 32000 | 1400 | 1100 JD | 310 J | 260 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 820 J | 6800 J | 210 J | 650 UD | 85 J | 320 UD |
| Benzo(k)fluoranthene | 207-08-9 | 1600 J | 12000 | 630 | 860 UD | 140 J | 430 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 640 U | 1200 U | 65 U | 650 UD | 64 U | 320 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 610 U | 1200 U | 62 U | 620 UD | 62 U | 310 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 740 U | 1400 U | 75 U | 750 UD | 75 U | 370 UD |
| Butylbenzylphthalate | 85-68-7 | 630 U | 1200 U | 64 U | 640 UD | 63 U | 320 UD |
| Caprolactam | 105-60-2 | 620 U | 1200 U | 63 U | 630 UD | 63 U | 310 UD |
| Carbazole | 86-74-8 | 590 J | 8300 | 940 | 830 JD | 230 J | 300 UD |
| Chrysene | 218-01-9 | 2800 J | 27000 | 1400 | 1400 JD | 370 J | 350 UD |
| Dibenz(a,h)anthracene | 53-70-3 | 490 U | 930 U | 68 J | 490 UD | 49 U | 240 UD |
| Dibenzofuran | 132-64-9 | 790 J | 8700 | 3900 E | 6000 D | 1700 | 1700 JD |
| Diethylphthalate | 84-66-2 | 670 U | 1300 U | 68 U | 680 UD | 67 U | 340 UD |
| Dimethylphthalate | 131-11-3 | 620 U | 1200 U | 63 U | 630 UD | 63 U | 310 UD |
| Di-n-butylphthalate | 84-74-2 | 590 U | 1100 U | 60 U | 600 UD | 59 U | 300 UD |
| Di-n-octyl phthalate | 117-84-0 | 660 U | 1300 U | 67 U | 670 UD | 66 U | 330 UD |
| Fluoranthene | 206-44-0 | 6700 | 51000 | 5200 E | 7400 D | 1900 | 1900 JD |
| Fluorene | 86-73-7 | 1500 J | 11000 | 3800 E | 6200 D | 1700 | 1700 JD |
| Hexachlorobenzene | 118-74-1 | 620 U | 1200 U | 63 U | 630 UD | 62 U | 310 UD |
| Hexachlorobutadiene | 87-68-3 | 600 U | 1100 U | 60 U | 600 UD | 60 U | 300 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 620 U | 1200 U | 63 U | 630 UD | 62 U | 310 UD |
| Hexachloroethane | 67-72-1 | 660 U | 1300 U | 67 U | 670 UD | 66 U | 330 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 580 J | 4400 J | 70 J | 500 UD | 50 U | 250 UD |
| Isophorone | 78-59-1 | 580 U | 1100 U | 59 U | 590 UD | 59 U | 290 UD |
| Naphthalene | 91-20-3 | 660 U | 9200 | 10000 E | 19000 D | 4200 E | 5200 D |
| Nitrobenzene | 98-95-3 | 850 U | 1600 U | 86 U | 860 UD | 85 U | 430 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 640 U | 1200 U | 65 U | 650 UD | 65 U | 320 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 640 U | 1200 U | 65 U | 650 UD | 64 U | 320 UD |
| Pentachlorophenol | 87-86-5 | 900 U | 1700 U | 91 U | 910 UD | 90 U | 450 UD |
| Phenanthrene | 85-01-8 | 6400 | 58000 | 9700 E | 18000 D | 3900 E | 5000 D |
| Phenol | 108-95-2 | 590 U | 1100 U | 60 U | 600 UD | 59 U | 300 UD |
| Pyrene | 129-00-0 | 4600 | 44000 | 3400 E | 4400 D | 1100 | 1100 JD |
| | | | | | | | |
| | | 37380 | 357400 | 54628 | 83600 | 20545 | 21710 |
| | | 8780 | 91200 | 13700 | 0 | 10130 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-1(12-14) | P-1(14-16) | P-1(16-18) | P-1(18-20) | P-1(22-24) | P-1(22-24)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2561-23 | T2561-24 | T2561-25 | T2561-26 | T2561-27 | T2561-27DL |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 68 U | 66 U | 65 U | 61 U | 67 U | 130 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 67 U | 65 U | 64 U | 60 U | 65 U | 130 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 64 U | 62 U | 61 U | 57 U | 62 U | 120 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 61 U | 59 U | 58 U | 55 U | 60 U | 120 UD |
| 2,4-Dichlorophenol | 120-83-2 | 77 U | 75 U | 74 U | 69 U | 75 U | 150 UD |
| 2,4-Dimethylphenol | 105-67-9 | 66 U | 64 U | 63 U | 59 U | 64 U | 130 UD |
| 2,4-Dinitrophenol | 51-28-5 | 360 U | 350 U | 340 U | 320 U | 350 U | 690 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 12000 UD | 120000 UD | 120000 UD | 570 U | 570 U | 1100 U |
| 2,6-Dinitrotoluene | 606-20-2 | 11000 UD | 110000 UD | 110000 UD | 550 U | 550 U | 1100 U |
| 2-Chloronaphthalene | 91-58-7 | 69 U | 67 U | 66 U | 62 U | 67 U | 130 UD |
| 2-Chlorophenol | 95-57-8 | 66 U | 64 U | 63 U | 59 U | 65 U | 130 UD |
| 2-Methylnaphthalene | 91-57-6 | 500 | 780 | 1100 | 140 J | 1400 | 1600 D |
| 2-Methylphenol | 95-48-7 | 69 U | 67 U | 66 U | 62 U | 67 U | 130 UD |
| 2-Nitroaniline | 88-74-4 | 53 U | 51 U | 50 U | 47 U | 52 U | 100 UD |
| 2-Nitrophenol | 88-75-5 | 64 U | 62 U | 61 U | 57 U | 62 U | 120 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 71 U | 69 U | 68 U | 64 U | 69 U | 140 UD |
| 3+4-Methylphenols | 106-44-5 | 66 U | 64 U | 63 U | 59 U | 64 U | 130 UD |
| 3-Nitroaniline | 99-09-2 | 54 U | 53 U | 52 U | 49 U | 53 U | 110 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 81 U | 78 U | 77 U | 72 U | 79 U | 160 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 62 U | 60 U | 59 U | 56 U | 61 U | 120 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 57 U | 56 U | 55 U | 51 U | 58 U | 110 UD |
| 4-Chloroaniline | 106-47-8 | 50 U | 48 U | 47 U | 44 U | 48 U | 97 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 66 U | 64 U | 63 U | 59 U | 64 U | 130 UD |
| 4-Nitroaniline | 100-01-6 | 71 U | 69 U | 68 U | 64 U | 69 U | 140 UD |
| 4-Nitrophenol | 100-02-7 | 52 U | 50 U | 49 U | 46 U | 50 U | 100 UD |
| Acenaphthene | 83-32-9 | 740 | 1100 | 1400 | 240 J | 2000 | 2200 D |
| Acenaphthylene | 208-96-8 | 67 U | 65 U | 64 U | 60 U | 66 U | 130 UD |
| Acetophenone | 98-86-2 | 61 U | 59 U | 58 U | 55 U | 59 U | 120 UD |
| Anthracene | 120-12-7 | 190 J | 370 J | 390 J | 72 J | 630 | 660 JD |
| Atrazine | 1912-24-9 | 64 U | 62 U | 61 U | 57 U | 62 U | 120 UD |
| Benzaldehyde | 100-52-7 | 85 U | 83 U | 82 U | 76 U | 83 U | 170 UD |
| Benzo(a)anthracene | 56-55-3 | 78 J | 150 J | 150 J | 52 U | 250 J | 240 JD |
| Benzo(a)pyrene | 50-32-8 | 66 U | 65 U | 64 U | 60 U | 79 J | 130 UD |
| Benzo(b)fluoranthene | 205-99-2 | 46 J | 80 J | 70 J | 41 U | 130 J | 120 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 69 U | 67 U | 66 U | 62 U | 67 U | 130 UD |
| Benzo(k)fluoranthene | 207-08-9 | 91 U | 89 U | 87 U | 82 U | 89 U | 180 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 68 U | 66 U | 65 U | 61 U | 67 U | 130 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 66 U | 64 U | 63 U | 59 U | 64 U | 130 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 80 U | 77 U | 76 U | 72 U | 78 U | 160 UD |
| Butylbenzylphthalate | 85-68-7 | 67 U | 65 U | 64 U | 60 J | 66 U | 130 UD |
| Caprolactam | 105-60-2 | 67 U | 65 U | 64 U | 60 U | 65 U | 130 UD |
| Carbazole | 86-74-8 | 63 U | 120 J | 130 J | 57 U | 220 J | 230 JD |
| Chrysene | 218-01-9 | 79 J | 140 J | 140 J | 67 U | 230 J | 250 JD |
| Dibenz(a,h)anthracene | 53-70-3 | 52 U | 51 U | 50 U | 47 U | 51 U | 100 UD |
| Dibenzofuran | 132-64-9 | 590 | 930 | 1100 | 210 J | 1700 | 1800 D |
| Diethylphthalate | 84-66-2 | 72 U | 70 U | 69 U | 64 U | 70 U | 140 UD |
| Dimethylphthalate | 131-11-3 | 67 U | 65 U | 64 U | 60 U | 65 U | 130 UD |
| Di-n-butylphthalate | 84-74-2 | 63 U | 61 U | 61 U | 57 U | 62 U | 120 UD |
| Di-n-octyl phthalate | 117-84-0 | 71 U | 69 U | 68 U | 63 U | 69 U | 140 UD |
| Fluoranthene | 206-44-0 | 550 | 1000 | 1000 | 230 J | 1800 | 1700 D |
| Fluorene | 86-73-7 | 620 | 970 | 1100 | 220 J | 1700 | 1800 D |
| Hexachlorobenzene | 118-74-1 | 66 U | 65 U | 64 U | 60 U | 65 U | 130 UD |
| Hexachlorobutadiene | 87-68-3 | 64 U | 62 U | 61 U | 57 U | 62 U | 120 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 66 U | 64 U | 63 U | 59 U | 65 U | 130 UD |
| Hexachloroethane | 67-72-1 | 71 U | 69 U | 68 U | 63 U | 69 U | 140 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 53 U | 51 U | 50 U | 47 U | 52 U | 100 UD |
| Isophorone | 78-59-1 | 62 U | 61 U | 60 U | 56 U | 61 U | 120 UD |
| Naphthalene | 91-20-3 | 1300 | 2000 | 3100 | 440 | 3600 E | 4300 D |
| Nitrobenzene | 98-95-3 | 91 U | 88 U | 87 U | 81 U | 89 U | 180 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 69 U | 67 U | 66 U | 62 U | 67 U | 130 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 88 U | 86 U | 85 U | 81 U | 87 U | 170 UD |
| Pentachlorophenol | 87-86-5 | 96 U | 93 U | 92 U | 86 U | 94 U | 190 UD |
| Phenanthrene | 85-01-8 | 1600 | 2500 | 2700 | 720 | 3700 E | 4500 D |
| Phenol | 108-95-2 | 63 U | 61 U | 60 U | 56 U | 61 U | 120 UD |
| Pyrene | 129-00-0 | 330 J | 600 | 600 | 130 J | 950 | 1000 D |
| | | | | | | | |
| | | 6623 | 10740 | 12970 | 2462 | 18199 | 20390 |
| | | 5150 | 8880 | 6540 | 3232 | 6900 | 0 |

## Queens West Development-Parcel 9
### Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-1(24-26) | P-1(26-28) | P-2(0-2) | P-2(2-4) | P-2(4-6) | P-2(4-6) DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2561-28 | T2561-29 | T2581-01 | T2581-02 | T2581-03 | T2581-03DL |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 10.0 | 5.0 | 5.0 | 25.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 61 U | 62 U | 1200 U | 590 U | 3200 U | 16000 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 59 U | 61 U | 1200 U | 580 U | 3100 U | 15000 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 56 U | 58 U | 1100 U | 550 U | 2900 U | 15000 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 54 U | 55 U | 1100 U | 530 U | 2800 U | 14000 UD |
| 2,4-Dichlorophenol | 120-83-2 | 68 U | 70 U | 1300 U | 660 U | 3600 U | 18000 UD |
| 2,4-Dimethylphenol | 105-67-9 | 58 U | 60 U | 1100 U | 570 U | 3000 U | 15000 UD |
| 2,4-Dinitrophenol | 51-28-5 | 310 U | 320 U | 6200 U | 3100 U | 16000 U | 82000 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 1100 U | 58 U | 1100 U | 530 U | 2800 U | 14000 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 1100 U | 56 U | 1000 U | 510 U | 2700 U | 14000 UD |
| 2-Chloronaphthalene | 91-58-7 | 61 U | 63 U | 1200 U | 600 U | 3200 U | 16000 UD |
| 2-Chlorophenol | 95-57-8 | 59 U | 60 U | 1100 U | 570 U | 3100 U | 15000 UD |
| 2-Methylnaphthalene | 91-57-6 | 220 J | 63 U | 1200 U | 600 U | 8800 J | 16000 UD |
| 2-Methylphenol | 95-48-7 | 61 U | 63 U | 1200 U | 600 U | 3200 U | 16000 UD |
| 2-Nitroaniline | 88-74-4 | 47 U | 48 U | 910 U | 460 U | 2400 U | 12000 UD |
| 2-Nitrophenol | 88-75-5 | 57 U | 58 U | 1100 U | 550 U | 3000 U | 15000 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 63 U | 65 U | 1200 U | 610 U | 3300 U | 16000 UD |
| 3+4-Methylphenols | 106-44-5 | 58 U | 60 U | 1100 U | 570 U | 3000 U | 15000 UD |
| 3-Nitroaniline | 99-09-2 | 48 U | 49 U | 940 U | 470 U | 2500 U | 13000 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 71 U | 73 U | 1400 U | 700 U | 3700 U | 19000 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 55 U | 56 U | 1100 U | 540 U | 2900 U | 14000 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 51 U | 52 U | 990 U | 500 U | 2700 U | 13000 UD |
| 4-Chloroaniline | 106-47-8 | 44 U | 45 U | 860 U | 430 U | 2300 U | 11000 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 58 U | 60 U | 1100 U | 570 U | 3000 U | 15000 UD |
| 4-Nitroaniline | 100-01-6 | 63 U | 64 U | 1200 U | 610 U | 3300 U | 16000 UD |
| 4-Nitrophenol | 100-02-7 | 46 U | 47 U | 890 U | 450 U | 2400 U | 12000 UD |
| Acenaphthene | 83-32-9 | 320 J | 67 U | 1300 U | 1600 J | 8700 J | 17000 UD |
| Acenaphthylene | 208-96-8 | 60 U | 61 U | 1200 U | 580 U | 11000 J | 16000 UD |
| Acetophenone | 98-86-2 | 54 U | 55 U | 1100 U | 530 U | 2800 U | 14000 UD |
| Anthracene | 120-12-7 | 55 U | 57 U | 1100 U | 3700 | 48000 | 21000 JD |
| Atrazine | 1912-24-9 | 56 U | 58 U | 1100 U | 550 U | 2900 U | 15000 UD |
| Benzaldehyde | 100-52-7 | 75 U | 77 U | 1500 U | 740 U | 3900 U | 20000 UD |
| Benzo(a)anthracene | 56-55-3 | 51 U | 53 U | 2800 J | 11000 | 99000 | 83000 JD |
| Benzo(a)pyrene | 50-32-8 | 59 U | 60 U | 2300 J | 11000 | 98000 | 56000 JD |
| Benzo(b)fluoranthene | 205-99-2 | 40 U | 42 U | 2800 J | 17000 | 160000 E | 77000 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 61 U | 62 U | 1200 U | 2400 J | 19000 J | 22000 JD |
| Benzo(k)fluoranthene | 207-08-9 | 81 U | 83 U | 1600 U | 4800 | 45000 | 25000 JD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 60 U | 62 U | 1200 U | 590 U | 3200 U | 16000 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 58 U | 60 U | 1100 U | 570 U | 3000 U | 15000 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 71 U | 72 U | 1400 U | 690 U | 3700 U | 18000 UD |
| Butylbenzylphthalate | 85-68-7 | 59 U | 61 U | 1200 U | 580 U | 3100 U | 16000 UD |
| Caprolactam | 105-60-2 | 59 U | 61 U | 1200 U | 580 U | 3100 U | 15000 UD |
| Carbazole | 86-74-8 | 56 U | 58 U | 1100 U | 1600 J | 25000 | 15000 UD |
| Chrysene | 218-01-9 | 66 U | 68 U | 1600 J | 11000 | 90000 | 49000 JD |
| Dibenz(a,h)anthracene | 53-70-3 | 46 U | 47 U | 900 U | 460 U | 2500 J | 12000 UD |
| Dibenzofuran | 132-64-9 | 220 J | 62 U | 1200 U | 1100 J | 15000 J | 16000 UD |
| Diethylphthalate | 84-66-2 | 63 U | 65 U | 1200 U | 620 U | 3300 U | 17000 UD |
| Dimethylphthalate | 131-11-3 | 59 U | 61 U | 1200 U | 580 U | 3100 U | 15000 UD |
| Di-n-butylphthalate | 84-74-2 | 56 U | 58 U | 1100 U | 550 U | 2900 U | 15000 UD |
| Di-n-octyl phthalate | 117-84-0 | 63 U | 64 U | 1200 U | 610 U | 3300 U | 16000 UD |
| Fluoranthene | 206-44-0 | 130 J | 100 J | 5600 J | 24000 | 200000 E | 230000 D |
| Fluorene | 86-73-7 | 170 J | 64 U | 1200 U | 1400 J | 19000 | 16000 UD |
| Hexachlorobenzene | 118-74-1 | 59 U | 60 U | 1200 U | 570 U | 3100 U | 15000 UD |
| Hexachlorobutadiene | 87-68-3 | 57 U | 58 U | 1100 U | 550 U | 3000 U | 15000 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 59 U | 60 U | 1100 U | 570 U | 3100 U | 15000 UD |
| Hexachloroethane | 67-72-1 | 62 U | 64 U | 1200 U | 610 U | 3300 U | 16000 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 47 U | 48 U | 910 U | 1100 J | 11000 J | 13000 JD |
| Isophorone | 78-59-1 | 55 U | 57 U | 1100 U | 540 U | 2900 U | 14000 UD |
| Naphthalene | 91-20-3 | 800 | 180 J | 1200 U | 610 U | 23000 | 16000 UD |
| Nitrobenzene | 98-95-3 | 80 U | 82 U | 1600 U | 780 U | 4200 U | 21000 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 61 U | 63 U | 1200 U | 600 U | 3200 U | 16000 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 61 U | 62 U | 1200 U | 590 U | 3700 U | 16000 UD |
| Pentachlorophenol | 87-86-5 | 85 U | 87 U | 1700 U | 830 U | 4400 U | 22000 UD |
| Phenanthrene | 85-01-8 | 660 | 270 J | 4400 J | 18000 | 170000 E | 200000 D |
| Phenol | 108-95-2 | 56 U | 57 U | 1100 U | 540 U | 2900 U | 15000 UD |
| Pyrene | 129-00-0 | 110 J | 110 J | 5600 J | 24000 | 180000 E | 190000 D |
| | | | | | | | |
| | | 2630 | 660 | 75100 | 133700 | 1231000 | 966000 |
| | | 1927 | 3590 | 2000 | 39480 | 220000 | 0 |

# Queens West Development-Parcel 9
## Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-2(5-8) | P-2(6-8)DL | P-2(8-10) | P-2(8-10)DL | P-2(8-10)DL2 | P-2(10-12) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2581-04 | T2581-04DL | T2581-05 | T2581-05DL | T2581-05DL2 | T2581-06 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 20.0 | 200.0 | 5.0 | 50.0 | 500.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 15000 J | 130000 UD | 46000 E | 48000 D | 65000 UD | 5900 E |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 13000 U | 130000 UD | 640 U | 6400 UD | 64000 UD | 63 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 12000 U | 120000 UD | 600 U | 6000 UD | 60000 UD | 60 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 12000 U | 120000 UD | 580 U | 5800 UD | 58000 UD | 57 U |
| 2,4-Dichlorophenol | 120-83-2 | 15000 U | 150000 UD | 730 U | 7300 UD | 73000 UD | 72 U |
| 2,4-Dimethylphenol | 105-67-9 | 13000 U | 130000 UD | 630 U | 6300 UD | 63000 UD | 62 U |
| 2,4-Dinitrophenol | 51-28-5 | 68000 U | 680000 UD | 3400 U | 34000 UD | 340000 UD | 330 U |
| 2,4-Dinitrotoluene | 121-14-2 | 12000 U | 120000 UD | 580 U | 5800 UD | 58000 UD | 57 U |
| 2,6-Dinitrotoluene | 606-20-2 | 11000 U | 110000 UD | 560 U | 5600 UD | 56000 UD | 55 U |
| 2-Chloronaphthalene | 91-58-7 | 13000 U | 130000 UD | 660 U | 6600 UD | 66000 UD | 65 U |
| 2-Chlorophenol | 95-57-8 | 13000 U | 130000 UD | 630 U | 6300 UD | 63000 UD | 62 U |
| 2-Methylnaphthalene | 91-57-6 | 37000 J | 130000 UD | 200000 E | 330000 ED | 340000 JD | 26000 E |
| 2-Methylphenol | 95-48-7 | 13000 U | 130000 UD | 660 U | 6600 UD | 66000 UD | 65 U |
| 2-Nitroaniline | 88-74-4 | 10000 U | 100000 UD | 500 U | 5000 UD | 50000 UD | 50 U |
| 2-Nitrophenol | 88-75-5 | 12000 U | 120000 UD | 610 U | 6100 UD | 61000 UD | 60 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 14000 U | 140000 UD | 680 U | 6800 UD | 68000 UD | 67 U |
| 3+4-Methylphenols | 106-44-5 | 12000 U | 120000 UD | 620 U | 6200 UD | 62000 UD | 62 U |
| 3-Nitroaniline | 99-09-2 | 10000 U | 100000 UD | 510 U | 5100 UD | 51000 UD | 51 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 15000 U | 150000 UD | 770 U | 7700 UD | 77000 UD | 78 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 12000 U | 120000 UD | 590 U | 5900 UD | 59000 UD | 58 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 11000 U | 110000 UD | 550 U | 5500 UD | 55000 UD | 54 U |
| 4-Chloroaniline | 106-47-8 | 9400 U | 94000 UD | 470 U | 4700 UD | 47000 UD | 46 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 13000 U | 130000 UD | 620 U | 6200 UD | 62000 UD | 62 U |
| 4-Nitroaniline | 100-01-6 | 14000 U | 140000 UD | 670 U | 6700 UD | 67000 UD | 67 U |
| 4-Nitrophenol | 100-02-7 | 9800 U | 98000 UD | 490 U | 4900 UD | 49000 UD | 48 U |
| Acenaphthene | 83-32-9 | 52000 J | 140000 UD | 110000 E | 150000 D | 96000 JD | 14000 E |
| Acenaphthylene | 208-96-8 | 13000 U | 130000 UD | 3500 J | 6400 UD | 64000 UD | 63 U |
| Acetophenone | 98-86-2 | 12000 U | 120000 UD | 580 U | 5800 UD | 58000 UD | 57 U |
| Anthracene | 120-12-7 | 220000 | 120000 UD | 40000 E | 57000 D | 60000 UD | 4900 E |
| Atrazine | 1912-24-9 | 12000 U | 120000 UD | 610 U | 6100 UD | 61000 UD | 60 U |
| Benzaldehyde | 100-52-7 | 16000 U | 160000 UD | 810 U | 8100 UD | 81000 UD | 80 U |
| Benzo(a)anthracene | 56-55-3 | 400000 | 350000 JD | 12000 | 10000 JD | 55000 UD | 1500 |
| Benzo(a)pyrene | 50-32-8 | 400000 | 230000 JD | 5800 | 6300 UD | 63000 UD | 660 |
| Benzo(b)fluoranthene | 205-99-2 | 700000 E | 340000 JD | 8500 | 5700 JD | 43000 UD | 840 |
| Benzo(g,h,i)perylene | 191-24-2 | 82000 | 130000 UD | 1200 J | 6500 UD | 65000 UD | 160 J |
| Benzo(k)fluoranthene | 207-08-9 | 220000 | 170000 UD | 2600 J | 8700 UD | 87000 UD | 250 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | 13000 U | 130000 UD | 650 U | 6500 UD | 65000 UD | 64 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 13000 U | 130000 UD | 620 U | 6200 UD | 62000 UD | 62 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 15000 U | 150000 UD | 760 U | 7600 UD | 76000 UD | 75 U |
| Butylbenzylphthalate | 85-68-7 | 13000 U | 130000 UD | 640 U | 6400 UD | 64000 UD | 63 U |
| Caprolactam | 105-60-2 | 13000 U | 130000 UD | 640 U | 6400 UD | 64000 UD | 63 U |
| Carbazole | 86-74-8 | 140000 | 120000 UD | 13000 | 13000 JD | 60000 UD | 1300 |
| Chrysene | 218-01-9 | 450000 | 230000 JD | 12000 | 7100 UD | 71000 UD | 1400 |
| Dibenz(a,h)anthracene | 53-70-3 | 9900 U | 99000 UD | 500 U | 5000 UD | 50000 UD | 49 U |
| Dibenzofuran | 132-64-9 | 210000 | 130000 UD | 86000 E | 130000 D | 85000 JD | 11000 E |
| Diethylphthalate | 84-66-2 | 14000 U | 140000 UD | 680 U | 6800 UD | 68000 UD | 67 U |
| Dimethylphthalate | 131-11-3 | 13000 U | 130000 UD | 640 U | 6400 UD | 64000 UD | 63 U |
| Di-n-butylphthalate | 84-74-2 | 12000 U | 120000 UD | 600 U | 6000 UD | 60000 UD | 59 U |
| Di-n-octyl phthalate | 117-84-0 | 13000 U | 130000 UD | 670 U | 6700 UD | 67000 UD | 66 U |
| Fluoranthene | 206-44-0 | 1000000 E | 1100000 D | 59000 E | 60000 D | 59000 UD | 7300 E |
| Fluorene | 86-73-7 | 74000 J | 130000 UD | 81000 E | 110000 D | 71000 JD | 11000 E |
| Hexachlorobenzene | 118-74-1 | 13000 U | 130000 UD | 630 U | 6300 UD | 63000 UD | 62 U |
| Hexachlorobutadiene | 87-68-3 | 12000 U | 120000 UD | 610 U | 6100 UD | 61000 UD | 60 U |
| Hexachlorocyclopentadiene | 77-47-4 | 13000 U | 130000 UD | 630 U | 6300 UD | 63000 UD | 62 U |
| Hexachloroethane | 67-72-1 | 13000 U | 130000 UD | 670 U | 6700 UD | 67000 UD | 66 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 97000 J | 100000 UD | 840 J | 5000 UD | 50000 UD | 180 J |
| Isophorone | 78-59-1 | 12000 U | 120000 UD | 590 U | 5900 UD | 59000 UD | 59 U |
| Naphthalene | 91-20-3 | 40000 J | 140000 UD | 430000 E | 550000 ED | 960000 D | 56000 E |
| Nitrobenzene | 98-95-3 | 17000 U | 170000 UD | 860 U | 8600 UD | 86000 UD | 85 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 13000 U | 130000 UD | 650 U | 6500 UD | 65000 UD | 65 U |
| N-Nitrosodiphenylamine | 86-30-6 | 13000 U | 130000 UD | 650 U | 6500 UD | 65000 UD | 64 U |
| Pentachlorophenol | 87-86-5 | 18000 U | 180000 UD | 910 U | 9100 UD | 91000 UD | 90 U |
| Phenanthrene | 85-01-8 | 1300000 E | 2300000 D | 160000 E | 200000 D | 180000 JD | 21000 E |
| Phenol | 108-95-2 | 12000 U | 120000 UD | 600 U | 6000 UD | 60000 UD | 59 U |
| Pyrene | 129-00-0 | 950000 E | 990000 D | 45000 E | 63000 D | 70000 UD | 5300 E |
| | | | | | | | |
| | | 6317000 | 5540000 | 1316440 | 1731700 | 1731000 | 168690 |
| | | 1086000 | 0 | 386000 | 0 | 0 | 37200 |

# Queens West Development-Parcel 9

Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-2(10-12)DL | P-2(10-12)DL2 | P-2(12-14) | P-2(12-14)DL | P-2(14-16) | P-2(14-16)DUP |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2581-06DL | T2581-06DL2 | T2581-07 | T2581-07DL | T2581-08 | T2581-10 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 100.0 | 1.0 | 10.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 4600 D | 6400 UD | 390 J | 680 UD | 68 J | 70 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 630 UD | 6300 UD | 67 U | 670 UD | 65 U | 68 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 600 UD | 6000 UD | 63 U | 630 UD | 62 U | 65 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 570 UD | 5700 UD | 61 U | 610 UD | 59 U | 62 U |
| 2,4-Dichlorophenol | 120-83-2 | 720 UD | 7200 UD | 76 U | 760 UD | 75 U | 78 U |
| 2,4-Dimethylphenol | 105-67-9 | 620 UD | 6200 UD | 66 U | 660 UD | 64 U | 67 U |
| 2,4-Dinitrophenol | 51-28-5 | 3300 UD | 33000 UD | 350 U | 3500 UD | 350 U | 360 U |
| 2,4-Dinitrotoluene | 121-14-2 | 570 UD | 5700 UD | 61 U | 610 UD | 59 U | 62 U |
| 2,6-Dinitrotoluene | 606-20-2 | 550 UD | 5500 UD | 58 U | 580 UD | 57 U | 60 U |
| 2-Chloronaphthalene | 91-58-7 | 650 UD | 6500 UD | 69 U | 690 UD | 67 U | 70 U |
| 2-Chlorophenol | 95-57-8 | 620 UD | 6200 UD | 66 U | 660 UD | 65 U | 67 U |
| 2-Methylnaphthalene | 91-57-6 | 34000 ED | 34000 JD | 3200 | 2400 JD | 660 | 160 J |
| 2-Methylphenol | 95-48-7 | 650 UD | 6500 UD | 69 U | 690 UD | 67 U | 70 U |
| 2-Nitroaniline | 88-74-4 | 500 UD | 5000 UD | 52 U | 520 UD | 51 U | 54 U |
| 2-Nitrophenol | 88-75-5 | 600 UD | 6000 UD | 64 U | 640 UD | 62 U | 65 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 670 UD | 6700 UD | 71 U | 710 UD | 69 U | 72 U |
| 3+4-Methylphenols | 106-44-5 | 620 UD | 6200 UD | 65 U | 650 UD | 64 U | 67 U |
| 3-Nitroaniline | 99-09-2 | 510 UD | 5100 UD | 54 U | 540 UD | 53 U | 55 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 760 UD | 7600 UD | 80 U | 800 UD | 78 U | 82 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 580 UD | 5800 UD | 62 U | 620 UD | 60 U | 63 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 540 UD | 5400 UD | 57 U | 570 UD | 56 U | 58 U |
| 4-Chloroaniline | 106-47-8 | 460 UD | 4600 UD | 49 U | 490 UD | 48 U | 50 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 620 UD | 6200 UD | 65 U | 650 UD | 64 U | 67 U |
| 4-Nitroaniline | 100-01-6 | 670 UD | 6700 UD | 71 U | 710 UD | 69 U | 72 U |
| 4-Nitrophenol | 100-02-7 | 480 UD | 4800 UD | 51 U | 510 UD | 50 U | 52 U |
| Acenaphthene | 83-32-9 | 15000 D | 10000 JD | 1500 | 830 JD | 350 J | 120 J |
| Acenaphthylene | 208-96-8 | 630 UD | 6300 UD | 67 U | 670 UD | 66 U | 69 U |
| Acetophenone | 98-86-2 | 570 UD | 5700 UD | 60 U | 600 UD | 59 U | 62 U |
| Anthracene | 120-12-7 | 5800 D | 5900 UD | 580 | 670 UD | 100 J | 64 U |
| Atrazine | 1912-24-9 | 600 UD | 6000 UD | 63 U | 630 UD | 62 U | 65 U |
| Benzaldehyde | 100-52-7 | 800 UD | 8000 UD | 85 U | 850 UD | 83 U | 87 U |
| Benzo(a)anthracene | 56-55-3 | 920 JD | 5500 UD | 150 J | 580 UD | 74 J | 59 U |
| Benzo(a)pyrene | 50-32-8 | 620 UD | 6200 UD | 75 J | 660 UD | 65 U | 68 U |
| Benzo(b)fluoranthene | 205-99-2 | 460 JD | 4300 UD | 100 J | 450 UD | 56 J | 46 U |
| Benzo(g,h,i)perylene | 191-24-2 | 650 UD | 6500 UD | 68 U | 680 UD | 67 U | 70 U |
| Benzo(k)fluoranthene | 207-08-9 | 860 UD | 8600 UD | 91 U | 910 UD | 89 U | 93 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 640 UD | 6400 UD | 68 U | 680 UD | 66 U | 69 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 620 UD | 6200 UD | 65 U | 650 UD | 64 U | 67 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 750 UD | 7500 UD | 79 U | 790 UD | 78 U | 81 U |
| Butylbenzylphthalate | 85-68-7 | 630 UD | 6300 UD | 67 U | 670 UD | 65 U | 68 U |
| Caprolactam | 105-60-2 | 630 UD | 6300 UD | 66 U | 660 UD | 65 U | 68 U |
| Carbazole | 86-74-8 | 1100 JD | 6000 UD | 230 J | 630 UD | 72 J | 69 J |
| Chrysene | 218-01-9 | 700 UD | 7000 UD | 130 J | 740 UD | 73 U | 76 U |
| Dibenz(a,h)anthracene | 53-70-3 | 490 UD | 4900 UD | 52 U | 520 UD | 51 U | 53 U |
| Dibenzofuran | 132-64-9 | 13000 D | 8800 JD | 1300 | 740 JD | 360 J | 140 J |
| Diethylphthalate | 84-66-2 | 670 UD | 6700 UD | 71 U | 710 UD | 70 U | 73 U |
| Dimethylphthalate | 131-11-3 | 630 UD | 6300 UD | 66 U | 660 UD | 65 U | 68 U |
| Di-n-butylphthalate | 84-74-2 | 590 UD | 5900 UD | 63 U | 630 UD | 62 U | 64 U |
| Di-n-octyl phthalate | 117-84-0 | 660 UD | 6600 UD | 70 U | 700 UD | 69 U | 72 U |
| Fluoranthene | 206-44-0 | 5900 D | 5800 UD | 760 | 610 UD | 260 J | 120 J |
| Fluorene | 86-73-7 | 12000 D | 7800 JD | 1200 | 700 UD | 280 J | 100 J |
| Hexachlorobenzene | 118-74-1 | 620 UD | 6200 UD | 66 U | 660 UD | 65 U | 68 U |
| Hexachlorobutadiene | 87-68-3 | 600 UD | 6000 UD | 64 U | 640 UD | 62 U | 65 U |
| Hexachlorocyclopentadiene | 77-47-4 | 620 UD | 6200 UD | 66 U | 660 UD | 65 U | 67 U |
| Hexachloroethane | 67-72-1 | 660 UD | 6600 UD | 70 U | 700 UD | 69 U | 72 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 500 UD | 5000 UD | 52 U | 520 UD | 51 U | 54 U |
| Isophorone | 78-59-1 | 580 UD | 5900 UD | 62 U | 620 UD | 61 U | 63 U |
| Naphthalene | 91-20-3 | 60000 ED | 100000 D | 5700 E | 6600 D | 2500 | 1400 |
| Nitrobenzene | 98-95-3 | 850 UD | 8500 UD | 90 U | 900 UD | 88 U | 92 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 650 UD | 6500 UD | 68 U | 680 UD | 67 U | 70 U |
| N-Nitrosodiphenylamine | 86-30-6 | 640 UD | 6400 UD | 68 U | 680 UD | 67 U | 70 U |
| Pentachlorophenol | 87-86-5 | 900 UD | 9000 UD | 96 U | 960 UD | 94 U | 98 U |
| Phenanthrene | 85-01-8 | 20000 D | 18000 JD | 2400 | 1700 JD | 1200 | 480 |
| Phenol | 108-95-2 | 590 UD | 5900 UD | 63 U | 630 UD | 61 U | 64 U |
| Pyrene | 129-00-0 | 6200 D | 6900 UD | 830 | 730 UD | 260 J | 100 J |
| | | | | | | | |
| | | 178780 | 178600 | 18545 | 12270 | 6240 | 2689 |
| | | 0 | 0 | 11190 | 0 | 4348 | 3026 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-2(16-18) | P-2(16-16)DL | P-2(18-20) | P-2(18-20)DL | P-2(21-22) | P-2(21-22)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2581-11 | T2581-11DL | T2581-12 | T2581-12DL | T2581-15 | T2581-15DL |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 5.0 | 1.0 | 10.0 | 1.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 79 J | 330 UD | 1500 | 660 UD | 380 J | 660 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 65 U | 320 UD | 64 U | 640 UD | 64 U | 640 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 61 U | 310 UD | 61 U | 610 UD | 60 U | 600 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 59 U | 300 UD | 58 U | 580 UD | 58 U | 580 UD |
| 2,4-Dichlorophenol | 120-83-2 | 74 U | 370 UD | 74 U | 740 UD | 73 U | 730 UD |
| 2,4-Dimethylphenol | 105-67-9 | 64 U | 320 UD | 63 U | 630 UD | 63 U | 630 UD |
| 2,4-Dinitrophenol | 51-28-5 | 340 U | 1700 UD | 340 U | 3400 UD | 340 U | 3400 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 59 U | 300 UD | 58 U | 580 UD | 58 U | 580 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 57 U | 280 UD | 56 U | 560 UD | 56 U | 560 UD |
| 2-Chloronaphthalene | 91-58-7 | 67 U | 330 UD | 66 U | 660 UD | 66 U | 660 UD |
| 2-Chlorophenol | 95-57-8 | 64 U | 320 UD | 64 U | 640 UD | 63 U | 630 UD |
| 2-Methylnaphthalene | 91-57-6 | 860 | 440 JD | 7400 E | 7300 D | 2500 | 1700 JD |
| 2-Methylphenol | 95-48-7 | 67 U | 330 UD | 66 U | 660 UD | 66 U | 660 UD |
| 2-Nitroaniline | 88-74-4 | 51 U | 260 UD | 51 U | 510 UD | 50 U | 500 UD |
| 2-Nitrophenol | 88-75-5 | 62 U | 310 UD | 61 U | 610 UD | 61 U | 610 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 69 U | 340 UD | 68 U | 680 UD | 68 U | 680 UD |
| 3+4-Methylphenols | 106-44-5 | 63 U | 320 UD | 63 U | 630 UD | 62 U | 620 UD |
| 3-Nitroaniline | 99-09-2 | 52 U | 260 UD | 52 U | 520 UD | 52 U | 520 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 78 U | 390 UD | 77 U | 770 UD | 77 U | 770 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 60 U | 300 UD | 59 U | 590 UD | 59 U | 590 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 56 U | 280 UD | 55 U | 550 UD | 55 U | 550 UD |
| 4-Chloroaniline | 106-47-8 | 48 U | 240 UD | 47 U | 470 UD | 47 U | 470 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 64 U | 320 UD | 63 U | 630 UD | 63 U | 630 UD |
| 4-Nitroaniline | 100-01-6 | 69 U | 340 UD | 68 U | 680 UD | 68 U | 680 UD |
| 4-Nitrophenol | 100-02-7 | 50 U | 250 UD | 49 U | 490 UD | 49 U | 490 UD |
| Acenaphthene | 83-32-9 | 400 J | 360 JD | 3700 E | 2700 JD | 1300 | 700 UD |
| Acenaphthylene | 208-96-8 | 65 U | 330 UD | 65 U | 650 UD | 64 U | 640 UD |
| Acetophenone | 98-86-2 | 59 U | 290 UD | 58 U | 580 UD | 58 U | 580 UD |
| Anthracene | 120-12-7 | 120 J | 300 UD | 1300 | 600 UD | 290 J | 600 UD |
| Atrazine | 1912-24-9 | 62 U | 310 UD | 61 U | 610 UD | 61 U | 610 UD |
| Benzaldehyde | 100-52-7 | 83 U | 410 UD | 82 U | 820 UD | 81 U | 810 UD |
| Benzo(a)anthracene | 56-55-3 | 81 J | 280 UD | 250 J | 560 UD | 55 U | 550 UD |
| Benzo(a)pyrene | 50-32-8 | 64 U | 320 UD | 100 J | 640 UD | 63 U | 630 UD |
| Benzo(b)fluoranthene | 205-99-2 | 64 J | 220 UD | 150 J | 440 UD | 44 U | 440 UD |
| Benzo(g,h,i)perylene | 191-24-2 | 66 U | 330 UD | 66 U | 660 UD | 65 U | 650 UD |
| Benzo(k)fluoranthene | 207-08-9 | 88 U | 440 UD | 88 U | 880 UD | 87 U | 870 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 66 U | 330 UD | 65 U | 650 UD | 65 U | 650 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 64 U | 320 UD | 63 U | 630 UD | 63 U | 630 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 77 U | 390 UD | 76 U | 760 UD | 76 U | 760 UD |
| Butylbenzylphthalate | 85-68-7 | 72 J | 330 UD | 150 J | 640 UD | 64 U | 640 UD |
| Caprolactam | 105-60-2 | 65 U | 320 UD | 64 U | 640 UD | 64 U | 640 UD |
| Carbazole | 86-74-8 | 110 J | 310 UD | 420 | 610 UD | 230 J | 600 UD |
| Chrysene | 218-01-9 | 72 U | 360 UD | 200 J | 710 UD | 71 U | 710 UD |
| Dibenz(a,h)anthracene | 53-70-3 | 50 U | 250 UD | 50 U | 500 UD | 50 U | 500 UD |
| Dibenzofuran | 132-64-9 | 420 | 330 UD | 3400 E | 2200 JD | 1700 | 660 UD |
| Diethylphthalate | 84-66-2 | 69 U | 350 UD | 69 U | 690 UD | 69 U | 680 UD |
| Dimethylphthalate | 131-11-3 | 65 U | 320 UD | 64 U | 640 UD | 64 U | 640 UD |
| Di-n-butylphthalate | 84-74-2 | 61 U | 310 UD | 61 U | 610 UD | 60 U | 600 UD |
| Di-n-octyl phthalate | 117-84-0 | 68 U | 340 UD | 68 U | 680 UD | 67 U | 670 UD |
| Fluoranthene | 206-44-0 | 330 J | 300 UD | 1900 | 800 JD | 360 J | 590 UD |
| Fluorene | 86-73-7 | 330 J | 340 UD | 2800 | 1500 JD | 850 | 670 UD |
| Hexachlorobenzene | 118-74-1 | 64 U | 320 UD | 64 U | 640 UD | 63 U | 630 UD |
| Hexachlorobutadiene | 87-68-3 | 62 U | 310 UD | 61 U | 610 UD | 61 U | 610 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 64 U | 320 UD | 64 U | 640 UD | 63 U | 630 UD |
| Hexachloroethane | 67-72-1 | 68 U | 340 UD | 68 U | 680 UD | 67 U | 670 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 51 U | 260 UD | 51 U | 510 UD | 50 U | 500 UD |
| Isophorone | 78-59-1 | 60 U | 300 UD | 60 U | 600 UD | 59 U | 590 UD |
| Naphthalene | 91-20-3 | 3300 E | 2600 D | 13000 E | 21000 D | 7600 E | 13000 D |
| Nitrobenzene | 98-95-3 | 88 U | 440 UD | 87 U | 870 UD | 86 U | 860 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 67 U | 330 UD | 66 U | 660 UD | 66 U | 660 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 66 U | 330 UD | 66 U | 660 UD | 65 U | 650 UD |
| Pentachlorophenol | 87-86-5 | 93 U | 470 UD | 92 U | 920 UD | 92 U | 920 UD |
| Phenanthrene | 85-01-8 | 1100 | 540 JD | 5600 E | 5900 D | 1600 | 920 JD |
| Phenol | 108-95-2 | 61 U | 300 UD | 60 U | 600 UD | 60 U | 600 UD |
| Pyrene | 129-00-0 | 330 J | 360 UD | 1700 | 700 UD | 290 J | 700 UD |
| | | | | | | | |
| | | 7596 | 3480 | 43570 | 41100 | 16600 | 15620 |
| | | 5150 | 0 | 13280 | 0 | 5776 | 0 |

# Queens West Development-Parcel 9
## Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-2(22-24) | P-2(24-26) | FIELDBLANK | P-3(0-2) | P-3(2-4) | P-3(2-4)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2581-16 | T2581-22 | T2581-17 | T2543-01 | T2543-02 | T2543-02DL |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | WATER | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/L | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 62 U | 65 U | 1.5 U | 1200 U | 230 U | 1200 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 61 U | 64 U | 1.3 U | 1200 U | 230 U | 1100 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 58 U | 60 U | 1.3 U | 1100 U | 220 U | 1100 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 56 U | 58 U | 1.2 U | 1100 U | 210 U | 1000 UD |
| 2,4-Dichlorophenol | 120-83-2 | 70 U | 73 U | 1.5 U | 1400 U | 260 U | 1300 UD |
| 2,4-Dimethylphenol | 105-67-9 | 60 U | 63 U | 1.2 U | 1200 U | 220 U | 1100 UD |
| 2,4-Dinitrophenol | 51-28-5 | 320 U | 340 U | 3.6 U | 6400 U | 1200 U | 6000 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 56 U | 58 U | 1.3 U | 1100 U | 210 U | 1000 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 54 U | 56 U | 1.3 U | 1100 U | 200 U | 1000 UD |
| 2-Chloronaphthalene | 91-58-7 | 63 U | 66 U | 1.4 U | 1200 U | 230 U | 1200 UD |
| 2-Chlorophenol | 95-57-8 | 60 U | 63 U | 1.2 U | 1200 U | 230 U | 1100 UD |
| 2-Methylnaphthalene | 91-57-6 | 82 J | 66 U | 1.1 U | 1200 U | 650 J | 1200 UD |
| 2-Methylphenol | 95-48-7 | 63 U | 66 U | 1.6 U | 1200 U | 230 U | 1200 UD |
| 2-Nitroaniline | 88-74-4 | 48 U | 50 U | 1.1 U | 940 U | 180 U | 900 UD |
| 2-Nitrophenol | 88-75-5 | 58 U | 61 U | 1.4 U | 1100 U | 220 U | 1100 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 65 U | 68 U | 1.1 U | 1300 U | 240 U | 1200 UD |
| 3+4-Methylphenols | 108-44-5 | 60 U | 62 U | 1.4 U | 1200 U | 220 U | 1100 UD |
| 3-Nitroaniline | 99-09-2 | 49 U | 52 U | 1.1 U | 970 U | 180 U | 920 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 73 U | 77 U | 1.7 U | 1400 U | 270 U | 1400 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 56 U | 59 U | 1.5 U | 1100 U | 210 U | 1100 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 52 U | 55 U | 1.4 U | 1000 U | 190 U | 970 UD |
| 4-Chloroaniline | 106-47-8 | 45 U | 47 U | 0.890 U | 890 U | 170 U | 840 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 60 U | 63 U | 1.4 U | 1200 U | 220 U | 1100 UD |
| 4-Nitroaniline | 100-01-6 | 65 U | 68 U | 1.2 U | 1300 U | 240 U | 1200 UD |
| 4-Nitrophenol | 100-02-7 | 47 U | 49 U | 3.2 U | 920 U | 170 U | 870 UD |
| Acenaphthene | 83-32-9 | 67 U | 70 U | 1.4 U | 1300 U | 1300 J | 1300 UD |
| Acenaphthylene | 208-96-8 | 61 U | 64 U | 1.3 U | 1200 U | 610 J | 1100 UD |
| Acetophenone | 98-86-2 | 55 U | 58 U | 1.3 U | 1100 U | 210 U | 1000 UD |
| Anthracene | 120-12-7 | 57 U | 60 U | 1.5 U | 1100 U | 4500 | 3200 JD |
| Atrazine | 1912-24-9 | 58 U | 61 U | 1.3 U | 1100 U | 220 U | 1100 UD |
| Benzaldehyde | 100-52-7 | 78 U | 81 U | 1.7 U | 1500 U | 290 U | 1400 UD |
| Benzo(a)anthracene | 56-55-3 | 53 U | 55 U | 1.2 U | 1200 J | 11000 | 11000 D |
| Benzo(a)pyrene | 50-32-8 | 60 U | 63 U | 1.2 U | 1200 U | 10000 | 8200 D |
| Benzo(b)fluoranthene | 205-99-2 | 42 U | 44 U | 0.780 U | 1400 J | 14000 E | 12000 D |
| Benzo(g,h,i)perylene | 191-24-2 | 63 U | 65 U | 1.1 U | 1200 U | 2900 | 2900 JD |
| Benzo(k)fluoranthene | 207-08-9 | 83 U | 87 U | 2.0 U | 1600 U | 5000 | 3200 JD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 62 U | 65 U | 1.4 U | 1200 U | 230 U | 1200 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 60 U | 63 U | 1.5 U | 1200 U | 220 U | 1100 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 73 U | 76 U | 1.6 U | 1400 U | 270 U | 1400 UD |
| Butylbenzylphthalate | 85-68-7 | 61 U | 64 U | 1.5 U | 1200 U | 230 U | 1100 UD |
| Caprolactam | 105-60-2 | 61 U | 64 U | 1.3 U | 1200 U | 230 U | 1100 UD |
| Carbazole | 86-74-8 | 58 U | 60 U | 1.3 U | 1100 U | 2400 | 1500 JD |
| Chrysene | 218-01-9 | 68 U | 71 U | 1.7 U | 1300 U | 11000 | 9300 D |
| Dibenz(a,h)anthracene | 53-70-3 | 47 U | 50 U | 0.900 U | 930 U | 310 J | 880 UD |
| Dibenzofuran | 132-64-9 | 63 U | 65 U | 1.3 U | 1200 U | 1300 J | 1200 UD |
| Diethylphthalate | 84-66-2 | 65 U | 68 U | 1.4 U | 1300 U | 240 U | 1200 UD |
| Dimethylphthalate | 131-11-3 | 61 U | 64 U | 1.3 U | 1200 U | 230 U | 1100 UD |
| Di-n-butylphthalate | 84-74-2 | 58 U | 60 U | 1.4 U | 1100 U | 210 U | 1100 UD |
| Di-n-octyl phthalate | 117-84-0 | 64 U | 67 U | 1.3 U | 1300 U | 240 U | 1200 UD |
| Fluoranthene | 206-44-0 | 56 U | 59 U | 1.3 U | 2200 J | 19000 E | 25000 D |
| Fluorene | 86-73-7 | 64 U | 67 U | 1.5 U | 1300 U | 1700 | 1200 UD |
| Hexachlorobenzene | 118-74-1 | 60 U | 63 U | 1.3 U | 1200 U | 230 U | 1100 UD |
| Hexachlorobutadiene | 87-68-3 | 58 U | 61 U | 1.4 U | 1100 U | 220 U | 1100 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 60 U | 63 U | 1.2 U | 1200 U | 230 U | 1100 UD |
| Hexachloroethane | 67-72-1 | 64 U | 67 U | 1.2 U | 1300 U | 240 U | 1200 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 48 U | 50 U | 0.860 U | 940 U | 2600 | 2200 JD |
| Isophorone | 78-59-1 | 57 U | 59 U | 1.3 U | 1100 U | 210 U | 1100 UD |
| Naphthalene | 91-20-3 | 770 | 850 | 1.4 U | 1300 U | 1200 J | 1200 UD |
| Nitrobenzene | 98-95-3 | 83 U | 86 U | 1.6 U | 1600 U | 310 U | 1500 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 63 U | 66 U | 1.4 U | 1200 U | 230 U | 1200 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 62 U | 65 U | 1.3 U | 1200 U | 230 U | 1200 UD |
| Pentachlorophenol | 87-86-5 | 88 U | 92 U | 1.8 U | 1700 U | 330 U | 1600 UD |
| Phenanthrene | 85-01-8 | 83 J | 63 U | 1.5 U | 1700 J | 16000 E | 20000 D |
| Phenol | 108-95-2 | 57 U | 60 U | 1.3 U | 1100 U | 210 U | 1100 UD |
| Pyrene | 129-00-0 | 67 U | 70 U | 1.5 U | 2300 J | 19000 E | 20000 D |
| | | | | | | | |
| | | 935 | 850 | 0 | | | |
| | | 1398 | 1580 | 9.2 | | | |

# Queens West Development-Parcel 9

Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-3(4-6) | P-3(4-6)DL | P-3(6-8) | P-3(6-8)DL | P-3(6-8)DL2 | P-3(8-10) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2543-03 | T2543-03DL | T2543-04 | T2543-04DL | T2543-04DL2 | T2543-05 |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 25.0 | 2.0 | 20.0 | 100.0 | 2.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 600 U | 3000 UD | 1400 J | 2500 UD | 12000 UD | 24000 E |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 590 U | 3000 UD | 240 U | 2400 UD | 12000 UD | 150 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 560 U | 2800 UD | 230 U | 2300 UD | 11000 UD | 140 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 540 U | 2700 UD | 220 U | 2200 UD | 11000 UD | 130 U |
| 2,4-Dichlorophenol | 120-83-2 | 680 U | 3400 UD | 280 U | 2800 UD | 14000 UD | 170 U |
| 2,4-Dimethylphenol | 105-67-9 | 740 J | 2900 UD | 240 U | 2400 UD | 12000 UD | 350 J |
| 2,4-Dinitrophenol | 51-28-5 | 3100 U | 16000 UD | 1300 U | 13000 UD | 64000 UD | 760 U |
| 2,4-Dinitrotoluene | 121-14-2 | 540 U | 2700 UD | 220 U | 2200 UD | 11000 UD | 130 U |
| 2,6-Dinitrotoluene | 606-20-2 | 520 U | 2600 UD | 210 U | 2100 UD | 11000 UD | 130 U |
| 2-Chloronaphthalene | 91-58-7 | 610 U | 3000 UD | 250 U | 2500 UD | 12000 UD | 150 U |
| 2-Chlorophenol | 95-57-8 | 590 U | 2900 UD | 240 U | 2400 UD | 12000 UD | 150 U |
| 2-Methylnaphthalene | 91-57-6 | 620 J | 3100 UD | 5200 | 3000 JD | 13000 UD | 180000 E |
| 2-Methylphenol | 95-48-7 | 610 U | 3000 UD | 250 U | 2500 UD | 12000 UD | 150 U |
| 2-Nitroaniline | 88-74-4 | 470 U | 2300 UD | 190 U | 1900 UD | 9500 UD | 120 U |
| 2-Nitrophenol | 88-75-5 | 560 U | 2800 UD | 230 U | 2300 UD | 12000 UD | 140 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 630 U | 3100 UD | 260 U | 2600 UD | 13000 UD | 160 U |
| 3+4-Methylphenols | 106-44-5 | 2700 J | 2900 UD | 240 U | 2400 UD | 12000 UD | 140 U |
| 3-Nitroaniline | 99-09-2 | 480 U | 2400 UD | 200 U | 2000 UD | 9800 UD | 120 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 710 U | 3600 UD | 290 U | 2900 UD | 15000 UD | 180 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 550 U | 2700 UD | 220 U | 2200 UD | 11000 UD | 140 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 510 U | 2500 UD | 210 U | 2100 UD | 10000 UD | 130 U |
| 4-Chloroaniline | 106-47-8 | 440 U | 2200 UD | 180 U | 1800 UD | 8900 UD | 110 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 580 U | 2900 UD | 240 U | 2400 UD | 12000 UD | 140 U |
| 4-Nitroaniline | 100-01-6 | 630 U | 3100 UD | 260 U | 2600 UD | 13000 UD | 160 U |
| 4-Nitrophenol | 100-02-7 | 450 U | 2300 UD | 190 U | 1900 UD | 9300 UD | 110 U |
| Acenaphthene | 83-32-9 | 5600 | 3400 JD | 8900 | 7900 JD | 13000 UD | 57000 E |
| Acenaphthylene | 208-96-8 | 1100 J | 3000 UD | 410 J | 2400 UD | 12000 UD | 1700 |
| Acetophenone | 98-86-2 | 540 U | 2700 UD | 220 U | 2200 UD | 11000 UD | 130 U |
| Anthracene | 120-12-7 | 8300 | 5500 JD | 20000 E | 26000 D | 14000 JD | 28000 E |
| Atrazine | 1912-24-9 | 560 U | 2800 UD | 230 U | 2300 UD | 12000 UD | 140 U |
| Benzaldehyde | 100-52-7 | 750 U | 3800 UD | 310 U | 3100 UD | 15000 UD | 190 U |
| Benzo(a)anthracene | 56-55-3 | 13000 | 13000 JD | 48000 E | 53000 D | 48000 JD | 21000 E |
| Benzo(a)pyrene | 50-32-8 | 8700 | 6100 JD | 40000 E | 37000 D | 22000 JD | 8200 E |
| Benzo(b)fluoranthene | 205-99-2 | 16000 | 12000 JD | 64000 E | 51000 D | 29000 JD | 10000 E |
| Benzo(g,h,i)perylene | 191-24-2 | 3500 J | 3100 JD | 11000 | 13000 JD | 13000 JD | 1900 |
| Benzo(k)fluoranthene | 207-08-9 | 5000 | 4000 UD | 11000 | 13000 JD | 17000 UD | 2500 |
| bis(2-Chloroethoxy)methane | 111-91-1 | 600 U | 3000 UD | 250 U | 2500 UD | 12000 UD | 150 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 580 U | 2900 UD | 240 U | 2400 UD | 12000 UD | 140 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 700 U | 3500 UD | 290 U | 2900 UD | 14000 UD | 180 U |
| Butylbenzylphthalate | 85-68-7 | 580 U | 3000 UD | 240 U | 2400 UD | 12000 UD | 150 U |
| Caprolactam | 105-60-2 | 590 U | 2900 UD | 240 U | 2400 UD | 12000 UD | 150 U |
| Carbazole | 86-74-8 | 3400 J | 2800 UD | 16000 E | 12000 JD | 11000 UD | 34000 E |
| Chrysene | 218-01-9 | 15000 | 8900 JD | 39000 E | 51000 D | 29000 JD | 19000 E |
| Dibenz(a,h)anthracene | 53-70-3 | 480 U | 2300 UD | 900 J | 1900 UD | 9400 UD | 240 J |
| Dibenzofuran | 132-64-9 | 2600 J | 3000 UD | 12000 | 11000 JD | 12000 UD | 40000 E |
| Diethylphthalate | 84-66-2 | 630 U | 3200 UD | 260 U | 2600 UD | 13000 UD | 160 U |
| Dimethylphthalate | 131-11-3 | 590 U | 2900 UD | 240 U | 2400 UD | 12000 UD | 150 U |
| Di-n-butylphthalate | 84-74-2 | 560 U | 2800 UD | 230 U | 2300 UD | 11000 UD | 140 U |
| Di-n-octyl phthalate | 117-84-0 | 620 U | 3100 UD | 260 U | 2600 UD | 13000 UD | 160 U |
| Fluoranthene | 206-44-0 | 34000 E | 42000 D | 69000 E | 140000 ED | 130000 D | 67000 E |
| Fluorene | 86-73-7 | 3000 J | 3100 UD | 5200 | 3100 JD | 13000 UD | 39000 E |
| Hexachlorobenzene | 118-74-1 | 590 U | 2800 UD | 240 U | 2400 UD | 12000 UD | 150 U |
| Hexachlorobutadiene | 87-68-3 | 560 U | 2800 UD | 230 U | 2300 UD | 12000 UD | 140 U |
| Hexachlorocyclopentadiene | 77-47-4 | 590 U | 2900 UD | 240 U | 2400 UD | 12000 UD | 150 U |
| Hexachloroethane | 67-72-1 | 620 U | 3100 UD | 260 U | 2600 UD | 13000 UD | 160 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 2800 J | 2300 UD | 9100 | 9300 JD | 9500 UD | 2200 |
| Isophorone | 78-59-1 | 560 U | 2800 UD | 230 U | 2300 UD | 11000 UD | 140 U |
| Naphthalene | 91-20-3 | 880 J | 3100 UD | 8000 | 5600 JD | 13000 UD | 360000 E |
| Nitrobenzene | 98-95-3 | 800 U | 4000 UD | 330 U | 3300 UD | 16000 UD | 200 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 610 U | 3000 UD | 250 U | 2500 UD | 12000 UD | 150 U |
| N-Nitrosodiphenylamine | 86-30-6 | 600 U | 3000 UD | 250 U | 2500 UD | 12000 UD | 150 U |
| Pentachlorophenol | 87-86-5 | 850 U | 4200 UD | 350 U | 3500 UD | 17000 UD | 210 U |
| Phenanthrene | 85-01-8 | 20000 | 21000 D | 71000 E | 140000 ED | 160000 D | 130000 E |
| Phenol | 108-95-2 | 560 U | 2800 UD | 230 U | 2300 UD | 11000 UD | 140 U |
| Pyrene | 129-00-0 | 37000 E | 43000 D | 60000 E | 110000 D | 120000 D | 38000 E |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-3(8-10)DL | P-3(8-10)DL2 | P-3(8-10)DL3 | P-3(10-12) | P-3(10-12)DL | P-3(10-12)DL2 |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2543-05DL | T2543-05DL2 | T2543-05DL3 | T2543-06 | T2543-06DL | T2543-06DL2 |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 20.0 | 200.0 | 1000.0 | 1.0 | 10.0 | 100.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 43000 D | 32000 JD | 75000 UD | 17000 E | 52000 D | 39000 JD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 1500 UD | 15000 UD | 74000 UD | 130 U | 1300 UD | 13000 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 1400 UD | 14000 UD | 70000 UD | 120 U | 1200 UD | 12000 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 1300 UD | 13000 UD | 67000 UD | 120 U | 1200 UD | 12000 UD |
| 2,4-Dichlorophenol | 120-83-2 | 1700 UD | 17000 UD | 84000 UD | 150 U | 1500 UD | 15000 UD |
| 2,4-Dimethylphenol | 105-67-9 | 1400 UD | 14000 UD | 72000 UD | 280 J | 1300 UD | 13000 UD |
| 2,4-Dinitrophenol | 51-28-5 | 7800 UD | 78000 UD | 390000 UD | 700 U | 7000 UD | 70000 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 1300 UD | 13000 UD | 67000 UD | 120 U | 1200 UD | 12000 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 1300 UD | 13000 UD | 65000 UD | 110 U | 1100 UD | 11000 UD |
| 2-Chloronaphthalene | 91-58-7 | 1500 UD | 15000 UD | 76000 UD | 130 U | 1300 UD | 13000 UD |
| 2-Chlorophenol | 95-57-8 | 1500 UD | 15000 UD | 73000 UD | 130 U | 1300 UD | 13000 UD |
| 2-Methylnaphthalene | 91-57-6 | 210000 ED | 230000 D | 140000 JD | 110000 E | 270000 ED | 230000 D |
| 2-Methylphenol | 95-48-7 | 1500 UD | 15000 UD | 76000 UD | 140 U | 1400 UD | 14000 UD |
| 2-Nitroaniline | 88-74-4 | 1200 UD | 12000 UD | 58000 UD | 100 U | 1000 UD | 10000 UD |
| 2-Nitrophenol | 88-75-5 | 1400 UD | 14000 UD | 70000 UD | 130 U | 1300 UD | 13000 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 1600 UD | 16000 UD | 78000 UD | 140 U | 1400 UD | 14000 UD |
| 3+4-Methylphenols | 106-44-5 | 1400 UD | 14000 UD | 72000 UD | 130 U | 1300 UD | 13000 UD |
| 3-Nitroaniline | 99-09-2 | 1200 UD | 12000 UD | 59000 UD | 110 U | 1100 UD | 11000 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 1800 UD | 18000 UD | 89000 UD | 160 U | 1600 UD | 16000 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 1400 UD | 14000 UD | 68000 UD | 120 U | 1200 UD | 12000 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 1300 UD | 13000 UD | 63000 UD | 110 U | 1100 UD | 11000 UD |
| 4-Chloroaniline | 106-47-8 | 1100 UD | 11000 UD | 54000 UD | 97 U | 970 UD | 9700 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 1400 UD | 14000 UD | 72000 UD | 130 U | 1300 UD | 13000 UD |
| 4-Nitroaniline | 100-01-6 | 1600 UD | 16000 UD | 78000 UD | 140 U | 1400 UD | 14000 UD |
| 4-Nitrophenol | 100-02-7 | 1100 UD | 11000 UD | 57000 UD | 100 U | 1000 UD | 10000 UD |
| Acenaphthene | 83-32-9 | 150000 ED | 230000 D | 150000 JD | 40000 E | 150000 ED | 220000 D |
| Acenaphthylene | 208-96-8 | 1500 UD | 15000 UD | 74000 UD | 720 J | 1600 JD | 13000 UD |
| Acetophenone | 98-86-2 | 1300 UD | 13000 UD | 67000 UD | 120 U | 1200 UD | 12000 UD |
| Anthracene | 120-12-7 | 44000 D | 32000 JD | 69000 UD | 16000 E | 51000 D | 34000 JD |
| Atrazine | 1912-24-9 | 1400 UD | 14000 UD | 70000 UD | 120 U | 1200 UD | 12000 UD |
| Benzaldehyde | 100-52-7 | 1900 UD | 19000 UD | 94000 UD | 170 U | 1700 UD | 17000 UD |
| Benzo(a)anthracene | 56-55-3 | 24000 D | 24000 JD | 64000 UD | 11000 E | 24000 D | 19000 JD |
| Benzo(a)pyrene | 50-32-8 | 7000 JD | 15000 UD | 73000 UD | 3800 | 6200 JD | 13000 UD |
| Benzo(b)fluoranthene | 205-99-2 | 7800 JD | 10000 UD | 50000 UD | 4600 | 8300 D | 8900 UD |
| Benzo(g,h,i)perylene | 191-24-2 | 1500 JD | 15000 UD | 75000 UD | 1000 | 1500 JD | 13000 UD |
| Benzo(k)fluoranthene | 207-08-9 | 2600 JD | 20000 UD | 100000 UD | 1100 | 2400 JD | 18000 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 1500 UD | 15000 UD | 75000 UD | 130 U | 1300 UD | 13000 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 1400 UD | 14000 UD | 72000 UD | 130 U | 1300 UD | 13000 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 1800 UD | 18000 UD | 88000 UD | 160 U | 1600 UD | 16000 UD |
| Butylbenzylphthalate | 85-68-7 | 1500 UD | 15000 UD | 74000 UD | 130 U | 1300 UD | 13000 UD |
| Caprolactam | 105-60-2 | 1500 UD | 15000 UD | 73000 UD | 130 U | 1300 UD | 13000 UD |
| Carbazole | 86-74-8 | 31000 D | 18000 JD | 70000 UD | 15000 E | 27000 D | 14000 JD |
| Chrysene | 218-01-9 | 24000 D | 16000 UD | 82000 UD | 11000 E | 23000 D | 15000 UD |
| Dibenz(a,h)anthracene | 53-70-3 | 1100 UD | 11000 UD | 57000 UD | 120 J | 1000 UD | 10000 UD |
| Dibenzofuran | 132-64-9 | 110000 ED | 130000 D | 84000 JD | 24000 E | 120000 ED | 140000 D |
| Diethylphthalate | 84-66-2 | 1600 UD | 16000 UD | 79000 UD | 140 U | 1400 UD | 14000 UD |
| Dimethylphthalate | 131-11-3 | 1500 UD | 15000 UD | 73000 UD | 130 U | 1300 UD | 13000 UD |
| Di-n-butylphthalate | 84-74-2 | 1400 UD | 14000 UD | 70000 UD | 120 U | 1200 UD | 12000 UD |
| Di-n-octyl phthalate | 117-84-0 | 1600 UD | 16000 UD | 78000 UD | 140 U | 1400 UD | 14000 UD |
| Fluoranthene | 206-44-0 | 85000 HD | 86000 JD | 68000 UD | 42000 E | 96000 ED | 82000 D |
| Fluorene | 86-73-7 | 91000 HD | 100000 D | 77000 UD | 28000 E | 100000 ED | 110000 D |
| Hexachlorobenzene | 118-74-1 | 1500 UD | 15000 UD | 73000 UD | 130 U | 1300 UD | 13000 UD |
| Hexachlorobutadiene | 87-68-3 | 1400 UD | 14000 UD | 70000 UD | 130 U | 1300 UD | 13000 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 1500 UD | 15000 UD | 73000 UD | 130 U | 1300 UD | 13000 UD |
| Hexachloroethane | 67-72-1 | 1600 UD | 16000 UD | 78000 UD | 140 U | 1400 UD | 14000 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 1200 UD | 12000 UD | 58000 UD | 1500 | 1200 JD | 10000 UD |
| Isophorone | 78-59-1 | 1400 UD | 14000 UD | 69000 UD | 120 U | 1200 UD | 12000 UD |
| Naphthalene | 91-20-3 | 600000 ED | 980000 ED | 1500000 D | 320000 E | 730000 ED | 970000 HD |
| Nitrobenzene | 98-95-3 | 2000 UD | 20000 UD | 100000 UD | 180 U | 1800 UD | 18000 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 1500 UD | 15000 UD | 76000 UD | 130 U | 1300 UD | 13000 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 1500 UD | 15000 UD | 75000 UD | 130 U | 1300 UD | 13000 UD |
| Pentachlorophenol | 87-86-5 | 2100 UD | 21000 UD | 110000 UD | 190 U | 1900 UD | 19000 UD |
| Phenanthrene | 85-01-8 | 170000 ED | 320000 D | 260000 JD | 87000 E | 190000 ED | 310000 D |
| Phenol | 108-95-2 | 1400 UD | 14000 UD | 69000 UD | 120 U | 1200 UD | 12000 UD |
| Pyrene | 129-00-0 | 71000 D | 71000 JD | 61000 UD | 29000 E | 80000 ED | 70000 JD |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-3(10-12)DL3 | P-3(12-14) | P-3(12-14)DL | P-3(12-14)DL2 | P-3(14-16) | P-3(14-16)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2543-06DL3 | T2543-07 | T2543-07DL | T2543-07DL2 | T2543-08 | T2543-08DL |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 500.0 | 1.0 | 10.0 | 100.0 | 1.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 67000 UD | 8700 E | 7800 D | 6800 UD | 17000 E | 31000 D |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 65000 UD | 67 U | 670 UD | 6700 UD | 83 U | 830 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 62000 UD | 63 U | 630 UD | 6300 UD | 79 U | 790 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 60000 UD | 61 U | 610 UD | 6100 UD | 76 U | 760 UD |
| 2,4-Dichlorophenol | 120-83-2 | 75000 UD | 77 U | 770 UD | 7700 UD | 96 U | 960 UD |
| 2,4-Dimethylphenol | 105-67-9 | 64000 UD | 180 J | 660 UD | 6600 UD | 4200 | 11000 D |
| 2,4-Dinitrophenol | 51-28-5 | 350000 UD | 350 U | 3500 UD | 35000 UD | 440 U | 4400 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 60000 UD | 61 U | 610 UD | 6100 UD | 76 U | 760 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 57000 UD | 59 U | 590 UD | 5900 UD | 73 U | 730 UD |
| 2-Chloronaphthalene | 91-58-7 | 67000 UD | 69 U | 690 UD | 6900 UD | 86 U | 860 UD |
| 2-Chlorophenol | 95-57-8 | 65000 UD | 66 U | 660 UD | 6600 UD | 83 U | 830 UD |
| 2-Methylnaphthalene | 91-57-6 | 170000 JD | 46000 E | 32000 D | 20000 JD | 100000 E | 170000 ED |
| 2-Methylphenol | 95-48-7 | 68000 UD | 69 U | 690 UD | 6900 UD | 86 U | 860 UD |
| 2-Nitroaniline | 88-74-4 | 52000 UD | 53 U | 530 UD | 5300 UD | 66 U | 660 UD |
| 2-Nitrophenol | 88-75-5 | 63000 UD | 64 U | 640 UD | 6400 UD | 80 U | 800 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 70000 UD | 71 U | 710 UD | 7100 UD | 88 U | 880 UD |
| 3+4-Methylphenols | 106-44-5 | 64000 UD | 65 U | 650 UD | 6500 UD | 82 U | 1400 JD |
| 3-Nitroaniline | 99-09-2 | 53000 UD | 54 U | 540 UD | 5400 UD | 67 U | 670 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 79000 UD | 80 U | 800 UD | 8000 UD | 100 U | 1000 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 61000 UD | 62 U | 620 UD | 6200 UD | 77 U | 770 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 56000 UD | 57 U | 570 UD | 5700 UD | 71 U | 710 UD |
| 4-Chloroaniline | 106-47-8 | 48000 UD | 49 U | 490 UD | 4900 UD | 62 U | 620 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 64000 UD | 65 U | 650 UD | 6500 UD | 82 U | 820 UD |
| 4-Nitroaniline | 100-01-6 | 69000 UD | 71 U | 710 UD | 7100 UD | 88 U | 880 UD |
| 4-Nitrophenol | 100-02-7 | 50000 UD | 51 U | 510 UD | 5100 UD | 64 U | 640 UD |
| Acenaphthene | 83-32-9 | 180000 JD | 22000 E | 29000 D | 26000 JD | 36000 E | 85000 ED |
| Acenaphthylene | 208-96-8 | 66000 UD | 360 J | 670 UD | 6700 UD | 1100 | 1200 JD |
| Acetophenone | 98-86-2 | 59000 UD | 61 U | 610 UD | 6100 UD | 76 U | 760 UD |
| Anthracene | 120-12-7 | 61000 UD | 7600 E | 8500 D | 6200 UD | 19000 E | 29000 D |
| Atrazine | 1912-24-9 | 62000 UD | 63 U | 630 UD | 6300 UD | 79 U | 790 UD |
| Benzaldehyde | 100-52-7 | 83000 UD | 85 U | 850 UD | 8500 UD | 110 U | 1100 UD |
| Benzo(a)anthracene | 56-55-3 | 57000 UD | 4700 E | 3900 JD | 5800 UD | 12000 E | 9200 D |
| Benzo(a)pyrene | 50-32-8 | 65000 UD | 1900 | 1500 JD | 6600 UD | 3500 | 2400 JD |
| Benzo(b)fluoranthene | 205-99-2 | 45000 UD | 2300 | 1800 JD | 4600 UD | 4700 E | 3700 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 67000 UD | 540 | 680 UD | 6800 UD | 890 | 860 UD |
| Benzo(k)fluoranthene | 207-08-9 | 89000 UD | 740 | 910 UD | 9100 UD | 1400 | 1100 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 67000 UD | 68 U | 680 UD | 6800 UD | 85 U | 850 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 64000 UD | 65 U | 650 UD | 6500 UD | 82 U | 820 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 78000 UD | 79 U | 790 UD | 7900 UD | 99 U | 990 UD |
| Butylbenzylphthalate | 85-68-7 | 66000 UD | 67 U | 670 UD | 6700 UD | 84 U | 840 UD |
| Caprolactam | 105-60-2 | 65000 UD | 67 U | 670 UD | 6700 UD | 83 U | 830 UD |
| Carbazole | 86-74-8 | 62000 UD | 4900 E | 3600 JD | 6300 UD | 19000 E | 9800 D |
| Chrysene | 218-01-9 | 73000 UD | 4800 E | 3300 JD | 7400 UD | 11000 E | 8400 D |
| Dibenz(a,h)anthracene | 53-70-3 | 51000 UD | 76 J | 670 UD | 5200 UD | 88 J | 650 UD |
| Dibenzofuran | 132-64-9 | 98000 JD | 19000 E | 23000 D | 15000 JD | 24000 E | 70000 ED |
| Diethylphthalate | 84-66-2 | 70000 UD | 71 U | 710 UD | 7100 UD | 89 U | 890 UD |
| Dimethylphthalate | 131-11-3 | 65000 UD | 67 U | 670 UD | 6700 UD | 83 U | 830 UD |
| Di-n-butylphthalate | 84-74-2 | 62000 UD | 63 U | 630 UD | 6300 UD | 79 U | 790 UD |
| Di-n-octyl phthalate | 117-84-0 | 69000 UD | 70 U | 700 UD | 7000 UD | 88 U | 880 UD |
| Fluoranthene | 206-44-0 | 60000 UD | 14000 E | 18000 D | 11000 JD | 64000 E | 50000 ED |
| Fluorene | 86-73-7 | 77000 JD | 16000 E | 19000 D | 12000 JD | 27000 E | 61000 ED |
| Hexachlorobenzene | 118-74-1 | 65000 UD | 66 U | 660 UD | 6600 UD | 83 U | 830 UD |
| Hexachlorobutadiene | 87-68-3 | 63000 UD | 64 U | 640 UD | 6400 UD | 80 U | 800 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 66000 UD | 66 U | 660 UD | 6600 UD | 83 U | 830 UD |
| Hexachloroethane | 67-72-1 | 69000 UD | 70 U | 700 UD | 7000 UD | 88 U | 880 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 52000 UD | 710 | 530 UD | 5300 UD | 1200 | 660 UD |
| Isophorone | 78-59-1 | 61000 UD | 62 U | 620 UD | 6200 UD | 78 U | 780 UD |
| Naphthalene | 91-20-3 | 1800000 D | 150000 E | 150000 ED | 980000 D | 170000 E | 350000 ED |
| Nitrobenzene | 98-95-3 | 89000 UD | 90 U | 900 UD | 9000 UD | 110 U | 1100 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 67000 UD | 69 U | 690 UD | 6900 UD | 86 U | 860 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 67000 UD | 68 U | 680 UD | 6800 UD | 85 U | 850 UD |
| Pentachlorophenol | 87-86-5 | 94000 UD | 96 U | 960 UD | 9800 UD | 120 U | 1200 UD |
| Phenanthrene | 85-01-8 | 310000 JD | 27000 E | 42000 ED | 46000 D | 130000 E | 110000 ED |
| Phenol | 108-95-2 | 62000 UD | 63 U | 630 UD | 6300 UD | 78 U | 790 UD |
| Pyrene | 129-00-0 | 72000 UD | 12000 E | 15000 D | 10000 JD | 30000 E | 43000 ED |

# Queens West Development-Parcel 9

Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-3(14-16)DL2 | P-3(14-16)DL3 | P-3(16-18) | P-3(16-18)DL | P-3(16-18)DL2 | P-3(16-18)DL3 |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2543-08DL2 | T2543-08DL3 | T2543-09 | T2543-09DL | T2543-09DL2 | T2543-09DL3 |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 100.0 | 500.0 | 1.0 | 10.0 | 100.0 | 500.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 30000 JD | 43000 UD | 11000 E | 20000 D | 18000 JD | 34000 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 8300 UD | 42000 UD | 66 U | 660 UD | 6600 UD | 33000 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 7900 UD | 40000 UD | 63 U | 630 UD | 6300 UD | 32000 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 7600 UD | 38000 UD | 61 U | 610 UD | 6100 UD | 30000 UD |
| 2,4-Dichlorophenol | 120-83-2 | 9600 UD | 48000 UD | 76 U | 760 UD | 7600 UD | 38000 UD |
| 2,4-Dimethylphenol | 105-67-9 | 8200 UD | 41000 UD | 990 | 650 UD | 6500 UD | 33000 UD |
| 2,4-Dinitrophenol | 51-28-5 | 44000 UD | 220000 UD | 350 U | 3500 UD | 35000 UD | 180000 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 7600 UD | 38000 UD | 61 U | 610 UD | 6100 UD | 30000 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 7300 UD | 37000 UD | 58 U | 580 UD | 5800 UD | 29000 UD |
| 2-Chloronaphthalene | 91-58-7 | 8600 UD | 43000 UD | 68 U | 680 UD | 6800 UD | 34000 UD |
| 2-Chlorophenol | 95-57-8 | 8300 UD | 41000 UD | 66 U | 660 UD | 6600 UD | 33000 UD |
| 2-Methylnaphthalene | 91-57-6 | 220000 D | 170000 JD | 63000 E | 97000 ED | 140000 D | 100000 JD |
| 2-Methylphenol | 95-48-7 | 8600 UD | 43000 UD | 69 U | 690 UD | 6900 UD | 34000 UD |
| 2-Nitroaniline | 88-74-4 | 6600 UD | 33000 UD | 52 U | 520 UD | 5200 UD | 26000 UD |
| 2-Nitrophenol | 88-75-5 | 8000 UD | 40000 UD | 63 U | 630 UD | 6300 UD | 32000 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 8800 UD | 44000 UD | 71 U | 710 UD | 7100 UD | 36000 UD |
| 3+4-Methylphenols | 106-44-5 | 8200 UD | 41000 UD | 65 U | 650 UD | 6500 UD | 33000 UD |
| 3-Nitroaniline | 99-09-2 | 6700 UD | 34000 UD | 54 U | 540 UD | 5400 UD | 27000 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 10000 UD | 50000 UD | 80 U | 800 UD | 8000 UD | 40000 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 7700 UD | 39000 UD | 62 U | 620 UD | 6200 UD | 31000 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 7100 UD | 36000 UD | 57 U | 570 UD | 5700 UD | 28000 UD |
| 4-Chloroaniline | 106-47-8 | 6200 UD | 31000 UD | 49 U | 490 UD | 4900 UD | 25000 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 8200 UD | 41000 UD | 65 U | 650 UD | 6500 UD | 33000 UD |
| 4-Nitroaniline | 100-01-6 | 8800 UD | 44000 UD | 70 U | 700 UD | 7000 UD | 35000 UD |
| 4-Nitrophenol | 100-02-7 | 6400 UD | 32000 UD | 51 U | 510 UD | 5100 UD | 26000 UD |
| Acenaphthene | 83-32-9 | 160000 D | 120000 JD | 24000 E | 57000 ED | 99000 D | 75000 JD |
| Acenaphthylene | 208-96-8 | 8400 UD | 42000 UD | 870 | 800 JD | 6700 UD | 33000 UD |
| Acetophenone | 98-86-2 | 7600 UD | 38000 UD | 60 U | 600 UD | 6000 UD | 30000 UD |
| Anthracene | 120-12-7 | 24000 JD | 39000 UD | 14000 E | 19000 D | 16000 JD | 31000 UD |
| Atrazine | 1912-24-9 | 7900 UD | 40000 UD | 63 U | 630 UD | 6300 UD | 32000 UD |
| Benzaldehyde | 100-52-7 | 11000 UD | 53000 UD | 85 U | 850 UD | 8500 UD | 42000 UD |
| Benzo(a)anthracene | 56-55-3 | 11000 JD | 36000 UD | 6200 E | 5800 D | 6800 JD | 29000 UD |
| Benzo(a)pyrene | 50-32-8 | 8300 UD | 41000 UD | 1900 | 1400 JD | 6600 UD | 33000 UD |
| Benzo(b)fluoranthene | 205-99-2 | 5700 UD | 28000 UD | 2900 | 2200 JD | 4500 UD | 23000 UD |
| Benzo(g,h,i)perylene | 191-24-2 | 8600 UD | 43000 UD | 520 | 680 UD | 6800 UD | 34000 UD |
| Benzo(k)fluoranthene | 207-08-9 | 11000 UD | 57000 UD | 750 | 910 UD | 9100 UD | 45000 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 8500 UD | 43000 UD | 68 U | 680 UD | 6800 UD | 34000 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 8200 UD | 41000 UD | 65 U | 650 UD | 6500 UD | 33000 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 9900 UD | 50000 UD | 79 U | 790 UD | 7900 UD | 40000 UD |
| Butylbenzylphthalate | 85-68-7 | 8400 UD | 42000 UD | 67 U | 670 UD | 6700 UD | 33000 UD |
| Caprolactam | 105-60-2 | 8300 UD | 42000 UD | 66 U | 660 UD | 6600 UD | 33000 UD |
| Carbazole | 86-74-8 | 7900 UD | 39000 UD | 11000 E | 6000 D | 6300 UD | 31000 UD |
| Chrysene | 218-01-9 | 9300 UD | 46000 UD | 5900 E | 4800 D | 7400 UD | 37000 UD |
| Dibenz(a,h)anthracene | 53-70-3 | 6500 UD | 32000 UD | 54 J | 520 UD | 5200 UD | 26000 UD |
| Dibenzofuran | 132-64-9 | 110000 D | 68000 JD | 19000 E | 49000 ED | 68000 D | 43000 JD |
| Diethylphthalate | 84-66-2 | 8900 UD | 45000 UD | 71 U | 710 UD | 7100 UD | 36000 UD |
| Dimethylphthalate | 131-11-3 | 8300 UD | 42000 UD | 66 U | 660 UD | 6600 UD | 33000 UD |
| Di-n-butylphthalate | 84-74-2 | 7900 UD | 39000 UD | 63 U | 630 UD | 6300 UD | 31000 UD |
| Di-n-octyl phthalate | 117-84-0 | 8800 UD | 44000 UD | 70 U | 700 UD | 7000 UD | 35000 UD |
| Fluoranthene | 206-44-0 | 55000 D | 38000 UD | 33000 E | 35000 ED | 36000 JD | 31000 UD |
| Fluorene | 86-73-7 | 84000 D | 52000 JD | 16000 E | 42000 ED | 54000 D | 35000 JD |
| Hexachlorobenzene | 118-74-1 | 8300 UD | 41000 UD | 66 U | 660 UD | 6600 UD | 33000 UD |
| Hexachlorobutadiene | 87-68-3 | 8000 UD | 40000 UD | 63 U | 630 UD | 6300 UD | 32000 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 8300 UD | 41000 UD | 66 U | 660 UD | 6600 UD | 33000 UD |
| Hexachloroethane | 67-72-1 | 8800 UD | 44000 UD | 70 U | 700 UD | 7000 UD | 35000 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 6600 UD | 33000 UD | 620 | 520 UD | 5200 UD | 26000 UD |
| Isophorone | 78-59-1 | 7800 UD | 39000 UD | 62 U | 620 UD | 6200 UD | 31000 UD |
| Naphthalene | 91-20-3 | 620000 ED | 1000000 D | 160000 E | 200000 ED | 370000 ED | 950000 D |
| Nitrobenzene | 98-95-3 | 11000 UD | 56000 UD | 90 U | 900 UD | 9000 UD | 46000 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 8600 UD | 43000 UD | 68 U | 680 UD | 6800 UD | 34000 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 8500 UD | 43000 UD | 68 U | 680 UD | 6800 UD | 34000 UD |
| Pentachlorophenol | 87-86-5 | 12000 UD | 60000 UD | 95 U | 950 UD | 9500 UD | 48000 UD |
| Phenanthrene | 85-01-8 | 220000 D | 190000 JD | 69000 E | 79000 ED | 150000 D | 130000 JD |
| Phenol | 108-95-2 | 7800 UD | 39000 UD | 62 U | 620 UD | 6200 UD | 31000 UD |
| Pyrene | 129-00-0 | 45000 JD | 46000 UD | 15000 E | 30000 D | 28000 JD | 36000 UD |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-3(18-20) | P-3(18-20)DL | P-3(18-20)DL2 | P-3(18-20)DL3 | P-3(10-12)DUP | P-3(10-12)DUPDL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2543-10 | T2543-10DL | T2543-10DL2 | T2543-10DL3 | T2543-11 | T2543-11DL |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 10.0 | 100.0 | 500.0 | 1.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 11000 E | 18000 D | 15000 JD | 34000 UD | 6300 E | 11000 D |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 66 U | 660 UD | 6600 UD | 33000 UD | 65 U | 650 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 63 U | 630 UD | 6300 UD | 31000 UD | 62 U | 620 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 60 U | 600 UD | 6000 UD | 30000 UD | 59 U | 590 UD |
| 2,4-Dichlorophenol | 120-83-2 | 76 U | 760 UD | 7600 UD | 38000 UD | 75 U | 750 UD |
| 2,4-Dimethylphenol | 105-67-9 | 9900 E | 3700 JD | 6500 UD | 33000 UD | 64 U | 640 UD |
| 2,4-Dinitrophenol | 51-28-5 | 350 U | 3500 UD | 35000 UD | 180000 UD | 350 U | 3500 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 60 U | 600 UD | 6000 UD | 30000 UD | 59 U | 590 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 58 U | 580 UD | 5800 UD | 29000 UD | 57 U | 570 UD |
| 2-Chloronaphthalene | 91-58-7 | 68 U | 680 UD | 6800 UD | 34000 UD | 67 U | 670 UD |
| 2-Chlorophenol | 95-57-8 | 66 U | 660 UD | 6600 UD | 33000 UD | 64 U | 640 UD |
| 2-Methylnaphthalene | 91-57-6 | 44000 E | 88000 ED | 120000 D | 85000 JD | 59000 E | 43000 ED |
| 2-Methylphenol | 95-48-7 | 68 U | 680 UD | 6800 UD | 34000 UD | 67 U | 670 UD |
| 2-Nitroaniline | 88-74-4 | 52 U | 520 UD | 5200 UD | 26000 UD | 51 U | 510 UD |
| 2-Nitrophenol | 88-75-5 | 63 U | 630 UD | 6300 UD | 32000 UD | 62 U | 620 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 70 U | 700 UD | 7000 UD | 35000 UD | 69 U | 690 UD |
| 3+4-Methylphenols | 106-44-5 | 1500 | 650 UD | 6500 UD | 32000 UD | 64 U | 640 UD |
| 3-Nitroaniline | 99-09-2 | 54 U | 540 UD | 5400 UD | 27000 UD | 53 U | 530 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 80 U | 800 UD | 8000 UD | 40000 UD | 78 U | 780 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 61 U | 610 UD | 6100 UD | 31000 UD | 60 U | 600 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 57 U | 570 UD | 5700 UD | 28000 UD | 56 U | 560 UD |
| 4-Chloroaniline | 106-47-8 | 49 U | 490 UD | 4900 UD | 24000 UD | 48 U | 480 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 65 U | 650 UD | 6500 UD | 33000 UD | 64 U | 640 UD |
| 4-Nitroaniline | 100-01-6 | 70 U | 700 UD | 7000 UD | 35000 UD | 69 U | 690 UD |
| 4-Nitrophenol | 100-02-7 | 51 U | 510 UD | 5100 UD | 25000 UD | 50 U | 500 UD |
| Acenaphthene | 83-32-9 | 24000 E | 50000 ED | 79000 D | 57000 JD | 20000 E | 37000 ED |
| Acenaphthylene | 208-96-8 | 780 | 670 UD | 6700 UD | 33000 UD | 300 J | 660 UD |
| Acetophenone | 98-86-2 | 60 U | 600 UD | 6000 UD | 30000 UD | 59 U | 590 UD |
| Anthracene | 120-12-7 | 13000 E | 17000 D | 13000 JD | 31000 UD | 8800 E | 10000 D |
| Atrazine | 1912-24-9 | 63 U | 630 UD | 6300 UD | 32000 UD | 62 U | 620 UD |
| Benzaldehyde | 100-52-7 | 84 U | 840 UD | 8400 UD | 42000 UD | 83 U | 830 UD |
| Benzo(a)anthracene | 56-55-3 | 5500 E | 4300 D | 5800 UD | 29000 UD | 5600 E | 4700 D |
| Benzo(a)pyrene | 50-32-8 | 1700 | 1100 JD | 6600 UD | 33000 UD | 2000 | 1300 JD |
| Benzo(b)fluoranthene | 205-99-2 | 2500 | 1600 JD | 4500 UD | 23000 UD | 2500 | 1700 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 470 | 680 UD | 6800 UD | 34000 UD | 560 | 670 UD |
| Benzo(k)fluoranthene | 207-08-9 | 590 | 910 UD | 9100 UD | 45000 UD | 540 | 890 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 68 U | 680 UD | 6800 UD | 34000 UD | 66 U | 660 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 65 U | 650 UD | 6500 UD | 33000 UD | 64 U | 640 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 79 U | 790 UD | 7900 UD | 39000 UD | 77 U | 770 UD |
| Butylbenzylphthalate | 85-68-7 | 67 U | 670 UD | 6700 UD | 33000 UD | 65 U | 650 UD |
| Caprolactam | 105-60-2 | 66 U | 660 UD | 6600 UD | 33000 UD | 65 U | 650 UD |
| Carbazole | 86-74-8 | 7800 E | 4200 D | 6300 UD | 31000 UD | 7500 E | 4700 D |
| Chrysene | 218-01-9 | 5200 E | 3600 JD | 7400 UD | 37000 UD | 5800 E | 4100 D |
| Dibenz(a,h)anthracene | 53-70-3 | 60 J | 520 UD | 5200 UD | 26000 UD | 64 J | 510 UD |
| Dibenzofuran | 132-64-9 | 17000 E | 42000 ED | 53000 D | 34000 UD | 14000 E | 28000 D |
| Diethylphthalate | 84-66-2 | 71 U | 710 UD | 7100 UD | 35000 UD | 70 U | 700 UD |
| Dimethylphthalate | 131-11-3 | 66 U | 660 UD | 6600 UD | 33000 UD | 65 U | 650 UD |
| Di-n-butylphthalate | 84-74-2 | 63 U | 630 UD | 6300 UD | 31000 UD | 61 U | 610 UD |
| Di-n-octyl phthalate | 117-84-0 | 70 U | 700 UD | 7000 UD | 35000 UD | 69 U | 690 UD |
| Fluoranthene | 206-44-0 | 31000 E | 29000 D | 27000 JD | 31000 UD | 20000 E | 22000 D |
| Fluorene | 86-73-7 | 17000 E | 37000 ED | 42000 D | 35000 UD | 14000 E | 23000 D |
| Hexachlorobenzene | 118-74-1 | 66 U | 660 UD | 6600 UD | 33000 UD | 65 U | 650 UD |
| Hexachlorobutadiene | 87-68-3 | 63 U | 630 UD | 6300 UD | 32000 UD | 62 U | 620 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 66 U | 660 UD | 6600 UD | 33000 UD | 64 U | 640 UD |
| Hexachloroethane | 67-72-1 | 70 U | 700 UD | 7000 UD | 35000 UD | 69 U | 690 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 570 | 520 UD | 5200 UD | 26000 UD | 710 | 510 UD |
| Isophorone | 78-59-1 | 62 U | 620 UD | 6200 UD | 31000 UD | 61 U | 610 UD |
| Naphthalene | 91-20-3 | 59000 E | 170000 ED | 340000 ED | 440000 D | 130000 E | 140000 ED |
| Nitrobenzene | 98-95-3 | 90 U | 900 UD | 9000 UD | 45000 UD | 88 U | 880 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 68 U | 680 UD | 6800 UD | 34000 UD | 67 U | 670 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 68 U | 680 UD | 6800 UD | 34000 UD | 66 U | 660 UD |
| Pentachlorophenol | 87-86-5 | 95 U | 950 UD | 9500 UD | 48000 UD | 93 U | 930 UD |
| Phenanthrene | 85-01-8 | 63000 E | 68000 ED | 120000 D | 93000 JD | 43000 E | 50000 ED |
| Phenol | 108-95-2 | 62 U | 620 UD | 6200 UD | 31000 UD | 61 U | 610 UD |
| Pyrene | 129-00-0 | 16000 E | 24000 D | 21000 JD | 36000 UD | 14000 E | 19000 D |

# Queens West Development-Parcel 9
## Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-3(10-12)DUPDL | P-3(20-22) | P-3(20-22)DL | P-3(20-22)DL2 | P-3(22-24) | P-3(22-24)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2543-11DL2 | T2543-12 | T2543-12DL | T2543-12DL2 | T2543-13 | T2543-13DL |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 100.0 | 1.0 | 10.0 | 100.0 | 1.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 6600 UD | 5500 E | 5300 D | 6800 UD | 20000 E | 33000 D |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 6500 UD | 67 U | 670 UD | 6700 UD | 130 U | 1300 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 6200 UD | 63 U | 630 UD | 6300 UD | 130 U | 1300 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 5900 UD | 61 U | 610 UD | 6100 UD | 120 U | 1200 UD |
| 2,4-Dichlorophenol | 120-83-2 | 7500 UD | 77 U | 770 UD | 7700 UD | 150 U | 1500 UD |
| 2,4-Dimethylphenol | 105-67-9 | 6400 UD | 66 U | 660 UD | 6600 UD | 820 J | 1300 UD |
| 2,4-Dinitrophenol | 51-28-5 | 35000 UD | 360 U | 3600 UD | 36000 UD | 710 U | 7100 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 5900 UD | 61 U | 610 UD | 6100 UD | 120 U | 1200 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 5700 UD | 59 U | 590 UD | 5900 UD | 120 U | 1200 UD |
| 2-Chloronaphthalene | 91-58-7 | 6700 UD | 69 U | 690 UD | 6900 UD | 140 U | 1400 UD |
| 2-Chlorophenol | 95-57-8 | 6400 UD | 66 U | 660 UD | 6600 UD | 130 U | 1300 UD |
| 2-Methylnaphthalene | 91-57-6 | 33000 JD | 37000 E | 27000 D | 25000 JD | 110000 E | 150000 ED |
| 2-Methylphenol | 95-48-7 | 6700 UD | 69 U | 690 UD | 6900 UD | 140 U | 1400 UD |
| 2-Nitroaniline | 88-74-4 | 5100 UD | 53 U | 530 UD | 5300 UD | 110 U | 1100 UD |
| 2-Nitrophenol | 88-75-5 | 6200 UD | 64 U | 640 UD | 6400 UD | 130 U | 1300 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 6900 UD | 71 U | 710 UD | 7100 UD | 140 U | 1400 UD |
| 3+4-Methylphenols | 108-44-5 | 6400 UD | 65 U | 650 UD | 6500 UD | 130 U | 1300 UD |
| 3-Nitroaniline | 99-09-2 | 5300 UD | 54 U | 540 UD | 5400 UD | 110 U | 1100 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 7800 UD | 81 U | 810 UD | 8100 UD | 160 U | 1600 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 6000 UD | 62 U | 620 UD | 6200 UD | 120 U | 1200 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 5600 UD | 57 U | 570 UD | 5700 UD | 120 U | 1200 UD |
| 4-Chloroaniline | 106-47-8 | 4800 UD | 49 U | 490 UD | 4900 UD | 99 U | 990 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 6400 UD | 66 U | 660 UD | 6600 UD | 130 U | 1300 UD |
| 4-Nitroaniline | 100-01-6 | 6900 UD | 71 U | 710 UD | 7100 UD | 140 U | 3200 JD |
| 4-Nitrophenol | 100-02-7 | 5000 UD | 51 U | 510 UD | 5100 UD | 100 U | 1000 UD |
| Acenaphthene | 83-32-9 | 40000 JD | 14000 E | 21000 D | 21000 JD | 44000 E | 92000 ED |
| Acenaphthylene | 208-96-8 | 6600 UD | 260 J | 670 UD | 6700 UD | 1300 | 1400 UD |
| Acetophenone | 98-86-2 | 5900 UD | 61 U | 610 UD | 6100 UD | 120 U | 1200 UD |
| Anthracene | 120-12-7 | 6100 UD | 5000 E | 4500 D | 6300 UD | 18000 E | 30000 D |
| Atrazine | 1912-24-9 | 6200 UD | 64 U | 640 UD | 6400 UD | 130 U | 1300 UD |
| Benzaldehyde | 100-52-7 | 8300 UD | 85 U | 850 UD | 8500 UD | 170 U | 1700 UD |
| Benzo(a)anthracene | 56-55-3 | 5600 UD | 2000 | 1600 JD | 5800 UD | 8700 E | 8400 D |
| Benzo(a)pyrene | 50-32-8 | 6500 UD | 660 | 660 UD | 6600 UD | 2700 | 2100 JD |
| Benzo(b)fluoranthene | 205-99-2 | 4400 UD | 820 | 580 JD | 4600 UD | 3900 | 2900 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 6700 UD | 220 J | 690 UD | 6900 UD | 740 J | 1400 UD |
| Benzo(k)fluoranthene | 207-08-9 | 8900 UD | 230 J | 910 UD | 9100 UD | 920 J | 1800 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 6600 UD | 68 U | 680 UD | 6800 UD | 140 U | 1400 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 6400 UD | 66 U | 660 UD | 6600 UD | 130 U | 1300 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 7700 UD | 80 U | 800 UD | 8000 UD | 160 U | 1600 UD |
| Butylbenzylphthalate | 85-68-7 | 6500 UD | 67 U | 670 UD | 6700 UD | 130 U | 1300 UD |
| Caprolactam | 105-60-2 | 6500 UD | 67 U | 670 UD | 6700 UD | 130 U | 1300 UD |
| Carbazole | 86-74-8 | 6200 UD | 3000 | 1800 JD | 6300 UD | 13000 E | 8600 D |
| Chrysene | 218-01-9 | 7200 UD | 2000 | 1100 JD | 7400 UD | 8800 E | 6100 JD |
| Dibenz(a,h)anthracene | 53-70-3 | 5100 UD | 52 U | 520 UD | 5200 UD | 100 U | 1000 UD |
| Dibenzofuran | 132-64-9 | 23000 JD | 12000 E | 16000 D | 14000 JD | 27000 E | 79000 ED |
| Diethylphthalate | 84-66-2 | 7000 UD | 72 U | 720 UD | 7200 UD | 140 U | 1400 UD |
| Dimethylphthalate | 131-11-3 | 6500 UD | 67 U | 670 UD | 6700 UD | 130 U | 1300 UD |
| Di-n-butylphthalate | 84-74-2 | 6100 UD | 63 U | 630 UD | 6300 UD | 130 U | 1300 UD |
| Di-n-octyl phthalate | 117-84-0 | 6900 UD | 71 U | 710 UD | 7100 UD | 140 U | 1400 UD |
| Fluoranthene | 206-44-0 | 16000 JD | 8200 E | 9500 D | 7500 JD | 46000 E | 52000 D |
| Fluorene | 86-73-7 | 18000 JD | 9600 E | 14000 D | 11000 JD | 32000 E | 68000 ED |
| Hexachlorobenzene | 118-74-1 | 6500 UD | 66 U | 660 UD | 6600 UD | 130 U | 1300 UD |
| Hexachlorobutadiene | 87-68-3 | 6200 UD | 64 U | 640 UD | 6400 UD | 130 U | 1300 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 6400 UD | 66 U | 660 UD | 6600 UD | 130 U | 1300 UD |
| Hexachloroethane | 67-72-1 | 6800 UD | 70 U | 700 UD | 7000 UD | 140 U | 1400 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 5100 UD | 180 J | 530 UD | 5300 UD | 990 | 1100 UD |
| Isophorone | 78-59-1 | 6100 UD | 62 U | 620 UD | 6200 UD | 130 U | 1300 UD |
| Naphthalene | 91-20-3 | 270000 D | 91000 E | 98000 ED | 200000 D | 170000 E | 320000 ED |
| Nitrobenzene | 98-95-3 | 8800 UD | 91 U | 910 UD | 9100 UD | 180 U | 1800 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 6700 UD | 69 U | 690 UD | 6900 UD | 140 U | 1400 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 6800 UD | 68 U | 680 UD | 6800 UD | 140 U | 1400 UD |
| Pentachlorophenol | 87-86-5 | 9300 UD | 96 U | 960 UD | 9600 UD | 190 U | 1900 UD |
| Phenanthrene | 85-01-8 | 68000 D | 18000 E | 29000 D | 34000 JD | 100000 E | 120000 ED |
| Phenol | 108-95-2 | 6100 UD | 63 U | 630 UD | 6300 UD | 130 U | 1300 UD |
| Pyrene | 129-00-0 | 14000 JD | 6900 E | 8900 D | 7300 UD | 28000 E | 45000 D |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-3(22-24)DL2 | P-4(0-2) | P-4(2-4) | P-4(4-6) | P-4(8-10) | P-4(8-10)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2543-13DL2 | T2582-19 | T2582-20 | T2582-21 | T2582-01 | T2582-01DL |
| Sampling Date | | 04/26/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 100.0 | 10.0 | 5.0 | 2.0 | 5.0 | 50.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 24000 JD | 1300 U | 670 U | 300 U | 350 U | 3500 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 13000 UD | 1300 U | 660 U | 290 U | 340 U | 3400 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 13000 UD | 1200 U | 630 U | 280 U | 320 U | 3200 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 12000 UD | 1200 U | 600 U | 270 U | 310 U | 3100 UD |
| 2,4-Dichlorophenol | 120-83-2 | 15000 UD | 1500 U | 760 U | 340 U | 390 U | 3900 UD |
| 2,4-Dimethylphenol | 105-67-9 | 13000 UD | 1300 U | 650 U | 290 U | 340 U | 3400 UD |
| 2,4-Dinitrophenol | 51-28-5 | 71000 UD | 6800 U | 3500 U | 1600 U | 1800 U | 18000 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 12000 UD | 1200 U | 600 U | 270 U | 310 U | 3100 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 12000 UD | 1100 U | 580 U | 260 U | 300 U | 3000 UD |
| 2-Chloronaphthalene | 91-58-7 | 14000 UD | 1300 U | 680 U | 300 U | 350 U | 3500 UD |
| 2-Chlorophenol | 95-57-8 | 13000 UD | 1300 U | 650 U | 290 U | 340 U | 3400 UD |
| 2-Methylnaphthalene | 91-57-6 | 190000 D | 4900 J | 680 U | 300 U | 350 U | 3500 UD |
| 2-Methylphenol | 95-48-7 | 14000 UD | 1300 U | 680 U | 300 U | 350 U | 3500 UD |
| 2-Nitroaniline | 88-74-4 | 11000 UD | 1000 U | 520 U | 230 U | 270 U | 2700 UD |
| 2-Nitrophenol | 88-75-5 | 13000 UD | 1200 U | 630 U | 280 U | 330 U | 3300 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 14000 UD | 1400 U | 700 U | 310 U | 360 U | 3600 UD |
| 3+4-Methylphenols | 106-44-5 | 13000 UD | 1300 U | 650 U | 290 U | 330 U | 3300 UD |
| 3-Nitroaniline | 99-09-2 | 11000 UD | 1000 U | 530 U | 240 U | 280 U | 2800 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 16000 UD | 1500 U | 790 U | 350 U | 410 U | 4100 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 12000 UD | 1200 U | 610 U | 270 U | 320 U | 3200 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 12000 UD | 1100 U | 570 U | 250 U | 290 U | 2900 UD |
| 4-Chloroaniline | 106-47-8 | 9900 UD | 950 U | 490 U | 220 U | 250 U | 2500 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 13000 UD | 1300 U | 650 U | 290 U | 330 U | 3300 UD |
| 4-Nitroaniline | 100-01-6 | 14000 UD | 1400 U | 700 U | 310 U | 360 U | 3600 UD |
| 4-Nitrophenol | 100-02-7 | 10000 UD | 980 U | 510 U | 230 U | 260 U | 2600 UD |
| Acenaphthene | 83-32-9 | 140000 D | 12000 | 730 U | 320 U | 690 J | 3800 UD |
| Acenaphthylene | 208-96-8 | 14000 UD | 1300 U | 660 U | 290 U | 340 U | 3400 UD |
| Acetophenone | 98-86-2 | 12000 UD | 1200 U | 600 U | 270 U | 310 U | 3100 UD |
| Anthracene | 120-12-7 | 20000 JD | 17000 | 620 U | 270 U | 4800 | 3200 UD |
| Atrazine | 1912-24-9 | 13000 UD | 1200 U | 630 U | 280 U | 320 U | 3200 UD |
| Benzaldehyde | 100-52-7 | 17000 UD | 1600 U | 840 U | 370 U | 430 U | 4300 UD |
| Benzo(a)anthracene | 56-55-3 | 12000 UD | 16000 | 1300 J | 290 U | 33000 E | 33000 D |
| Benzo(a)pyrene | 50-32-8 | 13000 UD | 13000 | 1000 J | 290 U | 17000 | 9200 JD |
| Benzo(b)fluoranthene | 205-99-2 | 9200 UD | 18000 | 1300 J | 340 J | 35000 E | 21000 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 14000 UD | 2900 J | 680 U | 300 U | 1600 J | 3500 UD |
| Benzo(k)fluoranthene | 207-08-9 | 18000 UD | 5000 J | 900 U | 400 U | 7300 | 4700 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 14000 UD | 1300 U | 670 U | 300 U | 350 U | 3500 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 13000 UD | 1300 U | 650 U | 290 U | 330 U | 3300 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 16000 UD | 1500 U | 790 U | 350 U | 410 U | 4100 UD |
| Butylbenzylphthalate | 85-68-7 | 13000 UD | 1300 U | 660 U | 290 U | 340 U | 3400 UD |
| Caprolactam | 105-60-2 | 13000 UD | 1300 U | 660 U | 290 U | 340 U | 3400 UD |
| Carbazole | 86-74-8 | 13000 UD | 3400 J | 620 U | 280 U | 320 U | 3200 UD |
| Chrysene | 218-01-9 | 15000 UD | 15000 | 740 J | 330 U | 26000 E | 17000 JD |
| Dibenz(a,h)anthracene | 53-70-3 | 10000 UD | 1000 U | 510 U | 230 U | 270 U | 2700 UD |
| Dibenzofuran | 132-64-9 | 92000 D | 9000 | 680 U | 300 U | 620 J | 3500 UD |
| Diethylphthalate | 84-66-2 | 14000 UD | 1400 U | 710 U | 310 U | 370 U | 3700 UD |
| Dimethylphthalate | 131-11-3 | 13000 UD | 1300 U | 660 U | 290 U | 340 U | 3400 UD |
| Di-n-butylphthalate | 84-74-2 | 13000 UD | 1200 U | 620 U | 280 U | 320 U | 3200 UD |
| Di-n-octyl phthalate | 117-84-0 | 14000 UD | 1400 U | 700 U | 310 U | 360 U | 3600 UD |
| Fluoranthene | 206-44-0 | 43000 JD | 45000 | 2600 J | 270 U | 57000 E | 98000 D |
| Fluorene | 86-73-7 | 72000 JD | 13000 | 690 U | 310 U | 520 J | 3600 UD |
| Hexachlorobenzene | 118-74-1 | 13000 UD | 1300 U | 650 U | 290 U | 340 U | 3400 UD |
| Hexachlorobutadiene | 87-68-3 | 13000 UD | 1200 U | 630 U | 280 U | 330 U | 3300 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 13000 UD | 1300 U | 650 U | 290 U | 340 U | 3400 UD |
| Hexachloroethane | 67-72-1 | 14000 UD | 1300 U | 700 U | 310 U | 360 U | 3600 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 11000 UD | 1100 J | 520 U | 230 U | 1300 J | 2700 UD |
| Isophorone | 78-59-1 | 13000 UD | 1200 U | 620 U | 270 U | 320 U | 3200 UD |
| Naphthalene | 91-20-3 | 610000 D | 5500 J | 700 U | 310 U | 360 U | 3600 UD |
| Nitrobenzene | 98-95-3 | 18000 UD | 1700 U | 880 U | 400 U | 460 U | 4600 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 14000 UD | 1300 U | 680 U | 300 U | 350 U | 3500 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 14000 UD | 1300 U | 670 U | 300 U | 350 U | 3500 UD |
| Pentachlorophenol | 87-86-5 | 19000 UD | 1800 U | 950 U | 420 U | 490 U | 4900 UD |
| Phenanthrene | 85-01-8 | 210000 D | 60000 | 3700 J | 290 U | 6000 | 3400 UD |
| Phenol | 108-95-2 | 13000 UD | 1200 U | 620 U | 280 U | 320 U | 3200 UD |
| Pyrene | 129-00-0 | 35000 JD | 44000 | 2800 J | 320 U | 56000 E | 120000 D |
| | | | | | | | |
| | | | 284800 | 13240 | 340 | 246830 | 298200 |
| | | | 90500 | 2400 | 2110 | 104300 | 0 |

## Queens West Development-Parcel 9

### Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-4(12-14) | P-4(12-14)DL | P-4(14-16) | P-4(16-18) | P-4(16-18)DL | P-4(18-20) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2582-02 | T2582-02DL | T2582-03 | T2582-04 | T2582-04DL | T2582-05 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 5.0 | 1.0 | 1.0 | 10.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 66 U | 330 UD | 89 U | 360 J | 700 UD | 69 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 65 U | 320 UD | 87 U | 68 U | 680 UD | 67 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 62 U | 310 UD | 83 U | 65 U | 650 UD | 64 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 59 U | 300 UD | 79 U | 62 U | 620 UD | 61 U |
| 2,4-Dichlorophenol | 120-83-2 | 75 U | 370 UD | 100 U | 79 U | 790 UD | 77 U |
| 2,4-Dimethylphenol | 105-67-9 | 64 U | 320 UD | 240 J | 67 U | 670 UD | 66 U |
| 2,4-Dinitrophenol | 51-28-5 | 340 U | 1700 UD | 460 U | 360 U | 3600 UD | 360 U |
| 2,4-Dinitrotoluene | 121-14-2 | 59 U | 300 UD | 79 U | 62 U | 620 UD | 61 U |
| 2,6-Dinitrotoluene | 606-20-2 | 57 U | 290 UD | 76 U | 60 U | 600 UD | 59 U |
| 2-Chloronaphthalene | 91-58-7 | 67 U | 330 UD | 90 U | 70 U | 700 UD | 69 U |
| 2-Chlorophenol | 95-57-8 | 64 U | 320 UD | 86 U | 68 U | 680 UD | 67 U |
| 2-Methylnaphthalene | 91-57-6 | 67 U | 340 UD | 90 U | 910 | 710 UD | 70 U |
| 2-Methylphenol | 95-48-7 | 67 U | 340 UD | 90 U | 71 U | 710 UD | 69 U |
| 2-Nitroaniline | 88-74-4 | 51 U | 260 UD | 68 U | 54 U | 540 UD | 53 U |
| 2-Nitrophenol | 88-75-5 | 62 U | 310 UD | 83 U | 65 U | 650 UD | 64 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 69 U | 340 UD | 92 U | 73 U | 730 UD | 71 U |
| 3+4-Methylphenols | 106-44-5 | 64 U | 320 UD | 85 U | 67 U | 670 UD | 66 U |
| 3-Nitroaniline | 99-09-2 | 53 U | 260 UD | 70 U | 55 U | 550 UD | 54 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 78 U | 390 UD | 100 U | 82 U | 820 UD | 81 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 60 U | 300 UD | 81 U | 63 U | 630 UD | 62 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 56 U | 280 UD | 75 U | 59 U | 590 UD | 58 U |
| 4-Chloroaniline | 106-47-8 | 48 U | 240 UD | 64 U | 51 U | 510 UD | 50 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 64 U | 320 UD | 85 U | 67 U | 670 UD | 66 U |
| 4-Nitroaniline | 100-01-6 | 69 U | 340 UD | 92 U | 73 U | 730 UD | 71 U |
| 4-Nitrophenol | 100-02-7 | 50 U | 250 UD | 67 U | 53 U | 530 UD | 52 U |
| Acenaphthene | 83-32-9 | 590 | 360 UD | 570 | 3300 | 2200 JD | 100 J |
| Acenaphthylene | 208-96-8 | 65 U | 330 UD | 88 U | 69 U | 690 UD | 68 U |
| Acetophenone | 98-86-2 | 59 U | 290 UD | 79 U | 62 U | 620 UD | 61 U |
| Anthracene | 120-12-7 | 470 | 300 UD | 470 J | 3700 E | 2800 JD | 63 U |
| Atrazine | 1912-24-9 | 62 U | 310 UD | 83 U | 65 U | 650 UD | 64 U |
| Benzaldehyde | 100-52-7 | 83 U | 410 UD | 110 U | 87 U | 870 UD | 86 U |
| Benzo(a)anthracene | 56-55-3 | 120 J | 280 UD | 280 J | 2300 | 1900 JD | 58 U |
| Benzo(a)pyrene | 50-32-8 | 64 U | 320 UD | 86 U | 760 | 680 UD | 67 U |
| Benzo(b)fluoranthene | 205-99-2 | 49 J | 220 UD | 120 J | 1700 | 840 JD | 46 U |
| Benzo(g,h,i)perylene | 191-24-2 | 67 U | 330 UD | 89 U | 130 J | 700 UD | 69 U |
| Benzo(k)fluoranthene | 207-08-9 | 89 U | 440 UD | 120 U | 350 J | 930 UD | 92 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 66 U | 330 UD | 89 U | 70 U | 700 UD | 69 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 64 U | 320 UD | 85 U | 67 U | 670 UD | 66 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 77 U | 390 UD | 100 U | 82 U | 820 UD | 80 U |
| Butylbenzylphthalate | 85-68-7 | 65 U | 330 UD | 87 U | 1800 | 850 JD | 67 U |
| Caprolactam | 105-60-2 | 65 U | 320 UD | 87 U | 68 U | 680 UD | 67 U |
| Carbazole | 86-74-8 | 330 J | 310 UD | 430 J | 1900 | 780 JD | 64 U |
| Chrysene | 218-01-9 | 100 J | 360 UD | 210 J | 2200 | 920 JD | 75 U |
| Dibenz(a,h)anthracene | 53-70-3 | 51 U | 250 UD | 68 U | 53 U | 530 UD | 52 U |
| Dibenzofuran | 132-64-9 | 600 | 340 JD | 560 | 3500 E | 2000 JD | 71 J |
| Diethylphthalate | 84-66-2 | 70 U | 350 UD | 93 U | 73 U | 730 UD | 72 U |
| Dimethylphthalate | 131-11-3 | 65 U | 320 UD | 87 U | 68 U | 680 UD | 67 U |
| Di-n-butylphthalate | 84-74-2 | 61 U | 310 UD | 82 U | 65 U | 650 UD | 64 U |
| Di-n-octyl phthalate | 117-84-0 | 69 U | 340 UD | 92 U | 72 U | 720 UD | 71 U |
| Fluoranthene | 206-44-0 | 1000 | 510 JD | 1700 | 7900 E | 10000 D | 180 J |
| Fluorene | 86-73-7 | 640 | 340 JD | 790 | 4000 E | 3000 JD | 70 U |
| Hexachlorobenzene | 118-74-1 | 64 U | 320 UD | 86 U | 68 U | 680 UD | 67 U |
| Hexachlorobutadiene | 87-68-3 | 62 U | 310 UD | 83 U | 65 U | 650 UD | 64 U |
| Hexachlorocyclopentadiene | 77-47-4 | 64 U | 320 UD | 86 U | 68 U | 680 UD | 67 U |
| Hexachloroethane | 67-72-1 | 68 U | 340 UD | 92 U | 72 U | 720 UD | 71 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 51 U | 260 UD | 68 U | 85 J | 540 UD | 53 U |
| Isophorone | 78-59-1 | 61 U | 300 UD | 81 U | 64 U | 640 UD | 63 U |
| Naphthalene | 91-20-3 | 69 U | 340 UD | 560 | 1200 | 730 UD | 480 |
| Nitrobenzene | 98-95-3 | 88 U | 440 UD | 120 U | 93 U | 930 UD | 91 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 67 U | 330 UD | 89 U | 70 U | 700 UD | 69 U |
| N-Nitrosodiphenylamine | 86-30-6 | 66 U | 330 UD | 89 U | 70 U | 700 UD | 69 U |
| Pentachlorophenol | 87-86-5 | 93 U | 470 UD | 120 U | 98 U | 980 UD | 97 U |
| Phenanthrene | 85-01-8 | 3300 E | 3200 D | 3600 | 13000 E | 22000 D | 390 J |
| Phenol | 108-95-2 | 61 U | 310 UD | 82 U | 64 U | 640 UD | 63 U |
| Pyrene | 129-00-0 | 780 | 390 JD | 1400 | 7000 E | 9900 D | 170 J |
| | | | | | | | |
| | | 7979 | 4780 | 10930 | 55895 | 57190 | 1391 |
| | | 2905 | 0 | 6210 | 8502 | 0 | 550 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-4(20-22) | P-4(20-22)DL | P-4(22-24) | P-4(24-26) | P-4(24-26)DL | P-4(26-28) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2582-06 | T2582-06DL | T2582-07 | T2582-08 | T2582-08DL | T2582-09 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 5.0 | 1.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 66 U | 330 UD | 69 U | 64 U | 320 UD | 93 J |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 64 U | 320 UD | 68 U | 63 U | 310 UD | 62 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 61 U | 310 UD | 64 U | 59 U | 300 UD | 58 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 59 U | 290 UD | 62 U | 57 U | 290 UD | 56 U |
| 2,4-Dichlorophenol | 120-83-2 | 74 U | 370 UD | 78 U | 72 U | 360 UD | 71 U |
| 2,4-Dimethylphenol | 105-67-9 | 63 U | 320 UD | 67 U | 62 U | 310 UD | 61 U |
| 2,4-Dinitrophenol | 51-28-5 | 340 U | 1700 UD | 360 U | 330 U | 1700 UD | 330 U |
| 2,4-Dinitrotoluene | 121-14-2 | 59 U | 290 UD | 62 U | 57 U | 290 UD | 56 U |
| 2,6-Dinitrotoluene | 606-20-2 | 57 U | 280 UD | 59 U | 55 U | 270 UD | 54 U |
| 2-Chloronaphthalene | 91-58-7 | 66 U | 330 UD | 70 U | 64 U | 320 UD | 63 U |
| 2-Chlorophenol | 95-57-8 | 64 U | 320 UD | 67 U | 62 U | 310 UD | 61 U |
| 2-Methylnaphthalene | 91-57-6 | 160 J | 330 UD | 70 U | 340 J | 320 UD | 500 |
| 2-Methylphenol | 95-48-7 | 66 U | 330 UD | 70 U | 65 U | 320 UD | 64 U |
| 2-Nitroaniline | 88-74-4 | 51 U | 250 UD | 53 U | 49 U | 250 UD | 49 U |
| 2-Nitrophenol | 88-75-5 | 61 U | 310 UD | 65 U | 60 U | 300 UD | 59 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 68 U | 340 UD | 72 U | 66 U | 330 UD | 65 U |
| 3+4-Methylphenols | 106-44-5 | 63 U | 320 UD | 66 U | 61 U | 310 UD | 60 U |
| 3-Nitroaniline | 99-09-2 | 52 U | 260 UD | 55 U | 51 U | 250 UD | 50 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 78 U | 390 UD | 82 U | 76 U | 380 UD | 74 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 60 U | 300 UD | 63 U | 59 U | 290 UD | 57 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 55 U | 280 UD | 58 U | 54 U | 270 UD | 53 U |
| 4-Chloroaniline | 106-47-8 | 48 U | 240 UD | 50 U | 46 U | 230 UD | 46 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 63 U | 320 UD | 66 U | 61 U | 310 UD | 60 U |
| 4-Nitroaniline | 100-01-6 | 68 U | 340 UD | 72 U | 66 U | 330 UD | 65 U |
| 4-Nitrophenol | 100-02-7 | 50 U | 250 UD | 52 U | 48 U | 240 UD | 47 U |
| Acenaphthene | 83-32-9 | 180 J | 360 UD | 94 J | 120 J | 350 UD | 490 |
| Acenaphthylene | 208-96-8 | 65 U | 320 UD | 68 U | 63 U | 320 UD | 62 U |
| Acetophenone | 98-86-2 | 58 U | 290 UD | 62 U | 57 U | 280 UD | 56 U |
| Anthracene | 120-12-7 | 60 U | 300 UD | 63 U | 59 U | 290 UD | 80 J |
| Atrazine | 1912-24-9 | 61 U | 310 UD | 64 U | 60 U | 300 UD | 59 U |
| Benzaldehyde | 100-52-7 | 82 U | 410 UD | 86 U | 80 U | 400 UD | 78 U |
| Benzo(a)anthracene | 56-55-3 | 68 J | 280 UD | 82 J | 54 U | 270 UD | 69 J |
| Benzo(a)pyrene | 50-32-8 | 64 U | 320 UD | 67 U | 62 U | 310 UD | 61 U |
| Benzo(b)fluoranthene | 205-99-2 | 44 U | 220 UD | 56 J | 43 U | 210 UD | 42 U |
| Benzo(g,h,i)perylene | 191-24-2 | 66 U | 330 UD | 70 U | 64 U | 320 UD | 63 U |
| Benzo(k)fluoranthene | 207-08-9 | 88 U | 440 UD | 93 U | 85 U | 430 UD | 84 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 66 U | 330 UD | 69 U | 64 U | 320 UD | 63 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 63 U | 320 UD | 66 U | 61 U | 310 UD | 60 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 77 U | 380 UD | 81 U | 75 U | 370 UD | 73 U |
| Butylbenzylphthalate | 85-68-7 | 65 U | 320 UD | 68 U | 63 U | 310 UD | 62 U |
| Caprolactam | 105-60-2 | 64 U | 320 UD | 68 U | 62 U | 310 UD | 61 U |
| Carbazole | 86-74-8 | 61 U | 310 UD | 64 U | 59 U | 300 UD | 290 J |
| Chrysene | 218-01-9 | 72 U | 360 UD | 75 U | 70 U | 350 UD | 69 U |
| Dibenz(a,h)anthracene | 53-70-3 | 50 U | 250 UD | 53 U | 49 U | 240 UD | 48 U |
| Dibenzofuran | 132-64-9 | 180 J | 330 UD | 86 J | 93 J | 320 UD | 380 |
| Diethylphthalate | 84-66-2 | 69 U | 340 UD | 73 U | 67 U | 340 UD | 66 U |
| Dimethylphthalate | 131-11-3 | 64 U | 320 UD | 68 U | 62 U | 310 UD | 61 U |
| Di-n-butylphthalate | 84-74-2 | 61 U | 300 UD | 64 U | 59 U | 300 UD | 58 U |
| Di-n-octyl phthalate | 117-84-0 | 68 U | 340 UD | 72 U | 66 U | 330 UD | 66 U |
| Fluoranthene | 206-44-0 | 170 J | 300 UD | 180 J | 58 U | 290 UD | 280 J |
| Fluorene | 86-73-7 | 71 J | 340 UD | 71 U | 66 U | 330 UD | 330 J |
| Hexachlorobenzene | 118-74-1 | 64 U | 320 UD | 67 U | 62 U | 310 UD | 61 U |
| Hexachlorobutadiene | 87-68-3 | 61 U | 310 UD | 65 U | 60 U | 300 UD | 59 U |
| Hexachlorocyclopentadiene | 77-47-4 | 64 U | 320 UD | 67 U | 62 U | 310 UD | 61 U |
| Hexachloroethane | 67-72-1 | 68 U | 340 UD | 71 U | 66 U | 330 UD | 65 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 51 U | 250 UD | 53 U | 49 U | 250 UD | 49 U |
| Isophorone | 78-59-1 | 60 U | 300 UD | 63 U | 58 U | 290 UD | 57 U |
| Naphthalene | 91-20-3 | 4400 E | 5900 D | 3300 | 3800 E | 3900 D | 3100 |
| Nitrobenzene | 98-95-3 | 87 U | 440 UD | 92 U | 85 U | 420 UD | 83 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 66 U | 330 UD | 70 U | 64 U | 320 UD | 63 U |
| N-Nitrosodiphenylamine | 86-30-6 | 66 U | 330 UD | 69 U | 64 U | 320 UD | 63 U |
| Pentachlorophenol | 87-86-5 | 93 U | 460 UD | 97 U | 90 U | 450 UD | 88 U |
| Phenanthrene | 85-01-8 | 440 | 320 UD | 380 J | 140 J | 310 UD | 1100 |
| Phenol | 108-95-2 | 61 U | 300 UD | 64 U | 59 U | 290 UD | 58 U |
| Pyrene | 129-00-0 | 200 J | 350 UD | 210 J | 69 U | 340 UD | 250 J |
| | | | | | | | |
| | | 5869 | 5900 | 4388 | 4493 | 3900 | 6982 |
| | | 1784 | 0 | 1651 | 1582 | 0 | 3804 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-4(28-30) | P-5(0-2) | P-5(2-4) | P-5(4-6) | P-5(4-6)DL | P-5(6-8) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2582-10 | T2582-11 | T2582-12 | T2582-13 | T2582-13DL | T2582-14 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 5.0 | 1.0 | 5.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 70 U | 140 U | 610 U | 74 J | 320 UD | 660 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 68 U | 140 U | 600 U | 63 U | 310 UD | 650 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 65 U | 130 U | 570 U | 60 U | 300 UD | 620 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 62 U | 130 U | 540 U | 57 U | 280 UD | 590 U |
| 2,4-Dichlorophenol | 120-83-2 | 78 U | 160 U | 690 U | 72 U | 360 UD | 740 U |
| 2,4-Dimethylphenol | 105-67-9 | 67 U | 140 U | 590 U | 62 U | 310 UD | 640 U |
| 2,4-Dinitrophenol | 51-28-5 | 360 U | 750 U | 3200 U | 330 U | 1700 UD | 3400 U |
| 2,4-Dinitrotoluene | 121-14-2 | 62 U | 130 U | 540 U | 57 U | 290 UD | 590 U |
| 2,6-Dinitrotoluene | 606-20-2 | 60 U | 120 U | 520 U | 56 U | 280 UD | 570 U |
| 2-Chloronaphthalene | 91-58-7 | 70 U | 140 U | 620 U | 65 U | 320 UD | 670 U |
| 2-Chlorophenol | 95-57-8 | 67 U | 140 U | 590 U | 62 U | 310 UD | 640 U |
| 2-Methylnaphthalene | 91-57-6 | 71 U | 150 U | 620 U | 530 | 330 UD | 970 J |
| 2-Methylphenol | 95-48-7 | 70 U | 150 U | 620 U | 65 U | 320 UD | 670 U |
| 2-Nitroaniline | 88-74-4 | 54 U | 110 U | 470 U | 49 U | 250 UD | 510 U |
| 2-Nitrophenol | 88-75-5 | 65 U | 130 U | 570 U | 60 U | 300 UD | 620 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 72 U | 150 U | 630 U | 67 U | 330 UD | 690 U |
| 3+4-Methylphenols | 106-44-5 | 67 U | 140 U | 580 U | 61 U | 310 UD | 640 U |
| 3-Nitroaniline | 99-09-2 | 55 U | 110 U | 480 U | 51 U | 250 UD | 520 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 82 U | 170 U | 720 U | 76 U | 380 UD | 780 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 63 U | 130 U | 550 U | 58 U | 290 UD | 600 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 58 U | 120 U | 510 U | 54 U | 270 UD | 560 U |
| 4-Chloroaniline | 106-47-8 | 50 U | 100 U | 440 U | 46 U | 230 UD | 480 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 67 U | 140 U | 590 U | 62 U | 310 UD | 640 U |
| 4-Nitroaniline | 100-01-6 | 72 U | 150 U | 630 U | 67 U | 330 UD | 690 U |
| 4-Nitrophenol | 100-02-7 | 52 U | 110 U | 460 U | 48 U | 240 UD | 500 U |
| Acenaphthene | 83-32-9 | 79 J | 160 U | 660 U | 330 J | 350 UD | 1900 J |
| Acenaphthylene | 208-96-8 | 69 U | 140 U | 600 U | 63 U | 320 UD | 650 U |
| Acetophenone | 98-86-2 | 62 U | 130 U | 540 U | 57 U | 290 UD | 590 U |
| Anthracene | 120-12-7 | 64 U | 130 U | 800 J | 80 J | 290 UD | 5600 |
| Atrazine | 1912-24-9 | 65 U | 130 U | 570 U | 60 U | 300 UD | 620 U |
| Benzaldehyde | 100-52-7 | 87 U | 180 U | 760 U | 80 U | 400 UD | 830 U |
| Benzo(a)anthracene | 56-55-3 | 59 U | 120 U | 2600 J | 79 J | 270 UD | 9400 |
| Benzo(a)pyrene | 50-32-8 | 68 U | 140 U | 2000 J | 62 U | 310 UD | 7900 |
| Benzo(b)fluoranthene | 205-99-2 | 46 U | 120 J | 3100 J | 57 J | 210 UD | 12000 |
| Benzo(g,h,i)perylene | 191-24-2 | 70 U | 140 U | 800 J | 64 U | 320 UD | 2000 J |
| Benzo(k)fluoranthene | 207-08-9 | 93 U | 190 U | 920 J | 86 U | 430 UD | 2800 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | 69 U | 140 U | 610 U | 64 U | 320 UD | 660 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 67 U | 140 U | 590 U | 62 U | 310 UD | 640 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 81 U | 170 U | 710 U | 75 U | 370 UD | 770 U |
| Butylbenzylphthalate | 85-68-7 | 68 U | 140 U | 5000 | 63 U | 320 UD | 650 U |
| Caprolactam | 105-60-2 | 68 U | 140 U | 600 U | 63 U | 310 UD | 650 U |
| Carbazole | 86-74-8 | 64 U | 130 U | 600 J | 610 | 300 UD | 1700 J |
| Chrysene | 218-01-9 | 76 U | 160 U | 2200 J | 70 U | 350 UD | 8900 |
| Dibenz(a,h)anthracene | 53-70-3 | 53 U | 110 U | 470 U | 49 U | 240 UD | 500 U |
| Dibenzofuran | 132-64-9 | 70 U | 140 U | 610 U | 290 J | 320 UD | 1400 J |
| Diethylphthalate | 84-66-2 | 73 U | 150 U | 640 U | 67 U | 340 UD | 690 U |
| Dimethylphthalate | 131-11-3 | 68 U | 140 U | 600 U | 63 U | 310 UD | 650 U |
| Di-n-butylphthalate | 84-74-2 | 64 U | 130 U | 560 U | 59 U | 300 UD | 610 U |
| Di-n-octyl phthalate | 117-84-0 | 72 U | 150 U | 630 U | 66 U | 330 UD | 690 U |
| Fluoranthene | 206-44-0 | 63 U | 200 J | 6600 | 200 J | 290 UD | 20000 |
| Fluorene | 86-73-7 | 71 U | 150 U | 630 U | 300 J | 330 UD | 2100 J |
| Hexachlorobenzene | 118-74-1 | 68 U | 140 U | 590 U | 62 U | 310 UD | 640 U |
| Hexachlorobutadiene | 87-68-3 | 65 U | 130 U | 570 U | 60 U | 300 UD | 620 U |
| Hexachlorocyclopentadiene | 77-47-4 | 67 U | 140 U | 590 U | 62 U | 310 UD | 640 U |
| Hexachloroethane | 67-72-1 | 72 U | 150 U | 630 U | 66 U | 330 UD | 680 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 54 U | 110 U | 510 J | 49 U | 250 UD | 510 U |
| Isophorone | 78-59-1 | 63 U | 130 U | 560 U | 59 U | 290 UD | 600 U |
| Naphthalene | 91-20-3 | 200 J | 150 U | 630 U | 4400 E | 3700 D | 1100 J |
| Nitrobenzene | 98-95-3 | 92 U | 190 U | 810 U | 85 U | 430 UD | 880 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 70 U | 140 U | 610 U | 65 U | 320 UD | 670 U |
| N-Nitrosodiphenylamine | 86-30-6 | 70 U | 140 U | 610 U | 64 U | 320 UD | 660 U |
| Pentachlorophenol | 87-86-5 | 98 U | 200 U | 860 U | 90 U | 450 UD | 930 U |
| Phenanthrene | 85-01-8 | 130 J | 270 J | 4900 | 760 | 310 UD | 22000 |
| Phenol | 108-95-2 | 64 U | 130 U | 560 U | 59 U | 300 UD | 610 U |
| Pyrene | 129-00-0 | 75 U | 220 J | 5200 | 200 J | 340 UD | 19000 |
| | | | | | | | |
| | | 409 | 810 | 35130 | 7890 | 3700 | 118770 |
| | | 1820 | 1700 | 4070 | 3139 | 0 | 43930 |

## Queens West Development-Parcel 9
### Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-5(8-10) | P-5(10-12) | P-5(12-14) | P-5(14-16) | P-5(16-18) | P-5(18-20) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2582-15 | T2582-16 | T2582-17 | T2582-18 | T2582-19 | T2582-20 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 320 U | 66 U | 130 U | 94 U | 65 U | 66 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 320 U | 65 U | 120 U | 92 U | 64 U | 65 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 300 U | 61 U | 120 U | 88 U | 60 U | 61 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 290 U | 59 U | 110 U | 84 U | 58 U | 59 U |
| 2,4-Dichlorophenol | 120-83-2 | 360 U | 74 U | 140 U | 110 U | 73 U | 74 U |
| 2,4-Dimethylphenol | 105-67-9 | 310 U | 64 U | 120 U | 91 U | 63 U | 64 U |
| 2,4-Dinitrophenol | 51-28-5 | 1700 U | 340 U | 650 U | 490 U | 340 U | 340 U |
| 2,4-Dinitrotoluene | 121-14-2 | 290 U | 59 U | 110 U | 84 U | 58 U | 59 U |
| 2,6-Dinitrotoluene | 606-20-2 | 280 U | 57 U | 110 U | 81 U | 56 U | 57 U |
| 2-Chloronaphthalene | 91-58-7 | 330 U | 67 U | 130 U | 95 U | 65 U | 67 U |
| 2-Chlorophenol | 95-57-8 | 310 U | 64 U | 120 U | 92 U | 63 U | 64 U |
| 2-Methylnaphthalene | 91-57-6 | 670 J | 67 U | 130 U | 96 U | 66 U | 67 U |
| 2-Methylphenol | 95-48-7 | 330 U | 67 U | 130 U | 95 U | 66 U | 67 U |
| 2-Nitroaniline | 88-74-4 | 250 U | 51 U | 97 U | 73 U | 50 U | 51 U |
| 2-Nitrophenol | 88-75-5 | 300 U | 62 U | 120 U | 88 U | 61 U | 62 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 340 U | 69 U | 130 U | 98 U | 67 U | 69 U |
| 3+4-Methylphenols | 106-44-5 | 310 U | 63 U | 120 U | 90 U | 62 U | 63 U |
| 3-Nitroaniline | 99-09-2 | 260 U | 52 U | 100 U | 75 U | 51 U | 52 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 380 U | 78 U | 150 U | 110 U | 77 U | 78 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 290 U | 60 U | 110 U | 86 U | 59 U | 60 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 270 U | 56 U | 110 U | 79 U | 54 U | 55 U |
| 4-Chloroaniline | 106-47-8 | 230 U | 48 U | 91 U | 68 U | 47 U | 48 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 310 U | 64 U | 120 U | 91 U | 62 U | 63 U |
| 4-Nitroaniline | 100-01-6 | 330 U | 69 U | 130 U | 98 U | 67 U | 68 U |
| 4-Nitrophenol | 100-02-7 | 240 U | 50 U | 95 U | 71 U | 49 U | 50 U |
| Acenaphthene | 83-32-9 | 2000 | 72 U | 140 U | 100 U | 70 U | 71 U |
| Acenaphthylene | 208-96-8 | 320 U | 65 U | 120 U | 93 U | 64 U | 65 U |
| Acetophenone | 98-86-2 | 290 U | 59 U | 110 U | 84 U | 58 U | 59 U |
| Anthracene | 120-12-7 | 3800 | 61 U | 120 U | 87 U | 59 U | 60 U |
| Atrazine | 1912-24-9 | 300 U | 62 U | 120 U | 88 U | 60 U | 61 U |
| Benzaldehyde | 100-52-7 | 400 U | 82 U | 160 U | 120 U | 81 U | 82 U |
| Benzo(a)anthracene | 56-55-3 | 3800 | 56 U | 110 U | 230 J | 55 U | 56 U |
| Benzo(a)pyrene | 50-32-8 | 2200 | 64 U | 120 U | 230 J | 63 U | 64 U |
| Benzo(b)fluoranthene | 205-99-2 | 2800 | 44 U | 84 U | 350 J | 43 U | 44 U |
| Benzo(g,h,i)perylene | 191-24-2 | 640 J | 66 U | 130 U | 110 J | 65 U | 66 U |
| Benzo(k)fluoranthene | 207-08-9 | 820 J | 88 U | 170 U | 130 U | 87 U | 88 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 320 U | 66 U | 130 U | 94 U | 65 U | 66 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 310 U | 64 U | 120 U | 91 U | 62 U | 63 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 380 U | 77 J | 190 J | 110 U | 76 U | 77 U |
| Butylbenzylphthalate | 85-68-7 | 320 U | 65 U | 170 J | 93 U | 64 U | 65 U |
| Caprolactam | 105-60-2 | 320 U | 65 U | 120 U | 92 U | 63 U | 64 U |
| Carbazole | 86-74-8 | 1100 J | 61 U | 120 U | 88 U | 60 U | 61 U |
| Chrysene | 218-01-9 | 3000 | 72 U | 140 U | 210 J | 71 U | 72 U |
| Dibenz(a,h)anthracene | 53-70-3 | 250 U | 50 U | 96 U | 72 U | 49 U | 50 U |
| Dibenzofuran | 132-64-9 | 1200 J | 66 U | 130 U | 95 U | 65 U | 66 U |
| Diethylphthalate | 84-66-2 | 340 U | 69 U | 130 U | 99 U | 68 U | 69 U |
| Dimethylphthalate | 131-11-3 | 320 U | 65 U | 120 U | 92 U | 63 U | 64 U |
| Di-n-butylphthalate | 84-74-2 | 300 U | 61 U | 120 U | 87 U | 60 U | 61 U |
| Di-n-octyl phthalate | 117-84-0 | 330 U | 68 U | 130 U | 98 U | 67 U | 68 U |
| Fluoranthene | 206-44-0 | 10000 | 60 U | 110 U | 440 J | 59 U | 60 U |
| Fluorene | 86-73-7 | 1700 J | 68 U | 130 U | 97 U | 67 U | 68 U |
| Hexachlorobenzene | 118-74-1 | 310 U | 64 U | 120 U | 92 U | 63 U | 64 U |
| Hexachlorobutadiene | 87-68-3 | 300 U | 62 U | 120 U | 88 U | 61 U | 62 U |
| Hexachlorocyclopentadiene | 77-47-4 | 310 U | 64 U | 120 U | 92 U | 63 U | 64 U |
| Hexachloroethane | 67-72-1 | 330 U | 68 U | 130 U | 97 U | 67 U | 68 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 490 J | 51 U | 97 U | 76 J | 50 U | 51 U |
| Isophorone | 78-59-1 | 290 U | 60 U | 110 U | 86 U | 59 U | 60 U |
| Naphthalene | 91-20-3 | 1000 J | 69 U | 130 U | 98 U | 860 | 110 J |
| Nitrobenzene | 98-95-3 | 430 U | 88 U | 170 U | 130 U | 86 U | 87 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 320 U | 67 U | 130 U | 95 U | 65 U | 66 U |
| N-Nitrosodiphenylamine | 86-30-6 | 320 U | 66 U | 130 U | 94 U | 65 U | 66 U |
| Pentachlorophenol | 87-86-5 | 450 U | 93 U | 180 U | 130 U | 91 U | 93 U |
| Phenanthrene | 85-01-8 | 13000 | 64 U | 120 U | 400 J | 63 U | 64 U |
| Phenol | 108-95-2 | 300 U | 61 U | 120 U | 87 U | 60 U | 61 U |
| Pyrene | 129-00-0 | 9300 | 71 U | 140 U | 480 J | 70 U | 71 U |
| | | | | | | | |
| | | 5750<br>17790 | 77<br>1520 | 320<br>10070 | 2536<br>3140 | 860<br>1520 | 110<br>1210 |

## Queens West Development-Parcel 9
### Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-5(20-22) | P-5(22-24) | P-5(22-24)RE | P-5(24-26) | P-5(28-30) | P-6(0-2) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2582-22 | T2582-23 | T2582-23RE | T2582-24 | T2582-25 | T2528-15 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 65 U | 63 U | 63 U | 66 U | 71 U | 3100 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 64 U | 62 U | 62 U | 65 U | 69 U | 3000 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 60 U | 59 U | 59 U | 62 U | 66 U | 2800 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 58 U | 56 U | 56 U | 59 U | 63 U | 2700 U |
| 2,4-Dichlorophenol | 120-83-2 | 73 U | 71 U | 71 U | 74 U | 80 U | 3400 U |
| 2,4-Dimethylphenol | 105-67-9 | 63 U | 61 U | 61 U | 64 U | 68 U | 2900 U |
| 2,4-Dinitrophenol | 51-28-5 | 340 U | 330 U | 330 U | 340 U | 370 U | 16000 U |
| 2,4-Dinitrotoluene | 121-14-2 | 58 U | 56 U | 56 U | 59 U | 63 U | 60 U |
| 2,6-Dinitrotoluene | 606-20-2 | 56 U | 54 U | 54 U | 57 U | 61 U | 58 U |
| 2-Chloronaphthalene | 91-58-7 | 66 U | 64 U | 64 U | 67 U | 71 U | 3100 U |
| 2-Chlorophenol | 95-57-8 | 63 U | 61 U | 61 U | 64 U | 69 U | 3000 U |
| 2-Methylnaphthalene | 91-57-6 | 66 U | 64 U | 64 U | 67 U | 72 U | 3100 U |
| 2-Methylphenol | 95-48-7 | 66 U | 64 U | 64 U | 67 U | 72 U | 3100 U |
| 2-Nitroaniline | 88-74-4 | 50 U | 49 U | 49 U | 51 U | 55 U | 2400 U |
| 2-Nitrophenol | 88-75-5 | 61 U | 59 U | 59 U | 62 U | 66 U | 2900 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 68 U | 66 U | 66 U | 69 U | 74 U | 3200 U |
| 3+4-Methylphenols | 106-44-5 | 62 U | 61 U | 61 U | 63 U | 68 U | 2900 U |
| 3-Nitroaniline | 99-09-2 | 51 U | 50 U | 50 U | 52 U | 56 U | 2400 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 77 U | 75 U | 75 U | 78 U | 83 U | 3600 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 59 U | 57 U | 57 U | 60 U | 64 U | 2800 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 55 U | 53 U | 53 U | 56 U | 59 U | 2600 U |
| 4-Chloroaniline | 106-47-8 | 47 U | 46 U | 46 U | 48 U | 51 U | 2200 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 62 U | 61 U | 61 U | 64 U | 68 U | 2900 U |
| 4-Nitroaniline | 100-01-6 | 67 U | 66 U | 66 U | 69 U | 73 U | 3200 U |
| 4-Nitrophenol | 100-02-7 | 49 U | 48 U | 48 U | 50 U | 53 U | 2300 U |
| Acenaphthene | 83-32-9 | 70 U | 68 U | 68 U | 72 U | 77 U | 3300 U |
| Acenaphthylene | 208-96-8 | 64 U | 62 U | 62 U | 65 U | 70 U | 3000 U |
| Acetophenone | 98-86-2 | 58 U | 56 U | 56 U | 59 U | 63 U | 2700 U |
| Anthracene | 120-12-7 | 60 U | 58 U | 58 U | 61 U | 65 U | 2800 U |
| Atrazine | 1912-24-9 | 61 U | 59 U | 59 U | 62 U | 66 U | 2800 U |
| Benzaldehyde | 100-52-7 | 81 U | 79 U | 79 U | 83 U | 88 U | 3800 U |
| Benzo(a)anthracene | 56-55-3 | 55 U | 54 U | 54 U | 56 U | 60 U | 6300 J |
| Benzo(a)pyrene | 50-32-8 | 63 U | 61 U | 61 U | 64 U | 68 U | 4700 J |
| Benzo(b)fluoranthene | 205-99-2 | 43 U | 42 U | 42 U | 44 U | 47 U | 6500 J |
| Benzo(g,h,i)perylene | 191-24-2 | 65 U | 64 U | 64 U | 67 U | 71 U | 3100 U |
| Benzo(k)fluoranthene | 207-08-9 | 87 U | 85 U | 85 U | 89 U | 95 U | 4100 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 65 U | 63 U | 63 U | 66 U | 71 U | 3100 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 62 U | 61 U | 61 U | 64 U | 68 U | 2900 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 76 U | 74 U | 74 U | 77 U | 83 U | 3600 U |
| Butylbenzylphthalate | 85-68-7 | 64 U | 62 U | 62 U | 65 U | 70 U | 3000 U |
| Caprolactam | 105-60-2 | 64 U | 62 U | 62 U | 65 U | 69 U | 3000 U |
| Carbazole | 86-74-8 | 60 U | 59 U | 59 U | 61 U | 66 U | 2800 U |
| Chrysene | 218-01-9 | 71 U | 69 U | 69 U | 72 U | 77 U | 5200 J |
| Dibenz(a,h)anthracene | 53-70-3 | 50 U | 48 U | 48 U | 50 U | 54 U | 2300 U |
| Dibenzofuran | 132-64-9 | 65 U | 64 U | 64 U | 67 U | 71 U | 3100 U |
| Diethylphthalate | 84-66-2 | 68 U | 66 U | 66 U | 69 U | 74 U | 3200 U |
| Dimethylphthalate | 131-11-3 | 64 U | 62 U | 62 U | 65 U | 69 U | 3000 U |
| Di-n-butylphthalate | 84-74-2 | 60 U | 59 U | 59 U | 61 U | 66 U | 2800 U |
| Di-n-octyl phthalate | 117-84-0 | 67 U | 65 U | 65 U | 68 U | 73 U | 3200 U |
| Fluoranthene | 206-44-0 | 59 U | 57 U | 57 U | 60 U | 64 U | 13000 J |
| Fluorene | 86-73-7 | 67 U | 65 U | 65 U | 68 U | 73 U | 3100 U |
| Hexachlorobenzene | 118-74-1 | 63 U | 61 U | 61 U | 64 U | 69 U | 3000 U |
| Hexachlorobutadiene | 87-68-3 | 61 U | 59 U | 59 U | 62 U | 66 U | 2900 U |
| Hexachlorocyclopentadiene | 77-47-4 | 63 U | 61 U | 61 U | 64 U | 69 U | 3000 U |
| Hexachloroethane | 67-72-1 | 67 U | 65 U | 65 U | 68 U | 73 U | 3200 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 50 U | 49 U | 49 U | 51 U | 55 U | 2400 U |
| Isophorone | 78-59-1 | 59 U | 58 U | 58 U | 60 U | 65 U | 2800 U |
| Naphthalene | 91-20-3 | 540 | 630 | 620 | 69 U | 510 | 3200 U |
| Nitrobenzene | 98-95-3 | 86 U | 84 U | 84 U | 88 U | 94 U | 89 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 65 U | 64 U | 64 U | 67 U | 71 U | 3100 U |
| N-Nitrosodiphenylamine | 86-30-6 | 65 U | 63 U | 63 U | 66 U | 71 U | 3100 U |
| Pentachlorophenol | 87-86-5 | 91 U | 89 U | 89 U | 93 U | 100 U | 4300 U |
| Phenanthrene | 85-01-8 | 63 U | 90 J | 65 J | 64 U | 69 U | 12000 J |
| Phenol | 108-95-2 | 60 U | 58 U | 58 U | 61 U | 65 U | 2800 U |
| Pyrene | 129-00-0 | 70 U | 68 U | 68 U | 71 U | 76 U | 13000 J |
| | | | | | | | |
| | | 540 | 720 | 685 | 0 | 510 | 60700 |
| | | 1450 | 1705 | 0 | 1270 | 1398 | 3800 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-6(2-4) | P-6(2-4)DL | P-6(4-6) | P-6(6-8) | P-6(8-10) | P-6(8-10)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2528-16 | T2528-16DL | T2528-17 | T2528-18 | T2528-19 | T2528-19DL |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 2.0 | 20.0 | 5.0 | 5.0 | 1.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 240 U | 2400 UD | 3000 U | 3100 U | 390 J | 680 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 660 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 220 U | 2200 UD | 2800 U | 2900 U | 130 U | 630 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 210 U | 2100 UD | 2700 U | 2700 U | 120 U | 610 UD |
| 2,4-Dichlorophenol | 120-83-2 | 270 U | 2700 UD | 3400 U | 3500 U | 150 U | 780 UD |
| 2,4-Dimethylphenol | 105-67-9 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 650 UD |
| 2,4-Dinitrophenol | 51-28-5 | 1200 U | 12000 UD | 16000 U | 16000 U | 700 U | 3500 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 60 U | 60 U | 67 U | 67 U | 2700 U | 2700 U |
| 2,6-Dinitrotoluene | 606-20-2 | 58 U | 58 U | 64 U | 64 U | 2600 U | 2600 U |
| 2-Chloronaphthalene | 91-58-7 | 240 U | 2400 UD | 3000 U | 3100 U | 140 U | 680 UD |
| 2-Chlorophenol | 95-57-8 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 660 UD |
| 2-Methylnaphthalene | 91-57-6 | 500 J | 2400 UD | 3000 U | 3100 U | 8200 E | 8800 D |
| 2-Methylphenol | 95-48-7 | 240 U | 2400 UD | 3000 U | 3100 U | 140 U | 680 UD |
| 2-Nitroaniline | 88-74-4 | 180 U | 1800 UD | 2300 U | 2400 U | 100 U | 520 UD |
| 2-Nitrophenol | 88-75-5 | 220 U | 2200 UD | 2800 U | 2900 U | 130 U | 630 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 250 U | 2500 UD | 3100 U | 3200 U | 140 U | 700 UD |
| 3+4-Methylphenols | 106-44-5 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 650 UD |
| 3-Nitroaniline | 99-09-2 | 190 U | 1900 UD | 2400 U | 2400 U | 110 U | 540 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 280 U | 2800 UD | 3500 U | 3600 U | 160 U | 800 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 220 U | 2200 UD | 2700 U | 2800 U | 120 U | 620 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 200 U | 2000 UD | 2500 U | 2600 U | 110 U | 570 UD |
| 4-Chloroaniline | 106-47-8 | 170 U | 1700 UD | 2200 U | 2200 U | 98 U | 490 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 650 UD |
| 4-Nitroaniline | 100-01-6 | 250 U | 2500 UD | 3100 U | 3200 U | 140 U | 700 UD |
| 4-Nitrophenol | 100-02-7 | 180 U | 1800 UD | 2300 U | 2300 U | 100 U | 510 UD |
| Acenaphthene | 83-32-9 | 2300 | 2600 UD | 3200 U | 3300 U | 9600 E | 10000 D |
| Acenaphthylene | 208-96-8 | 240 U | 2400 UD | 3000 U | 3000 U | 460 J | 670 UD |
| Acetophenone | 98-86-2 | 210 U | 2100 UD | 2700 U | 2700 U | 120 U | 600 UD |
| Anthracene | 120-12-7 | 5000 | 4000 JD | 3400 J | 2800 U | 7900 E | 8900 D |
| Atrazine | 1912-24-9 | 220 U | 2200 UD | 2800 U | 2900 U | 130 U | 630 UD |
| Benzaldehyde | 100-52-7 | 300 U | 3000 UD | 3700 U | 3800 U | 170 U | 850 UD |
| Benzo(a)anthracene | 56-55-3 | 8900 | 8900 JD | 7800 J | 7800 J | 3600 | 3700 JD |
| Benzo(a)pyrene | 50-32-8 | 8600 | 7000 JD | 7400 J | 7800 J | 3700 | 2800 JD |
| Benzo(b)fluoranthene | 205-99-2 | 13000 E | 8800 JD | 9600 J | 8300 J | 5500 | 3500 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 1600 | 3400 JD | 3600 J | 4400 J | 820 J | 1400 JD |
| Benzo(k)fluoranthene | 207-08-9 | 3500 | 3200 UD | 4000 U | 4100 U | 1100 | 1100 JD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 240 U | 2400 UD | 3000 U | 3100 U | 140 U | 680 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 650 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 280 U | 2800 UD | 3500 U | 3600 U | 160 U | 790 UD |
| Butylbenzylphthalate | 85-68-7 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 670 UD |
| Caprolactam | 105-60-2 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 660 UD |
| Carbazole | 86-74-8 | 2000 | 2200 UD | 2800 U | 2900 U | 660 J | 640 JD |
| Chrysene | 218-01-9 | 7900 | 7800 JD | 8700 J | 7800 J | 3300 | 3300 JD |
| Dibenz(a,h)anthracene | 53-70-3 | 180 U | 1800 UD | 2300 U | 2300 U | 100 U | 520 UD |
| Dibenzofuran | 132-64-9 | 1400 J | 2400 UD | 3000 U | 3100 U | 7600 E | 6900 D |
| Diethylphthalate | 84-66-2 | 250 U | 2500 UD | 3100 U | 3200 U | 140 U | 710 UD |
| Dimethylphthalate | 131-11-3 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 660 UD |
| Di-n-butylphthalate | 84-74-2 | 220 U | 2200 UD | 2800 U | 2800 U | 130 U | 630 UD |
| Di-n-octyl phthalate | 117-84-0 | 250 U | 2500 UD | 3100 U | 3200 U | 140 U | 700 UD |
| Fluoranthene | 206-44-0 | 21000 E | 20000 D | 18000 | 17000 J | 11000 E | 12000 D |
| Fluorene | 86-73-7 | 2000 | 2400 UD | 3100 U | 3200 U | 8800 E | 8100 D |
| Hexachlorobenzene | 118-74-1 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 660 UD |
| Hexachlorobutadiene | 87-68-3 | 220 U | 2200 UD | 2800 U | 2900 U | 130 U | 630 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 230 U | 2300 UD | 2900 U | 3000 U | 130 U | 660 UD |
| Hexachloroethane | 67-72-1 | 250 U | 2500 UD | 3100 U | 3200 U | 140 U | 700 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 690 J | 3100 JD | 2300 U | 2600 J | 450 J | 1100 JD |
| Isophorone | 78-59-1 | 220 U | 2200 UD | 2700 U | 2800 U | 120 U | 620 UD |
| Naphthalene | 91-20-3 | 2000 | 2500 UD | 4100 J | 3200 U | 6600 | 7000 D |
| Nitrobenzene | 98-95-3 | 99 U | 99 U | 99 U | 99 U | 4100 U | 4100 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 240 U | 2400 UD | 3000 U | 3100 U | 140 U | 680 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 240 U | 2400 UD | 3000 U | 3100 U | 140 U | 680 UD |
| Pentachlorophenol | 87-86-5 | 340 U | 3400 UD | 4200 U | 4300 U | 190 U | 950 UD |
| Phenanthrene | 85-01-8 | 18000 E | 18000 D | 18000 J | 10000 J | 14000 E | 18000 D |
| Phenol | 108-95-2 | 220 U | 2200 UD | 2800 U | 2800 U | 120 U | 620 UD |
| Pyrene | 129-00-0 | 18000 E | 19000 D | 19000 | 16000 J | 9900 E | 11000 D |
| | | | | | | | |
| | | 116390 | 100100 | 99600 | 81000 | 103480 | 108240 |
| | | 19700 | 0 | 17800 | 14800 | 18070 | 0 |

## Queens West Development-Parcel 9

Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-6(10-12) | P-6(10-12)DL | P-6(10-12)DL2 |
|---|---|---|---|---|
| Lab Sample Number | | T2528-20 | T2528-20DL | T2528-20DL2 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 10.0 | 100.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | |
| 1,1-Biphenyl | 92-52-4 | 25000 E | 72000 ED | 43000 D |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 130 U | 1300 UD | 5300 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 130 U | 1300 UD | 5100 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 120 U | 1200 UD | 4900 UD |
| 2,4-Dichlorophenol | 120-83-2 | 150 U | 1500 UD | 6100 UD |
| 2,4-Dimethylphenol | 105-67-9 | 130 U | 1300 UD | 5200 UD |
| 2,4-Dinitrophenol | 51-28-5 | 700 U | 7000 UD | 28000 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 210 U | 210 U | 2100 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 210 U | 210 U | 2100 UD |
| 2-Chloronaphthalene | 91-58-7 | 140 U | 1400 UD | 5600 UD |
| 2-Chlorophenol | 95-57-8 | 130 U | 1300 UD | 5300 UD |
| 2-Methylnaphthalene | 91-57-6 | 310000 E | 540000 ED | 230000 D |
| 2-Methylphenol | 95-48-7 | 140 U | 1400 UD | 5500 UD |
| 2-Nitroaniline | 88-74-4 | 100 U | 1000 UD | 4200 UD |
| 2-Nitrophenol | 88-75-5 | 130 U | 1300 UD | 5100 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 140 U | 1400 UD | 5700 UD |
| 3+4-Methylphenols | 106-44-5 | 130 U | 1300 UD | 5200 UD |
| 3-Nitroaniline | 99-09-2 | 110 U | 1100 UD | 4300 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 160 U | 1600 UD | 6400 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 120 U | 1200 UD | 4900 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 110 U | 1100 UD | 4600 UD |
| 4-Chloroaniline | 106-47-8 | 97 U | 970 UD | 3900 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 130 U | 1300 UD | 5200 UD |
| 4-Nitroaniline | 100-01-6 | 140 U | 1400 UD | 5600 UD |
| 4-Nitrophenol | 100-02-7 | 100 U | 1000 UD | 4100 UD |
| Acenaphthene | 83-32-9 | 15000 E | 110000 ED | 87000 D |
| Acenaphthylene | 208-96-8 | 3200 | 5700 JD | 5400 UD |
| Acetophenone | 98-86-2 | 120 U | 1200 UD | 4800 UD |
| Anthracene | 120-12-7 | 24000 E | 52000 D | 27000 JD |
| Atrazine | 1912-24-9 | 130 U | 1300 UD | 5100 UD |
| Benzaldehyde | 100-52-7 | 170 U | 1700 UD | 6800 UD |
| Benzo(a)anthracene | 56-55-3 | 7100 E | 6900 JD | 4600 UD |
| Benzo(a)pyrene | 50-32-8 | 2600 | 2000 JD | 5300 UD |
| Benzo(b)fluoranthene | 205-99-2 | 3800 | 2400 JD | 3600 UD |
| Benzo(g,h,i)perylene | 191-24-2 | 250 J | 1400 UD | 5500 UD |
| Benzo(k)fluoranthene | 207-08-9 | 1300 | 1800 UD | 7300 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 130 U | 1300 UD | 5400 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 130 U | 1300 UD | 5200 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 160 U | 1600 UD | 6400 UD |
| Butylbenzylphthalate | 85-68-7 | 130 U | 1300 UD | 5400 UD |
| Caprolactam | 105-60-2 | 130 U | 1300 UD | 5300 UD |
| Carbazole | 86-74-8 | 26000 E | 20000 D | 7900 JD |
| Chrysene | 218-01-9 | 5400 | 5500 JD | 5900 UD |
| Dibenz(a,h)anthracene | 53-70-3 | 100 U | 1000 UD | 4200 UD |
| Dibenzofuran | 132-64-9 | 15000 E | 110000 ED | 81000 D |
| Diethylphthalate | 84-66-2 | 140 U | 1400 UD | 5700 UD |
| Dimethylphthalate | 131-11-3 | 130 U | 1300 UD | 5300 UD |
| Di-n-butylphthalate | 84-74-2 | 120 U | 1200 UD | 5000 UD |
| Di-n-octyl phthalate | 117-84-0 | 140 U | 1400 UD | 5600 UD |
| Fluoranthene | 206-44-0 | 53000 E | 50000 D | 24000 JD |
| Fluorene | 86-73-7 | 31000 E | 96000 ED | 65000 D |
| Hexachlorobenzene | 118-74-1 | 130 U | 1300 UD | 5300 UD |
| Hexachlorobutadiene | 87-68-3 | 130 U | 1300 UD | 5100 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 130 U | 1300 UD | 5300 UD |
| Hexachloroethane | 67-72-1 | 140 U | 1400 UD | 5600 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 130 J | 1000 UD | 4200 UD |
| Isophorone | 78-59-1 | 120 U | 1200 UD | 5000 UD |
| Naphthalene | 91-20-3 | 410000 E | 770000 ED | 490000 ED |
| Nitrobenzene | 98-95-3 | 320 U | 320 U | 3200 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 140 U | 1400 UD | 5500 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 130 U | 1300 UD | 5400 UD |
| Pentachlorophenol | 87-86-5 | 190 U | 1900 UD | 7700 UD |
| Phenanthrene | 85-01-8 | 110000 E | 150000 ED | 110000 D |
| Phenol | 108-95-2 | 120 U | 1200 UD | 5000 UD |
| Pyrene | 129-00-0 | 19000 E | 40000 D | 17000 JD |
| | | | | |
| | | 1061780 | 2032500 | 1181900 |
| | | 31000 | 0 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-5(10-12)DL3 | P-6(12-14) | P-6(12-14)DL | P-6(12-14)DL2 | P-6(14-16) | P-6(14-16)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2528-20DL3 | T2528-21 | T2528-21DL | T2528-21DL2 | T2528-22 | T2528-22DL |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1000.0 | 1.0 | 10.0 | 100.0 | 1.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 54000 UD | 7400 E | 11000 D | 8400 JD | 4000 E | 2700 D |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 53000 UD | 66 U | 660 UD | 5300 UD | 64 U | 320 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 51000 UD | 63 U | 630 UD | 5100 UD | 61 U | 300 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 49000 UD | 61 U | 610 UD | 4900 UD | 59 U | 290 UD |
| 2,4-Dichlorophenol | 120-83-2 | 61000 UD | 76 U | 760 UD | 6100 UD | 74 U | 370 UD |
| 2,4-Dimethylphenol | 105-67-9 | 52000 UD | 65 U | 650 UD | 5200 UD | 680 | 360 JD |
| 2,4-Dinitrophenol | 51-28-5 | 280000 UD | 350 U | 3500 UD | 28000 UD | 340 U | 1700 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 2100 UD | 2700 U | 2700 U | 2700 U | 2700 U | 120 U |
| 2,6-Dinitrotoluene | 606-20-2 | 2100 UD | 2600 U | 2600 U | 2600 U | 2600 U | 120 U |
| 2-Chloronaphthalene | 91-58-7 | 55000 UD | 68 U | 680 UD | 5500 UD | 66 U | 330 UD |
| 2-Chlorophenol | 95-57-8 | 53000 UD | 66 U | 660 UD | 5300 UD | 64 U | 320 UD |
| 2-Methylnaphthalene | 91-57-6 | 240000 JD | 43000 E | 47000 ED | 57000 D | 41000 E | 28000 ED |
| 2-Methylphenol | 95-48-7 | 55000 UD | 69 U | 690 UD | 5500 UD | 66 U | 330 UD |
| 2-Nitroaniline | 88-74-4 | 42000 UD | 52 U | 520 UD | 4200 UD | 51 U | 250 UD |
| 2-Nitrophenol | 88-75-5 | 51000 UD | 63 U | 630 UD | 5100 UD | 61 U | 310 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 57000 UD | 71 U | 710 UD | 5700 UD | 68 U | 340 UD |
| 3+4-Methylphenols | 106-44-5 | 52000 UD | 65 U | 650 UD | 5200 UD | 63 U | 310 UD |
| 3-Nitroaniline | 99-09-2 | 43000 UD | 54 U | 540 UD | 4300 UD | 52 U | 260 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 64000 UD | 80 U | 800 UD | 6400 UD | 77 U | 390 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 49000 UD | 62 U | 620 UD | 4900 UD | 60 U | 300 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 46000 UD | 57 U | 570 UD | 4600 UD | 55 U | 280 UD |
| 4-Chloroaniline | 106-47-8 | 39000 UD | 49 U | 490 UD | 3900 UD | 47 U | 240 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 52000 UD | 65 U | 650 UD | 5200 UD | 63 U | 320 UD |
| 4-Nitroaniline | 100-01-6 | 56000 UD | 70 U | 700 UD | 5600 UD | 68 U | 340 UD |
| 4-Nitrophenol | 100-02-7 | 41000 UD | 51 U | 510 UD | 4100 UD | 49 U | 250 UD |
| Acenaphthene | 83-32-9 | 77000 JD | 12000 E | 21000 D | 19000 JD | 4300 E | 3000 D |
| Acenaphthylene | 208-96-8 | 54000 UD | 870 | 770 JD | 5400 UD | 120 J | 320 UD |
| Acetophenone | 98-86-2 | 48000 UD | 60 U | 600 UD | 4800 UD | 58 U | 290 UD |
| Anthracene | 120-12-7 | 50000 UD | 6400 E | 9000 D | 7600 JD | 980 | 770 JD |
| Atrazine | 1912-24-9 | 51000 UD | 63 U | 630 UD | 5100 UD | 61 U | 310 UD |
| Benzaldehyde | 100-52-7 | 68000 UD | 85 U | 850 UD | 6800 UD | 82 U | 410 UD |
| Benzo(a)anthracene | 56-55-3 | 46000 UD | 2400 | 2060 JD | 4600 UD | 120 J | 280 UD |
| Benzo(a)pyrene | 50-32-8 | 53000 UD | 2200 | 1400 JD | 5300 UD | 64 U | 320 UD |
| Benzo(b)fluoranthene | 205-99-2 | 36000 UD | 3000 | 1800 JD | 3600 UD | 54 J | 220 UD |
| Benzo(g,h,i)perylene | 191-24-2 | 55000 UD | 350 J | 680 UD | 5500 UD | 66 U | 330 UD |
| Benzo(k)fluoranthene | 207-08-9 | 73000 UD | 990 | 910 UD | 7300 UD | 88 U | 440 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 54000 UD | 68 U | 680 UD | 5400 UD | 66 U | 330 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 52000 UD | 65 U | 650 UD | 5200 UD | 63 U | 320 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 64000 UD | 79 U | 790 UD | 6400 UD | 81 J | 380 UD |
| Butylbenzylphthalate | 85-68-7 | 54000 UD | 67 U | 670 UD | 5400 UD | 64 U | 320 UD |
| Caprolactam | 105-60-2 | 53000 UD | 66 U | 660 UD | 5300 UD | 64 U | 320 UD |
| Carbazole | 86-74-8 | 50000 UD | 3300 E | 2500 JD | 5000 UD | 320 J | 320 JD |
| Chrysene | 218-01-9 | 59000 UD | 2200 | 1800 JD | 5900 UD | 76 J | 360 UD |
| Dibenz(a,h)anthracene | 53-70-3 | 42000 UD | 52 U | 520 UD | 4200 UD | 50 U | 250 UD |
| Dibenzofuran | 132-64-9 | 73000 JD | 12000 E | 20000 D | 18000 JD | 4600 E | 3100 D |
| Diethylphthalate | 84-66-2 | 57000 UD | 71 U | 710 UD | 5700 UD | 69 U | 340 UD |
| Dimethylphthalate | 131-11-3 | 53000 UD | 66 U | 660 UD | 5300 UD | 64 U | 320 UD |
| Di-n-butylphthalate | 84-74-2 | 50000 UD | 63 U | 630 UD | 5000 UD | 61 U | 300 UD |
| Di-n-octyl phthalate | 117-84-0 | 56000 UD | 70 U | 700 UD | 5600 UD | 68 U | 340 UD |
| Fluoranthene | 206-44-0 | 49000 UD | 9100 E | 9800 D | 7400 JD | 830 | 640 JD |
| Fluorene | 86-73-7 | 56000 UD | 10000 E | 16000 D | 14000 JD | 3600 E | 2200 D |
| Hexachlorobenzene | 118-74-1 | 53000 UD | 66 U | 660 UD | 5300 UD | 64 U | 320 UD |
| Hexachlorobutadiene | 87-68-3 | 51000 UD | 63 U | 630 UD | 5100 UD | 61 U | 310 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 53000 UD | 66 U | 660 UD | 5300 UD | 64 U | 320 UD |
| Hexachloroethane | 67-72-1 | 56000 UD | 70 U | 700 UD | 5600 UD | 68 U | 340 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 42000 UD | 160 J | 540 JD | 4200 UD | 51 U | 250 UD |
| Isophorone | 78-59-1 | 50000 UD | 62 U | 620 UD | 5000 UD | 60 U | 300 UD |
| Naphthalene | 91-20-3 | 890000 D | 85000 E | 81000 ED | 140000 D | 110000 E | 91000 ED |
| Nitrobenzene | 98-95-3 | 3200 UD | 4000 U | 4000 U | 4100 U | 4100 U | 180 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 55000 UD | 68 U | 680 UD | 5500 UD | 66 U | 330 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 54000 UD | 68 U | 680 UD | 5400 UD | 66 U | 330 UD |
| Pentachlorophenol | 87-86-5 | 77000 UD | 95 U | 950 UD | 7700 UD | 92 U | 460 UD |
| Phenanthrene | 85-01-8 | 100000 JD | 18000 E | 27000 D | 29000 JD | 4600 E | 3200 D |
| Phenol | 108-95-2 | 50000 UD | 62 U | 620 UD | 5000 UD | 60 U | 300 UD |
| Pyrene | 129-00-0 | 58000 UD | 7000 E | 7500 D | 6000 JD | 710 | 470 JD |
| | | | | | | | |
| | | 1380000 | 225370 | 260110 | 306400 | 176101 | 135760 |
| | | 0 | 29300 | 0 | 0 | 44720 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-6(14-16)DL2 | P-6(20-22) | P-6(20-22)DL | FIELDBLANK | P-7(0-2) | P-7(2-4) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2528-22DL2 | T2528-25 | T2528-25DL | T2528-27 | T2527-25 | T2527-26 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | WATER | SOIL | SOIL |
| Dilution Factor | | 100.0 | 1.0 | 10.0 | 1.0 | 5.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/L | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 5400 UD | 63 U | 630 UD | 1.5 U | 300 U | 1400 J |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 5300 UD | 61 U | 610 UD | 1.3 U | 290 U | 580 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 5100 UD | 58 U | 580 UD | 1.3 U | 270 U | 550 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 4900 UD | 56 U | 560 UD | 1.2 U | 260 U | 530 U |
| 2,4-Dichlorophenol | 120-83-2 | 6100 UD | 70 U | 700 UD | 1.5 U | 330 U | 670 U |
| 2,4-Dimethylphenol | 105-67-9 | 5200 UD | 60 U | 600 UD | 1.2 U | 280 U | 570 U |
| 2,4-Dinitrophenol | 51-28-5 | 28000 UD | 330 U | 3300 UD | 3.6 U | 1500 U | 3100 U |
| 2,4-Dinitrotoluene | 121-14-2 | 120 U | 610 UD | 610 UD | 120 U | 260 U | 530 U |
| 2,6-Dinitrotoluene | 606-20-2 | 120 U | 580 UD | 580 UD | 120 U | 250 U | 510 U |
| 2-Chloronaphthalene | 91-58-7 | 5500 UD | 63 U | 630 UD | 1.4 U | 300 U | 600 U |
| 2-Chlorophenol | 95-57-8 | 5300 UD | 61 U | 610 UD | 1.2 U | 290 U | 570 U |
| 2-Methylnaphthalene | 91-57-6 | 19000 JD | 4900 E | 5900 D | 1.1 U | 300 U | 7000 |
| 2-Methylphenol | 95-48-7 | 5500 UD | 63 U | 630 UD | 1.6 U | 300 U | 600 U |
| 2-Nitroaniline | 88-74-4 | 4200 UD | 48 U | 480 UD | 1.1 U | 230 U | 460 U |
| 2-Nitrophenol | 88-75-5 | 5100 UD | 59 U | 590 UD | 1.4 U | 280 U | 550 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 5700 UD | 65 U | 650 UD | 1.1 U | 310 U | 620 U |
| 3+4-Methylphenols | 106-44-5 | 5200 UD | 60 U | 600 UD | 1.4 U | 280 U | 840 J |
| 3-Nitroaniline | 99-09-2 | 4300 UD | 50 U | 500 UD | 1.1 U | 230 U | 470 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 6400 UD | 74 U | 740 UD | 1.7 UL | 350 U | 700 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 4900 UD | 57 U | 570 UD | 1.5 U | 270 U | 540 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 4600 UD | 53 U | 530 UD | 1.4 U | 250 U | 500 U |
| 4-Chloroaniline | 106-47-8 | 3900 UD | 45 U | 450 UD | 0.890 U | 210 U | 430 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 5200 UD | 60 U | 600 UD | 1.4 U | 280 U | 570 U |
| 4-Nitroaniline | 100-01-6 | 5600 UD | 65 U | 650 UD | 1.2 U | 310 U | 610 U |
| 4-Nitrophenol | 100-02-7 | 4100 UD | 47 U | 470 UD | 3.2 U | 220 U | 460 U |
| Acenaphthene | 83-32-9 | 5900 UD | 1200 | 1200 JD | 1.4 U | 320 U | 17000 |
| Acenaphthylene | 208-96-8 | 5400 UD | 62 U | 620 UD | 1.3 U | 290 U | 580 U |
| Acetophenone | 98-86-2 | 4800 UD | 56 U | 560 UD | 1.3 U | 260 U | 530 U |
| Anthracene | 120-12-7 | 5000 UD | 350 J | 570 UD | 1.5 U | 270 U | 25000 |
| Atrazine | 1912-24-9 | 5100 UD | 58 U | 580 UD | 1.3 U | 270 U | 550 U |
| Benzaldehyde | 100-52-7 | 6800 UD | 78 U | 780 UD | 1.7 U | 370 U | 740 U |
| Benzo(a)anthracene | 56-55-3 | 4600 UD | 53 U | 530 UD | 1.2 U | 530 J | 30000 E |
| Benzo(a)pyrene | 50-32-8 | 5300 UD | 61 U | 610 UD | 1.2 U | 420 J | 28000 |
| Benzo(b)fluoranthene | 205-99-2 | 3600 UD | 42 U | 420 UD | 0.780 U | 480 J | 33000 E |
| Benzo(g,h,i)perylene | 191-24-2 | 5500 UD | 63 U | 630 UD | 1.1 U | 300 U | 6300 |
| Benzo(k)fluoranthene | 207-08-9 | 7300 UD | 84 U | 840 UD | 2.0 U | 380 U | 10000 |
| bis(2-Chloroethoxy)methane | 111-91-1 | 5400 UD | 63 U | 630 UD | 1.4 U | 290 U | 590 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 5200 UD | 60 U | 600 UD | 1.5 U | 280 U | 570 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 6400 UD | 73 U | 730 UD | 7.3 J | 340 U | 690 U |
| Butylbenzylphthalate | 85-68-7 | 5400 UD | 62 U | 620 UD | 1.5 U | 290 U | 580 U |
| Caprolactam | 105-60-2 | 5300 UD | 61 U | 610 UD | 1.3 U | 290 U | 580 U |
| Carbazole | 86-74-8 | 5000 UD | 240 J | 580 UD | 1.3 U | 270 U | 14000 |
| Chrysene | 218-01-9 | 5900 UD | 68 U | 680 UD | 1.7 U | 460 J | 27000 |
| Dibenz(a,h)anthracene | 53-70-3 | 4200 UD | 48 U | 480 UD | 0.900 U | 220 U | 630 J |
| Dibenzofuran | 132-64-9 | 5500 UD | 1200 | 1200 JD | 1.3 U | 300 U | 11000 |
| Diethylphthalate | 84-66-2 | 5700 UD | 66 U | 660 UD | 1.4 U | 310 U | 620 U |
| Dimethylphthalate | 131-11-3 | 5300 UD | 61 U | 610 UD | 1.3 U | 290 U | 580 U |
| Di-n-butylphthalate | 84-74-2 | 5000 UD | 58 U | 580 UD | 1.4 U | 270 U | 550 U |
| Di-n-octyl phthalate | 117-84-0 | 5600 UD | 65 U | 650 UD | 1.3 U | 300 U | 610 U |
| Fluoranthene | 206-44-0 | 4900 UD | 340 J | 570 UD | 1.3 U | 950 J | 59000 E |
| Fluorene | 86-73-7 | 5800 UD | 1100 | 1100 JD | 1.5 U | 300 U | 17000 |
| Hexachlorobenzene | 118-74-1 | 5300 UD | 61 U | 610 UD | 1.3 U | 290 U | 580 U |
| Hexachlorobutadiene | 87-68-3 | 5100 UD | 59 U | 590 UD | 1.4 U | 280 U | 550 U |
| Hexachlorocyclopentadiene | 77-47-4 | 5300 UD | 61 U | 610 UD | 1.2 U | 290 U | 570 U |
| Hexachloroethane | 67-72-1 | 5600 UD | 65 U | 650 UD | 1.2 U | 300 U | 610 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 4200 UD | 48 U | 480 UD | 0.860 U | 230 U | 4100 |
| Isophorone | 78-59-1 | 5000 UD | 57 U | 570 UD | 1.3 U | 270 U | 540 U |
| Naphthalene | 91-20-3 | 160000 D | 12000 E | 21000 D | 1.4 U | 310 U | 14000 |
| Nitrobenzene | 98-95-3 | 180 U | 900 UD | 900 UD | 180 U | 390 U | 790 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 5500 UD | 63 U | 630 UD | 1.4 U | 300 U | 600 U |
| N-Nitrosodiphenylamine | 86-30-6 | 5400 UD | 63 U | 630 UD | 1.3 U | 300 U | 590 U |
| Pentachlorophenol | 87-86-5 | 7700 UD | 88 U | 880 UD | 1.6 U | 410 U | 830 U |
| Phenanthrene | 85-01-8 | 5300 UD | 1300 | 1400 JD | 1.5 U | 690 J | 58000 E |
| Phenol | 108-95-2 | 5000 UD | 58 U | 580 UD | 1.3 U | 270 U | 550 U |
| Pyrene | 129-00-0 | 5800 UD | 190 J | 670 UD | 1.5 U | 1000 J | 52000 E |
| | | | | | | | |
| | | 179000 | 22820 | 31800 | 7.3 | | |
| | | 0 | 11540 | 0 | 1.9 | | |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-7(2-4)DL | P-7(4-6) | P-7(4-6)DL | P-7(6-8) | P-7(6-8)DL | P-7(8-10) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-26DL | T2528-01 | T2528-01DL | T2528-02 | T2528-02DL | T2528-03 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 50.0 | 5.0 | 50.0 | 5.0 | 20.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 3000 UD | 3400 J | 32000 UD | 860 J | 2500 UD | 66 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 2900 UD | 3100 U | 31000 UD | 620 U | 2500 UD | 65 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 2800 UD | 3000 U | 30000 UD | 590 U | 2400 UD | 62 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 2600 UD | 2900 U | 29000 UD | 570 U | 2300 UD | 59 U |
| 2,4-Dichlorophenol | 120-83-2 | 3300 UD | 3600 U | 36000 UD | 710 U | 2900 UD | 74 U |
| 2,4-Dimethylphenol | 105-67-9 | 2900 UD | 3100 U | 31000 UD | 610 U | 2400 UD | 64 U |
| 2,4-Dinitrophenol | 51-28-5 | 15000 UD | 17000 U | 170000 UD | 3300 U | 13000 UD | 340 U |
| 2,4-Dinitrotoluene | 121-14-2 | 2600 UD | 2900 U | 29000 UD | 570 U | 2300 UD | 59 U |
| 2,6-Dinitrotoluene | 606-20-2 | 2500 UD | 2800 U | 28000 UD | 550 U | 2200 UD | 57 U |
| 2-Chloronaphthalene | 91-58-7 | 3000 UD | 3200 U | 32000 UD | 640 U | 2600 UD | 67 U |
| 2-Chlorophenol | 95-57-8 | 2900 UD | 3100 U | 31000 UD | 620 U | 2500 UD | 64 U |
| 2-Methylnaphthalene | 91-57-6 | 6100 JD | 17000 J | 33000 UD | 4300 | 2600 UD | 67 U |
| 2-Methylphenol | 95-48-7 | 3000 UD | 3200 U | 32000 UD | 640 U | 2600 UD | 67 U |
| 2-Nitroaniline | 88-74-4 | 2300 UD | 2500 U | 25000 UD | 490 U | 2000 UD | 51 U |
| 2-Nitrophenol | 88-75-5 | 2800 UD | 3000 U | 30000 UD | 590 U | 2400 UD | 62 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 3100 UD | 3300 U | 33000 UD | 660 U | 2600 UD | 69 U |
| 3+4-Methylphenols | 106-44-5 | 2800 UD | 3100 U | 31000 UD | 610 U | 2400 UD | 64 U |
| 3-Nitroaniline | 99-09-2 | 2300 UD | 2500 U | 25000 UD | 500 U | 2000 UD | 52 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 3500 UD | 3800 U | 38000 UD | 750 U | 3000 UD | 78 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 2700 UD | 2900 U | 29000 UD | 580 U | 2300 UD | 60 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 2500 UD | 2700 U | 27000 UD | 530 U | 2100 UD | 56 U |
| 4-Chloroaniline | 106-47-8 | 2100 UD | 2300 U | 23000 UD | 460 U | 1800 UD | 48 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 2800 UD | 3100 U | 31000 UD | 610 U | 2400 UD | 64 U |
| 4-Nitroaniline | 100-01-6 | 3100 UD | 3300 U | 33000 UD | 660 U | 2600 UD | 69 U |
| 4-Nitrophenol | 100-02-7 | 2200 UD | 2400 U | 24000 UD | 480 U | 1900 UD | 50 U |
| Acenaphthene | 83-32-9 | 13000 JD | 59000 | 51000 JD | 17000 | 6200 JD | 72 U |
| Acenaphthylene | 208-96-8 | 2900 UD | 3200 U | 32000 UD | 630 U | 2500 UD | 65 U |
| Acetophenone | 98-86-2 | 2600 UD | 2900 U | 29000 UD | 560 U | 2300 UD | 59 U |
| Anthracene | 120-12-7 | 22000 D | 110000 | 82000 JD | 26000 | 11000 JD | 61 U |
| Atrazine | 1912-24-9 | 2800 UD | 3000 U | 30000 UD | 590 U | 2400 UD | 62 U |
| Benzaldehyde | 100-52-7 | 3700 UD | 4000 U | 40000 UD | 790 U | 3200 UD | 83 U |
| Benzo(a)anthracene | 56-55-3 | 28000 D | 120000 | 110000 JD | 41000 E | 17000 D | 56 U |
| Benzo(a)pyrene | 50-32-8 | 18000 D | 100000 | 77000 JD | 36000 E | 11000 JD | 64 U |
| Benzo(b)fluoranthene | 205-99-2 | 20000 D | 140000 | 88000 JD | 54000 E | 13000 JD | 44 U |
| Benzo(g,h,i)perylene | 191-24-2 | 7400 JD | 16000 J | 32000 UD | 5700 | 4400 JD | 67 U |
| Benzo(k)fluoranthene | 207-08-9 | 7700 JD | 50000 | 43000 UD | 14000 | 4000 JD | 89 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 3000 UD | 3200 U | 32000 UD | 630 U | 2500 UD | 66 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 2800 UD | 3100 U | 31000 UD | 610 U | 2400 UD | 64 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 3500 UD | 3700 U | 37000 UD | 740 U | 3000 UD | 200 J |
| Butylbenzylphthalate | 85-68-7 | 2900 UD | 3200 U | 32000 UD | 620 U | 2500 UD | 65 U |
| Caprolactam | 105-60-2 | 2900 UD | 3100 U | 31000 UD | 620 U | 2500 UD | 65 U |
| Carbazole | 86-74-8 | 11000 JD | 49000 | 42000 JD | 12000 | 4700 JD | 61 U |
| Chrysene | 218-01-9 | 23000 D | 110000 | 100000 JD | 37000 E | 15000 JD | 72 U |
| Dibenz(a,h)anthracene | 53-70-3 | 2300 UD | 2400 U | 24000 UD | 600 J | 1900 UD | 50 U |
| Dibenzofuran | 132-64-9 | 8400 JD | 32000 | 32000 UD | 7800 | 3000 JD | 67 U |
| Diethylphthalate | 84-66-2 | 3100 UD | 3400 U | 34000 UD | 670 U | 2700 UD | 69 U |
| Dimethylphthalate | 131-11-3 | 2900 UD | 3100 U | 31000 UD | 620 U | 2500 UD | 65 U |
| Di-n-butylphthalate | 84-74-2 | 2700 UD | 3000 U | 30000 UD | 590 U | 2400 UD | 61 U |
| Di-n-octyl phthalate | 117-84-0 | 3100 UD | 3300 U | 33000 UD | 660 U | 2600 UD | 69 U |
| Fluoranthene | 206-44-0 | 61000 D | 270000 E | 260000 D | 68000 E | 37000 D | 89 J |
| Fluorene | 86-73-7 | 12000 JD | 50000 | 43000 JD | 13000 | 4500 JD | 68 U |
| Hexachlorobenzene | 118-74-1 | 2900 UD | 3100 U | 31000 UD | 620 U | 2500 UD | 64 U |
| Hexachlorobutadiene | 87-68-3 | 2800 UD | 3000 U | 30000 UD | 590 U | 2400 UD | 62 U |
| Hexachlorocyclopentadiene | 77-47-4 | 2900 UD | 3100 U | 31000 UD | 620 U | 2500 UD | 64 U |
| Hexachloroethane | 67-72-1 | 3100 UD | 3300 U | 33000 UD | 660 U | 2600 UD | 68 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 6500 JD | 6700 J | 28000 JD | 2100 J | 3800 JD | 51 U |
| Isophorone | 78-59-1 | 2700 UD | 2900 U | 29000 UD | 580 U | 2300 UD | 60 U |
| Naphthalene | 91-20-3 | 12000 JD | 27000 | 33000 UD | 5600 | 2600 UD | 69 U |
| Nitrobenzene | 98-95-3 | 3900 UD | 4300 U | 43000 UD | 840 U | 3400 UD | 88 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 3000 UD | 3200 U | 32000 UD | 640 U | 2600 UD | 67 U |
| N-Nitrosodiphenylamine | 86-30-6 | 3000 UD | 3200 U | 32000 UD | 640 U | 2500 UD | 66 U |
| Pentachlorophenol | 87-86-5 | 4200 UD | 4500 U | 45000 UD | 890 U | 3600 UD | 93 U |
| Phenanthrene | 85-01-8 | 73000 D | 280000 E | 340000 D | 67000 E | 44000 D | 130 J |
| Phenol | 108-95-2 | 2700 UD | 3000 U | 30000 UD | 580 U | 2300 UD | 61 U |
| Pyrene | 129-00-0 | 60000 D | 250000 E | 240000 D | 72000 E | 37000 D | 99 J |
| | | | 1690100 | 1461000 | 483860 | 215600 | 518 |
| | | | 257300 | 0 | 64700 | 0 | 1990 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-7(8-10)DUP | P-7(10-12) | P-7(12-14) | P-7(14-16) | P-7(16-18) | P-7(18-20) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2528-04 | T2528-05 | T2528-06 | T2528-07 | T2528-08 | T2528-09 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 67 U | 73 U | 67 U | 73 U | 67 U | 67 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 65 U | 72 U | 66 U | 71 U | 65 U | 66 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 62 U | 68 U | 62 U | 68 U | 62 U | 62 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 60 U | 65 U | 59 U | 65 U | 60 U | 60 U |
| 2,4-Dichlorophenol | 120-83-2 | 75 U | 82 U | 75 U | 82 U | 75 U | 75 U |
| 2,4-Dimethylphenol | 105-67-9 | 64 U | 71 U | 64 U | 70 U | 64 U | 65 U |
| 2,4-Dinitrophenol | 51-28-5 | 350 U | 380 U | 350 U | 380 U | 350 U | 350 U |
| 2,4-Dinitrotoluene | 121-14-2 | 60 U | 65 U | 59 U | 65 U | 60 U | 60 U |
| 2,6-Dinitrotoluene | 606-20-2 | 57 U | 63 U | 57 U | 62 U | 57 U | 57 U |
| 2-Chloronaphthalene | 91-58-7 | 67 U | 74 U | 67 U | 73 U | 67 U | 68 U |
| 2-Chlorophenol | 95-57-8 | 65 U | 71 U | 64 U | 70 U | 65 U | 65 U |
| 2-Methylnaphthalene | 91-57-6 | 86 J | 74 U | 68 U | 74 U | 68 U | 68 U |
| 2-Methylphenol | 95-48-7 | 67 U | 74 U | 67 U | 73 U | 68 U | 68 U |
| 2-Nitroaniline | 88-74-4 | 52 U | 56 U | 51 U | 56 U | 52 U | 52 U |
| 2-Nitrophenol | 88-75-5 | 62 U | 68 U | 62 U | 68 U | 63 U | 63 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 69 U | 76 U | 69 U | 76 U | 70 U | 70 U |
| 3+4-Methylphenols | 106-44-5 | 64 U | 70 U | 64 U | 70 U | 64 U | 64 U |
| 3-Nitroaniline | 99-09-2 | 53 U | 58 U | 53 U | 58 U | 53 U | 53 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 79 U | 86 U | 78 U | 86 U | 79 U | 79 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 61 U | 66 U | 60 U | 66 U | 61 U | 61 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 56 U | 61 U | 56 U | 61 U | 56 U | 56 U |
| 4-Chloroaniline | 106-47-8 | 48 U | 53 U | 48 U | 53 U | 48 U | 49 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 64 U | 70 U | 64 U | 70 U | 64 U | 64 U |
| 4-Nitroaniline | 100-01-6 | 69 U | 76 U | 69 U | 75 U | 69 U | 70 U |
| 4-Nitrophenol | 100-02-7 | 50 U | 55 U | 50 U | 55 U | 50 U | 50 U |
| Acenaphthene | 83-32-9 | 72 U | 770 | 72 U | 100 J | 72 U | 130 J |
| Acenaphthylene | 208-96-8 | 66 U | 72 U | 66 U | 72 U | 66 U | 66 U |
| Acetophenone | 98-86-2 | 59 U | 65 U | 59 U | 65 U | 59 U | 60 U |
| Anthracene | 120-12-7 | 82 J | 67 U | 83 J | 67 U | 61 U | 170 J |
| Atrazine | 1912-24-9 | 62 U | 68 U | 62 U | 68 U | 62 U | 62 U |
| Benzaldehyde | 100-52-7 | 83 U | 91 U | 83 U | 91 U | 83 U | 84 U |
| Benzo(a)anthracene | 56-55-3 | 72 J | 62 U | 97 J | 62 U | 79 J | 230 J |
| Benzo(a)pyrene | 50-32-8 | 66 U | 71 U | 72 J | 71 U | 65 U | 160 J |
| Benzo(b)fluoranthene | 205-99-2 | 45 U | 49 U | 86 J | 49 U | 45 U | 170 J |
| Benzo(g,h,i)perylene | 191-24-2 | 67 U | 73 U | 67 U | 73 U | 67 U | 69 J |
| Benzo(k)fluoranthene | 207-08-9 | 89 U | 98 U | 89 U | 97 U | 89 U | 90 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 67 U | 73 U | 66 U | 73 U | 67 U | 67 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 64 U | 70 U | 64 U | 70 U | 64 U | 64 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 190 J | 220 J | 150 J | 110 J | 100 J | 200 J |
| Butylbenzylphthalate | 85-68-7 | 66 U | 72 U | 65 U | 71 U | 66 U | 66 U |
| Caprolactam | 105-60-2 | 65 U | 71 U | 65 U | 71 U | 65 U | 66 U |
| Carbazole | 86-74-8 | 62 U | 68 U | 62 U | 67 U | 62 U | 120 J |
| Chrysene | 218-01-9 | 73 U | 80 U | 89 J | 79 U | 73 U | 190 J |
| Dibenz(a,h)anthracene | 53-70-3 | 51 U | 56 U | 51 U | 55 U | 51 U | 51 U |
| Dibenzofuran | 132-64-9 | 67 U | 73 U | 67 U | 73 U | 67 U | 72 J |
| Diethylphthalate | 84-66-2 | 70 U | 77 U | 70 U | 76 U | 70 U | 70 U |
| Dimethylphthalate | 131-11-3 | 65 U | 71 U | 65 U | 71 U | 65 U | 65 U |
| Di-n-butylphthalate | 84-74-2 | 62 U | 68 U | 62 U | 67 U | 62 U | 62 U |
| Di-n-octyl phthalate | 117-84-0 | 69 U | 76 U | 69 U | 75 U | 69 U | 69 U |
| Fluoranthene | 206-44-0 | 140 J | 75 J | 220 J | 66 U | 160 J | 530 |
| Fluorene | 86-73-7 | 68 U | 75 U | 68 U | 74 U | 69 U | 100 J |
| Hexachlorobenzene | 118-74-1 | 65 U | 71 U | 65 U | 71 U | 65 U | 65 U |
| Hexachlorobutadiene | 87-68-3 | 62 U | 68 U | 62 U | 68 U | 63 U | 63 U |
| Hexachlorocyclopentadiene | 77-47-4 | 65 U | 71 U | 64 U | 70 U | 65 U | 65 U |
| Hexachloroethane | 67-72-1 | 69 U | 75 U | 69 U | 75 U | 69 U | 69 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 52 U | 56 U | 51 U | 56 U | 52 U | 53 J |
| Isophorone | 78-59-1 | 61 U | 67 U | 61 U | 66 U | 61 U | 61 U |
| Naphthalene | 91-20-3 | 69 U | 76 U | 69 U | 75 U | 69 U | 99 J |
| Nitrobenzene | 98-95-3 | 89 U | 97 U | 88 U | 96 U | 89 U | 89 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 67 U | 74 U | 67 U | 73 U | 67 U | 67 U |
| N-Nitrosodiphenylamine | 86-30-6 | 67 U | 73 U | 67 U | 73 U | 67 U | 67 U |
| Pentachlorophenol | 87-86-5 | 94 U | 100 U | 94 U | 100 U | 94 U | 94 U |
| Phenanthrene | 85-01-8 | 270 J | 120 J | 300 J | 70 U | 210 J | 720 |
| Phenol | 108-95-2 | 61 U | 67 U | 61 U | 67 U | 62 U | 62 U |
| Pyrene | 129-00-0 | 190 J | 99 J | 210 J | 78 U | 160 J | 470 |
| | | 1030 | 1284 | 1307 | 210 | 709 | 3493 |
| | | 1980 | 2050 | 2100 | 2900 | 1600 | 2570 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-7(20-22) | P-7(22-24) | P-7(16-20) | P-8(10-12) | P-8(14-16) | P-8(14-16)DUP |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2528-10 | T2528-11 | T2528-12 | T2603-05 | T2603-06 | T2603-07 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 67 U | 67 U | 75 U | 72 U | 110 U | 65 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 66 U | 66 U | 73 U | 70 U | 110 U | 64 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 62 U | 63 U | 69 U | 66 U | 100 U | 60 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 60 U | 60 U | 67 U | 64 U | 97 U | 58 U |
| 2,4-Dichlorophenol | 120-83-2 | 75 U | 76 U | 84 U | 80 U | 120 U | 73 U |
| 2,4-Dimethylphenol | 105-67-9 | 65 U | 65 U | 72 U | 69 U | 100 U | 63 U |
| 2,4-Dinitrophenol | 51-28-5 | 350 U | 350 U | 390 U | 370 U | 560 U | 340 U |
| 2,4-Dinitrotoluene | 121-14-2 | 60 U | 60 U | 60 U | 64 U | 97 U | 58 U |
| 2,6-Dinitrotoluene | 606-20-2 | 58 U | 58 U | 58 U | 61 U | 93 U | 56 U |
| 2-Chloronaphthalene | 91-58-7 | 68 U | 68 U | 75 U | 72 U | 110 U | 65 U |
| 2-Chlorophenol | 95-57-8 | 65 U | 65 U | 72 U | 69 U | 100 U | 63 U |
| 2-Methylnaphthalene | 91-57-6 | 68 U | 68 U | 76 U | 73 U | 110 U | 66 U |
| 2-Methylphenol | 95-48-7 | 68 U | 68 U | 75 U | 72 U | 110 U | 66 U |
| 2-Nitroaniline | 88-74-4 | 52 U | 52 U | 58 U | 55 U | 83 U | 50 U |
| 2-Nitrophenol | 88-75-5 | 63 U | 63 U | 70 U | 67 U | 100 U | 61 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 70 U | 70 U | 78 U | 74 U | 110 U | 68 U |
| 3+4-Methylphenols | 108-44-5 | 64 U | 65 U | 72 U | 69 U | 100 U | 62 U |
| 3-Nitroaniline | 99-09-2 | 53 U | 53 U | 59 U | 57 U | 86 U | 51 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 79 U | 79 U | 88 U | 84 U | 130 U | 77 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 61 U | 61 U | 68 U | 65 U | 98 U | 59 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 56 U | 57 U | 63 U | 60 U | 91 U | 55 U |
| 4-Chloroaniline | 106-47-8 | 48 U | 49 U | 54 U | 52 U | 78 U | 47 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 64 U | 65 U | 72 U | 69 U | 100 U | 62 U |
| 4-Nitroaniline | 100-01-6 | 70 U | 70 U | 77 U | 74 U | 110 U | 67 U |
| 4-Nitrophenol | 100-02-7 | 50 U | 51 U | 56 U | 54 U | 82 U | 49 U |
| Acenaphthene | 83-32-9 | 97 J | 86 J | 81 U | 300 J | 120 U | 70 U |
| Acenaphthylene | 208-96-8 | 66 U | 66 U | 74 U | 71 U | 110 U | 64 U |
| Acetophenone | 98-86-2 | 60 U | 60 U | 66 U | 64 U | 96 U | 58 U |
| Anthracene | 120-12-7 | 61 U | 73 J | 68 U | 560 | 99 U | 60 U |
| Atrazine | 1912-24-9 | 62 U | 63 U | 69 U | 67 U | 100 U | 60 U |
| Benzaldehyde | 100-52-7 | 84 U | 84 U | 93 U | 89 U | 130 U | 81 U |
| Benzo(a)anthracene | 56-55-3 | 67 J | 89 J | 83 U | 1100 | 92 U | 56 U |
| Benzo(a)pyrene | 50-32-8 | 65 U | 65 U | 73 U | 1100 | 110 U | 63 U |
| Benzo(b)fluoranthene | 205-99-2 | 47 J | 64 J | 50 U | 1300 | 72 U | 43 U |
| Benzo(g,h,i)perylene | 191-24-2 | 67 U | 68 U | 75 U | 440 | 110 U | 65 U |
| Benzo(k)fluoranthene | 207-08-9 | 90 U | 90 U | 100 U | 510 | 140 U | 87 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 67 U | 67 U | 75 U | 71 U | 110 U | 65 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 64 U | 65 U | 72 U | 69 U | 100 U | 62 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 110 J | 140 J | 87 U | 83 U | 130 U | 76 U |
| Butylbenzylphthalate | 85-68-7 | 66 U | 66 U | 73 U | 70 U | 110 U | 64 U |
| Caprolactam | 105-60-2 | 65 U | 66 U | 73 U | 70 U | 110 U | 63 U |
| Carbazole | 86-74-8 | 67 U | 62 U | 69 U | 73 J | 100 U | 60 U |
| Chrysene | 218-01-9 | 73 U | 74 U | 81 U | 970 | 120 U | 71 U |
| Dibenz(a,h)anthracene | 53-70-3 | 51 U | 51 U | 57 U | 65 J | 83 U | 50 U |
| Dibenzofuran | 132-64-9 | 67 U | 68 U | 75 U | 140 J | 110 U | 65 U |
| Diethylphthalate | 84-66-2 | 70 U | 71 U | 78 U | 75 U | 110 U | 68 U |
| Dimethylphthalate | 131-11-3 | 65 U | 66 U | 73 U | 70 U | 110 U | 63 U |
| Di-n-butylphthalate | 84-74-2 | 62 U | 62 U | 69 U | 66 U | 100 U | 60 U |
| Di-n-octyl phthalate | 117-84-0 | 69 U | 70 U | 77 U | 74 U | 110 U | 67 U |
| Fluoranthene | 206-44-0 | 130 J | 190 J | 67 U | 3100 | 98 U | 59 U |
| Fluorene | 86-73-7 | 69 U | 69 U | 76 U | 270 J | 110 U | 67 U |
| Hexachlorobenzene | 118-74-1 | 65 U | 65 U | 73 U | 70 U | 110 U | 63 U |
| Hexachlorobutadiene | 87-68-3 | 63 U | 63 U | 70 U | 67 U | 100 U | 61 U |
| Hexachlorocyclopentadiene | 77-47-4 | 65 U | 65 U | 72 U | 69 U | 100 U | 63 U |
| Hexachloroethane | 67-72-1 | 69 U | 70 U | 77 U | 74 U | 110 U | 67 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 52 U | 52 U | 58 U | 300 J | 83 U | 50 U |
| Isophorone | 78-59-1 | 61 U | 62 U | 68 U | 65 U | 99 U | 59 U |
| Naphthalene | 91-20-3 | 74 J | 70 U | 77 U | 74 U | 110 U | 350 J |
| Nitrobenzene | 98-95-3 | 85 U | 89 U | 89 U | 95 U | 140 U | 86 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 67 U | 68 U | 75 U | 72 U | 110 U | 65 U |
| N-Nitrosodiphenylamine | 86-30-6 | 67 U | 67 U | 75 U | 72 U | 110 U | 65 U |
| Pentachlorophenol | 87-86-5 | 94 U | 95 U | 100 U | 100 U | 150 U | 91 U |
| Phenanthrene | 85-01-8 | 150 J | 280 J | 72 U | 1400 | 100 U | 63 U |
| Phenol | 108-95-2 | 62 U | 62 U | 69 U | 66 U | 100 U | 60 U |
| Pyrene | 129-00-0 | 130 J | 180 J | 80 U | 2600 | 120 U | 70 U |
| | | 805 | 1102 | 0 | 14228 | 0 | 350 |
| | | 2140 | 2077 | 1900 | 15900 | 9380 | 1600 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-8(16-18) | P-8(18-20) | P-8(20-22) | P-8(22-24) | P-5(0-2) | P-9(0-2) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2603-08 | T2603-09 | T2603-10 | T2603-11 | T2527-01 | T2603-13 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 | 04/25/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 20.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 74 U | 64 U | 66 U | 66 U | 130 J | 2400 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 72 U | 63 U | 64 U | 65 U | 120 U | 2400 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 68 U | 59 U | 60 U | 61 U | 110 U | 2200 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 66 U | 57 U | 58 U | 59 U | 110 U | 2200 U |
| 2,4-Dichlorophenol | 120-83-2 | 83 U | 72 U | 73 U | 74 U | 140 U | 2700 U |
| 2,4-Dimethylphenol | 105-67-9 | 71 U | 62 U | 63 U | 64 U | 120 U | 2300 U |
| 2,4-Dinitrophenol | 51-28-5 | 380 U | 330 U | 340 U | 340 U | 640 U | 13000 U |
| 2,4-Dinitrotoluene | 121-14-2 | 66 U | 57 U | 58 U | 59 U | 110 U | 2200 U |
| 2,6-Dinitrotoluene | 606-20-2 | 63 U | 55 U | 56 U | 57 U | 110 U | 2100 U |
| 2-Chloronaphthalene | 91-58-7 | 74 U | 64 U | 65 U | 67 U | 120 U | 2400 U |
| 2-Chlorophenol | 95-57-8 | 71 U | 62 U | 63 U | 64 U | 120 U | 2300 U |
| 2-Methylnaphthalene | 91-57-6 | 75 U | 65 U | 66 U | 67 U | 410 J | 2500 U |
| 2-Methylphenol | 95-48-7 | 74 U | 65 U | 66 U | 67 U | 120 U | 2400 U |
| 2-Nitroaniline | 88-74-4 | 57 U | 49 U | 50 U | 51 U | 94 U | 1900 U |
| 2-Nitrophenol | 88-75-5 | 69 U | 60 U | 61 U | 62 U | 110 U | 2300 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 77 U | 66 U | 67 U | 69 U | 130 U | 2500 U |
| 3+4-Methylphenols | 106-44-5 | 71 U | 61 U | 62 U | 63 U | 120 U | 2300 U |
| 3-Nitroaniline | 99-09-2 | 58 U | 51 U | 51 U | 52 U | 97 U | 1900 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 87 U | 75 U | 77 U | 78 U | 140 U | 2800 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 67 U | 58 U | 59 U | 60 U | 110 U | 2200 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 62 U | 54 U | 54 U | 55 U | 100 U | 2000 U |
| 4-Chloroaniline | 106-47-8 | 53 U | 46 U | 47 U | 48 U | 88 U | 1700 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 71 U | 61 U | 62 U | 63 U | 120 U | 2300 U |
| 4-Nitroaniline | 100-01-6 | 76 U | 66 U | 67 U | 69 U | 130 U | 2500 U |
| 4-Nitrophenol | 100-02-7 | 55 U | 48 U | 49 U | 50 U | 92 U | 1800 U |
| Acenaphthene | 83-32-9 | 80 U | 69 U | 70 U | 71 U | 1900 | 4900 J |
| Acenaphthylene | 208-96-8 | 73 U | 63 U | 64 U | 65 U | 120 U | 2400 U |
| Acetophenone | 98-86-2 | 66 U | 57 U | 58 U | 59 U | 110 U | 2100 U |
| Anthracene | 120-12-7 | 68 U | 59 U | 59 U | 61 U | 3500 | 9600 J |
| Atrazine | 1912-24-9 | 69 U | 60 U | 60 U | 62 U | 110 U | 2200 U |
| Benzaldehyde | 100-52-7 | 92 U | 80 U | 81 U | 82 U | 150 U | 3000 U |
| Benzo(a)anthracene | 56-55-3 | 83 U | 54 U | 55 U | 56 U | 4800 | 14000 J |
| Benzo(a)pyrene | 50-32-8 | 72 U | 62 U | 63 U | 64 U | 4600 | 13000 J |
| Benzo(b)fluoranthene | 205-99-2 | 49 U | 43 U | 43 U | 44 U | 6400 E | 14000 J |
| Benzo(g,h,i)perylene | 191-24-2 | 74 U | 64 U | 65 U | 66 U | 840 | 7400 J |
| Benzo(k)fluoranthene | 207-08-9 | 99 U | 86 U | 87 U | 88 U | 2100 | 6200 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | 74 U | 64 U | 65 U | 66 U | 120 U | 2400 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 71 U | 61 U | 62 U | 63 U | 120 U | 2300 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 86 U | 75 U | 76 U | 77 U | 140 U | 2800 U |
| Butylbenzylphthalate | 85-68-7 | 72 U | 63 U | 64 U | 65 U | 120 U | 2400 U |
| Caprolactam | 105-60-2 | 72 U | 62 U | 63 U | 65 U | 120 U | 2400 U |
| Carbazole | 86-74-8 | 68 U | 59 U | 60 U | 61 U | 1400 | 2400 J |
| Chrysene | 218-01-9 | 80 U | 70 U | 71 U | 72 U | 4500 | 13000 J |
| Dibenz(a,h)anthracene | 53-70-3 | 56 U | 49 U | 49 U | 50 U | 93 U | 1800 U |
| Dibenzofuran | 132-64-9 | 74 U | 64 U | 65 U | 66 U | 1100 | 2800 J |
| Diethylphthalate | 84-66-2 | 77 U | 67 U | 68 U | 69 U | 130 U | 2500 U |
| Dimethylphthalate | 131-11-3 | 72 U | 62 U | 63 U | 65 U | 120 U | 2400 U |
| Di-n-butylphthalate | 84-74-2 | 68 U | 59 U | 60 U | 61 U | 110 U | 2200 U |
| Di-n-octyl phthalate | 117-84-0 | 76 U | 66 U | 67 U | 68 U | 130 U | 2500 U |
| Fluoranthene | 206-44-0 | 67 U | 58 U | 59 U | 60 U | 11000 E | 34000 |
| Fluorene | 86-73-7 | 76 U | 66 U | 67 U | 68 U | 1900 | 4800 J |
| Hexachlorobenzene | 118-74-1 | 72 U | 62 U | 63 U | 64 U | 120 U | 2300 U |
| Hexachlorobutadiene | 87-68-3 | 69 U | 60 U | 61 U | 62 U | 110 U | 2300 U |
| Hexachlorocyclopentadiene | 77-47-1 | 71 U | 62 U | 63 U | 64 U | 120 U | 2300 U |
| Hexachloroethane | 67-72-1 | 76 U | 66 U | 67 U | 68 U | 130 U | 2500 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 57 U | 49 U | 50 U | 51 U | 350 J | 6300 J |
| Isophorone | 78-59-1 | 67 U | 58 U | 59 U | 60 U | 110 U | 2200 U |
| Naphthalene | 91-20-3 | 160 J | 65 U | 67 U | 69 U | 820 | 2700 J |
| Nitrobenzene | 98-95-3 | 98 U | 85 U | 86 U | 88 U | 160 U | 3200 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 74 U | 64 U | 65 U | 66 U | 120 U | 2400 U |
| N-Nitrosodiphenylamine | 86-30-6 | 74 U | 64 U | 65 U | 66 U | 120 U | 2400 U |
| Pentachlorophenol | 87-86-5 | 100 U | 90 U | 91 U | 93 U | 170 U | 3400 U |
| Phenanthrene | 85-01-8 | 71 U | 62 U | 63 U | 64 U | 10000 E | 38000 |
| Phenol | 108-95-2 | 68 U | 59 U | 60 U | 61 U | 110 U | 2200 U |
| Pyrene | 129-00-0 | 79 U | 69 U | 70 U | 71 U | 10000 E | 34000 |
| | | | | | | | |
| | | 160 | 0 | 0 | 0 | | 208100 |
| | | 1800 | 1750 | 1620 | 1400 | | 32900 |

# Queens West Development-Parcel 9
## Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-9(0-2)DL | P-9(2-4) | P-9(2-4) | P-9(2-4)DL | P-9(2-4)DL | P-9(4-6) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-01DL | T2603-14 | T2527-02 | T2603-14DL | T2527-02DL | T2527-03 |
| Sampling Date | | 04/25/05 | 04/29/05 | 04/25/05 | 04/29/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 20.0 | 5.0 | 100.0 | 25.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 1200 UD | 2500 J | 630 U | 12000 UD | 3200 UD | 790 J |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 1200 UD | 2400 U | 620 U | 12000 UD | 3100 UD | 650 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 1100 UD | 2300 U | 590 U | 11000 UD | 2900 UD | 620 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 1100 UD | 2200 U | 570 U | 11000 UD | 2800 UD | 600 U |
| 2,4-Dichlorophenol | 120-83-2 | 1400 UD | 2800 U | 710 U | 14000 UD | 3600 UD | 750 U |
| 2,4-Dimethylphenol | 105-67-9 | 1200 UD | 2400 U | 610 U | 12000 UD | 3100 UD | 640 U |
| 2,4-Dinitrophenol | 51-28-5 | 6400 UD | 13000 U | 3300 U | 64000 UD | 16000 UD | 3500 U |
| 2,4-Dinitrotoluene | 121-14-2 | 1100 UD | 2200 U | 570 U | 11000 UD | 2800 UD | 600 U |
| 2,6-Dinitrotoluene | 606-20-2 | 1100 UD | 2100 U | 550 U | 11000 UD | 2700 UD | 570 U |
| 2-Chloronaphthalene | 91-58-7 | 1200 UD | 2500 U | 640 U | 12000 UD | 3200 UD | 670 U |
| 2-Chlorophenol | 95-57-8 | 1200 UD | 2400 U | 620 U | 12000 UD | 3100 UD | 650 U |
| 2-Methylnaphthalene | 91-57-6 | 1200 UD | 2500 U | 760 J | 13000 UD | 3200 UD | 2400 J |
| 2-Methylphenol | 95-48-7 | 1200 UD | 2500 U | 640 U | 12000 UD | 3200 UD | 670 U |
| 2-Nitroaniline | 88-74-4 | 940 UD | 1900 U | 490 U | 9500 UD | 2400 UD | 520 U |
| 2-Nitrophenol | 88-75-5 | 1100 UD | 2300 U | 590 U | 12000 UD | 3000 UD | 620 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 1300 UD | 2600 U | 660 U | 13000 UD | 3300 UD | 690 U |
| 3+4-Methylphenols | 106-44-5 | 1200 UD | 2400 U | 610 U | 12000 UD | 3000 UD | 640 U |
| 3-Nitroaniline | 99-09-2 | 970 UD | 2000 U | 500 U | 9800 UD | 2500 UD | 530 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 1400 UD | 2900 U | 750 U | 15000 UD | 3700 UD | 790 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 1100 UD | 2200 U | 580 U | 11000 UD | 2900 UD | 610 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 1000 UD | 2100 U | 530 U | 10000 UD | 2700 UD | 560 U |
| 4-Chloroaniline | 106-47-8 | 880 UD | 1800 U | 460 U | 9000 UD | 2300 UD | 480 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 1200 UD | 2400 U | 610 U | 12000 UD | 3000 UD | 640 U |
| 4-Nitroaniline | 100-01-6 | 1300 UD | 2600 U | 660 U | 13000 UD | 3300 UD | 690 U |
| 4-Nitrophenol | 100-02-7 | 920 UD | 1900 U | 480 U | 9300 UD | 2400 UD | 500 U |
| Acenaphthene | 83-32-9 | 1700 JD | 21000 | 5600 | 20000 JD | 5100 JD | 30000 |
| Acenaphthylene | 208-96-8 | 1200 UD | 2400 U | 630 U | 12000 UD | 3100 UD | 1100 J |
| Acetophenone | 98-86-2 | 1100 UD | 2200 U | 560 U | 11000 UD | 2800 UD | 590 U |
| Anthracene | 120-12-7 | 3100 JD | 31000 | 11000 | 29000 JD | 9300 JD | 37000 E |
| Atrazine | 1912-24-9 | 1100 UD | 2300 U | 590 U | 12000 UD | 3000 UD | 620 U |
| Benzaldehyde | 100-52-7 | 1500 UD | 3100 U | 790 U | 15000 UD | 4000 UD | 830 U |
| Benzo(a)anthracene | 56-55-3 | 4600 JD | 30000 | 17000 | 30000 JD | 16000 JD | 57000 E |
| Benzo(a)pyrene | 50-32-8 | 3400 JD | 26000 | 17000 | 25000 JD | 12000 JD | 58000 E |
| Benzo(b)fluoranthene | 205-99-2 | 3700 JD | 30000 | 21000 | 30000 JD | 14000 JD | 74000 E |
| Benzo(g,h,i)perylene | 191-24-2 | 2000 JD | 15000 J | 3000 J | 12000 UD | 5500 JD | 7600 |
| Benzo(k)fluoranthene | 207-08-9 | 1600 UD | 12000 J | 8100 | 17000 UD | 14000 JD | 24000 |
| bis(2-Chloroethoxy)methane | 111-91-1 | 1200 UD | 2500 U | 630 U | 12000 UD | 3200 UD | 670 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 1200 UD | 2400 U | 610 U | 12000 UD | 3000 UD | 640 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 1400 UD | 2900 U | 740 U | 14000 UD | 3700 UD | 780 U |
| Butylbenzylphthalate | 85-68-7 | 1200 UD | 2400 U | 620 U | 12000 UD | 3100 UD | 660 U |
| Caprolactam | 105-60-2 | 1200 UD | 2400 U | 620 U | 12000 UD | 3100 UD | 650 U |
| Carbazole | 86-74-8 | 1300 JD | 8500 J | 3600 J | 11000 UD | 3400 JD | 13000 |
| Chrysene | 218-01-9 | 4100 JD | 27000 | 16000 | 26000 JD | 16000 JD | 52000 E |
| Dibenz(a,h)anthracene | 53-70-3 | 930 UD | 2200 J | 480 U | 9400 UD | 2400 UD | 980 J |
| Dibenzofuran | 132-64-9 | 1200 UD | 17000 | 3100 J | 15000 JD | 3200 JD | 18000 |
| Diethylphthalate | 84-66-2 | 1300 UD | 2600 U | 670 U | 13000 UD | 3300 UD | 700 U |
| Dimethylphthalate | 131-11-3 | 1200 UD | 2400 U | 620 U | 12000 UD | 3100 UD | 650 U |
| Di-n-butylphthalate | 84-74-2 | 1100 UD | 2300 U | 590 U | 11000 UD | 2900 UD | 620 U |
| Di-n-octyl phthalate | 117-84-0 | 1300 UD | 2600 U | 660 U | 13000 UD | 3300 UD | 690 U |
| Fluoranthene | 206-44-0 | 10000 D | 83000 | 34000 E | 77000 D | 35000 D | 79000 E |
| Fluorene | 86-73-7 | 1600 JD | 22000 | 5100 | 21000 JD | 4700 JD | 27000 |
| Hexachlorobenzene | 118-74-1 | 1200 UD | 2400 U | 620 U | 12000 UD | 3100 UD | 650 U |
| Hexachlorobutadiene | 87-68-3 | 1100 UD | 2300 U | 580 U | 12000 UD | 3000 UD | 620 U |
| Hexachlorocyclopentadiene | 77-47-4 | 1200 UD | 2400 U | 620 U | 12000 UD | 3100 UD | 650 U |
| Hexachloroethane | 67-72-1 | 1300 UD | 2600 U | 660 U | 13000 UD | 3300 UD | 690 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 1800 JD | 13000 J | 1800 J | 9500 UD | 5300 JD | 4300 |
| Isophorone | 78-59-1 | 1100 UD | 2300 U | 580 U | 11000 UD | 2900 UD | 610 U |
| Naphthalene | 91-20-3 | 1300 UD | 2600 U | 1300 J | 13000 UD | 3300 UD | 2800 J |
| Nitrobenzene | 98-95-3 | 1600 UD | 3300 U | 840 U | 16000 UD | 4200 UD | 890 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 1200 UD | 2500 U | 640 U | 12000 UD | 3200 UD | 670 U |
| N-Nitrosodiphenylamine | 86-30-6 | 1200 UD | 2500 U | 630 U | 12000 UD | 3200 UD | 670 U |
| Pentachlorophenol | 87-86-5 | 1700 UD | 3500 U | 890 U | 17000 UD | 4600 UD | 940 U |
| Phenanthrene | 85-01-8 | 12000 D | 150000 E | 30000 | 110000 D | 33000 D | 72000 E |
| Phenol | 108-95-2 | 1100 UD | 2300 U | 580 U | 11000 UD | 2900 UD | 610 U |
| Pyrene | 129-00-0 | 10000 D | 66000 | 33000 E | 61000 JD | 34000 D | 78000 E |
| | | | | | | | |
| | | | 556200<br>163400 | | 444000<br>0 | | |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-9(4-6)DL | P-9(4-6) | P-9(6-8) | P-9(6-8)DL | P-9(8-10) | P-9(10-12) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-03DL | T2603-15 | T2603-16 | T2603-16DL | T2603-17 | T2603-18 |
| Sampling Date | | 04/25/05 | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 50.0 | 10.0 | 1.0 | 5.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 6700 UD | 1300 U | 860 | 1100 JD | 73 U | 72 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 6500 UD | 1200 U | 130 U | 630 UD | 71 U | 71 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 6200 UD | 1200 U | 120 U | 600 UD | 67 U | 67 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 6000 UD | 1100 U | 120 U | 580 UD | 65 U | 64 U |
| 2,4-Dichlorophenol | 120-83-2 | 7500 UD | 1400 U | 150 U | 730 UD | 82 U | 81 U |
| 2,4-Dimethylphenol | 105-67-9 | 6400 UD | 1200 U | 120 U | 620 UD | 70 U | 69 U |
| 2,4-Dinitrophenol | 51-28-5 | 35000 UD | 6600 U | 670 U | 3400 UD | 380 U | 370 U |
| 2,4-Dinitrotoluene | 121-14-2 | 6000 UD | 1100 U | 120 U | 580 UD | 65 U | 64 U |
| 2,6-Dinitrotoluene | 606-20-2 | 5700 UD | 4900 J | 110 U | 550 UD | 62 U | 62 U |
| 2-Chloronaphthalene | 91-58-7 | 6700 UD | 1300 U | 130 U | 650 UD | 73 U | 73 U |
| 2-Chlorophenol | 95-57-8 | 6500 UD | 1200 U | 130 U | 630 UD | 70 U | 70 U |
| 2-Methylnaphthalene | 91-57-6 | 6800 UD | 1400 J | 11000 E | 11000 D | 560 | 300 J |
| 2-Methylphenol | 95-48-7 | 6700 UD | 1300 U | 130 U | 650 UD | 73 U | 73 U |
| 2-Nitroaniline | 88-74-4 | 5200 UD | 980 U | 100 U | 500 UD | 56 U | 56 U |
| 2-Nitrophenol | 88-75-5 | 6200 UD | 1200 U | 120 U | 600 UD | 68 U | 67 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 6900 UD | 1300 U | 130 U | 670 UD | 75 U | 75 U |
| 3+4-Methylphenols | 106-44-5 | 6400 UD | 1200 U | 120 U | 620 UD | 70 U | 69 U |
| 3-Nitroaniline | 99-09-2 | 5300 UD | 1000 U | 100 U | 510 UD | 57 U | 57 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 7900 UD | 1500 U | 150 U | 760 UD | 86 U | 85 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 6100 UD | 1200 U | 120 U | 590 UD | 66 U | 65 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 5600 UD | 1100 U | 110 U | 540 UD | 61 U | 60 U |
| 4-Chloroaniline | 106-47-8 | 4800 UD | 920 U | 93 U | 470 UD | 53 U | 52 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 6400 UD | 1200 U | 120 U | 620 UD | 70 U | 69 U |
| 4-Nitroaniline | 100-01-6 | 6900 UD | 1300 U | 130 U | 670 UD | 75 U | 75 U |
| 4-Nitrophenol | 100-02-7 | 5000 UD | 960 U | 97 U | 490 UD | 55 U | 54 U |
| Acenaphthene | 83-32-9 | 33000 JD | 1400 U | 2100 | 2300 JD | 92 J | 78 U |
| Acenaphthylene | 208-96-8 | 6600 UD | 1300 U | 870 | 1100 JD | 72 U | 71 U |
| Acetophenone | 98-86-2 | 5900 UD | 1100 U | 110 U | 570 UD | 65 U | 64 U |
| Anthracene | 120-12-7 | 46000 D | 1200 U | 2800 | 2900 JD | 67 U | 66 U |
| Atrazine | 1912-24-9 | 6200 UD | 1200 U | 120 U | 600 UD | 68 U | 67 U |
| Benzaldehyde | 100-52-7 | 8300 UD | 1600 U | 160 U | 800 UD | 91 U | 90 U |
| Benzo(a)anthracene | 56-55-3 | 64000 D | 2200 J | 1800 | 1600 JD | 62 U | 61 U |
| Benzo(a)pyrene | 50-32-8 | 37000 JD | 2200 J | 1100 | 1100 JD | 71 U | 70 U |
| Benzo(b)fluoranthene | 205-99-2 | 41000 D | 2300 J | 1000 | 940 JD | 49 U | 48 U |
| Benzo(g,h,i)perylene | 191-24-2 | 18000 JD | 1600 J | 450 J | 650 UD | 73 U | 72 U |
| Benzo(k)fluoranthene | 207-08-9 | 12000 JD | 1700 U | 380 J | 860 UD | 97 U | 96 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 6700 UD | 1300 U | 130 U | 640 UD | 73 U | 72 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 6400 UD | 1200 U | 120 U | 620 UD | 70 U | 69 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 7800 UD | 1500 U | 150 U | 750 UD | 85 U | 84 U |
| Butylbenzylphthalate | 85-68-7 | 6600 UD | 1300 U | 130 U | 630 UD | 71 U | 71 U |
| Caprolactam | 105-60-2 | 6500 UD | 1200 U | 130 U | 630 UD | 71 U | 70 U |
| Carbazole | 86-74-8 | 11000 JD | 1200 U | 590 J | 600 UD | 67 U | 67 U |
| Chrysene | 218-01-9 | 50000 D | 2200 J | 1600 | 1700 JD | 79 U | 79 U |
| Dibenz(a,h)anthracene | 53-70-3 | 5100 UD | 970 U | 98 U | 490 UD | 55 U | 55 U |
| Dibenzofuran | 132-64-9 | 17000 JD | 1300 U | 130 U | 630 JD | 73 U | 72 U |
| Diethylphthalate | 84-66-2 | 7000 UD | 1300 U | 140 U | 680 UD | 76 U | 76 U |
| Dimethylphthalate | 131-11-3 | 6500 UD | 1200 U | 130 U | 630 UD | 71 U | 70 U |
| Di-n-butylphthalate | 84-74-2 | 6200 UD | 1200 U | 120 U | 600 UD | 67 U | 67 U |
| Di-n-octyl phthalate | 117-84-0 | 6900 UD | 1300 U | 130 U | 670 UD | 75 U | 74 U |
| Fluoranthene | 206-44-0 | 120000 D | 3700 J | 3400 | 3400 JD | 88 J | 65 U |
| Fluorene | 86-73-7 | 27000 JD | 1300 U | 3100 | 3200 JD | 90 J | 74 U |
| Hexachlorobenzene | 118-74-1 | 6500 UD | 1200 U | 130 U | 630 UD | 71 U | 70 U |
| Hexachlorobutadiene | 87-68-3 | 6200 UD | 1200 U | 120 U | 600 UD | 68 U | 67 U |
| Hexachlorocyclopentadiene | 77-47-4 | 6500 UD | 1200 U | 130 U | 630 UD | 70 U | 70 U |
| Hexachloroethane | 67-72-1 | 6900 UD | 1300 U | 130 U | 670 UD | 75 U | 74 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 17000 JD | 1200 J | 220 J | 500 UD | 56 U | 56 U |
| Isophorone | 78-59-1 | 6100 UD | 1200 U | 120 U | 590 UD | 66 U | 66 U |
| Naphthalene | 91-20-3 | 6800 UD | 1300 U | 130 U | 670 UD | 130 J | 540 |
| Nitrobenzene | 98-95-3 | 8900 UD | 1700 U | 170 U | 860 UD | 96 U | 96 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 6700 UD | 1300 U | 130 U | 650 UD | 73 U | 72 U |
| N-Nitrosodiphenylamine | 86-30-6 | 6700 UD | 1300 U | 130 U | 650 UD | 73 U | 72 U |
| Pentachlorophenol | 87-86-5 | 9400 UD | 1800 U | 180 U | 910 UD | 100 U | 100 U |
| Phenanthrene | 85-01-8 | 120000 D | 3700 J | 9200 E | 11000 D | 260 J | 170 J |
| Phenol | 108-95-2 | 6100 UD | 1200 U | 120 U | 590 UD | 67 U | 66 U |
| Pyrene | 129-00-0 | 120000 D | 4100 J | 7500 E | 7100 D | 110 J | 77 U |
| | | | 29500 | 47770 | 49170 | 1430 | 1110 |
| | | | 10700 | 54500 | 0 | 6580 | 3670 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-9(12-14) | P-9(12-14)DL | P-9(14-16) | P-9(14-16)DL | P-9(14-16)DL2 | P-9(16-18) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2603-19 | T2603-19DL | T2603-20 | T2603-20DL | T2603-20DL2 | T2603-21 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 20.0 | 1.0 | 5.0 | 25.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 740 | 1400 UD | 400 J | 450 JD | 1700 UD | 66 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 66 U | 1300 UD | 66 U | 330 UD | 1700 UD | 64 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 63 U | 1300 UD | 63 U | 310 UD | 1600 UD | 61 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 60 U | 1200 UD | 60 U | 300 UD | 1500 UD | 58 U |
| 2,4-Dichlorophenol | 120-83-2 | 76 U | 1500 UD | 76 U | 380 UD | 1900 UD | 74 U |
| 2,4-Dimethylphenol | 105-67-9 | 65 U | 1300 UD | 65 U | 330 UD | 1600 UD | 63 U |
| 2,4-Dinitrophenol | 51-28-5 | 350 U | 7000 UD | 350 U | 1800 UD | 8800 UD | 340 U |
| 2,4-Dinitrotoluene | 121-14-2 | 60 U | 1200 UD | 60 U | 300 UD | 1500 UD | 58 U |
| 2,6-Dinitrotoluene | 606-20-2 | 58 U | 1200 UD | 58 U | 290 UD | 1400 UD | 56 U |
| 2-Chloronaphthalene | 91-58-7 | 68 U | 1400 UD | 68 U | 340 UD | 1700 UD | 66 U |
| 2-Chlorophenol | 95-57-8 | 66 U | 1300 UD | 65 U | 330 UD | 1600 UD | 63 U |
| 2-Methylnaphthalene | 91-57-6 | 10000 E | 14000 D | 6800 E | 6000 D | 6200 JD | 580 |
| 2-Methylphenol | 95-48-7 | 68 U | 1400 UD | 68 U | 340 UD | 1700 UD | 66 U |
| 2-Nitroaniline | 88-74-4 | 52 U | 1000 UD | 52 U | 260 UD | 1300 UD | 50 U |
| 2-Nitrophenol | 88-75-5 | 63 U | 1300 UD | 63 U | 320 UD | 1600 UD | 61 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 70 U | 1400 UD | 70 U | 350 UD | 1800 UD | 68 U |
| 3+4-Methylphenols | 106-44-5 | 65 U | 1300 UD | 65 U | 320 UD | 1600 UD | 63 U |
| 3-Nitroaniline | 99-09-2 | 53 U | 1100 UD | 53 U | 270 UD | 1300 UD | 52 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 80 U | 1600 UD | 80 U | 400 UD | 2000 UD | 77 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 61 U | 1200 UD | 61 U | 310 UD | 1500 UD | 59 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 57 U | 1100 UD | 57 U | 280 UD | 1400 UD | 55 U |
| 4-Chloroaniline | 106-47-8 | 49 U | 980 UD | 49 U | 240 UD | 1200 UD | 47 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 65 U | 1300 UD | 65 U | 320 UD | 1600 UD | 63 U |
| 4-Nitroaniline | 100-01-6 | 70 U | 1400 UD | 70 U | 350 UD | 1800 UD | 68 U |
| 4-Nitrophenol | 100-02-7 | 51 U | 1000 UD | 51 U | 250 UD | 1300 UD | 49 U |
| Acenaphthene | 83-32-9 | 1100 | 1600 JD | 540 | 580 JD | 1800 UD | 93 J |
| Acenaphthylene | 208-96-8 | 690 | 1300 UD | 390 J | 400 JD | 1700 UD | 64 U |
| Acetophenone | 98-86-2 | 60 U | 1200 UD | 60 U | 300 UD | 1500 UD | 58 U |
| Anthracene | 120-12-7 | 1800 | 2000 JD | 890 | 760 JD | 1500 UD | 97 J |
| Atrazine | 1912-24-9 | 63 U | 1300 UD | 63 U | 310 UD | 1600 UD | 61 U |
| Benzaldehyde | 100-52-7 | 84 U | 1700 UD | 84 U | 420 UD | 2100 UD | 82 U |
| Benzo(a)anthracene | 56-55-3 | 630 | 1100 UD | 340 J | 330 JD | 1400 UD | 58 U |
| Benzo(a)pyrene | 50-32-8 | 570 | 1300 UD | 250 J | 330 UD | 1600 UD | 64 U |
| Benzo(b)fluoranthene | 205-99-2 | 370 J | 900 UD | 89 J | 230 UD | 1100 UD | 44 U |
| Benzo(g,h,i)perylene | 191-24-2 | 300 J | 1400 UD | 190 J | 340 UD | 1700 UD | 66 U |
| Benzo(k)fluoranthene | 207-08-9 | 150 J | 1800 UD | 110 J | 450 UD | 2300 UD | 87 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 68 U | 1400 UD | 67 U | 340 UD | 1700 UD | 65 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 65 U | 1300 UD | 65 U | 320 UD | 1600 UD | 63 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 79 U | 1600 UD | 79 U | 390 UD | 2000 UD | 76 U |
| Butylbenzylphthalate | 85-68-7 | 66 U | 1300 UD | 66 U | 330 UD | 1700 UD | 250 J |
| Caprolactam | 105-60-2 | 66 U | 1300 UD | 66 U | 330 UD | 1600 UD | 64 U |
| Carbazole | 86-74-8 | 63 U | 1300 UD | 63 U | 310 UD | 1600 UD | 61 U |
| Chrysene | 218-01-9 | 750 | 1500 UD | 380 J | 370 JD | 1800 UD | 71 U |
| Dibenz(a,h)anthracene | 53-70-3 | 51 U | 1000 UD | 51 U | 260 UD | 1300 UD | 50 U |
| Dibenzofuran | 132-64-9 | 68 U | 1400 UD | 160 J | 340 UD | 1700 UD | 66 U |
| Diethylphthalate | 84-66-2 | 71 U | 1400 UD | 71 U | 350 UD | 1800 UD | 69 U |
| Dimethylphthalate | 131-11-3 | 66 U | 1300 UD | 66 U | 330 UD | 1600 UD | 64 U |
| Di-n-butylphthalate | 84-74-2 | 63 U | 1300 UD | 62 U | 310 UD | 1600 UD | 61 U |
| Di-n-octyl phthalate | 117-84-0 | 70 U | 1400 UD | 70 U | 350 UD | 1700 UD | 68 U |
| Fluoranthene | 206-44-0 | 1000 | 1500 JD | 450 | 490 JD | 1500 UD | 74 J |
| Fluorene | 86-73-7 | 1800 | 2400 JD | 980 | 820 JD | 1700 UD | 110 J |
| Hexachlorobenzene | 118-74-1 | 66 U | 1300 UD | 66 U | 330 UD | 1600 UD | 64 U |
| Hexachlorobutadiene | 87-68-3 | 63 U | 1300 UD | 63 U | 320 UD | 1600 UD | 61 U |
| Hexachlorocyclopentadiene | 77-47-4 | 66 U | 1300 UD | 65 U | 330 UD | 1600 UD | 63 U |
| Hexachloroethane | 67-72-1 | 70 U | 1400 UD | 70 U | 350 UD | 1700 UD | 68 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 150 J | 1000 UD | 86 J | 260 UD | 1300 UD | 50 U |
| Isophorone | 78-59-1 | 62 U | 1200 UD | 62 U | 310 UD | 1500 UD | 60 U |
| Naphthalene | 91-20-3 | 11000 E | 14000 D | 16000 E | 17000 ED | 15000 D | 710 |
| Nitrobenzene | 98-95-3 | 90 U | 1800 UD | 89 U | 450 UD | 2200 UD | 87 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 68 U | 1400 UD | 68 U | 340 UD | 1700 UD | 66 U |
| N-Nitrosodiphenylamine | 86-30-6 | 68 U | 1400 UD | 68 U | 340 UD | 1700 UD | 65 U |
| Pentachlorophenol | 87-86-5 | 95 U | 1900 UD | 95 U | 470 UD | 2400 UD | 92 U |
| Phenanthrene | 85-01-8 | 6400 E | 7800 JD | 3500 E | 2800 D | 3000 JD | 370 J |
| Phenol | 108-95-2 | 62 U | 1200 UD | 62 U | 310 UD | 1600 UD | 60 U |
| Pyrene | 129-00-0 | 4200 E | 4400 JD | 2000 | 1500 JD | 1800 UD | 180 J |
| | | 41650 | 47700 | 33555 | 31140 | 24200 | 2464 |
| | | 40200 | 0 | 28800 | 0 | 0 | 8480 |

# Queens West Development-Parcel 9
## Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-9(18-20) | P-9(24-25) | P-10(0-2) | P-10(2-4) | P-10(4-6) | P-10(4-6)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2603-22 | T2603-25 | T2527-15 | T2527-16 | T2527-17 | T2527-17DL |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 5.0 | 5.0 | 2.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 65 U | 61 U | 3100 U | 900 J | 1000 J | 1200 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 64 U | 59 U | 3000 U | 620 U | 240 U | 1200 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 61 U | 56 U | 2900 U | 590 U | 230 U | 1100 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 58 U | 54 U | 2800 U | 570 U | 220 U | 1100 UD |
| 2,4-Dichlorophenol | 120-83-2 | 73 U | 68 U | 3500 U | 710 U | 270 U | 1400 UD |
| 2,4-Dimethylphenol | 105-67-9 | 63 U | 58 U | 3000 U | 610 U | 230 U | 1200 UD |
| 2,4-Dinitrophenol | 51-28-5 | 340 U | 310 U | 16000 U | 3300 U | 1300 U | 6300 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 58 U | 54 U | 2800 U | 570 U | 220 U | 1100 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 56 U | 52 U | 2700 U | 550 U | 210 U | 1000 UD |
| 2-Chloronaphthalene | 91-58-7 | 66 U | 61 U | 3100 U | 640 U | 250 U | 1200 UD |
| 2-Chlorophenol | 95-57-8 | 63 U | 59 U | 3000 U | 620 U | 240 U | 1200 UD |
| 2-Methylnaphthalene | 91-57-6 | 66 U | 61 U | 3100 U | 4500 | 6700 | 6600 JD |
| 2-Methylphenol | 95-48-7 | 66 U | 61 U | 3100 U | 640 U | 250 U | 1200 UD |
| 2-Nitroaniline | 88-74-4 | 50 U | 47 U | 2400 U | 490 U | 190 U | 940 UD |
| 2-Nitrophenol | 88-75-5 | 61 U | 57 U | 2900 U | 590 U | 230 U | 1100 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 68 U | 63 U | 3200 U | 660 U | 250 U | 1300 UD |
| 3+4-Methylphenols | 106-44-5 | 62 U | 58 U | 3000 U | 610 U | 230 U | 1200 UD |
| 3-Nitroaniline | 99-09-2 | 52 U | 48 U | 2400 U | 500 U | 190 U | 960 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 77 U | 71 U | 3600 U | 750 U | 290 U | 1400 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 59 U | 55 U | 2800 U | 580 U | 220 U | 1100 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 55 U | 51 U | 2600 U | 530 U | 200 U | 1000 UD |
| 4-Chloroaniline | 106-47-8 | 47 U | 44 U | 2200 U | 460 U | 180 U | 880 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 63 U | 58 U | 3000 U | 610 U | 230 U | 1200 UD |
| 4-Nitroaniline | 100-01-6 | 68 U | 63 U | 3200 U | 660 U | 250 U | 1300 UD |
| 4-Nitrophenol | 100-02-7 | 49 U | 46 U | 2300 U | 480 U | 180 U | 920 UD |
| Acenaphthene | 83-32-9 | 70 U | 65 U | 3300 U | 1400 J | 7800 | 8400 D |
| Acenaphthylene | 208-96-8 | 64 U | 60 U | 3000 U | 1000 J | 470 J | 1200 UD |
| Acetophenone | 98-86-2 | 58 U | 54 U | 2700 U | 570 U | 220 U | 1100 UD |
| Anthracene | 120-12-7 | 60 U | 55 U | 2800 U | 2900 J | 9200 | 12000 D |
| Atrazine | 1912-24-9 | 61 U | 56 U | 2900 U | 590 U | 230 U | 1100 UD |
| Benzaldehyde | 100-52-7 | 81 U | 75 U | 3800 U | 790 U | 300 U | 1500 UD |
| Benzo(a)anthracene | 56-55-3 | 55 U | 51 U | 2600 U | 2100 J | 11000 | 10000 D |
| Benzo(a)pyrene | 50-32-8 | 63 U | 59 U | 3700 J | 2300 J | 11000 | 7900 D |
| Benzo(b)fluoranthene | 205-99-2 | 44 U | 40 U | 3000 J | 1800 J | 13000 E | 9000 D |
| Benzo(g,h,i)perylene | 191-24-2 | 65 U | 61 U | 5100 J | 1400 J | 2100 | 3400 JD |
| Benzo(k)fluoranthene | 207-08-9 | 87 U | 81 U | 4100 U | 850 U | 3600 | 2700 JD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 65 U | 60 U | 3100 U | 640 U | 240 U | 1200 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 63 U | 58 U | 3000 U | 610 U | 230 U | 1200 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 76 U | 71 U | 3600 U | 740 U | 280 U | 1400 UD |
| Butylbenzylphthalate | 85-68-7 | 64 U | 59 U | 3000 U | 620 U | 240 U | 1200 UD |
| Caprolactam | 105-60-2 | 64 U | 59 U | 3000 U | 620 U | 240 U | 1200 UD |
| Carbazole | 86-74-8 | 60 U | 56 U | 2900 U | 590 U | 6100 | 6300 JD |
| Chrysene | 218-01-9 | 71 U | 66 U | 3400 U | 2400 J | 10000 | 10000 D |
| Dibenz(a,h)anthracene | 53-70-3 | 50 U | 46 U | 2400 U | 480 U | 210 J | 930 UD |
| Dibenzofuran | 132-64-9 | 65 U | 61 U | 3100 U | 640 U | 6000 | 6300 JD |
| Diethylphthalate | 84-66-2 | 68 U | 63 U | 3200 U | 670 U | 260 U | 1300 UD |
| Dimethylphthalate | 131-11-3 | 64 U | 59 U | 3000 U | 620 U | 240 U | 1200 UD |
| Di-n-butylphthalate | 84-74-2 | 60 U | 56 U | 2900 U | 590 U | 230 U | 1100 UD |
| Di-n-octyl phthalate | 117-84-0 | 67 U | 63 U | 3200 U | 660 U | 250 U | 1300 UD |
| Fluoranthene | 206-44-0 | 59 U | 55 U | 3400 J | 2900 J | 19000 E | 25000 D |
| Fluorene | 86-73-7 | 67 U | 62 U | 3200 U | 1900 J | 6600 | 8800 D |
| Hexachlorobenzene | 118-74-1 | 63 U | 59 U | 3000 U | 620 U | 240 U | 1200 UD |
| Hexachlorobutadiene | 87-68-3 | 61 U | 57 U | 2900 U | 590 U | 230 U | 1100 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 63 U | 59 U | 3000 U | 620 U | 240 U | 1200 UD |
| Hexachloroethane | 67-72-1 | 67 U | 62 U | 3200 U | 660 U | 250 U | 1300 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 50 U | 47 U | 2600 J | 610 J | 1300 J | 3000 JD |
| Isophorone | 78-59-1 | 59 U | 55 U | 2800 U | 580 U | 220 U | 1100 UD |
| Naphthalene | 91-20-3 | 230 J | 61 U | 3200 U | 4800 | 8700 | 9400 D |
| Nitrobenzene | 98-95-3 | 96 U | 80 U | 4100 U | 840 U | 320 U | 1600 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 66 U | 61 U | 3100 U | 640 U | 250 U | 1200 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 65 U | 61 U | 3100 U | 3200 J | 240 U | 1200 UD |
| Pentachlorophenol | 87-86-5 | 92 U | 85 U | 4300 U | 890 U | 340 U | 1700 UD |
| Phenanthrene | 85-01-8 | 63 U | 71 J | 3900 J | 6500 | 23000 E | 33000 D |
| Phenol | 108-95-2 | 60 U | 56 U | 2800 U | 590 U | 220 U | 1100 UD |
| Pyrene | 129-00-0 | 70 U | 65 U | 6900 J | 9400 | 20000 E | 28000 D |
| | | | | | | | |
| | | 230<br>1500 | 71<br>1400 | | | | |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-10(6-8) | P-10(6-8)DL | P-10(8-10) | P-10(8-10)DL | P-10(8-10)DL2 | P-10(10-12) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-18 | T2527-18DL | T2527-19 | T2527-19DL | T2527-19DL2 | T2527-20 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 2.0 | 20.0 | 1.0 | 5.0 | 25.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 1300 J | 2500 UD | 1800 | 2100 D | 1700 JD | 1900 |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 240 U | 2400 UD | 65 U | 320 UD | 1600 UD | 130 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 230 U | 2300 UD | 62 U | 310 UD | 1500 UD | 120 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 220 U | 2200 UD | 59 U | 300 UD | 1500 UD | 110 U |
| 2,4-Dichlorophenol | 120-83-2 | 280 U | 2800 UD | 75 U | 370 UD | 1900 UD | 140 U |
| 2,4-Dimethylphenol | 105-67-9 | 240 U | 2400 UD | 64 U | 320 UD | 1600 UD | 120 U |
| 2,4-Dinitrophenol | 51-28-5 | 1300 U | 13000 UD | 340 U | 1700 UD | 8600 UD | 670 U |
| 2,4-Dinitrotoluene | 121-14-2 | 220 U | 2200 UD | 59 U | 300 UD | 1500 UD | 110 U |
| 2,6-Dinitrotoluene | 606-20-2 | 210 U | 2100 UD | 57 U | 280 UD | 1400 UD | 110 U |
| 2-Chloronaphthalene | 91-58-7 | 250 U | 2500 UD | 67 U | 330 UD | 1700 UD | 130 U |
| 2-Chlorophenol | 95-57-8 | 240 U | 2400 UD | 64 U | 320 UD | 1600 UD | 120 U |
| 2-Methylnaphthalene | 91-57-6 | 6500 | 6100 JD | 17000 E | 18000 HD | 26000 D | 22000 E |
| 2-Methylphenol | 95-48-7 | 250 U | 2500 UD | 67 U | 330 UD | 1700 UD | 130 U |
| 2-Nitroaniline | 88-74-4 | 190 U | 1900 UD | 51 U | 260 UD | 1300 UD | 99 U |
| 2-Nitrophenol | 88-75-5 | 230 U | 2300 UD | 62 U | 310 UD | 1500 UD | 120 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 260 U | 2500 UD | 69 U | 340 UD | 1700 UD | 130 U |
| 3+4-Methylphenols | 106-44-5 | 230 U | 2300 UD | 64 U | 320 UD | 1600 UD | 120 U |
| 3-Nitroaniline | 99-09-2 | 190 U | 1900 UD | 52 U | 260 UD | 1300 UD | 100 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 290 U | 2900 UD | 78 U | 390 UD | 2000 UD | 150 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 220 U | 2200 UD | 60 U | 300 UD | 1500 UD | 120 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 210 U | 2100 UD | 56 U | 280 UD | 1400 UD | 110 U |
| 4-Chloroaniline | 106-47-8 | 180 U | 1800 UD | 48 U | 240 UD | 1200 UD | 93 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 240 U | 2400 UD | 64 U | 320 UD | 1600 UD | 120 U |
| 4-Nitroaniline | 100-01-6 | 250 U | 2500 UD | 69 U | 340 UD | 1700 UD | 130 U |
| 4-Nitrophenol | 100-02-7 | 180 U | 1800 UD | 50 U | 250 UD | 1200 UD | 97 U |
| Acenaphthene | 83-32-9 | 10000 | 10000 JD | 2200 | 2700 D | 2600 JD | 1800 |
| Acenaphthylene | 208-96-8 | 340 J | 2400 UD | 940 | 1600 JD | 1000 UD | 1100 |
| Acetophenone | 98-86-2 | 220 U | 2200 UD | 59 U | 290 UD | 1500 UD | 110 U |
| Anthracene | 120-12-7 | 13000 E | 14000 JD | 3400 E | 3800 D | 3900 JD | 4400 |
| Atrazine | 1912-24-9 | 230 U | 2300 UD | 62 U | 310 UD | 1500 UD | 120 U |
| Benzaldehyde | 100-52-7 | 310 U | 3100 UD | 83 U | 410 UD | 2100 UD | 160 U |
| Benzo(a)anthracene | 56-55-3 | 16000 E | 15000 D | 2200 | 1900 JD | 1900 JD | 3000 |
| Benzo(a)pyrene | 50-32-8 | 16000 E | 11000 JD | 1900 | 1300 JD | 1600 UD | 2200 |
| Benzo(b)fluoranthene | 205-99-2 | 21000 E | 12000 JD | 1400 | 1000 JD | 1100 UD | 1700 |
| Benzo(g,h,i)perylene | 191-24-2 | 2700 | 6000 JD | 490 | 630 JD | 1700 UD | 570 J |
| Benzo(k)fluoranthene | 207-08-9 | 5900 | 4000 JD | 510 | 440 UD | 2200 UD | 450 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | 240 U | 2400 UD | 66 U | 330 UD | 1700 UD | 130 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 240 U | 2400 UD | 64 U | 320 UD | 1600 UD | 120 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 290 U | 2900 UD | 77 U | 390 UD | 1900 UD | 150 U |
| Butylbenzylphthalate | 85-68-7 | 240 U | 2400 UD | 65 U | 330 UD | 1600 UD | 130 U |
| Caprolactam | 105-60-2 | 240 U | 2400 UD | 65 U | 320 UD | 1600 UD | 130 U |
| Carbazole | 86-74-8 | 10000 | 9400 JD | 61 U | 310 UD | 1500 UD | 120 U |
| Chrysene | 218-01-9 | 15000 E | 14000 JD | 2100 | 2000 JD | 1800 UD | 3000 |
| Dibenz(a,h)anthracene | 53-70-3 | 290 J | 1900 UD | 54 J | 260 UD | 1300 UD | 98 U |
| Dibenzofuran | 132-64-9 | 8600 | 8600 JD | 67 U | 790 JD | 1700 UD | 130 U |
| Diethylphthalate | 84-66-2 | 260 U | 2600 UD | 70 U | 350 UD | 1700 UD | 130 U |
| Dimethylphthalate | 131-11-3 | 240 U | 2400 UD | 65 U | 320 UD | 1600 UD | 130 U |
| Di-n-butylphthalate | 84-74-2 | 230 U | 2300 UD | 61 U | 310 UD | 1500 UD | 120 U |
| Di-n-octyl phthalate | 117-84-0 | 250 U | 2500 UD | 69 U | 340 UD | 1700 UD | 130 U |
| Fluoranthene | 206-44-0 | 28000 E | 37000 D | 4200 E | 3700 D | 2900 JD | 5400 |
| Fluorene | 86-73-7 | 11000 | 11000 JD | 2900 | 3400 D | 4300 JD | 2400 |
| Hexachlorobenzene | 118-74-1 | 240 U | 2400 UD | 64 U | 320 UD | 1600 UD | 130 U |
| Hexachlorobutadiene | 87-68-3 | 230 U | 2300 UD | 62 U | 310 UD | 1500 UD | 120 U |
| Hexachlorocyclopentadiene | 77-47-4 | 240 U | 2400 UD | 64 U | 320 UD | 1600 UD | 120 U |
| Hexachloroethane | 67-72-1 | 250 U | 2500 UD | 68 U | 340 UD | 1700 UD | 130 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 1600 | 5200 JD | 300 J | 430 JD | 1300 UD | 380 J |
| Isophorone | 78-59-1 | 220 U | 2200 UD | 61 U | 300 UD | 1500 UD | 120 U |
| Naphthalene | 91-20-3 | 10000 | 11000 JD | 14000 E | 17000 HD | 24000 D | 19000 E |
| Nitrobenzene | 98-95-3 | 320 U | 3200 UD | 88 U | 440 UD | 2200 UD | 170 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 250 U | 2500 UD | 67 U | 330 UD | 1700 UD | 130 U |
| N-Nitrosodiphenylamine | 86-30-6 | 250 U | 2500 UD | 66 U | 330 UD | 1700 UD | 130 U |
| Pentachlorophenol | 87-86-5 | 340 U | 3400 UD | 93 U | 470 UD | 2300 UD | 180 U |
| Phenanthrene | 85-01-8 | 31000 E | 54000 D | 7500 E | 9600 D | 11000 D | 10000 E |
| Phenol | 108-95-2 | 230 U | 2300 UD | 61 U | 300 UD | 1500 UD | 120 U |
| Pyrene | 129-00-0 | 25000 E | 36000 D | 4700 E | 7700 D | 8500 JD | 7500 E |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-10(10-12)DL | P-10(12-14) | P-10(12-14)DL | P-10(14-16) | P-10(14-16)DL | P-10(16-18) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-20DL | T2527-21 | T2527-21DL | T2527-22 | T2527-22DL | T2527-23 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 1.0 | 5.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 2500 JD | 410 | 370 JD | 600 | 960 JD | 100 J |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 1300 UD | 65 U | 320 UD | 65 U | 320 UD | 64 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 1200 UD | 62 U | 310 UD | 62 U | 310 UD | 60 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 1100 UD | 59 U | 300 UD | 59 U | 300 UD | 58 U |
| 2,4-Dichlorophenol | 120-83-2 | 1400 UD | 74 U | 370 UD | 75 U | 370 UD | 73 U |
| 2,4-Dimethylphenol | 105-67-9 | 1200 UD | 64 U | 320 UD | 64 U | 320 UD | 63 U |
| 2,4-Dinitrophenol | 51-28-5 | 6700 UD | 340 U | 1700 UD | 340 U | 1700 UD | 340 U |
| 2,4-Dinitrotoluene | 121-14-2 | 1100 UD | 59 U | 300 UD | 59 U | 300 UD | 58 U |
| 2,6-Dinitrotoluene | 606-20-2 | 1100 UD | 57 U | 280 UD | 57 U | 290 UD | 56 U |
| 2-Chloronaphthalene | 91-58-7 | 1300 UD | 67 U | 330 UD | 67 U | 330 UD | 65 U |
| 2-Chlorophenol | 95-57-8 | 1200 UD | 64 U | 320 UD | 64 U | 320 UD | 63 U |
| 2-Methylnaphthalene | 91-57-6 | 35000 D | 4700 E | 5000 D | 7500 E | 7800 D | 1500 |
| 2-Methylphenol | 95-48-7 | 1300 UD | 67 U | 330 UD | 67 U | 340 UD | 66 U |
| 2-Nitroaniline | 88-74-4 | 990 UD | 51 U | 260 UD | 51 U | 260 UD | 50 U |
| 2-Nitrophenol | 88-75-5 | 1200 UD | 62 U | 310 UD | 62 U | 310 UD | 61 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 1300 UD | 69 U | 340 UD | 69 U | 340 UD | 67 U |
| 3+4-Methylphenols | 106-44-5 | 1200 UD | 63 U | 320 UD | 64 U | 320 UD | 62 U |
| 3-Nitroaniline | 99-09-2 | 1000 UD | 52 U | 260 UD | 53 U | 260 UD | 51 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 1500 UD | 78 U | 390 UD | 78 U | 390 UD | 77 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 1200 UD | 60 U | 300 UD | 60 U | 300 UD | 59 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 1100 UD | 56 U | 280 UD | 56 U | 280 UD | 54 U |
| 4-Chloroaniline | 106-47-8 | 930 UD | 48 U | 240 UD | 48 U | 240 UD | 47 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 1200 UD | 64 U | 320 UD | 64 U | 320 UD | 62 U |
| 4-Nitroaniline | 100-01-6 | 1300 UD | 69 U | 340 UD | 69 U | 340 UD | 67 U |
| 4-Nitrophenol | 100-02-7 | 970 UD | 50 U | 250 UD | 50 U | 250 UD | 49 U |
| Acenaphthene | 83-32-9 | 3700 JD | 450 | 430 JD | 820 | 770 JD | 180 J |
| Acenaphthylene | 208-96-8 | 1900 JD | 310 J | 330 UD | 480 | 420 JD | 73 J |
| Acetophenone | 98-86-2 | 1100 UD | 59 U | 290 UD | 59 U | 290 UD | 58 U |
| Anthracene | 120-12-7 | 17000 D | 870 | 650 JD | 1500 | 1400 JD | 290 J |
| Atrazine | 1912-24-9 | 1200 UD | 62 U | 310 UD | 62 U | 310 UD | 60 U |
| Benzaldehyde | 100-52-7 | 1600 UD | 83 U | 410 UD | 83 U | 410 UD | 81 U |
| Benzo(a)anthracene | 56-55-3 | 2700 JD | 400 | 310 JD | 860 | 670 JD | 150 J |
| Benzo(a)pyrene | 50-32-8 | 1800 JD | 280 J | 320 UD | 650 | 440 JD | 98 J |
| Benzo(b)fluoranthene | 205-99-2 | 1400 JD | 150 J | 220 UD | 620 | 340 JD | 74 J |
| Benzo(g,h,i)perylene | 191-24-2 | 1300 UD | 130 J | 330 UD | 190 J | 330 UD | 65 U |
| Benzo(k)fluoranthene | 207-08-9 | 1700 UD | 89 U | 440 UD | 130 J | 440 UD | 87 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 1300 UD | 66 U | 330 UD | 66 U | 330 UD | 65 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 1200 UD | 64 U | 320 UD | 64 U | 320 UD | 62 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 1500 UD | 77 U | 390 UD | 77 U | 390 UD | 76 U |
| Butylbenzylphthalate | 85-68-7 | 1300 UD | 65 U | 330 UD | 65 U | 330 UD | 64 U |
| Caprolactam | 105-60-2 | 1300 UD | 65 U | 320 UD | 65 U | 320 UD | 63 U |
| Carbazole | 86-74-8 | 1200 UD | 61 U | 310 UD | 62 U | 310 UD | 60 U |
| Chrysene | 218-01-9 | 2700 JD | 450 | 360 UD | 910 | 680 JD | 140 J |
| Dibenz(a,h)anthracene | 53-70-3 | 980 UD | 50 U | 250 UD | 51 U | 250 UD | 49 U |
| Dibenzofuran | 132-64-9 | 1300 UD | 67 U | 330 UD | 250 J | 330 UD | 65 U |
| Diethylphthalate | 84-66-2 | 1300 UD | 69 U | 350 UD | 70 U | 350 UD | 68 U |
| Dimethylphthalate | 131-11-3 | 1300 UD | 65 U | 320 UD | 65 U | 320 UD | 63 U |
| Di-n-butylphthalate | 84-74-2 | 1200 UD | 61 U | 310 UD | 61 U | 310 UD | 60 U |
| Di-n-octyl phthalate | 117-84-0 | 1300 UD | 68 U | 340 UD | 69 U | 340 UD | 67 U |
| Fluoranthene | 206-44-0 | 4500 JD | 560 | 400 JD | 1600 | 1100 JD | 250 J |
| Fluorene | 86-73-7 | 5200 JD | 780 | 730 JD | 1100 | 1200 JD | 270 J |
| Hexachlorobenzene | 118-74-1 | 1300 UD | 64 U | 320 UD | 64 U | 320 UD | 63 U |
| Hexachlorobutadiene | 87-68-3 | 1200 UD | 62 U | 310 UD | 62 U | 310 UD | 61 U |
| Hexachlorocyclopentadiene | 77-47-4 | 1200 UD | 64 U | 320 UD | 64 U | 320 UD | 63 U |
| Hexachloroethane | 67-72-1 | 1300 UD | 68 U | 340 UD | 68 U | 340 UD | 67 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 990 UD | 83 J | 260 UD | 94 J | 260 UD | 50 U |
| Isophorone | 78-59-1 | 1200 UD | 60 U | 300 UD | 61 U | 300 UD | 59 U |
| Naphthalene | 91-20-3 | 33000 D | 3500 E | 3500 D | 6600 E | 7600 D | 1400 |
| Nitrobenzene | 98-95-3 | 1700 UD | 88 U | 440 UD | 88 U | 440 UD | 86 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 1300 UD | 67 U | 330 UD | 67 U | 330 UD | 65 U |
| N-Nitrosodiphenylamine | 86-30-6 | 1300 UD | 66 U | 330 UD | 66 U | 330 UD | 65 U |
| Pentachlorophenol | 87-86-5 | 1800 UD | 93 U | 470 UD | 93 U | 470 UD | 91 U |
| Phenanthrene | 85-01-8 | 16000 D | 2100 | 2200 D | 3400 E | 3800 D | 940 |
| Phenol | 108-95-2 | 1200 UD | 61 U | 300 UD | 61 U | 310 UD | 60 U |
| Pyrene | 129-00-0 | 13000 D | 2100 | 1700 JD | 3600 E | 3200 D | 840 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-11(0-2) | P-11(0-2)DL | P-11(2-4) | P-11(4-6) | P-11(4-6)DL | P-11(6-8) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-04 | T2527-04DL | T2527-05 | T2527-06 | T2527-06DL | T2527-07 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 50.0 | 2.0 | 5.0 | 25.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 3800 J | 29000 UD | 240 U | 3500 J | 15000 UD | 630 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 2900 U | 29000 UD | 230 U | 3000 U | 15000 UD | 610 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 2700 U | 27000 UD | 220 U | 2800 U | 14000 UD | 580 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 2600 U | 26000 UD | 210 U | 2700 U | 14000 UD | 560 U |
| 2,4-Dichlorophenol | 120-83-2 | 3300 U | 33000 UD | 270 U | 3500 U | 17000 UD | 700 U |
| 2,4-Dimethylphenol | 105-67-9 | 2800 U | 28000 UD | 230 U | 3000 U | 15000 UD | 600 U |
| 2,4-Dinitrophenol | 51-28-5 | 15000 U | 150000 UD | 1200 U | 16000 U | 80000 UD | 3300 U |
| 2,4-Dinitrotoluene | 121-14-2 | 2600 U | 26000 UD | 210 U | 2700 U | 14000 UD | 560 U |
| 2,6-Dinitrotoluene | 606-20-2 | 2500 U | 25000 UD | 210 U | 2600 U | 13000 UD | 540 U |
| 2-Chloronaphthalene | 91-58-7 | 3000 U | 30000 UD | 240 U | 3100 U | 16000 UD | 630 U |
| 2-Chlorophenol | 95-57-8 | 2800 U | 28000 UD | 230 U | 3000 U | 15000 UD | 610 U |
| 2-Methylnaphthalene | 91-57-6 | 17000 J | 30000 UD | 380 J | 20000 | 20000 JD | 21000 |
| 2-Methylphenol | 95-48-7 | 3000 U | 30000 UD | 240 U | 3100 U | 16000 UD | 630 U |
| 2-Nitroaniline | 88-74-4 | 2300 U | 23000 UD | 180 U | 2400 U | 12000 UD | 480 U |
| 2-Nitrophenol | 88-75-5 | 2700 U | 27000 UD | 220 U | 2900 U | 14000 UD | 590 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 3000 U | 30000 UD | 250 U | 3200 U | 16000 UD | 650 U |
| 3+4-Methylphenols | 106-44-5 | 2800 U | 28000 UD | 230 U | 3000 U | 15000 UD | 600 U |
| 3-Nitroaniline | 99-09-2 | 2300 U | 23000 UD | 190 U | 2400 U | 12000 UD | 500 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 3500 U | 35000 UD | 280 U | 3600 U | 18000 UD | 740 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 2700 U | 27000 UD | 220 U | 2800 U | 14000 UD | 570 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 2500 U | 25000 UD | 200 U | 2600 U | 13000 UD | 530 U |
| 4-Chloroaniline | 106-47-8 | 2100 U | 21000 UD | 170 U | 2200 U | 11000 UD | 450 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 2800 U | 28000 UD | 230 U | 3000 U | 15000 UD | 600 U |
| 4-Nitroaniline | 100-01-6 | 3000 U | 30000 UD | 250 U | 3200 U | 16000 UD | 650 U |
| 4-Nitrophenol | 100-02-7 | 2200 U | 22000 UD | 180 U | 2300 U | 12000 UD | 470 U |
| Acenaphthene | 83-32-9 | 58000 | 52000 JD | 1000 J | 54000 | 49000 JD | 21000 |
| Acenaphthylene | 208-96-8 | 2900 U | 29000 UD | 240 U | 3000 U | 15000 UD | 930 J |
| Acetophenone | 98-86-2 | 2600 U | 26000 UD | 210 U | 2700 U | 14000 UD | 560 U |
| Anthracene | 120-12-7 | 100000 | 88000 JD | 1600 | 100000 | 100000 D | 30000 |
| Atrazine | 1912-24-9 | 2700 U | 27000 UD | 220 U | 2900 U | 14000 UD | 580 U |
| Benzaldehyde | 100-52-7 | 3700 U | 37000 UD | 300 U | 3800 U | 19000 UD | 780 U |
| Benzo(a)anthracene | 56-55-3 | 120000 | 120000 JD | 2600 | 120000 | 120000 D | 43000 E |
| Benzo(a)pyrene | 50-32-8 | 120000 | 96000 JD | 2200 | 120000 | 85000 JD | 40000 E |
| Benzo(b)fluoranthene | 205-99-2 | 160000 E | 110000 JD | 2700 | 150000 E | 94000 D | 53000 E |
| Benzo(g,h,i)perylene | 191-24-2 | 23000 | 57000 JD | 730 J | 18000 J | 35000 JD | 5700 |
| Benzo(k)fluoranthene | 207-08-9 | 58000 | 39000 UD | 860 J | 52000 | 34000 JD | 19000 |
| bis(2-Chloroethoxy)methane | 111-91-1 | 2900 U | 29000 UD | 240 U | 3100 U | 16000 UD | 630 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 2800 U | 28000 UD | 230 U | 3000 U | 15000 UD | 600 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 3400 U | 34000 UD | 280 U | 3600 U | 18000 UD | 730 U |
| Butylbenzylphthalate | 85-68-7 | 2900 U | 29000 UD | 230 U | 3000 U | 15000 UD | 620 U |
| Caprolactam | 105-60-2 | 2900 U | 29000 UD | 230 U | 3000 U | 15000 UD | 610 U |
| Carbazole | 86-74-8 | 39000 | 36000 JD | 640 J | 45000 | 44000 JD | 17000 |
| Chrysene | 218-01-9 | 110000 | 110000 JD | 2600 | 110000 | 110000 D | 38000 E |
| Dibenz(a,h)anthracene | 53-70-3 | 2400 J | 22000 UD | 180 U | 2300 U | 12000 UD | 640 J |
| Dibenzofuran | 132-64-9 | 42000 | 39000 JD | 740 J | 35000 | 32000 JD | 14000 |
| Diethylphthalate | 84-66-2 | 3100 U | 31000 UD | 250 U | 3200 U | 16000 UD | 660 U |
| Dimethylphthalate | 131-11-3 | 2900 U | 29000 UD | 230 U | 3000 U | 15000 UD | 610 U |
| Di-n-butylphthalate | 84-74-2 | 2700 U | 27000 UD | 220 U | 2900 U | 14000 UD | 580 U |
| Di-n-octyl phthalate | 117-84-0 | 3000 U | 30000 UD | 250 U | 3200 U | 16000 UD | 650 U |
| Fluoranthene | 206-44-0 | 280000 E | 300000 D | 6000 | 250000 E | 290000 D | 64000 E |
| Fluorene | 86-73-7 | 60000 | 49000 JD | 1100 J | 52000 | 46000 JD | 23000 |
| Hexachlorobenzene | 118-74-1 | 2800 U | 28000 UD | 230 U | 3000 U | 15000 UD | 610 U |
| Hexachlorobutadiene | 87-68-3 | 2700 U | 27000 UD | 220 U | 2900 U | 14000 UD | 590 U |
| Hexachlorocyclopentadiene | 77-47-4 | 2800 U | 28000 UD | 230 U | 3000 U | 15000 UD | 610 U |
| Hexachloroethane | 67-72-1 | 3000 U | 30000 UD | 250 U | 3200 U | 16000 UD | 650 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 9800 J | 48000 JD | 660 J | 8200 J | 32000 JD | 3200 J |
| Isophorone | 78-59-1 | 2700 U | 27000 UD | 220 U | 2800 U | 14000 UD | 570 U |
| Naphthalene | 91-20-3 | 35000 | 36000 JD | 710 J | 31000 | 30000 JD | 22000 |
| Nitrobenzene | 98-95-3 | 3900 U | 38000 UD | 320 U | 4100 U | 20000 UD | 830 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 3000 U | 30000 UD | 240 U | 3100 U | 15000 UD | 630 U |
| N-Nitrosodiphenylamine | 86-30-6 | 2900 U | 29000 UD | 240 U | 3100 U | 15000 UD | 630 U |
| Pentachlorophenol | 87-86-5 | 4100 U | 41000 UD | 340 U | 4300 U | 22000 UD | 880 U |
| Phenanthrene | 85-01-8 | 280000 E | 360000 D | 6300 | 260000 E | 340000 D | 69000 E |
| Phenol | 108-95-2 | 2700 U | 27000 UD | 220 U | 2800 U | 14000 UD | 580 U |
| Pyrene | 129-00-0 | 250000 E | 270000 D | 5900 | 240000 E | 270000 D | 66000 E |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-11(6-8)DL | P-11(8-10) | P-11(8-10)DL | P-11(10-12) | P-11(10-12)DL | P-11(12-14) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-07DL | T2527-08 | T2527-08DL | T2527-09 | T2527-09DL | T2527-10 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 25.0 | 2.0 | 20.0 | 10.0 | 50.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 3100 UD | 4900 | 6600 JD | 6700 J | 8600 JD | 440 |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 3100 UD | 260 U | 2600 UD | 1300 U | 6400 UD | 66 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 2900 UD | 250 U | 2500 UD | 1200 U | 6100 UD | 63 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 2800 UD | 240 U | 2400 UD | 1200 U | 5900 UD | 61 U |
| 2,4-Dichlorophenol | 120-83-2 | 3500 UD | 300 U | 3000 UD | 1500 U | 7400 UD | 76 U |
| 2,4-Dimethylphenol | 105-67-9 | 3000 UD | 260 U | 2600 UD | 1300 U | 6300 UD | 65 U |
| 2,4-Dinitrophenol | 51-28-5 | 16000 UD | 1400 U | 14000 UD | 6800 U | 34000 UD | 350 U |
| 2,4-Dinitrotoluene | 121-14-2 | 2800 UD | 240 U | 2400 UD | 1200 U | 2800 UD | 61 U |
| 2,6-Dinitrotoluene | 606-20-2 | 2700 UD | 230 U | 2300 UD | 1100 U | 2700 UD | 58 U |
| 2-Chloronaphthalene | 91-58-7 | 3200 UD | 270 U | 2700 UD | 1300 U | 6600 UD | 68 U |
| 2-Chlorophenol | 95-57-8 | 3000 UD | 260 U | 2600 UD | 1300 U | 6400 UD | 66 U |
| 2-Methylnaphthalene | 91-57-6 | 21000 D | 59000 E | 85000 D | 98000 E | 140000 D | 5600 E |
| 2-Methylphenol | 95-48-7 | 3200 UD | 270 U | 2700 UD | 1300 U | 6600 UD | 69 U |
| 2-Nitroaniline | 88-74-4 | 2400 UD | 200 U | 2000 UD | 1000 U | 5100 UD | 52 U |
| 2-Nitrophenol | 88-75-5 | 2900 UD | 250 U | 2500 UD | 1200 U | 6100 UD | 63 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 3300 UD | 270 U | 2700 UD | 1400 U | 6800 UD | 71 U |
| 3+4-Methylphenols | 106-44-5 | 3000 UD | 250 U | 2500 UD | 1300 U | 6300 UD | 65 U |
| 3-Nitroaniline | 99-09-2 | 2500 UD | 210 U | 2100 UD | 1000 U | 5200 UD | 54 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 3700 UD | 310 U | 3100 UD | 1600 U | 7800 UD | 80 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 2800 UD | 240 U | 2400 UD | 1200 U | 6000 UD | 62 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 2600 UD | 220 U | 2200 UD | 1100 U | 5500 UD | 57 U |
| 4-Chloroaniline | 106-47-8 | 2300 UD | 190 U | 1900 UD | 950 U | 4800 UD | 49 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 3000 UD | 250 U | 2500 UD | 1300 U | 6300 UD | 65 U |
| 4-Nitroaniline | 100-01-6 | 3200 UD | 270 U | 2700 UD | 1400 U | 6800 UD | 70 U |
| 4-Nitrophenol | 100-02-7 | 2400 UD | 200 U | 2000 UD | 990 U | 5000 UD | 51 U |
| Acenaphthene | 83-32-9 | 21000 D | 10000 | 14000 JD | 12000 | 14000 JD | 710 |
| Acenaphthylene | 208-96-8 | 3100 UD | 2500 | 2600 UD | 4300 J | 6500 UD | 210 J |
| Acetophenone | 98-86-2 | 2800 UD | 240 U | 2400 UD | 1200 U | 5800 UD | 60 U |
| Anthracene | 120-12-7 | 40000 D | 11000 | 15000 JD | 15000 | 17000 JD | 1000 |
| Atrazine | 1912-24-9 | 2900 UD | 250 U | 2500 UD | 1200 U | 6100 UD | 63 U |
| Benzaldehyde | 100-52-7 | 3900 UD | 330 U | 3300 UD | 1600 U | 8200 UD | 85 U |
| Benzo(a)anthracene | 56-55-3 | 40000 D | 6500 | 6300 JD | 7600 J | 7400 JD | 530 |
| Benzo(a)pyrene | 50-32-8 | 29000 D | 3900 | 3900 JD | 4500 J | 6400 UD | 300 J |
| Benzo(b)fluoranthene | 205-99-2 | 32000 D | 4300 | 3400 JD | 3700 J | 4400 UD | 270 J |
| Benzo(g,h,i)perylene | 191-24-2 | 11000 JD | 1600 | 2700 UD | 1300 U | 6800 UD | 110 J |
| Benzo(k)fluoranthene | 207-08-9 | 10000 JD | 1600 J | 3500 UD | 1800 U | 8800 UD | 110 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | 3100 UD | 260 U | 2600 UD | 1300 U | 6600 UD | 68 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 3000 UD | 250 U | 2500 UD | 1300 U | 6300 UD | 65 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 3700 UD | 310 U | 3100 UD | 1500 U | 7700 UD | 79 U |
| Butylbenzylphthalate | 85-68-7 | 3100 UD | 260 U | 2600 UD | 1300 U | 6500 UD | 67 U |
| Caprolactam | 105-60-2 | 3100 UD | 260 U | 2600 UD | 1300 U | 6400 UD | 66 U |
| Carbazole | 86-74-8 | 15000 JD | 250 U | 2500 UD | 1200 U | 6100 UD | 63 U |
| Chrysene | 218-01-9 | 38000 D | 5800 | 7200 JD | 7500 J | 7400 JD | 540 |
| Dibenz(a,h)anthracene | 53-70-3 | 2400 UD | 250 J | 2000 UD | 1000 U | 5000 UD | 52 U |
| Dibenzofuran | 132-64-9 | 13000 JD | 270 U | 5800 JD | 4500 J | 6600 UD | 350 J |
| Diethylphthalate | 84-66-2 | 3300 UD | 280 U | 2800 UD | 1400 U | 6900 UD | 71 U |
| Dimethylphthalate | 131-11-3 | 3100 UD | 260 U | 2600 UD | 1300 U | 6400 UD | 66 U |
| Di-n-butylphthalate | 84-74-2 | 2900 UD | 240 U | 2400 UD | 1200 U | 6100 UD | 63 U |
| Di-n-octyl phthalate | 117-84-0 | 3200 UD | 270 U | 2700 UD | 1400 U | 6800 UD | 70 U |
| Fluoranthene | 206-44-0 | 82000 D | 13000 E | 14000 JD | 16000 | 14000 JD | 1200 |
| Fluorene | 86-73-7 | 23000 D | 8000 | 15000 JD | 14000 | 19000 JD | 690 |
| Hexachlorobenzene | 118-74-1 | 3000 UD | 260 U | 2600 UD | 1300 U | 6400 UD | 66 U |
| Hexachlorobutadiene | 87-68-3 | 2900 UD | 250 U | 2500 UD | 1200 U | 6100 UD | 63 U |
| Hexachlorocyclopentadiene | 77-47-4 | 3000 UD | 260 U | 2600 UD | 1300 U | 6400 UD | 66 U |
| Hexachloroethane | 67-72-1 | 3200 UD | 270 U | 2700 UD | 1400 U | 6800 UD | 70 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 11000 JD | 820 J | 2000 UD | 1000 U | 5100 UD | 84 J |
| Isophorone | 78-59-1 | 2900 UD | 240 U | 2400 UD | 1200 U | 6000 UD | 62 U |
| Naphthalene | 91-20-3 | 22000 D | 53000 E | 88000 D | 90000 E | 140000 D | 5300 E |
| Nitrobenzene | 98-95-3 | 20000 UD | 830 U | 3500 UD | 1700 U | 8700 UD | 90 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 3200 UD | 270 U | 2700 UD | 1300 U | 6600 UD | 68 U |
| N-Nitrosodiphenylamine | 86-30-6 | 3100 UD | 260 U | 2600 UD | 1300 U | 6600 UD | 68 U |
| Pentachlorophenol | 87-86-5 | 4400 UD | 370 U | 3700 UD | 1900 U | 9300 UD | 95 U |
| Phenanthrene | 85-01-8 | 97000 D | 26000 E | 40000 D | 40000 | 53000 D | 2700 |
| Phenol | 108-95-2 | 2900 UD | 240 U | 2400 UD | 1200 U | 6100 UD | 62 U |
| Pyrene | 129-00-0 | 87000 D | 17000 E | 28000 D | 35000 | 35000 JD | 2300 |

## Queens West Development-Parcel 9

**Soil Samples**

Semi-Volatile Organic Compounds

| Sample ID | | P-11(12-14)DL | P-11(14-16) | P-11(14-16)DL | P-11(14-16)DL2 | P-11(16-18) | P-11(16-18)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-10DL | T2527-11 | T2527-11DL | T2527-11DL2 | T2527-12 | T2527-12DL |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 1.0 | 5.0 | 25.0 | 2.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 420 JD | 3600 | 6400 D | 5800 JD | 5400 | 7300 JD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 330 UD | 120 U | 620 UD | 3100 UD | 260 U | 1300 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 320 UD | 120 U | 590 UD | 2900 UD | 240 U | 1200 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 300 UD | 110 U | 560 UD | 2800 UD | 230 U | 1200 UD |
| 2,4-Dichlorophenol | 120-83-2 | 380 UD | 140 U | 710 UD | 3500 UD | 290 U | 1500 UD |
| 2,4-Dimethylphenol | 105-67-9 | 330 UD | 120 U | 610 UD | 3000 UD | 250 U | 1300 UD |
| 2,4-Dinitrophenol | 51-28-5 | 1800 UD | 660 U | 3300 UD | 16000 UD | 1400 U | 6800 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 240 U | 110 U | 2400 UD | 1200 U | 1200 U | 5900 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 290 UD | 110 U | 2300 UD | 1100 U | 230 U | 1100 UD |
| 2-Chloronaphthalene | 91-58-7 | 340 UD | 130 U | 640 UD | 3200 UD | 260 U | 1300 UD |
| 2-Chlorophenol | 95-57-8 | 330 UD | 120 U | 610 UD | 3100 UD | 250 U | 1300 UD |
| 2-Methylnaphthalene | 91-57-6 | 6300 D | 48000 E | 52000 ED | 79000 D | 71000 E | 74000 ED |
| 2-Methylphenol | 95-48-7 | 340 UD | 130 U | 640 UD | 3200 UD | 260 U | 1300 UD |
| 2-Nitroaniline | 88-74-4 | 260 UD | 97 U | 480 UD | 2400 UD | 200 U | 1000 UD |
| 2-Nitrophenol | 88-75-5 | 320 UD | 120 U | 590 UD | 2900 UD | 250 U | 1200 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 350 UD | 130 U | 660 UD | 3300 UD | 270 U | 1400 UD |
| 3+4-Methylphenols | 108-44-5 | 330 UD | 120 U | 600 UD | 3000 UD | 250 U | 1300 UD |
| 3-Nitroaniline | 99-09-2 | 270 UD | 100 U | 500 UD | 2500 UD | 210 U | 1000 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 400 UD | 150 U | 740 UD | 3700 UD | 310 U | 1500 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 310 UD | 110 U | 570 UD | 2900 UD | 240 U | 1200 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 280 UD | 110 U | 530 UD | 2600 UD | 220 U | 1100 UD |
| 4-Chloroaniline | 106-47-8 | 250 UD | 91 U | 460 UD | 2300 UD | 190 U | 950 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 330 UD | 120 U | 610 UD | 3000 UD | 250 U | 1300 UD |
| 4-Nitroaniline | 100-01-6 | 350 UD | 130 U | 650 UD | 3300 UD | 270 U | 1400 UD |
| 4-Nitrophenol | 100-02-7 | 260 UD | 95 U | 480 UD | 2400 UD | 200 U | 980 UD |
| Acenaphthene | 83-32-9 | 750 JD | 4000 | 6600 D | 5900 JD | 5400 | 8000 D |
| Acenaphthylene | 208-96-8 | 330 UD | 1600 | 4500 D | 4000 JD | 2900 | 5300 JD |
| Acetophenone | 98-86-2 | 300 UD | 110 U | 560 UD | 2800 UD | 230 U | 1200 UD |
| Anthracene | 120-12-7 | 810 JD | 8700 E | 9000 D | 9900 JD | 8900 | 12000 D |
| Atrazine | 1912-24-9 | 320 UD | 120 U | 590 UD | 2900 UD | 240 U | 1200 UD |
| Benzaldehyde | 100-52-7 | 420 UD | 160 U | 790 UD | 3900 UD | 330 U | 1600 UD |
| Benzo(a)anthracene | 56-55-3 | 420 JD | 4000 | 3600 JD | 3700 JD | 4500 | 4800 JD |
| Benzo(a)pyrene | 50-32-8 | 330 UD | 3300 | 2600 JD | 3100 UD | 3900 | 3100 JD |
| Benzo(b)fluoranthene | 205-99-2 | 230 JD | 2600 | 1800 JD | 2100 UD | 2700 | 2500 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 340 UD | 1100 | 1200 JD | 3200 UD | 1200 J | 1400 JD |
| Benzo(k)fluoranthene | 207-08-9 | 450 UD | 750 J | 840 UD | 4200 UD | 830 J | 1800 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 340 UD | 130 U | 630 UD | 3200 UD | 260 U | 1300 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 330 UD | 120 U | 610 UD | 3000 UD | 250 U | 1300 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 400 UD | 150 U | 740 UD | 3700 UD | 310 U | 1500 UD |
| Butylbenzylphthalate | 85-68-7 | 330 UD | 120 U | 620 UD | 3100 UD | 260 U | 1300 UD |
| Caprolactam | 105-60-2 | 330 UD | 120 U | 620 UD | 3100 UD | 260 U | 1300 UD |
| Carbazole | 86-74-8 | 310 UD | 120 U | 590 UD | 2900 UD | 240 U | 1200 UD |
| Chrysene | 218-01-9 | 410 JD | 3900 | 3800 JD | 3400 UD | 4700 | 5100 JD |
| Dibenz(a,h)anthracene | 53-70-3 | 260 UD | 110 J | 480 UD | 2400 UD | 200 U | 1000 UD |
| Dibenzofuran | 132-64-9 | 340 UD | 130 U | 1400 JD | 3200 UD | 260 U | 2000 JD |
| Diethylphthalate | 84-66-2 | 360 UD | 130 U | 660 UD | 3300 UD | 260 U | 1400 UD |
| Dimethylphthalate | 131-11-3 | 330 UD | 120 U | 620 UD | 3100 UD | 260 U | 1300 UD |
| Di-n-butylphthalate | 84-74-2 | 310 UD | 120 U | 580 UD | 2900 UD | 240 U | 1200 UD |
| Di-n-octyl phthalate | 117-84-0 | 350 UD | 130 U | 650 UD | 3300 UD | 270 U | 1400 UD |
| Fluoranthene | 206-44-0 | 870 JD | 7800 E | 7100 D | 6800 JD | 8800 | 9200 D |
| Fluorene | 86-73-7 | 920 JD | 6300 E | 9100 D | 11000 JD | 7800 | 12000 D |
| Hexachlorobenzene | 118-74-1 | 330 UD | 120 U | 610 UD | 3100 UD | 250 U | 1300 UD |
| Hexachlorobutadiene | 87-68-3 | 320 UD | 120 U | 590 UD | 2900 UD | 250 U | 1200 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 330 UD | 120 U | 610 UD | 3100 UD | 250 U | 1300 UD |
| Hexachloroethane | 67-72-1 | 350 UD | 130 U | 650 UD | 3300 UD | 270 U | 1400 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 260 UD | 300 J | 820 JD | 2400 UD | 620 J | 1000 UD |
| Isophorone | 78-59-1 | 310 UD | 120 U | 580 UD | 2900 UD | 240 U | 1200 UD |
| Naphthalene | 91-20-3 | 6800 D | 47000 E | 53000 ED | 85000 D | 67000 E | 78000 ED |
| Nitrobenzene | 98-95-3 | 450 UD | 170 U | 3500 UD | 4200 UD | 350 U | 1700 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 340 UD | 130 U | 630 UD | 3200 UD | 260 U | 1300 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 340 UD | 130 U | 630 UD | 3200 UD | 260 U | 1300 UD |
| Pentachlorophenol | 87-86-5 | 480 UD | 180 U | 890 UD | 4400 UD | 370 U | 1800 UD |
| Phenanthrene | 85-01-8 | 2800 D | 19000 E | 22000 D | 29000 D | 23000 E | 31000 D |
| Phenol | 108-95-2 | 310 UD | 120 U | 580 UD | 2900 UD | 240 U | 1200 UD |
| Pyrene | 129-00-0 | 1800 JD | 8500 E | 18000 D | 20000 D | 22000 E | 27000 D |

## Queens West Development-Parcel 9
### Soil Samples
Semi-Volatile Organic Compounds

| Sample ID | | P-11(16-18)DL2 | P-11(18-20) | P-11(21-22) | P-11(21-22)DL | P-11(22-23) | FIELDBLANK2 |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2527-12DL2 | T2527-13 | T2543-14 | T2543-14DL | T2543-15 | T2543-16 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | WATER |
| Dilution Factor | | 50.0 | 1.0 | 1.0 | 10.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/L |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 6800 JD | 100 J | 3100 | 2000 JD | 110 J | 1.5 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 6400 UD | 65 U | 130 U | 1300 UD | 65 U | 1.3 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 6100 UD | 62 U | 120 U | 1200 UD | 61 U | 1.3 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 5900 UD | 59 U | 120 U | 1200 UD | 59 U | 1.2 U |
| 2,4-Dichlorophenol | 120-83-2 | 7400 UD | 75 U | 150 U | 1500 UD | 74 U | 1.6 U |
| 2,4-Dimethylphenol | 105-67-9 | 6300 UD | 64 U | 130 U | 1300 UD | 64 U | 1.2 U |
| 2,4-Dinitrophenol | 51-28-5 | 34000 UD | 360 U | 690 U | 6900 UD | 340 U | 3.7 U |
| 2,4-Dinitrotoluene | 121-14-2 | 5900 UD | 61 U | 120 U | 1200 UD | 59 U | 1.3 U |
| 2,6-Dinitrotoluene | 606-20-2 | 5600 UD | 57 U | 110 U | 1100 UD | 57 U | 1.3 U |
| 2-Chloronaphthalene | 91-58-7 | 6600 UD | 67 U | 130 U | 1300 UD | 67 U | 1.5 U |
| 2-Chlorophenol | 95-57-8 | 6400 UD | 64 U | 130 U | 1300 UD | 64 U | 1.2 U |
| 2-Methylnaphthalene | 91-57-6 | 110000 D | 1400 | 26000 E | 33000 D | 870 | 1.1 U |
| 2-Methylphenol | 95-48-7 | 6600 UD | 67 U | 130 U | 1300 UD | 67 U | 1.6 U |
| 2-Nitroaniline | 88-74-4 | 5100 UD | 51 U | 100 U | 1000 UD | 51 U | 1.1 U |
| 2-Nitrophenol | 88-75-5 | 6100 UD | 62 U | 120 U | 1200 UD | 62 U | 1.4 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 6800 UD | 69 U | 140 U | 1400 UD | 69 U | 1.1 U |
| 3+4-Methylphenols | 106-44-5 | 6300 UD | 64 U | 130 U | 1300 UD | 63 U | 1.4 U |
| 3-Nitroaniline | 99-09-2 | 5200 UD | 53 U | 110 U | 1100 UD | 52 U | 1.1 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 7700 UD | 78 U | 160 U | 1600 UD | 78 U | 1.7 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 5900 UD | 60 U | 120 U | 1200 UD | 60 U | 1.6 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 5500 UD | 56 U | 110 U | 1100 UD | 55 U | 1.4 U |
| 4-Chloroaniline | 106-47-8 | 4700 UD | 48 U | 97 U | 970 UD | 48 U | 0.900 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 6300 UD | 64 U | 130 U | 1300 UD | 63 U | 1.4 U |
| 4-Nitroaniline | 100-01-6 | 6800 UD | 69 U | 140 U | 1400 UD | 68 U | 1.2 U |
| 4-Nitrophenol | 100-02-7 | 4900 UD | 50 U | 100 U | 1000 UD | 50 U | 3.3 U |
| Acenaphthene | 83-32-9 | 7300 JD | 130 J | 3800 | 3400 JD | 310 J | 1.4 U |
| Acenaphthylene | 208-96-8 | 6500 UD | 69 J | 1600 | 1400 JD | 65 U | 1.4 U |
| Acetophenone | 98-86-2 | 5800 UD | 59 U | 120 U | 1200 UD | 59 U | 1.3 U |
| Anthracene | 120-12-7 | 12000 JD | 190 J | 3300 | 3800 JD | 140 J | 1.5 U |
| Atrazine | 1912-24-9 | 6100 UD | 62 U | 120 U | 1200 UD | 61 U | 1.3 U |
| Benzaldehyde | 100-52-7 | 8200 UD | 83 U | 170 U | 1700 UD | 82 U | 1.7 U |
| Benzo(a)anthracene | 56-55-3 | 5600 UD | 78 J | 1800 | 1700 JD | 58 J | 1.2 U |
| Benzo(a)pyrene | 50-32-8 | 6400 UD | 65 U | 1300 | 1300 UD | 64 U | 1.2 U |
| Benzo(b)fluoranthene | 205-99-2 | 4400 UD | 44 U | 1000 | 890 UD | 44 U | 0.790 U |
| Benzo(g,h,i)perylene | 191-24-2 | 6600 UD | 67 U | 640 J | 1300 UD | 66 U | 1.1 U |
| Benzo(k)fluoranthene | 207-08-9 | 8800 UD | 89 U | 270 J | 1800 UD | 88 U | 2.0 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 6600 UD | 66 U | 130 U | 1300 UD | 66 U | 1.4 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 6300 UD | 64 U | 130 U | 1300 UD | 63 U | 1.5 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 7600 UD | 78 U | 160 U | 1600 UD | 77 U | 1.6 U |
| Butylbenzylphthalate | 85-68-7 | 6400 UD | 65 U | 130 U | 1300 UD | 65 U | 1.5 U |
| Caprolactam | 105-60-2 | 6400 UD | 65 U | 130 U | 1300 UD | 64 U | 1.3 U |
| Carbazole | 86-74-8 | 6100 UD | 62 U | 320 J | 1200 UD | 61 U | 1.3 U |
| Chrysene | 218-01-9 | 7200 UD | 73 U | 1800 | 1500 UD | 72 U | 1.8 U |
| Dibenz(a,h)anthracene | 53-70-3 | 5000 UD | 51 U | 100 U | 1000 UD | 50 U | 0.910 U |
| Dibenzofuran | 132-64-9 | 6600 UD | 67 U | 1600 | 1400 JD | 200 J | 1.4 U |
| Diethylphthalate | 84-66-2 | 6900 UD | 70 U | 140 U | 1400 UD | 69 U | 1.4 U |
| Dimethylphthalate | 131-11-3 | 6400 UD | 65 U | 130 U | 1300 UD | 64 U | 1.3 U |
| Di-n-butylphthalate | 84-74-2 | 6100 UD | 62 U | 120 U | 1200 UD | 61 U | 1.4 U |
| Di-n-octyl phthalate | 117-84-0 | 6800 UD | 69 U | 140 U | 1400 UD | 68 U | 1.4 U |
| Fluoranthene | 206-44-0 | 8200 JD | 160 J | 3800 | 3100 JD | 160 J | 1.3 U |
| Fluorene | 86-73-7 | 14000 JD | 210 J | 4300 | 4700 JD | 300 J | 1.5 U |
| Hexachlorobenzene | 118-74-1 | 6400 UD | 65 U | 130 U | 1300 UD | 64 U | 1.3 U |
| Hexachlorobutadiene | 87-68-3 | 6100 UD | 62 U | 120 U | 1200 UD | 62 U | 1.4 U |
| Hexachlorocyclopentadiene | 77-47-4 | 6400 UD | 64 U | 130 U | 1300 UD | 64 U | 1.2 U |
| Hexachloroethane | 67-72-1 | 6800 UD | 69 U | 140 U | 1400 UD | 68 U | 1.2 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 5100 UD | 51 U | 420 J | 1000 UD | 51 U | 0.870 U |
| Isophorone | 78-59-1 | 6000 UD | 61 U | 120 U | 1200 UD | 60 U | 1.3 U |
| Naphthalene | 91-20-3 | 120000 D | 1500 | 28000 E | 38000 D | 1500 | 1.5 U |
| Nitrobenzene | 98-95-3 | 8700 UD | 88 U | 180 U | 1800 UD | 87 U | 1.7 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 6600 UD | 67 U | 130 U | 1300 UD | 66 U | 1.5 U |
| N-Nitrosodiphenylamine | 86-30-6 | 6600 UD | 67 U | 130 U | 1300 UD | 66 U | 1.3 U |
| Pentachlorophenol | 87-86-5 | 9200 UD | 94 U | 190 U | 1900 UD | 93 U | 1.7 U |
| Phenanthrene | 85-01-8 | 36000 JD | 630 | 9500 E | 14000 D | 690 | 1.5 U |
| Phenol | 108-95-2 | 6000 UD | 61 U | 120 U | 1200 UD | 61 U | 1.3 U |
| Pyrene | 129-00-0 | 26000 JD | 450 | 7500 E | 9100 D | 280 J | 1.5 U |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-12(0-2) | P-12(2-4) | P-12(4-6) | P-12(6-8) | P-12(8-10) | P-12(8-10)RE |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2631-14 | T2631-15 | T2631-16 | T2631-17 | T2631-18 | T2631-18RE |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 10.0 | 5.0 | 10.0 | 2.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 6000 U | 1200 U | 780 U | 590 U | 670 J | 640 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 5900 U | 1100 U | 770 U | 580 U | 120 U | 620 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 5600 U | 1100 U | 730 U | 550 U | 120 U | 590 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 5300 U | 1000 U | 700 U | 530 U | 110 U | 570 U |
| 2,4-Dichlorophenol | 120-83-2 | 6700 U | 1300 U | 880 U | 660 U | 140 U | 710 U |
| 2,4-Dimethylphenol | 105-67-9 | 5800 U | 1100 U | 760 U | 570 U | 120 U | 610 U |
| 2,4-Dinitrophenol | 51-28-5 | 31000 U | 6000 U | 4100 U | 3100 U | 660 U | 3300 U |
| 2,4-Dinitrotoluene | 121-14-2 | 5300 U | 1000 U | 700 U | 530 U | 110 U | 570 U |
| 2,6-Dinitrotoluene | 606-20-2 | 5100 U | 990 U | 670 U | 510 U | 110 U | 550 U |
| 2-Chloronaphthalene | 91-58-7 | 6000 U | 1200 U | 790 U | 590 U | 130 U | 640 U |
| 2-Chlorophenol | 95-57-8 | 5800 U | 1100 U | 760 U | 570 U | 120 U | 620 U |
| 2-Methylnaphthalene | 91-57-6 | 6100 U | 1200 U | 800 U | 600 U | 6400 E | 5900 |
| 2-Methylphenol | 95-48-7 | 6100 U | 1200 U | 790 U | 600 U | 130 U | 640 U |
| 2-Nitroaniline | 88-74-4 | 4600 U | 890 U | 600 U | 450 U | 98 U | 490 U |
| 2-Nitrophenol | 88-75-5 | 5600 U | 1100 U | 730 U | 550 U | 120 U | 590 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 6200 U | 1200 U | 810 U | 610 U | 130 U | 660 U |
| 3+4-Methylphenols | 106-44-5 | 5700 U | 1100 U | 750 U | 570 U | 120 U | 610 U |
| 3-Nitroaniline | 99-09-2 | 4700 U | 920 U | 620 U | 470 U | 100 U | 500 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 7100 U | 1400 U | 920 U | 700 U | 150 U | 750 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 5400 U | 1000 U | 710 U | 530 U | 120 U | 580 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 5000 U | 970 U | 660 U | 490 U | 110 U | 530 U |
| 4-Chloroaniline | 106-47-8 | 4300 U | 840 U | 570 U | 430 U | 92 U | 460 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 5800 U | 1100 U | 750 U | 570 U | 120 U | 610 U |
| 4-Nitroaniline | 100-01-6 | 6200 U | 1200 U | 810 U | 610 U | 130 U | 660 U |
| 4-Nitrophenol | 100-02-7 | 4500 U | 870 U | 590 U | 440 U | 95 U | 480 U |
| Acenaphthene | 83-32-9 | 6500 U | 1300 U | 850 U | 640 U | 1100 | 1100 J |
| Acenaphthylene | 208-96-8 | 5900 U | 1100 U | 770 U | 580 U | 490 J | 630 U |
| Acetophenone | 98-86-2 | 5300 U | 1000 U | 700 U | 520 U | 110 U | 560 U |
| Anthracene | 120-12-7 | 5600 U | 1100 U | 720 U | 1200 J | 1500 | 1500 J |
| Atrazine | 1912-24-9 | 5800 U | 1100 U | 730 U | 550 U | 120 U | 590 U |
| Benzaldehyde | 100-52-7 | 7500 U | 1400 U | 980 U | 740 U | 160 U | 790 U |
| Benzo(a)anthracene | 56-55-3 | 10000 J | 1700 J | 670 U | 4000 | 1600 | 1300 J |
| Benzo(a)pyrene | 50-32-8 | 9900 J | 2100 J | 780 U | 3800 | 980 | 970 J |
| Benzo(b)fluoranthene | 205-99-2 | 12000 J | 2400 J | 520 U | 4800 | 1000 | 1100 J |
| Benzo(g,h,i)perylene | 191-24-2 | 6000 U | 1200 J | 1100 J | 1800 J | 280 J | 640 U |
| Benzo(k)fluoranthene | 207-08-9 | 8000 U | 1500 U | 1000 U | 1500 J | 310 J | 850 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 6000 U | 1200 U | 780 U | 590 U | 130 U | 630 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 5800 U | 1100 U | 750 U | 570 U | 120 U | 610 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 7000 U | 1300 U | 910 U | 690 U | 150 U | 740 U |
| Butylbenzylphthalate | 85-68-7 | 5900 U | 1100 U | 770 U | 580 U | 120 U | 620 U |
| Caprolactam | 105-60-2 | 5900 U | 1100 U | 770 U | 580 U | 120 U | 620 U |
| Carbazole | 86-74-8 | 5600 U | 1100 U | 730 U | 550 U | 120 U | 590 U |
| Chrysene | 218-01-9 | 7100 J | 1300 U | 860 U | 3100 J | 1500 | 850 J |
| Dibenz(a,h)anthracene | 53-70-3 | 4600 U | 880 U | 600 U | 450 U | 97 U | 480 U |
| Dibenzofuran | 132-64-9 | 6000 U | 1200 U | 790 U | 590 U | 610 J | 680 J |
| Diethylphthalate | 84-66-2 | 6300 U | 1200 U | 820 U | 620 U | 130 U | 670 U |
| Dimethylphthalate | 131-11-3 | 5900 U | 1100 U | 770 U | 580 U | 120 U | 620 U |
| Di-n-butylphthalate | 84-74-2 | 5500 U | 1100 U | 730 U | 550 U | 120 U | 590 U |
| Di-n-octyl phthalate | 117-84-0 | 6200 U | 1200 U | 810 U | 610 U | 130 U | 660 U |
| Fluoranthene | 206-44-0 | 17000 J | 2800 J | 710 U | 11000 | 2700 | 2900 J |
| Fluorene | 86-73-7 | 6100 U | 1200 U | 800 U | 600 U | 1200 | 1200 J |
| Hexachlorobenzene | 118-74-1 | 5800 U | 1100 U | 760 U | 570 U | 120 U | 620 U |
| Hexachlorobutadiene | 87-68-3 | 5600 U | 1100 U | 730 U | 550 U | 120 U | 590 U |
| Hexachlorocyclopentadiene | 77-47-4 | 5800 U | 1100 U | 760 U | 570 U | 120 U | 620 U |
| Hexachloroethane | 67-72-1 | 6200 U | 1200 U | 810 U | 610 U | 130 U | 660 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 4600 U | 890 U | 600 U | 1100 J | 270 J | 480 U |
| Isophorone | 78-59-1 | 5500 U | 1100 U | 720 U | 540 U | 120 U | 580 U |
| Naphthalene | 91-20-3 | 6700 U | 1200 U | 810 U | 610 U | 8800 E | 8700 |
| Nitrobenzene | 98-95-3 | 7900 U | 1500 U | 1000 U | 780 U | 170 U | 840 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 6000 U | 1200 U | 790 U | 590 U | 130 U | 640 U |
| N-Nitrosodiphenylamine | 86-30-6 | 6000 U | 1200 U | 780 U | 590 U | 130 U | 640 U |
| Pentachlorophenol | 87-86-5 | 8400 U | 1600 U | 1100 U | 830 U | 180 U | 890 U |
| Phenanthrene | 85-01-8 | 12000 J | 2100 J | 780 U | 9000 | 4900 | 5000 |
| Phenol | 108-95-2 | 5500 U | 1100 U | 720 U | 540 U | 120 U | 580 U |
| Pyrene | 129-00-0 | 19000 J | 3700 J | 840 U | 10000 | 3700 | 5000 |
| | | | | | | | |
| | | 87000 | 16000 | 1100 | 51300 | 38010 | 36200 |
| | | 9100 | 2400 | 2880 | 11150 | 86900 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-12(10-12) | P-12(12-14) | P-12(14-16) | P-12(16-18) | FIELDBLANK | P-12(18-20) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2631-19 | T2631-20 | T2632-02 | T2632-03 | T2632-04 | T2632-07 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | WATER | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/L | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 66 U | 72 U | 91 U | 77 U | 1.5 U | 61 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 65 U | 70 U | 89 U | 75 U | 1.3 U | 60 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 62 U | 67 U | 85 U | 71 U | 1.3 U | 57 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 59 U | 64 U | 82 U | 69 U | 1.2 U | 55 U |
| 2,4-Dichlorophenol | 120-83-2 | 75 U | 81 U | 100 U | 86 U | 1.5 U | 69 U |
| 2,4-Dimethylphenol | 105-67-9 | 64 U | 69 U | 88 U | 74 U | 1.2 U | 59 U |
| 2,4-Dinitrophenol | 51-28-5 | 350 U | 370 U | 480 U | 400 U | 3.7 U | 320 U |
| 2,4-Dinitrotoluene | 121-14-2 | 59 U | 64 U | 82 U | 69 U | 1.3 U | 55 U |
| 2,6-Dinitrotoluene | 606-20-2 | 57 U | 62 U | 79 U | 66 U | 1.3 U | 53 U |
| 2-Chloronaphthalene | 91-58-7 | 67 U | 72 U | 92 U | 77 U | 1.5 U | 62 U |
| 2-Chlorophenol | 95-57-8 | 64 U | 70 U | 89 U | 74 U | 1.2 U | 59 U |
| 2-Methylnaphthalene | 91-57-6 | 67 U | 73 U | 93 U | 100 J | 1.1 U | 62 U |
| 2-Methylphenol | 95-48-7 | 67 U | 73 U | 92 U | 78 U | 1.6 U | 85 J |
| 2-Nitroaniline | 88-74-4 | 51 U | 55 U | 70 U | 59 U | 1.1 U | 47 U |
| 2-Nitrophenol | 88-75-5 | 62 U | 67 U | 85 U | 72 U | 1.4 U | 57 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 69 U | 75 U | 95 U | 80 U | 1.1 U | 64 U |
| 3+4-Methylphenols | 106-44-5 | 64 U | 69 U | 88 U | 74 U | 1.4 U | 80 J |
| 3-Nitroaniline | 99-09-2 | 53 U | 57 U | 72 U | 61 U | 1.1 U | 48 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 78 U | 85 U | 110 U | 91 U | 1.7 U | 72 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 60 U | 65 U | 83 U | 70 U | 1.6 U | 56 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 58 U | 60 U | 77 U | 64 U | 1.4 U | 51 U |
| 4-Chloroaniline | 106-47-8 | 48 U | 52 U | 66 U | 56 U | 0.900 U | 44 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 64 U | 69 U | 88 U | 74 U | 1.4 U | 59 U |
| 4-Nitroaniline | 100-01-6 | 69 U | 75 U | 95 U | 80 U | 1.2 U | 64 U |
| 4-Nitrophenol | 100-02-7 | 50 U | 54 U | 69 U | 58 U | 3.3 U | 46 U |
| Acenaphthene | 83-32-9 | 72 U | 150 J | 99 U | 83 U | 1.4 U | 66 U |
| Acenaphthylene | 208-96-8 | 66 U | 71 U | 90 U | 76 U | 1.4 U | 60 U |
| Acetophenone | 98-86-2 | 59 U | 64 U | 81 U | 68 U | 1.3 U | 54 U |
| Anthracene | 120-12-7 | 61 U | 66 U | 84 U | 70 U | 1.5 U | 56 U |
| Atrazine | 1912-24-9 | 62 U | 67 U | 85 U | 72 U | 1.3 U | 57 U |
| Benzaldehyde | 100-52-7 | 83 U | 90 U | 110 U | 96 U | 1.7 U | 76 U |
| Benzo(a)anthracene | 56-55-3 | 56 U | 61 U | 78 U | 65 U | 1.2 U | 52 U |
| Benzo(a)pyrene | 50-32-8 | 65 U | 70 U | 89 U | 75 U | 1.2 U | 59 U |
| Benzo(b)fluoranthene | 205-99-2 | 44 U | 48 U | 61 U | 51 U | 0.790 U | 41 U |
| Benzo(g,h,i)perylene | 191-24-2 | 67 U | 72 U | 92 U | 77 U | 1.1 U | 62 U |
| Benzo(k)fluoranthene | 207-08-9 | 89 U | 96 U | 120 U | 100 U | 2.0 U | 82 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 66 U | 72 U | 91 U | 77 U | 1.4 U | 61 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 64 U | 69 U | 88 U | 74 U | 1.5 U | 59 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 77 U | 84 U | 110 U | 90 U | 3.7 J | 71 U |
| Butylbenzylphthalate | 85-68-7 | 65 U | 71 U | 90 U | 75 U | 1.5 U | 60 U |
| Caprolactam | 105-60-2 | 65 U | 70 U | 89 U | 75 U | 1.3 U | 60 U |
| Carbazole | 86-74-8 | 62 U | 67 U | 85 U | 71 U | 1.3 U | 57 U |
| Chrysene | 218-01-9 | 72 U | 78 U | 100 U | 84 U | 1.8 U | 67 U |
| Dibenz(a,h)anthracene | 53-70-3 | 51 U | 55 U | 70 U | 59 U | 0.910 U | 47 U |
| Dibenzofuran | 132-64-9 | 67 U | 72 U | 92 U | 77 U | 1.4 U | 62 U |
| Diethylphthalate | 84-66-2 | 70 U | 75 U | 96 U | 81 U | 1.4 U | 64 U |
| Dimethylphthalate | 131-11-3 | 66 U | 70 U | 89 U | 75 U | 1.3 U | 60 U |
| Di-n-butylphthalate | 84-74-2 | 61 U | 67 U | 85 U | 71 U | 1.4 U | 57 U |
| Di-n-octyl phthalate | 117-84-0 | 69 U | 74 U | 94 U | 79 U | 1.4 U | 63 U |
| Fluoranthene | 206-44-0 | 60 U | 65 U | 83 U | 69 U | 1.3 U | 55 U |
| Fluorene | 86-73-7 | 68 U | 74 U | 94 U | 79 U | 1.5 U | 63 U |
| Hexachlorobenzene | 118-74-1 | 65 U | 70 U | 89 U | 75 U | 1.3 U | 59 U |
| Hexachlorobutadiene | 87-68-3 | 62 U | 67 U | 85 U | 72 U | 1.4 U | 57 U |
| Hexachlorocyclopentadiene | 77-47-4 | 64 U | 70 U | 89 U | 74 U | 1.2 U | 59 U |
| Hexachloroethane | 67-72-1 | 69 U | 74 U | 94 U | 79 U | 1.2 U | 63 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 51 U | 55 U | 70 U | 59 U | 0.870 U | 47 U |
| Isophorone | 78-59-1 | 61 U | 66 U | 83 U | 70 U | 1.3 U | 56 U |
| Naphthalene | 91-20-3 | 69 U | 430 J | 95 U | 1100 | 1.5 U | 96 J |
| Nitrobenzene | 98-95-3 | 88 U | 95 U | 120 U | 100 U | 1.7 U | 81 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 67 U | 72 U | 92 U | 77 U | 1.5 U | 62 U |
| N-Nitrosodiphenylamine | 86-30-6 | 66 U | 72 U | 91 U | 77 U | 1.3 U | 61 U |
| Pentachlorophenol | 87-86-5 | 93 U | 100 U | 130 U | 110 U | 1.7 U | 86 U |
| Phenanthrene | 85-01-8 | 64 U | 70 U | 89 J | 74 U | 1.5 U | 59 U |
| Phenol | 108-95-2 | 61 U | 66 U | 110 J | 150 J | 1.3 U | 270 J |
| Pyrene | 129-00-0 | 71 U | 77 U | 98 U | 87 J | 1.5 U | 66 U |
| | | 0 | 580 | 199 | 1437 | 3.7 | 531 |
| | | 1890 | 7946 | 5400 | 33000 | 101.7 | 1730 |

## Queens West Development-Parcel 9

**Soil Samples**

Semi-Volatile Organic Compounds

| Sample ID | | P-12(22-24) | P-13(0-2) | P-13(4-6) | P-13(6-8) | P-13(8-10) | P-13(10-12) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2632-08 | T2631-01 | T2631-03 | T2631-04 | T2631-05 | T2631-06 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 10.0 | 5.0 | 2.0 | 2.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 62 U | 1200 U | 630 U | 240 U | 120 U | 2000 J |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 60 U | 1200 U | 610 U | 240 U | 120 U | 1300 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 57 U | 1100 U | 580 U | 230 U | 110 U | 1200 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 55 U | 1100 U | 560 U | 220 U | 110 U | 1200 U |
| 2,4-Dichlorophenol | 120-83-2 | 69 U | 1400 U | 700 U | 270 U | 130 U | 1500 U |
| 2,4-Dimethylphenol | 105-67-9 | 60 U | 1200 U | 600 U | 240 U | 110 U | 1300 U |
| 2,4-Dinitrophenol | 51-28-5 | 320 U | 6300 U | 3300 U | 1300 U | 620 U | 6800 U |
| 2,4-Dinitrotoluene | 121-14-2 | 55 U | 1100 U | 560 U | 220 U | 110 U | 1200 U |
| 2,6-Dinitrotoluene | 606-20-2 | 53 U | 1000 U | 540 U | 210 U | 100 U | 1100 U |
| 2-Chloronaphthalene | 91-58-7 | 62 U | 1200 U | 630 U | 250 U | 120 U | 1300 U |
| 2-Chlorophenol | 95-57-8 | 60 U | 1200 U | 610 U | 240 U | 120 U | 1300 U |
| 2-Methylnaphthalene | 91-57-6 | 63 U | 1200 U | 640 U | 250 U | 120 U | 12000 |
| 2-Methylphenol | 95-48-7 | 62 U | 1200 U | 630 U | 250 U | 120 U | 1300 U |
| 2-Nitroaniline | 88-74-4 | 48 U | 930 U | 480 U | 190 U | 92 U | 1000 U |
| 2-Nitrophenol | 88-75-5 | 58 U | 1100 U | 590 U | 230 U | 110 U | 1200 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 64 U | 1300 U | 650 U | 250 U | 120 U | 1400 U |
| 3+4-Methylphenols | 106-44-5 | 59 U | 1200 U | 600 U | 230 U | 110 U | 1300 U |
| 3-Nitroaniline | 99-09-2 | 49 U | 950 U | 500 U | 190 U | 94 U | 1000 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 73 U | 1400 U | 740 U | 290 U | 140 U | 1600 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 56 U | 1100 U | 570 U | 220 U | 110 U | 1200 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 52 U | 1000 U | 530 U | 200 U | 100 U | 1100 U |
| 4-Chloroaniline | 106-47-8 | 45 U | 870 U | 460 U | 180 U | 86 U | 950 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 59 U | 1200 U | 600 U | 230 U | 110 U | 1300 U |
| 4-Nitroaniline | 100-01-6 | 64 U | 1200 U | 650 U | 250 U | 120 U | 1400 U |
| 4-Nitrophenol | 100-02-7 | 46 U | 910 U | 470 U | 180 U | 90 U | 990 U |
| Acenaphthene | 83-32-9 | 67 U | 1300 U | 680 U | 260 U | 130 U | 13000 |
| Acenaphthylene | 208-96-8 | 61 U | 1200 U | 620 U | 240 U | 120 U | 2200 J |
| Acetophenone | 98-86-2 | 55 U | 1100 U | 560 U | 220 U | 110 U | 1200 U |
| Anthracene | 120-12-7 | 57 U | 1500 J | 570 U | 220 U | 110 U | 18000 |
| Atrazine | 1912-24-9 | 57 U | 1100 U | 580 U | 230 U | 110 U | 1200 U |
| Benzaldehyde | 100-52-7 | 77 U | 1500 U | 780 U | 300 U | 150 U | 1600 U |
| Benzo(a)anthracene | 56-55-3 | 53 U | 4300 J | 530 U | 210 U | 180 J | 18000 |
| Benzo(a)pyrene | 50-32-8 | 60 U | 3900 J | 610 U | 240 U | 280 J | 14000 |
| Benzo(b)fluoranthene | 205-99-2 | 41 U | 4900 J | 420 U | 220 J | 290 J | 16000 |
| Benzo(g,h,i)perylene | 191-24-2 | 62 U | 1700 J | 630 U | 250 U | 160 J | 3700 J |
| Benzo(k)fluoranthene | 207-08-9 | 83 U | 1700 J | 840 U | 330 U | 160 U | 5300 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | 62 U | 1200 U | 630 U | 240 U | 120 U | 1300 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 59 U | 1200 U | 600 U | 230 U | 110 U | 1300 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 72 U | 1400 U | 730 U | 280 U | 140 U | 1500 U |
| Butylbenzylphthalate | 85-68-7 | 61 U | 1200 U | 620 U | 240 U | 120 U | 1300 U |
| Caprolactam | 105-60-2 | 60 U | 1200 U | 610 U | 240 U | 120 U | 1300 U |
| Carbazole | 86-74-8 | 57 U | 1100 U | 580 U | 230 U | 110 U | 7400 J |
| Chrysene | 218-01-9 | 67 U | 3100 J | 680 U | 270 U | 180 J | 14000 |
| Dibenz(a,h)anthracene | 53-70-3 | 47 U | 920 U | 480 U | 190 U | 91 U | 1000 U |
| Dibenzofuran | 132-64-9 | 62 U | 1200 U | 630 U | 250 U | 120 U | 13000 |
| Diethylphthalate | 84-66-2 | 65 U | 1300 U | 660 U | 260 U | 120 U | 1400 U |
| Dimethylphthalate | 131-11-3 | 60 U | 1200 U | 610 U | 240 U | 120 U | 1300 U |
| Di-n-butylphthalate | 84-74-2 | 57 U | 1100 U | 580 U | 230 U | 110 U | 1200 U |
| Di-n-octyl phthalate | 117-84-0 | 64 U | 1200 U | 650 U | 250 U | 120 U | 1400 U |
| Fluoranthene | 206-44-0 | 56 U | 11000 | 570 U | 300 J | 420 J | 40000 |
| Fluorene | 86-73-7 | 63 U | 1200 U | 640 U | 250 U | 120 U | 18000 |
| Hexachlorobenzene | 118-74-1 | 60 U | 1200 U | 610 U | 240 U | 120 U | 1300 U |
| Hexachlorobutadiene | 87-68-3 | 58 U | 1100 U | 590 U | 230 U | 110 U | 1200 U |
| Hexachlorocyclopentadiene | 77-47-4 | 60 U | 1200 U | 610 U | 240 U | 120 U | 1300 U |
| Hexachloroethane | 67-72-1 | 64 U | 1200 U | 650 U | 260 U | 120 U | 1400 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 48 U | 1200 J | 480 U | 190 U | 110 J | 2400 J |
| Isophorone | 78-59-1 | 56 U | 1100 U | 570 U | 220 U | 110 U | 1200 U |
| Naphthalene | 91-20-3 | 64 U | 1200 U | 650 U | 440 J | 140 J | 50000 |
| Nitrobenzene | 98-95-3 | 82 U | 1600 U | 830 U | 320 U | 160 U | 1700 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 62 U | 1200 U | 630 U | 250 U | 120 U | 1300 U |
| N-Nitrosodiphenylamine | 86-30-6 | 62 U | 1200 U | 630 U | 240 U | 120 U | 1300 U |
| Pentachlorophenol | 87-86-5 | 87 U | 1700 U | 880 U | 340 U | 170 U | 1900 U |
| Phenanthrene | 85-01-8 | 60 U | 8600 | 610 U | 240 U | 240 J | 54000 |
| Phenol | 108-95-2 | 57 U | 1100 U | 580 U | 220 U | 110 U | 1200 U |
| Pyrene | 129-00-0 | 66 U | 9000 | 670 U | 310 J | 390 J | 38000 |
| | | 0 | 50900 | 0 | 1270 | 2390 | 341000 |
| | | 1400 | 5200 | 1200 | 2120 | 8310 | 133700 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-13(16-18) | P-13(16-18)DL | P-13(18-20) | P-13(8-10)DUP | P-13(20-22) | P-13(22-24) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2631-08 | T2631-08DL | T2631-09 | T2631-10 | T2631-11 | T2631-12 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 2.0 | 10.0 | 1.0 | 2.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 470 J | 1200 UD | 92 U | 120 U | 640 J | 87 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 230 U | 1100 UD | 90 U | 120 U | 440 U | 85 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 220 U | 1100 UD | 85 U | 110 U | 420 U | 81 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 210 U | 1000 UD | 82 U | 110 U | 400 U | 78 U |
| 2,4-Dichlorophenol | 120-83-2 | 260 U | 1300 UD | 100 U | 140 U | 500 U | 98 U |
| 2,4-Dimethylphenol | 105-67-9 | 380 J | 1100 UD | 88 U | 120 U | 620 J | 84 U |
| 2,4-Dinitrophenol | 51-28-5 | 1200 U | 6100 UD | 480 U | 640 U | 2300 U | 450 U |
| 2,4-Dinitrotoluene | 121-14-2 | 210 U | 1000 UD | 82 U | 110 U | 2000 J | 78 U |
| 2,6-Dinitrotoluene | 606-20-2 | 200 U | 1000 UD | 79 U | 110 U | 390 U | 75 U |
| 2-Chloronaphthalene | 91-58-7 | 240 U | 1200 UD | 97 U | 120 U | 460 U | 88 U |
| 2-Chlorophenol | 95-57-8 | 230 U | 1100 UD | 89 U | 120 U | 440 U | 84 U |
| 2-Methylnaphthalene | 91-57-6 | 4200 | 2000 JD | 93 U | 120 U | 4600 | 88 U |
| 2-Methylphenol | 95-48-7 | 440 J | 1200 UD | 92 U | 120 U | 750 J | 88 U |
| 2-Nitroaniline | 88-74-4 | 180 U | 900 UD | 71 U | 95 U | 350 U | 67 U |
| 2-Nitrophenol | 88-75-5 | 220 U | 1100 UD | 86 U | 110 U | 420 U | 81 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 240 U | 1200 UD | 95 U | 130 U | 470 U | 91 U |
| 3+4-Methylphenols | 106-44-5 | 970 J | 1100 UD | 88 U | 120 U | 1700 J | 83 U |
| 3-Nitroaniline | 99-09-2 | 190 U | 930 UD | 72 U | 97 U | 360 U | 69 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 280 U | 1400 UD | 110 U | 150 U | 530 U | 100 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 210 U | 1100 UD | 83 U | 110 U | 410 U | 79 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 200 U | 980 UD | 77 U | 100 U | 380 U | 73 U |
| 4-Chloroaniline | 106-47-8 | 170 U | 850 UD | 66 U | 89 U | 320 U | 63 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 230 U | 1100 UD | 88 U | 120 U | 430 U | 84 U |
| 4-Nitroaniline | 100-01-6 | 240 U | 1200 UD | 95 U | 130 U | 470 U | 90 U |
| 4-Nitrophenol | 100-02-7 | 180 U | 880 UD | 69 U | 93 U | 340 U | 66 U |
| Acenaphthene | 83-32-9 | 1600 | 1300 UD | 99 U | 130 U | 1400 J | 94 U |
| Acenaphthylene | 208-96-8 | 2700 | 1400 JD | 90 U | 120 U | 3100 | 86 U |
| Acetophenone | 98-86-2 | 210 U | 1000 UD | 81 U | 110 U | 400 U | 77 U |
| Anthracene | 120-12-7 | 6400 | 3600 JD | 84 U | 180 J | 7300 | 80 U |
| Atrazine | 1912-24-9 | 220 U | 1100 UD | 85 U | 110 U | 420 U | 81 U |
| Benzaldehyde | 100-52-7 | 290 U | 1500 UD | 110 U | 150 U | 560 U | 110 U |
| Benzo(a)anthracene | 56-55-3 | 5400 | 4100 JD | 78 U | 730 J | 5700 | 74 U |
| Benzo(a)pyrene | 50-32-8 | 5100 | 3500 JD | 89 U | 680 J | 4200 | 85 U |
| Benzo(b)fluoranthene | 205-99-2 | 6200 | 4500 JD | 61 U | 800 | 4400 | 58 U |
| Benzo(g,h,i)perylene | 191-24-2 | 1000 J | 1200 UD | 92 U | 340 J | 1500 J | 87 U |
| Benzo(k)fluoranthene | 207-08-9 | 1900 | 1600 UD | 120 U | 230 J | 1600 J | 120 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 230 U | 1200 UD | 91 U | 120 U | 460 U | 87 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 230 U | 1100 UD | 88 U | 120 U | 430 U | 84 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 270 U | 1400 UD | 110 U | 140 U | 520 U | 100 U |
| Butylbenzylphthalate | 85-68-7 | 230 U | 1200 UD | 90 U | 120 U | 440 U | 92 J |
| Caprolactam | 105-60-2 | 230 U | 1100 UD | 89 U | 120 U | 440 U | 85 U |
| Carbazole | 86-74-8 | 3900 | 1700 JD | 85 U | 170 J | 3300 | 81 U |
| Chrysene | 218-01-9 | 4800 | 2200 JD | 100 U | 720 J | 4400 | 95 U |
| Dibenz(a,h)anthracene | 53-70-3 | 180 U | 890 UD | 70 U | 94 U | 340 U | 66 U |
| Dibenzofuran | 132-64-9 | 4000 | 2000 JD | 92 U | 120 U | 4200 | 87 U |
| Diethylphthalate | 84-66-2 | 250 U | 1200 UD | 96 U | 130 U | 470 U | 91 U |
| Dimethylphthalate | 131-11-3 | 230 U | 1100 UD | 89 U | 120 U | 440 U | 85 U |
| Di-n-butylphthalate | 84-74-2 | 220 U | 1100 UD | 85 U | 110 U | 420 U | 81 U |
| Di-n-octyl phthalate | 117-84-0 | 240 U | 1200 UD | 95 U | 130 U | 460 U | 90 U |
| Fluoranthene | 206-44-0 | 12000 E | 10000 D | 110 J | 1600 | 15000 | 79 U |
| Fluorene | 86-73-7 | 5200 | 2600 JD | 94 U | 130 U | 5500 | 89 U |
| Hexachlorobenzene | 118-74-1 | 230 U | 1100 UD | 89 U | 120 U | 440 U | 85 U |
| Hexachlorobutadiene | 87-68-3 | 220 U | 1100 UD | 86 U | 110 U | 420 U | 81 U |
| Hexachlorocyclopentadiene | 77-47-4 | 230 U | 1100 UD | 89 U | 120 U | 440 U | 84 U |
| Hexachloroethane | 67-72-1 | 240 U | 1200 UD | 94 U | 130 U | 460 U | 90 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 480 J | 900 UD | 71 U | 220 J | 1000 J | 67 U |
| Isophorone | 78-59-1 | 210 U | 1100 UD | 84 U | 110 U | 410 U | 79 U |
| Naphthalene | 91-20-3 | 13000 E | 12000 D | 150 J | 530 J | 18000 | 130 J |
| Nitrobenzene | 98-95-3 | 310 U | 1600 UD | 120 U | 160 U | 600 U | 120 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 240 U | 1200 UD | 92 U | 120 U | 460 U | 88 U |
| N-Nitrosodiphenylamine | 86-30-6 | 230 U | 1200 UD | 92 U | 120 U | 460 U | 87 U |
| Pentachlorophenol | 87-86-5 | 330 U | 1600 UD | 130 U | 170 U | 630 U | 120 U |
| Phenanthrene | 85-01-8 | 16000 E | 18000 D | 170 J | 1700 | 20000 | 110 J |
| Phenol | 108-95-2 | 870 J | 1100 UD | 84 U | 110 U | 1600 J | 80 U |
| Pyrene | 129-00-0 | 10000 | 10000 D | 110 J | 1700 | 13000 | 94 U |
| | | 106810 | 77600 | 540 | 9600 | 125510 | 332 |
| | | 35020 | 0 | 2340 | 6080 | 14370 | 1600 |

## Queens West Development-Parcel 9

**Soil Samples**

Semi-Volatile Organic Compounds

| Sample ID | | P-13(24-26) | P-14(2-4) | P-14(4-6) | P-14(8-10) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2631-13 | T2604-02 | T2604-03 | T2604-05 |
| Sampling Date | | 05/02/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 10.0 | 10.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | |
| 1,1-Biphenyl | 92-52-4 | 60 U | 1200 U | 6300 U | 1200 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 58 U | 1200 U | 6200 U | 1200 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 55 U | 1100 U | 5900 U | 1200 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 53 U | 1100 U | 5600 U | 1100 U |
| 2,4-Dichlorophenol | 120-83-2 | 67 U | 1400 U | 7100 U | 1400 U |
| 2,4-Dimethylphenol | 105-67-9 | 57 U | 1200 U | 6100 U | 1200 U |
| 2,4-Dinitrophenol | 51-28-5 | 310 U | 6200 U | 33000 U | 6400 U |
| 2,4-Dinitrotoluene | 121-14-2 | 53 U | 1100 U | 5600 U | 1100 U |
| 2,6-Dinitrotoluene | 606-20-2 | 51 U | 1000 U | 5400 U | 1100 U |
| 2-Chloronaphthalene | 91-58-7 | 60 U | 1200 U | 6300 U | 1200 U |
| 2-Chlorophenol | 95-57-8 | 58 U | 1200 U | 6100 U | 1200 U |
| 2-Methylnaphthalene | 91-57-6 | 61 U | 1500 J | 6400 U | 3200 J |
| 2-Methylphenol | 95-48-7 | 60 U | 1200 U | 6400 U | 1300 U |
| 2-Nitroaniline | 88-74-4 | 46 U | 930 U | 4900 U | 980 U |
| 2-Nitrophenol | 88-75-5 | 56 U | 1100 U | 5900 U | 1200 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 62 U | 1200 U | 6500 U | 1300 U |
| 3+4-Methylphenols | 106-44-5 | 57 U | 1200 U | 6000 U | 1200 U |
| 3-Nitroaniline | 99-09-2 | 47 U | 950 U | 5000 U | 980 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 70 U | 1400 U | 7400 U | 1500 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 54 U | 1100 U | 5700 U | 1100 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 50 U | 1000 U | 5300 U | 1000 U |
| 4-Chloroaniline | 106-47-8 | 43 U | 870 U | 4600 U | 900 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 57 U | 1200 U | 6000 U | 1200 U |
| 4-Nitroaniline | 100-01-6 | 62 U | 1200 U | 6500 U | 1300 U |
| 4-Nitrophenol | 100-02-7 | 45 U | 910 U | 4700 U | 930 U |
| Acenaphthene | 83-32-9 | 64 U | 3500 J | 6800 U | 11000 |
| Acenaphthylene | 208-96-8 | 59 U | 1200 U | 6200 U | 1200 U |
| Acetophenone | 98-86-2 | 53 U | 1100 U | 5600 U | 1100 U |
| Anthracene | 120-12-7 | 55 U | 7600 | 15000 J | 17000 |
| Atrazine | 1912-24-9 | 55 U | 1100 U | 5900 U | 1200 U |
| Benzaldehyde | 100-52-7 | 74 U | 1500 U | 7900 U | 1500 U |
| Benzo(a)anthracene | 56-55-3 | 51 U | 13000 | 21000 J | 22000 |
| Benzo(a)pyrene | 50-32-8 | 58 U | 13000 | 18000 J | 21000 |
| Benzo(b)fluoranthene | 205-99-2 | 40 U | 17000 | 21000 J | 25000 |
| Benzo(g,h,i)perylene | 191-24-2 | 60 U | 7600 | 8000 J | 9600 |
| Benzo(k)fluoranthene | 207-08-9 | 80 U | 5700 J | 9400 J | 8900 |
| bis(2-Chloroethoxy)methane | 111-91-1 | 60 U | 1200 U | 6300 U | 1200 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 57 U | 1200 U | 6000 U | 1200 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 69 U | 1400 U | 7300 U | 1400 U |
| Butylbenzylphthalate | 85-68-7 | 580 | 1200 U | 6200 U | 1200 U |
| Caprolactam | 105-60-2 | 58 U | 1200 U | 6200 U | 1200 U |
| Carbazole | 86-74-8 | 55 U | 3000 J | 5800 U | 6000 J |
| Chrysene | 218-01-9 | 65 U | 13000 | 18000 J | 21000 |
| Dibenz(a,h)anthracene | 53-70-3 | 45 U | 920 J | 4800 U | 1500 J |
| Dibenzofuran | 132-64-9 | 60 U | 2500 J | 6900 J | 7100 J |
| Diethylphthalate | 84-66-2 | 62 U | 1300 U | 6600 U | 1300 U |
| Dimethylphthalate | 131-11-3 | 58 U | 1200 U | 6200 U | 1200 U |
| Di-n-butylphthalate | 84-74-2 | 55 U | 1100 U | 5800 U | 1100 U |
| Di-n-octyl phthalate | 117-84-0 | 62 U | 1200 U | 6500 U | 1300 U |
| Fluoranthene | 206-44-0 | 64 U | 32000 | 56000 | 66000 E |
| Fluorene | 86-73-7 | 61 U | 3500 J | 7200 J | 11000 |
| Hexachlorobenzene | 118-74-1 | 58 U | 1200 U | 6100 U | 1200 U |
| Hexachlorobutadiene | 87-68-3 | 56 U | 1100 U | 5900 U | 1200 U |
| Hexachlorocyclopentadiene | 77-47-4 | 58 U | 1200 U | 6100 U | 1200 U |
| Hexachloroethane | 67-72-1 | 62 U | 1200 U | 6500 U | 1300 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 46 U | 5500 J | 6800 J | 7100 J |
| Isophorone | 78-59-1 | 54 U | 1100 U | 5700 U | 1100 U |
| Naphthalene | 91-20-3 | 62 U | 2500 J | 6500 U | 5700 J |
| Nitrobenzene | 98-95-3 | 79 U | 1600 U | 8400 U | 1600 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 60 U | 1200 U | 6300 U | 1200 U |
| N-Nitrosodiphenylamine | 86-30-6 | 60 U | 1200 U | 6300 U | 1200 U |
| Pentachlorophenol | 87-86-5 | 84 U | 1700 U | 8900 U | 1700 U |
| Phenanthrene | 85-01-8 | 58 U | 40000 | 75000 | 91000 E |
| Phenol | 108-95-2 | 55 U | 1100 U | 5800 U | 1100 U |
| Pyrene | 129-00-0 | 64 U | 37000 | 56000 | 69000 |
| | | | | | |
| | | 580 | 208820 | 317300 | 386100 |
| | | 1460 | 63400 | 53400 | 176400 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-14(8-10)DL | P-14(10-12) | P-14(10-12)DL | P-14(14-16) | P-14(16-18) | P-14(18-20) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2604-05DL | T2604-06 | T2604-06DL | T2604-07 | T2604-08 | T2604-09 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 20.0 | 1.0 | 2.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 2500 UD | 63 U | 130 UD | 67 U | 110 U | 100 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 2400 UD | 61 U | 120 UD | 66 U | 100 U | 100 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 2300 UD | 58 U | 120 UD | 62 U | 98 U | 97 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 2200 UD | 56 U | 110 UD | 60 U | 94 U | 93 U |
| 2,4-Dichlorophenol | 120-83-2 | 2800 UD | 70 U | 140 UD | 75 U | 120 U | 120 U |
| 2,4-Dimethylphenol | 105-67-9 | 2400 UD | 60 U | 120 UD | 65 U | 100 U | 100 U |
| 2,4-Dinitrophenol | 51-28-5 | 13000 UD | 330 U | 650 UD | 350 U | 550 U | 540 U |
| 2,4-Dinitrotoluene | 121-14-2 | 2200 UD | 56 U | 110 UD | 60 U | 94 U | 93 U |
| 2,6-Dinitrotoluene | 606-20-2 | 2100 UD | 54 U | 110 UD | 58 U | 90 U | 90 U |
| 2-Chloronaphthalene | 91-58-7 | 2500 UD | 63 U | 130 UD | 68 U | 110 U | 110 U |
| 2-Chlorophenol | 95-57-8 | 2400 UD | 61 U | 120 UD | 65 U | 100 U | 100 U |
| 2-Methylnaphthalene | 91-57-6 | 2800 JD | 110 J | 130 UD | 68 U | 110 U | 110 U |
| 2-Methylphenol | 95-48-7 | 2500 UD | 63 U | 130 UD | 68 U | 110 U | 110 U |
| 2-Nitroaniline | 88-74-4 | 1900 UD | 48 U | 97 UD | 52 U | 81 U | 81 U |
| 2-Nitrophenol | 88-75-5 | 2300 UD | 58 U | 120 UD | 63 U | 98 U | 98 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 2600 UD | 65 U | 130 UD | 70 U | 110 U | 110 U |
| 3+4-Methylphenols | 106-44-5 | 2400 UD | 60 U | 120 UD | 64 U | 100 U | 100 U |
| 3-Nitroaniline | 99-09-2 | 2000 UD | 50 U | 99 UD | 53 U | 83 U | 83 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 2900 UD | 74 U | 150 UD | 79 U | 120 U | 120 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 2200 UD | 57 U | 110 UD | 61 U | 95 U | 95 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 2100 UD | 53 U | 110 UD | 56 U | 88 U | 88 U |
| 4-Chloroaniline | 106-47-8 | 1800 UD | 45 U | 91 UD | 49 U | 76 U | 76 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 2400 UD | 60 U | 120 UD | 65 U | 100 U | 100 U |
| 4-Nitroaniline | 100-01-6 | 2600 UD | 65 U | 130 UD | 70 U | 110 U | 110 U |
| 4-Nitrophenol | 100-02-7 | 1900 UD | 47 U | 94 UD | 51 U | 79 U | 79 U |
| Acenaphthene | 83-32-9 | 9700 JD | 430 | 370 JD | 73 U | 110 U | 110 U |
| Acenaphthylene | 208-96-8 | 2400 UD | 62 U | 120 UD | 66 U | 100 U | 100 U |
| Acetophenone | 98-86-2 | 2200 UD | 56 U | 110 UD | 60 U | 94 U | 93 U |
| Anthracene | 120-12-7 | 15000 JD | 630 | 520 JD | 62 U | 96 U | 96 U |
| Atrazine | 1912-24-9 | 2300 UD | 58 U | 120 UD | 63 U | 98 U | 97 U |
| Benzaldehyde | 100-52-7 | 3100 UD | 78 U | 160 UD | 84 U | 130 U | 130 U |
| Benzo(a)anthracene | 56-55-3 | 20000 D | 940 | 840 D | 57 U | 89 U | 89 U |
| Benzo(a)pyrene | 50-32-8 | 19000 D | 880 | 780 D | 65 U | 100 U | 100 U |
| Benzo(b)fluoranthene | 205-99-2 | 22000 D | 980 | 850 D | 45 U | 70 U | 70 U |
| Benzo(g,h,i)perylene | 191-24-2 | 13000 JD | 500 | 590 JD | 67 U | 110 U | 100 U |
| Benzo(k)fluoranthene | 207-08-9 | 8900 JD | 430 | 360 JD | 90 U | 140 U | 140 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 2500 UD | 63 U | 130 UD | 67 U | 110 U | 100 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 2400 UD | 60 U | 120 UD | 65 U | 100 U | 100 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 2900 UD | 73 U | 150 UD | 78 U | 120 U | 140 J |
| Butylbenzylphthalate | 85-68-7 | 2400 UD | 61 U | 120 UD | 66 U | 100 U | 140 J |
| Caprolactam | 105-60-2 | 2400 UD | 61 U | 120 UD | 66 U | 100 U | 100 U |
| Carbazole | 86-74-8 | 5500 JD | 250 J | 210 JD | 62 U | 98 U | 97 U |
| Chrysene | 218-01-9 | 20000 D | 960 | 750 JD | 73 U | 110 U | 110 U |
| Dibenz(a,h)anthracene | 53-70-3 | 1900 JD | 67 J | 95 UD | 51 U | 80 U | 80 U |
| Dibenzofuran | 132-64-9 | 6600 JD | 280 J | 230 JD | 67 U | 110 U | 100 U |
| Diethylphthalate | 84-66-2 | 2600 UD | 66 U | 130 UD | 70 U | 110 U | 110 U |
| Dimethylphthalate | 131-11-3 | 2400 UD | 61 U | 120 UD | 66 U | 100 U | 100 U |
| Di-n-butylphthalate | 84-74-2 | 2300 UD | 58 U | 120 UD | 62 U | 97 U | 97 U |
| Di-n-octyl phthalate | 117-84-0 | 2600 UD | 65 U | 130 UD | 69 U | 110 U | 110 U |
| Fluoranthene | 206-44-0 | 46000 D | 2800 | 2100 D | 61 U | 95 U | 94 U |
| Fluorene | 86-73-7 | 9600 JD | 460 | 390 JD | 69 U | 110 U | 110 U |
| Hexachlorobenzene | 118-74-1 | 2400 UD | 61 U | 120 UD | 65 U | 100 U | 100 U |
| Hexachlorobutadiene | 87-68-3 | 2300 UD | 58 U | 120 UD | 63 U | 98 U | 98 U |
| Hexachlorocyclopentadiene | 77-47-4 | 2400 UD | 61 U | 120 UD | 65 U | 100 U | 100 U |
| Hexachloroethane | 67-72-1 | 2600 UD | 65 U | 130 UD | 69 U | 110 U | 110 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 11000 JD | 400 | 490 JD | 52 U | 81 U | 81 U |
| Isophorone | 78-59-1 | 2300 UD | 57 U | 110 UD | 61 U | 96 U | 95 U |
| Naphthalene | 91-20-3 | 5100 JD | 150 J | 140 JD | 70 U | 110 U | 380 J |
| Nitrobenzene | 98-95-3 | 3300 UD | 83 U | 170 UD | 89 U | 140 U | 140 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 2500 UD | 63 U | 130 UD | 68 U | 110 U | 110 U |
| N-Nitrosodiphenylamine | 86-30-6 | 2500 UD | 63 U | 130 UD | 67 U | 110 U | 100 U |
| Pentachlorophenol | 87-86-5 | 3500 UD | 88 U | 180 UD | 94 U | 150 U | 150 U |
| Phenanthrene | 85-01-8 | 66000 D | 3400 E | 2500 D | 65 U | 100 U | 100 U |
| Phenol | 108-95-2 | 2300 UD | 58 U | 120 UD | 62 U | 97 U | 96 U |
| Pyrene | 129-00-0 | 45000 D | 2400 | 2000 D | 72 U | 110 U | 110 U |
| | | 327100 | 16057 | 13120 | 0 | 0 | 640 |
| | | 0 | 13900 | 0 | 1500 | 11250 | 8900 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-14(20-22) | P-14(22-24) | P-14(22-24)RE | P-14(26-28) | P-15(0-2) | P-15(2-4) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2604-10 | T2604-11 | T2604-11RE | T2604-12 | T2632-09 | T2632-10 |
| Sampling Date | | 04/29/05 | 04/29/05 | 04/29/05 | 04/29/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 65 U | 67 U | 67 U | 61 U | 610 U | 62 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 63 U | 66 U | 66 U | 59 U | 590 U | 61 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 60 U | 62 U | 62 U | 56 U | 560 U | 58 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 58 U | 60 U | 60 U | 54 U | 540 U | 55 U |
| 2,4-Dichlorophenol | 120-83-2 | 73 U | 75 U | 75 U | 68 U | 680 U | 70 U |
| 2,4-Dimethylphenol | 105-67-9 | 63 U | 65 U | 65 U | 59 U | 580 U | 60 U |
| 2,4-Dinitrophenol | 51-28-5 | 340 U | 350 U | 350 U | 320 U | 3200 U | 320 U |
| 2,4-Dinitrotoluene | 121-14-2 | 58 U | 60 U | 60 U | 54 U | 540 U | 55 U |
| 2,6-Dinitrotoluene | 606-20-2 | 56 U | 58 U | 58 U | 52 U | 520 U | 53 U |
| 2-Chloronaphthalene | 91-58-7 | 65 U | 68 U | 68 U | 61 U | 610 U | 63 U |
| 2-Chlorophenol | 95-57-8 | 63 U | 65 U | 65 U | 59 U | 590 U | 60 U |
| 2-Methylnaphthalene | 91-57-6 | 66 U | 68 U | 68 U | 62 U | 620 U | 63 U |
| 2-Methylphenol | 95-48-7 | 66 U | 68 U | 68 U | 61 U | 610 U | 63 U |
| 2-Nitroaniline | 88-74-4 | 50 U | 52 U | 52 U | 47 U | 470 U | 48 U |
| 2-Nitrophenol | 88-75-5 | 61 U | 63 U | 63 U | 57 U | 570 U | 58 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 67 U | 70 U | 70 U | 63 U | 630 U | 65 U |
| 3+4-Methylphenols | 106-44-5 | 62 U | 64 U | 64 U | 58 U | 580 U | 60 U |
| 3-Nitroaniline | 99-09-2 | 51 U | 53 U | 53 U | 48 U | 480 U | 49 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 76 U | 79 U | 79 U | 72 U | 710 U | 73 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 59 U | 61 U | 61 U | 55 U | 550 U | 56 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 54 U | 56 U | 56 U | 51 U | 510 U | 52 U |
| 4-Chloroaniline | 106-47-8 | 47 U | 49 U | 49 U | 44 U | 440 U | 45 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 62 U | 64 U | 64 U | 58 U | 580 U | 60 U |
| 4-Nitroaniline | 100-01-6 | 67 U | 70 U | 70 U | 63 U | 630 U | 64 U |
| 4-Nitrophenol | 100-02-7 | 49 U | 50 U | 50 U | 46 U | 460 U | 47 U |
| Acenaphthene | 83-32-9 | 70 U | 73 U | 73 U | 66 U | 660 U | 67 U |
| Acenaphthylene | 208-96-8 | 64 U | 66 U | 66 U | 60 U | 600 U | 61 U |
| Acetophenone | 98-86-2 | 58 U | 60 U | 60 U | 54 U | 540 U | 55 U |
| Anthracene | 120-12-7 | 59 U | 61 U | 61 U | 56 U | 560 U | 90 J |
| Atrazine | 1912-24-9 | 60 U | 62 U | 62 U | 57 U | 560 U | 58 U |
| Benzaldehyde | 100-52-7 | 81 U | 84 U | 84 U | 76 U | 760 U | 77 U |
| Benzo(a)anthracene | 56-55-3 | 55 U | 57 U | 57 U | 52 U | 520 U | 410 |
| Benzo(a)pyrene | 50-32-8 | 63 U | 65 U | 65 U | 59 U | 590 U | 440 |
| Benzo(b)fluoranthene | 205-99-2 | 43 U | 45 U | 45 U | 41 U | 410 U | 480 |
| Benzo(g,h,i)perylene | 191-24-2 | 65 U | 67 U | 67 U | 61 U | 610 U | 390 |
| Benzo(k)fluoranthene | 207-08-9 | 87 U | 90 U | 90 U | 81 U | 810 U | 220 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | 65 U | 67 U | 67 U | 61 U | 610 U | 62 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 62 U | 64 U | 64 U | 58 U | 580 U | 60 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 76 U | 78 U | 78 U | 71 U | 710 U | 72 U |
| Butylbenzylphthalate | 85-68-7 | 64 U | 66 U | 66 U | 60 U | 600 U | 61 U |
| Caprolactam | 105-60-2 | 63 U | 65 U | 65 U | 59 U | 590 U | 61 U |
| Carbazole | 86-74-8 | 60 U | 62 U | 62 U | 56 U | 560 U | 58 U |
| Chrysene | 218-01-9 | 71 U | 73 U | 73 U | 66 U | 660 U | 370 J |
| Dibenz(a,h)anthracene | 53-70-3 | 49 U | 51 U | 51 U | 46 U | 460 U | 48 J |
| Dibenzofuran | 132-64-9 | 65 U | 67 U | 67 U | 61 U | 610 U | 62 U |
| Diethylphthalate | 84-66-2 | 68 U | 70 U | 70 U | 64 U | 640 U | 65 U |
| Dimethylphthalate | 131-11-3 | 63 U | 65 U | 65 U | 59 U | 590 U | 61 U |
| Di-n-butylphthalate | 84-74-2 | 60 U | 62 U | 62 U | 56 U | 560 U | 58 U |
| Di-n-octyl phthalate | 117-84-0 | 67 U | 69 U | 69 U | 63 U | 630 U | 64 U |
| Fluoranthene | 206-44-0 | 59 U | 61 U | 61 U | 55 U | 630 J | 610 |
| Fluorene | 86-73-7 | 66 U | 69 U | 69 U | 62 U | 620 U | 64 U |
| Hexachlorobenzene | 118-74-1 | 63 U | 65 U | 65 U | 59 U | 590 U | 60 U |
| Hexachlorobutadiene | 87-68-3 | 61 U | 63 U | 63 U | 57 U | 570 U | 58 U |
| Hexachlorocyclopentadiene | 77-47-4 | 63 U | 65 U | 65 U | 59 U | 590 U | 60 U |
| Hexachloroethane | 67-72-1 | 67 U | 69 U | 69 U | 63 U | 630 U | 64 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 50 U | 52 U | 52 U | 47 U | 470 U | 280 J |
| Isophorone | 78-59-1 | 59 U | 61 U | 61 U | 55 U | 550 U | 57 U |
| Naphthalene | 91-20-3 | 67 U | 70 U | 70 U | 63 U | 630 U | 64 U |
| Nitrobenzene | 98-95-3 | 86 U | 89 U | 89 U | 81 U | 800 U | 82 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 65 U | 67 U | 67 U | 61 U | 610 U | 63 U |
| N-Nitrosodiphenylamine | 86-30-6 | 65 U | 67 U | 67 U | 61 U | 610 U | 62 U |
| Pentachlorophenol | 87-86-5 | 91 U | 94 U | 94 U | 85 U | 850 U | 87 U |
| Phenanthrene | 85-01-8 | 63 U | 65 U | 65 U | 59 U | 590 U | 430 |
| Phenol | 108-95-2 | 60 U | 62 U | 62 U | 56 U | 560 U | 260 J |
| Pyrene | 129-00-0 | 70 U | 72 U | 72 U | 65 U | 650 U | 930 |
| | | 0 | 0 | 0 | 0 | 630 | 4958 |
| | | 1500 | 2460 | 0 | 1300 | 1500 | 1954 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-15(6-8) | P-15(8-10) | P-15(8-10)DL | P-15(8-10)DL2 | P-15(10-12) | P-15(10-12)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2632-12 | T2632-13 | T2632-13DL | T2632-13DL2 | T2632-14 | T2632-14DL |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 10.0 | 100.0 | 10.0 | 100.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 64 U | 3900 | 3200 JD | 14000 UD | 14000 | 13000 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 63 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 60 U | 130 U | 1300 UD | 13000 UD | 1200 U | 12000 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 57 U | 120 U | 1200 UD | 12000 UD | 1200 U | 12000 UD |
| 2,4-Dichlorophenol | 120-83-2 | 72 U | 150 U | 1500 UD | 15000 UD | 1500 U | 15000 UD |
| 2,4-Dimethylphenol | 105-67-9 | 62 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| 2,4-Dinitrophenol | 51-28-5 | 330 U | 700 U | 7000 UD | 70000 UD | 7000 U | 70000 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 57 U | 120 U | 1200 UD | 12000 UD | 1200 U | 12000 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 55 U | 120 U | 1200 UD | 12000 UD | 1200 U | 12000 UD |
| 2-Chloronaphthalene | 91-58-7 | 65 U | 140 U | 1400 UD | 14000 UD | 1400 U | 14000 UD |
| 2-Chlorophenol | 95-57-8 | 62 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| 2-Methylnaphthalene | 91-57-6 | 65 U | 13000 E | 9400 D | 14000 UD | 51000 | 38000 JD |
| 2-Methylphenol | 95-48-7 | 65 U | 140 U | 1400 UD | 14000 UD | 1400 U | 14000 UD |
| 2-Nitroaniline | 88-74-4 | 50 U | 100 U | 1000 UD | 10000 UD | 1000 U | 10000 UD |
| 2-Nitrophenol | 88-75-5 | 60 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 67 U | 140 U | 1400 UD | 14000 UD | 1400 U | 14000 UD |
| 3+4-Methylphenols | 106-44-5 | 62 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| 3-Nitroaniline | 99-09-2 | 51 U | 110 U | 1100 UD | 11000 UD | 1100 U | 11000 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 76 U | 160 U | 1600 UD | 16000 UD | 1600 U | 16000 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 58 U | 120 U | 1200 UD | 12000 UD | 1200 U | 12000 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 54 U | 110 U | 1100 UD | 11000 UD | 1100 U | 11000 UD |
| 4-Chloroaniline | 106-47-8 | 47 U | 98 U | 980 UD | 9800 UD | 970 U | 9700 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 62 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| 4-Nitroaniline | 100-01-6 | 67 U | 140 U | 1400 UD | 14000 UD | 1400 U | 14000 UD |
| 4-Nitrophenol | 100-02-7 | 48 U | 100 U | 1000 UD | 10000 UD | 1000 U | 10000 UD |
| Acenaphthene | 83-32-9 | 70 U | 27000 E | 26000 D | 21000 JD | 130000 E | 98000 D |
| Acenaphthylene | 208-96-8 | 63 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| Acetophenone | 98-86-2 | 57 U | 120 U | 1200 UD | 12000 UD | 1200 U | 12000 UD |
| Anthracene | 120-12-7 | 59 U | 45000 E | 48000 D | 39000 JD | 53000 | 43000 JD |
| Atrazine | 1912-24-9 | 60 U | 130 U | 1300 UD | 13000 UD | 1200 U | 12000 UD |
| Benzaldehyde | 100-52-7 | 80 U | 170 U | 1700 UD | 17000 UD | 1700 U | 17000 UD |
| Benzo(a)anthracene | 56-55-3 | 55 U | 4300 | 3900 JD | 12000 UD | 18000 | 18000 JD |
| Benzo(a)pyrene | 50-32-8 | 62 U | 1300 | 1300 UD | 13000 UD | 8000 J | 13000 UD |
| Benzo(b)fluoranthene | 205-99-2 | 43 U | 1700 | 1400 JD | 9000 UD | 9800 | 9000 UD |
| Benzo(g,h,i)perylene | 191-24-2 | 65 U | 520 J | 1400 UD | 14000 UD | 3400 J | 13000 UD |
| Benzo(k)fluoranthene | 207-08-9 | 86 U | 740 J | 1800 UD | 18000 UD | 4600 J | 18000 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 64 U | 140 U | 1400 UD | 14000 UD | 1300 U | 13000 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 62 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 75 U | 160 U | 1600 UD | 16000 UD | 1600 U | 16000 UD |
| Butylbenzylphthalate | 85-68-7 | 63 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| Caprolactam | 105-60-2 | 63 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| Carbazole | 86-74-8 | 60 U | 18000 E | 13000 D | 13000 UD | 15000 | 15000 JD |
| Chrysene | 218-01-9 | 70 U | 4000 | 3800 JD | 15000 UD | 14000 | 15000 JD |
| Dibenz(a,h)anthracene | 53-70-3 | 49 U | 100 U | 1000 UD | 10000 UD | 1000 U | 10000 UD |
| Dibenzofuran | 132-64-9 | 65 U | 33000 E | 38000 D | 30000 JD | 140000 E | 120000 D |
| Diethylphthalate | 84-66-2 | 67 U | 140 U | 1400 UD | 14000 UD | 1400 U | 14000 UD |
| Dimethylphthalate | 131-11-3 | 63 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| Di-n-butylphthalate | 84-74-2 | 59 U | 130 U | 1300 UD | 13000 UD | 1200 U | 12000 UD |
| Di-n-octyl phthalate | 117-84-0 | 66 U | 140 U | 1400 UD | 14000 UD | 1400 U | 14000 UD |
| Fluoranthene | 206-44-0 | 58 U | 31000 E | 30000 D | 29000 JD | 170000 E | 120000 D |
| Fluorene | 86-73-7 | 66 U | 38000 E | 45000 D | 36000 JD | 150000 E | 120000 D |
| Hexachlorobenzene | 118-74-1 | 62 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| Hexachlorobutadiene | 87-68-3 | 60 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 62 U | 130 U | 1300 UD | 13000 UD | 1300 U | 13000 UD |
| Hexachloroethane | 67-72-1 | 66 U | 140 U | 1400 UD | 14000 UD | 1400 U | 14000 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 50 U | 360 J | 1000 UD | 10000 UD | 3400 J | 10000 UD |
| Isophorone | 78-59-1 | 58 U | 120 U | 1200 UD | 12000 UD | 1200 U | 12000 UD |
| Naphthalene | 91-20-3 | 67 U | 6300 | 4300 JD | 14000 UD | 25000 | 21000 JD |
| Nitrobenzene | 98-95-3 | 85 U | 180 U | 1800 UD | 18000 UD | 1800 U | 18000 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 65 U | 140 U | 1400 UD | 14000 UD | 1300 U | 13000 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 64 U | 140 U | 1400 UD | 14000 UD | 1300 U | 13000 UD |
| Pentachlorophenol | 87-86-5 | 90 U | 190 U | 1900 UD | 19000 UD | 1900 U | 19000 UD |
| Phenanthrene | 85-01-8 | 62 U | 110000 E | 170000 ED | 110000 D | 540000 E | 450000 D |
| Phenol | 108-95-2 | 59 U | 120 U | 1200 UD | 12000 UD | 1200 U | 12000 UD |
| Pyrene | 129-00-0 | 69 U | 25000 E | 15000 D | 15000 JD | 110000 E | 68000 JD |
| | | | | | | | |
| | | 0 | 363120 | 409000 | 280000 | 1460100 | 1124000 |
| | | 1400 | 37470 | 0 | 0 | 237700 | 0 |

## Queens West Development-Parcel 9

**Soil Samples**

Semi-Volatile Organic Compounds

| Sample ID | | P-15(12-14) | P-15(12-14)DL | P-15(14-16) | P-15(16-18) | P-15(18-20) | P-15(20-22) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2632-16 | T2632-16DL | T2632-17 | T2632-18 | T2632-19 | T2632-20 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 10.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 720 J | 2000 UD | 72 U | 66 U | 65 U | 60 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 200 U | 2000 UD | 70 U | 65 U | 64 U | 59 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 190 U | 1900 UD | 67 U | 61 U | 60 U | 56 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 190 U | 1800 UD | 64 U | 59 U | 58 U | 54 U |
| 2,4-Dichlorophenol | 120-83-2 | 220 U | 2200 UD | 81 U | 74 U | 73 U | 67 U |
| 2,4-Dimethylphenol | 105-67-9 | 190 U | 1900 UD | 69 U | 64 U | 63 U | 58 U |
| 2,4-Dinitrophenol | 51-28-5 | 1000 U | 10000 UD | 370 U | 340 U | 340 U | 310 U |
| 2,4-Dinitrotoluene | 121-14-2 | 180 U | 1800 UD | 64 U | 59 U | 58 U | 54 U |
| 2,6-Dinitrotoluene | 606-20-2 | 170 U | 1700 UD | 62 U | 57 U | 56 U | 52 U |
| 2-Chloronaphthalene | 91-58-7 | 200 U | 2000 UD | 72 U | 67 U | 65 U | 60 U |
| 2-Chlorophenol | 95-57-8 | 190 U | 1900 UD | 69 U | 64 U | 63 U | 58 U |
| 2-Methylnaphthalene | 91-57-6 | 2100 | 2100 JD | 78 J | 67 U | 66 U | 61 U |
| 2-Methylphenol | 95-48-7 | 200 U | 2000 UD | 72 U | 67 U | 66 U | 61 U |
| 2-Nitroaniline | 88-74-4 | 150 U | 1500 UD | 55 U | 51 U | 50 U | 46 U |
| 2-Nitrophenol | 88-75-5 | 190 U | 1900 UD | 67 U | 62 U | 61 U | 56 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 210 U | 2100 UD | 74 U | 69 U | 68 U | 62 U |
| 3+4-Methylphenols | 106-44-5 | 190 U | 1900 UD | 69 U | 63 U | 62 U | 57 U |
| 3-Nitroaniline | 99-09-2 | 160 U | 1600 UD | 57 U | 52 U | 51 U | 47 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 240 U | 2400 UD | 84 U | 78 U | 77 U | 71 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 180 U | 1800 UD | 65 U | 60 U | 59 U | 54 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 170 U | 1700 UD | 60 U | 56 U | 55 U | 50 U |
| 4-Chloroaniline | 106-47-8 | 140 U | 1400 UD | 52 U | 48 U | 47 U | 43 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 190 U | 1900 UD | 69 U | 64 U | 62 U | 58 U |
| 4-Nitroaniline | 100-01-6 | 210 U | 2100 UD | 74 U | 69 U | 67 U | 62 U |
| 4-Nitrophenol | 100-02-7 | 150 U | 1500 UD | 54 U | 50 U | 49 U | 45 U |
| Acenaphthene | 83-32-9 | 5600 | 5900 JD | 180 J | 72 U | 81 J | 65 U |
| Acenaphthylene | 208-96-8 | 200 U | 2000 UD | 71 U | 65 U | 64 U | 59 U |
| Acetophenone | 98-86-2 | 180 U | 1800 UD | 64 U | 59 U | 58 U | 53 U |
| Anthracene | 120-12-7 | 2300 | 3000 JD | 150 J | 61 U | 60 U | 55 U |
| Atrazine | 1912-24-9 | 190 U | 1900 UD | 67 U | 62 U | 60 U | 56 U |
| Benzaldehyde | 100-52-7 | 260 U | 2600 UD | 89 U | 82 U | 81 U | 75 U |
| Benzo(a)anthracene | 56-55-3 | 620 J | 1700 UD | 150 J | 56 U | 55 U | 51 U |
| Benzo(a)pyrene | 50-32-8 | 190 U | 1900 UD | 100 J | 64 U | 63 U | 58 U |
| Benzo(b)fluoranthene | 205-99-2 | 160 J | 1300 UD | 61 J | 44 U | 43 U | 40 U |
| Benzo(g,h,i)perylene | 191-24-2 | 200 U | 2000 UD | 72 U | 66 U | 65 U | 60 U |
| Benzo(k)fluoranthene | 207-08-9 | 270 U | 2700 UD | 96 U | 88 U | 87 U | 80 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 200 U | 2000 UD | 72 U | 66 U | 65 U | 60 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 190 U | 1900 UD | 69 U | 64 U | 62 U | 58 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 230 U | 2300 UD | 84 U | 77 U | 76 U | 70 U |
| Butylbenzylphthalate | 85-68-7 | 200 U | 2000 UD | 70 U | 65 U | 64 U | 59 U |
| Caprolactam | 105-60-2 | 190 U | 1900 UD | 70 U | 65 U | 63 U | 59 U |
| Carbazole | 86-74-8 | 950 J | 1900 UD | 66 U | 61 U | 60 U | 56 U |
| Chrysene | 218-01-9 | 500 J | 2200 UD | 110 J | 72 U | 71 U | 66 U |
| Dibenz(a,h)anthracene | 53-70-3 | 150 U | 1500 UD | 55 U | 50 U | 50 U | 46 U |
| Dibenzofuran | 132-64-9 | 6800 | 7900 JD | 210 J | 66 U | 65 U | 60 U |
| Diethylphthalate | 84-66-2 | 210 U | 2100 UD | 75 U | 69 U | 68 U | 63 U |
| Dimethylphthalate | 131-11-3 | 190 U | 1900 UD | 70 U | 65 U | 63 U | 59 U |
| Di-n-butylphthalate | 84-74-2 | 180 U | 1800 UD | 66 U | 61 U | 60 U | 55 U |
| Di-n-octyl phthalate | 117-84-0 | 210 U | 2100 UD | 74 U | 68 U | 67 U | 62 U |
| Fluoranthene | 206-44-0 | 5200 | 8600 JD | 480 | 60 U | 59 U | 54 U |
| Fluorene | 86-73-7 | 6700 | 8400 JD | 230 J | 68 U | 67 U | 61 U |
| Hexachlorobenzene | 118-74-1 | 190 U | 1900 UD | 70 U | 64 U | 63 U | 58 U |
| Hexachlorobutadiene | 87-68-3 | 190 U | 1900 UD | 67 U | 62 U | 61 U | 56 U |
| Hexachlorocyclopentadiene | 77-47-4 | 190 U | 1900 UD | 69 U | 64 U | 63 U | 58 U |
| Hexachloroethane | 67-72-1 | 210 U | 2100 UD | 74 U | 68 U | 67 U | 62 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 150 U | 1500 UD | 71 J | 51 U | 50 U | 46 U |
| Isophorone | 78-59-1 | 180 U | 1800 UD | 65 U | 60 U | 59 U | 55 U |
| Naphthalene | 91-20-3 | 1100 J | 2100 UD | 74 U | 69 U | 67 U | 62 U |
| Nitrobenzene | 98-95-3 | 260 U | 2600 UD | 95 U | 88 U | 86 U | 79 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 200 U | 2000 UD | 72 U | 67 U | 65 U | 60 U |
| N-Nitrosodiphenylamine | 86-30-6 | 200 U | 2000 UD | 72 U | 66 U | 65 U | 60 U |
| Pentachlorophenol | 87-86-5 | 280 U | 2800 UD | 100 U | 93 U | 91 U | 84 U |
| Phenanthrene | 85-01-8 | 26000 E | 23000 D | 1000 | 120 J | 88 J | 58 U |
| Phenol | 108-95-2 | 180 U | 1800 UD | 66 U | 61 U | 60 U | 55 U |
| Pyrene | 129-00-0 | 4600 | 2900 JD | 580 | 71 U | 70 U | 64 U |
| | | 63350 | 61800 | 3400 | 120 | 179 | 0 |
| | | 54800 | 0 | 1930 | 1600 | 1600 | 1500 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-15(22-24) | P-16(0-2) | P-16(0-2)DL | P-16(4-6) | P-16(6-8) | P-16(8-10) |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2632-21 | T2632-22 | T2632-22DL | T2632-23 | T2632-24 | T2632-25 |
| Sampling Date | | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 20.0 | 200.0 | 20.0 | 20.0 | 10.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 61 U | 13000 U | 130000 UD | 2500 U | 2700 U | 1400 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 60 U | 12000 U | 120000 UD | 2500 U | 2600 U | 1300 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 57 U | 12000 U | 120000 UD | 2300 U | 2500 U | 1300 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 54 U | 11000 U | 110000 UD | 2200 U | 2400 U | 1200 U |
| 2,4-Dichlorophenol | 120-83-2 | 69 U | 14000 U | 140000 UD | 2800 U | 3000 U | 1500 U |
| 2,4-Dimethylphenol | 105-67-9 | 59 U | 12000 U | 120000 UD | 2400 U | 2600 U | 1300 U |
| 2,4-Dinitrophenol | 51-28-5 | 320 U | 66000 U | 660000 UD | 13000 U | 14000 U | 7000 U |
| 2,4-Dinitrotoluene | 121-14-2 | 54 U | 11000 U | 110000 UD | 2200 U | 2400 U | 1200 U |
| 2,6-Dinitrotoluene | 606-20-2 | 57 U | 11000 U | 110000 UD | 2200 U | 2300 U | 1200 U |
| 2-Chloronaphthalene | 91-58-7 | 62 U | 13000 U | 130000 UD | 2500 U | 2700 U | 1400 U |
| 2-Chlorophenol | 95-57-8 | 59 U | 12000 U | 120000 UD | 2400 U | 2600 U | 1300 U |
| 2-Methylnaphthalene | 91-57-6 | 62 U | 17000 J | 130000 UD | 2500 U | 2700 U | 1400 U |
| 2-Methylphenol | 95-48-7 | 62 U | 13000 U | 130000 UD | 2500 U | 2700 U | 1400 U |
| 2-Nitroaniline | 88-74-4 | 47 U | 9700 U | 97000 UD | 1900 U | 2000 U | 1000 U |
| 2-Nitrophenol | 88-75-5 | 57 U | 12000 U | 120000 UD | 2300 U | 2500 U | 1300 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 63 U | 13000 U | 130000 UD | 2600 U | 2800 U | 1400 U |
| 3+4-Methylphenols | 106-44-5 | 58 U | 12000 U | 120000 UD | 2400 U | 2500 U | 1300 U |
| 3-Nitroaniline | 99-09-2 | 48 U | 10000 U | 100000 UD | 2000 U | 2100 U | 1100 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 72 U | 15000 U | 150000 UD | 3000 U | 3100 U | 1600 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 55 U | 11000 U | 110000 UD | 2300 U | 2400 U | 1200 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 51 U | 11000 U | 110000 UD | 2100 U | 2200 U | 1100 U |
| 4-Chloroaniline | 106-47-8 | 44 U | 9100 U | 91000 UD | 1800 U | 1900 U | 980 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 59 U | 12000 U | 120000 UD | 2400 U | 2500 U | 1300 U |
| 4-Nitroaniline | 100-01-6 | 63 U | 13000 U | 130000 UD | 2600 U | 2800 U | 1400 U |
| 4-Nitrophenol | 100-02-7 | 46 U | 9500 U | 95000 UD | 1900 U | 2000 U | 1000 U |
| Acenaphthene | 83-32-9 | 66 U | 190000 | 200000 JD | 5200 J | 8900 J | 3300 J |
| Acenaphthylene | 208-96-8 | 60 U | 12000 U | 120000 UD | 2500 U | 2600 U | 1300 U |
| Acetophenone | 98-86-2 | 54 U | 11000 U | 110000 UD | 2200 U | 2400 U | 1200 U |
| Anthracene | 120-12-7 | 56 U | 310000 | 310000 JD | 9400 J | 16000 | 5300 J |
| Atrazine | 1912-24-9 | 57 U | 12000 U | 120000 UD | 2300 U | 2500 U | 1300 U |
| Benzaldehyde | 100-52-7 | 76 U | 16000 U | 160000 UD | 3100 U | 3300 U | 1700 U |
| Benzo(a)anthracene | 56-55-3 | 52 U | 630000 E | 690000 JD | 24000 | 39000 | 10000 |
| Benzo(a)pyrene | 50-32-8 | 59 U | 600000 | 650000 JD | 22000 | 36000 | 9700 |
| Benzo(b)fluoranthene | 205-99-2 | 41 U | 810000 E | 880000 D | 28000 | 47000 | 12000 |
| Benzo(g,h,i)perylene | 191-24-2 | 61 U | 290000 | 310000 JD | 12000 J | 20000 | 5100 J |
| Benzo(k)fluoranthene | 207-08-9 | 82 U | 320000 | 330000 JD | 12000 J | 21000 | 5300 J |
| bis(2-Chloroethoxy)methane | 111-91-1 | 61 U | 13000 U | 130000 UD | 2500 U | 2600 U | 1400 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 59 U | 12000 U | 120000 UD | 2400 U | 2500 U | 1300 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 71 U | 16000 U | 160000 UD | 2800 U | 3100 U | 1600 U |
| Butylbenzylphthalate | 85-68-7 | 60 U | 12000 U | 120000 UD | 2600 U | 2600 U | 1300 U |
| Caprolactam | 105-60-2 | 60 U | 12000 U | 120000 UD | 2400 U | 2600 U | 1300 U |
| Carbazole | 86-74-8 | 57 U | 140000 | 140000 JD | 4400 J | 7500 J | 2500 J |
| Chrysene | 218-01-9 | 67 U | 550000 | 650000 JD | 21000 | 32000 | 9300 |
| Dibenz(a,h)anthracene | 53-70-3 | 47 U | 45000 J | 96000 UD | 1900 U | 3000 J | 1000 U |
| Dibenzofuran | 132-64-9 | 82 J | 86000 | 130000 UD | 2500 U | 3900 J | 1500 J |
| Diethylphthalate | 84-66-2 | 64 U | 13000 U | 130000 UD | 2600 U | 2800 U | 1400 U |
| Dimethylphthalate | 131-11-3 | 60 U | 12000 U | 120000 UD | 2400 U | 2600 U | 1300 U |
| Di-n-butylphthalate | 84-74-2 | 56 U | 12000 U | 120000 UD | 2300 U | 2500 U | 1300 U |
| Di-n-octyl phthalate | 117-84-0 | 63 U | 13000 U | 130000 UD | 2600 U | 2700 U | 1400 U |
| Fluoranthene | 206-44-0 | 110 J | 1400000 E | 1600000 D | 50000 | 82000 | 24000 |
| Fluorene | 86-73-7 | 90 J | 140000 | 150000 JD | 4200 J | 7200 J | 2600 J |
| Hexachlorobenzene | 118-74-1 | 59 U | 12000 U | 120000 UD | 2400 U | 2600 U | 1300 U |
| Hexachlorobutadiene | 87-68-3 | 57 U | 12000 U | 120000 UD | 2300 U | 2500 U | 1300 U |
| Hexachlorocyclopentadiene | 77-47-4 | 59 U | 12000 U | 120000 UD | 2400 U | 2600 U | 1300 U |
| Hexachloroethane | 67-72-1 | 63 U | 13000 U | 130000 UD | 2600 U | 2700 U | 1400 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 47 U | 190000 | 250000 JD | 9300 J | 16000 | 4000 J |
| Isophorone | 78-59-1 | 56 U | 12000 U | 120000 UD | 2300 U | 2400 U | 1200 U |
| Naphthalene | 91-20-3 | 63 U | 64000 J | 130000 UD | 2600 U | 2800 U | 1400 U |
| Nitrobenzene | 98-95-3 | 81 U | 17000 U | 170000 UD | 3300 U | 3500 U | 1800 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 61 U | 13000 U | 130000 UD | 2500 U | 2700 U | 1400 U |
| N-Nitrosodiphenylamine | 86-30-6 | 61 U | 13000 U | 130000 UD | 2500 U | 2700 U | 1400 U |
| Pentachlorophenol | 87-86-5 | 86 U | 18000 U | 180000 UD | 3500 U | 3700 U | 1900 U |
| Phenanthrene | 85-01-8 | 340 J | 1400000 E | 1300000 D | 39000 | 66000 | 21000 |
| Phenol | 108-95-2 | 56 U | 12000 U | 120000 UD | 2300 U | 2400 U | 1200 U |
| Pyrene | 129-00-0 | 68 J | 1400000 E | 1300000 D | 43000 | 72000 | 20000 |
| | | | | | | | |
| | | 690 | 8582000 | 8760000 | 283500 | 477500 | 135600 |
| | | 1500 | 1867000 | 0 | 60700 | 109300 | 16800 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-16(10-12) | P-16(12-14) | P-17(8-10) | P-17(8-10)DL | P-17(10-12) | P-17(10-12)DL |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2632-26 | T2632-27 | T2561-04 | T2561-04DL | T2561-05 | T2561-05DL |
| Sampling Date | | 05/02/05 | 05/02/05 | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 5.0 | 2.0 | 1.0 | 10.0 | 1.0 | 5.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 330 U | 140 U | 67 U | 670 UD | 65 U | 330 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 330 U | 140 U | 66 U | 660 UD | 64 U | 320 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 310 U | 130 U | 63 U | 630 UD | 61 U | 300 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 300 U | 130 U | 60 U | 600 UD | 58 U | 290 UD |
| 2,4-Dichlorophenol | 120-83-2 | 370 U | 160 U | 78 U | 780 UD | 73 U | 370 UD |
| 2,4-Dimethylphenol | 105-67-9 | 320 U | 140 U | 65 U | 650 UD | 63 U | 310 UD |
| 2,4-Dinitrophenol | 51-28-5 | 1700 U | 740 U | 350 U | 3500 UD | 340 U | 1700 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 300 U | 130 U | 60 U | 600 UD | 58 U | 290 UD |
| 2,6-Dinitrotoluene | 606-20-2 | 290 U | 120 U | 58 U | 580 UD | 56 U | 280 UD |
| 2-Chloronaphthalene | 91-58-7 | 340 U | 140 U | 68 U | 680 UD | 66 U | 330 UD |
| 2-Chlorophenol | 95-57-8 | 320 U | 140 U | 65 U | 650 UD | 63 U | 320 UD |
| 2-Methylnaphthalene | 91-57-6 | 340 U | 150 U | 690 | 680 UD | 190 J | 330 UD |
| 2-Methylphenol | 95-48-7 | 340 U | 140 U | 68 U | 680 UD | 66 U | 330 UD |
| 2-Nitroaniline | 88-74-4 | 260 U | 110 U | 52 U | 520 UD | 50 U | 260 UD |
| 2-Nitrophenol | 88-75-5 | 310 U | 130 U | 63 U | 630 UD | 61 U | 300 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 350 U | 150 U | 70 U | 700 UD | 68 U | 340 UD |
| 3+4-Methylphenols | 105-44-5 | 320 U | 140 U | 65 U | 650 UD | 62 U | 310 UD |
| 3-Nitroaniline | 99-09-2 | 260 U | 110 U | 53 U | 530 UD | 52 U | 260 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 390 U | 170 U | 80 U | 800 UD | 77 U | 380 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 300 U | 130 U | 61 U | 610 UD | 59 U | 300 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 280 U | 120 U | 57 U | 570 UD | 55 U | 270 UD |
| 4-Chloroaniline | 106-47-8 | 240 U | 100 U | 49 U | 490 UD | 47 U | 240 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 320 U | 140 U | 65 U | 650 UD | 63 U | 310 UD |
| 4-Nitroaniline | 100-01-6 | 350 U | 150 U | 70 U | 700 UD | 68 U | 340 UD |
| 4-Nitrophenol | 100-02-7 | 250 U | 110 U | 51 U | 510 UD | 49 U | 250 UD |
| Acenaphthene | 83-32-9 | 1400 J | 270 J | 7800 E | 16000 D | 2900 | 4300 D |
| Acenaphthylene | 208-96-8 | 330 U | 140 U | 130 J | 670 UD | 64 U | 320 UD |
| Acetophenone | 98-86-2 | 300 U | 130 U | 60 U | 600 UD | 58 U | 290 UD |
| Anthracene | 120-12-7 | 2300 | 440 J | 4700 E | 3200 JD | 660 | 680 JD |
| Atrazine | 1912-24-9 | 310 U | 130 U | 63 U | 630 UD | 61 U | 300 UD |
| Benzaldehyde | 100-52-7 | 410 U | 180 U | 84 U | 840 UD | 81 U | 410 UD |
| Benzo(a)anthracene | 56-55-3 | 4400 | 1300 | 2200 | 1900 JD | 510 | 490 JD |
| Benzo(a)pyrene | 50-32-8 | 3900 | 1100 | 1400 | 1100 JD | 340 J | 320 JD |
| Benzo(b)fluoranthene | 205-99-2 | 5200 | 1300 | 2200 | 1300 JD | 470 | 380 JD |
| Benzo(g,h,i)perylene | 191-24-2 | 2000 | 460 J | 350 J | 680 UD | 100 J | 330 UD |
| Benzo(k)fluoranthene | 207-08-9 | 2000 J | 520 J | 860 | 900 UD | 200 J | 440 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 330 U | 140 U | 67 U | 670 UD | 65 U | 330 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 320 U | 140 U | 65 U | 650 UD | 63 U | 310 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 390 U | 170 U | 160 J | 790 UD | 76 U | 380 UD |
| Butylbenzylphthalate | 85-68-7 | 330 U | 140 U | 6900 E | 7600 D | 1100 | 1100 JD |
| Caprolactam | 105-60-2 | 330 U | 140 U | 66 U | 660 UD | 64 U | 320 UD |
| Carbazole | 86-74-8 | 910 J | 240 J | 2300 | 1400 JD | 570 | 590 JD |
| Chrysene | 218-01-9 | 3800 | 1000 | 1900 | 1700 JD | 470 | 460 JD |
| Dibenz(a,h)anthracene | 53-70-3 | 370 J | 110 U | 100 J | 510 UD | 50 U | 250 UD |
| Dibenzofuran | 132-64-9 | 630 J | 140 U | 6300 E | 13000 D | 2400 | 3200 D |
| Diethylphthalate | 84-66-2 | 350 U | 150 U | 71 U | 710 UD | 68 U | 340 UD |
| Dimethylphthalate | 131-11-3 | 330 U | 140 U | 66 U | 660 UD | 64 U | 320 UD |
| Di-n-butylphthalate | 84-74-2 | 310 U | 130 U | 120 J | 620 UD | 60 U | 300 UD |
| Di-n-octyl phthalate | 117-84-0 | 340 U | 150 U | 70 U | 700 UD | 67 U | 340 UD |
| Fluoranthene | 206-44-0 | 10000 | 2700 | 12000 E | 13000 D | 2300 | 3000 D |
| Fluorene | 86-73-7 | 1100 J | 210 J | 6300 E | 12000 D | 2000 | 2600 D |
| Hexachlorobenzene | 118-74-1 | 320 U | 140 U | 66 U | 660 UD | 63 U | 320 UD |
| Hexachlorobutadiene | 87-68-3 | 310 U | 130 U | 63 U | 630 UD | 61 U | 300 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 320 U | 140 U | 65 U | 650 UD | 63 U | 320 UD |
| Hexachloroethane | 67-72-1 | 340 U | 150 U | 70 U | 700 UD | 67 U | 340 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 1600 J | 330 J | 120 J | 520 UD | 63 J | 260 UD |
| Isophorone | 78-59-1 | 300 U | 130 U | 62 U | 620 UD | 58 U | 300 UD |
| Naphthalene | 91-20-3 | 470 J | 150 U | 6100 E | 8900 D | 2400 | 3000 D |
| Nitrobenzene | 98-95-3 | 440 U | 190 U | 89 U | 890 UD | 86 U | 430 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 330 U | 140 U | 68 U | 680 UD | 66 U | 330 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 330 U | 140 U | 67 U | 670 UD | 65 U | 330 UD |
| Pentachlorophenol | 87-86-5 | 470 U | 200 U | 95 U | 960 UD | 92 U | 460 UD |
| Phenanthrene | 85-01-8 | 9100 | 2100 | 23000 E | 32000 D | 4900 E | 7900 D |
| Phenol | 108-95-2 | 310 U | 130 U | 62 U | 620 UD | 60 U | 300 UD |
| Pyrene | 129-00-0 | 8500 | 2400 | 5800 E | 7400 D | 1400 | 1700 JD |
| | | | | | | | |
| | | 57630 | 14370 | 91430 | 120400 | 22973 | 29720 |
| | | 13790 | 3360 | 5860 | 0 | 10640 | 0 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-17(12-14) | P-17(12-14)DL | P-17(12-14)DL2 | P-17(14-16) | P-17(14-16)DL | P-17(14-16)DUP |
|---|---|---|---|---|---|---|---|
| Lab Sample Number | | T2561-05 | T2561-05DL | T2561-05DL2 | T2561-07 | T2561-07DL | T2561-08 |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 100.0 | 500.0 | 1.0 | 5.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | | |
| 1,1-Biphenyl | 92-52-4 | 680 U | 6800 UD | 27000 UD | 82 U | 410 UD | 80 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 660 U | 6600 UD | 26000 UD | 80 U | 400 UD | 79 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 630 U | 6300 UD | 25000 UD | 76 U | 380 UD | 75 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 600 U | 6000 UD | 24000 UD | 73 U | 360 UD | 72 U |
| 2,4-Dichlorophenol | 120-83-2 | 760 U | 7600 UD | 30000 UD | 92 U | 460 UD | 90 U |
| 2,4-Dimethylphenol | 105-67-9 | 650 U | 6500 UD | 26000 UD | 79 U | 390 UD | 180 J |
| 2,4-Dinitrophenol | 51-28-5 | 3500 U | 35000 UD | 140000 UD | 420 U | 2100 UD | 420 U |
| 2,4-Dinitrotoluene | 121-14-2 | 600 U | 6000 UD | 24000 UD | 73 U | 360 UD | 72 U |
| 2,6-Dinitrotoluene | 606-20-2 | 580 U | 5800 UD | 23000 UD | 70 U | 350 UD | 69 U |
| 2-Chloronaphthalene | 91-58-7 | 680 U | 6800 UD | 27000 UD | 82 U | 410 UD | 81 U |
| 2-Chlorophenol | 95-57-8 | 660 U | 6600 UD | 26000 UD | 79 U | 400 UD | 78 U |
| 2-Methylnaphthalene | 91-57-6 | 59000 E | 68000 D | 56000 JD | 1600 | 1800 JD | 450 J |
| 2-Methylphenol | 95-48-7 | 680 U | 6800 UD | 27000 UD | 82 U | 410 UD | 81 U |
| 2-Nitroaniline | 88-74-4 | 520 U | 5200 UD | 21000 UD | 63 U | 310 UD | 62 U |
| 2-Nitrophenol | 88-75-5 | 630 U | 6300 UD | 25000 UD | 76 U | 380 UD | 75 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 700 U | 7000 UD | 28000 UD | 85 U | 420 UD | 83 U |
| 3+4-Methylphenols | 106-44-5 | 650 U | 6500 UD | 26000 UD | 78 U | 390 UD | 77 U |
| 3-Nitroaniline | 99-09-2 | 530 U | 5300 UD | 21000 UD | 65 U | 320 UD | 64 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 800 U | 8000 UD | 32000 UD | 96 U | 480 UD | 95 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 610 U | 6100 UD | 25000 UD | 74 U | 370 UD | 73 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 570 U | 5700 UD | 23000 UD | 69 U | 340 UD | 67 U |
| 4-Chloroaniline | 106-47-8 | 490 U | 4900 UD | 20000 UD | 59 U | 300 UD | 58 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 650 U | 6500 UD | 26000 UD | 78 U | 390 UD | 77 U |
| 4-Nitroaniline | 100-01-6 | 700 U | 7000 UD | 28000 UD | 85 U | 420 UD | 83 U |
| 4-Nitrophenol | 100-02-7 | 510 U | 5100 UD | 20000 UD | 61 U | 310 UD | 60 U |
| Acenaphthene | 83-32-9 | 87000 E | 240000 D | 240000 D | 3800 | 5900 D | 1500 |
| Acenaphthylene | 208-96-8 | 670 U | 6700 UD | 27000 UD | 81 U | 400 UD | 79 U |
| Acetophenone | 98-86-2 | 600 U | 6000 UD | 24000 UD | 73 U | 360 UD | 71 U |
| Anthracene | 120-12-7 | 67000 E | 61000 D | 55000 JD | 1200 | 1300 JD | 360 J |
| Atrazine | 1912-24-9 | 630 U | 6300 UD | 25000 UD | 76 U | 380 UD | 75 U |
| Benzaldehyde | 100-52-7 | 840 U | 8400 UD | 34000 UD | 100 U | 510 UD | 100 U |
| Benzo(a)anthracene | 56-55-3 | 17000 | 17000 JD | 23000 UD | 590 | 600 JD | 160 J |
| Benzo(a)pyrene | 50-32-8 | 4000 J | 6600 UD | 26000 UD | 230 J | 400 UD | 78 U |
| Benzo(b)fluoranthene | 205-99-2 | 7800 | 5700 JD | 18000 UD | 330 J | 370 JD | 92 J |
| Benzo(g,h,i)perylene | 191-24-2 | 680 U | 6800 UD | 27000 UD | 82 U | 410 UD | 81 U |
| Benzo(k)fluoranthene | 207-08-9 | 2600 J | 9000 UD | 36000 UD | 120 J | 550 UD | 110 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 680 U | 6800 UD | 27000 UD | 82 U | 410 UD | 80 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 650 U | 6500 UD | 26000 UD | 78 U | 390 UD | 77 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 790 U | 7900 UD | 32000 UD | 95 U | 480 UD | 94 U |
| Butylbenzylphthalate | 85-68-7 | 660 U | 6600 UD | 27000 UD | 130 J | 400 UD | 79 U |
| Caprolactam | 105-60-2 | 660 U | 6600 UD | 26000 UD | 80 U | 400 UD | 78 U |
| Carbazole | 86-74-8 | 19000 | 12000 JD | 25000 UD | 720 | 720 JD | 200 J |
| Chrysene | 218-01-9 | 14000 | 15000 JD | 29000 UD | 510 | 550 JD | 150 J |
| Dibenz(a,h)anthracene | 53-70-3 | 510 U | 5100 UD | 21000 UD | 62 U | 310 UD | 61 U |
| Dibenzofuran | 132-64-9 | 76000 E | 200000 D | 180000 D | 3100 | 4300 D | 1200 |
| Diethylphthalate | 84-66-2 | 710 U | 7100 UD | 28000 UD | 86 U | 430 UD | 84 U |
| Dimethylphthalate | 131-11-3 | 660 U | 6600 UD | 26000 UD | 80 U | 400 UD | 78 U |
| Di-n-butylphthalate | 84-74-2 | 630 U | 6300 UD | 25000 UD | 76 U | 380 UD | 74 U |
| Di-n-octyl phthalate | 117-84-0 | 700 U | 7000 UD | 28000 UD | 84 U | 420 UD | 83 U |
| Fluoranthene | 206-44-0 | 160000 E | 190000 D | 170000 D | 3800 | 5000 D | 1400 |
| Fluorene | 86-73-7 | 77000 E | 200000 D | 190000 D | 3200 | 4600 D | 1200 |
| Hexachlorobenzene | 118-74-1 | 660 U | 6600 UD | 26000 UD | 79 U | 400 UD | 78 U |
| Hexachlorobutadiene | 87-68-3 | 630 U | 6300 UD | 25000 UD | 76 U | 380 UD | 75 U |
| Hexachlorocyclopentadiene | 77-47-4 | 660 U | 6600 UD | 26000 UD | 79 U | 400 UD | 78 U |
| Hexachloroethane | 67-72-1 | 700 U | 7000 UD | 28000 UD | 84 U | 420 UD | 83 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 520 U | 5200 UD | 21000 UD | 63 U | 310 UD | 62 U |
| Isophorone | 78-59-1 | 620 U | 6200 UD | 25000 UD | 75 U | 370 UD | 73 U |
| Naphthalene | 91-20-3 | 200000 E | 350000 ED | 380000 D | 5400 E | 8400 D | 2400 |
| Nitrobenzene | 98-95-3 | 900 U | 9000 UD | 36000 UD | 110 U | 540 UD | 110 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 680 U | 6800 UD | 27000 UD | 82 U | 410 UD | 81 U |
| N-Nitrosodiphenylamine | 86-30-6 | 680 U | 6800 UD | 27000 UD | 82 U | 410 UD | 80 U |
| Pentachlorophenol | 87-86-5 | 950 U | 9500 UD | 38000 UD | 110 U | 570 UD | 110 U |
| Phenanthrene | 85-01-8 | 340000 E | 470000 ED | 590000 D | 7800 E | 13000 D | 3400 |
| Phenol | 108-95-2 | 620 U | 6200 UD | 25000 UD | 75 U | 380 UD | 74 U |
| Pyrene | 129-00-0 | 84000 E | 100000 D | 91000 JD | 2200 | 2800 D | 820 |
| | | 1194400 | 1928700 | 1952000 | 34730 | 49190 | 13502 |
| | | 548000 | 0 | 0 | 11630 | 0 | 9200 |

# Queens West Development-Parcel 9

## Soil Samples

Semi-Volatile Organic Compounds

| Sample ID | | P-17(20-22) | P-17(22-24) | FIELDBLANK-3 | P-17(24-26) | P-17(26-28) |
|---|---|---|---|---|---|---|
| Lab Sample Number | | T2561-09 | T2561-11 | T2561-12 | T2561-14 | T2561-15 |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | WATER | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/Kg | ug/Kg | ug/L | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | | | |
| 1,1-Biphenyl | 92-52-4 | 65 U | 62 U | 1.5 U | 63 U | 65 U |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 63 U | 61 U | 1.3 U | 62 U | 63 U |
| 2,4,5-Trichlorophenol | 95-95-4 | 60 U | 58 U | 1.3 U | 59 U | 60 U |
| 2,4,6-Trichlorophenol | 88-06-2 | 58 U | 56 U | 1.2 U | 58 U | 58 U |
| 2,4-Dichlorophenol | 120-83-2 | 73 U | 70 U | 1.5 U | 71 U | 73 U |
| 2,4-Dimethylphenol | 105-67-9 | 62 U | 60 U | 1.2 U | 61 U | 62 U |
| 2,4-Dinitrophenol | 51-28-5 | 340 U | 320 U | 3.7 U | 330 U | 340 U |
| 2,4-Dinitrotoluene | 121-14-2 | 72 U | 68 U | 58 U | 56 U | 56 U |
| 2,6-Dinitrotoluene | 606-20-2 | 69 U | 66 U | 56 U | 54 U | 54 U |
| 2-Chloronaphthalene | 91-58-7 | 65 U | 63 U | 1.5 U | 64 U | 65 U |
| 2-Chlorophenol | 95-57-8 | 63 U | 60 U | 1.2 U | 61 U | 63 U |
| 2-Methylnaphthalene | 91-57-6 | 66 U | 120 J | 1.1 U | 70 J | 140 J |
| 2-Methylphenol | 95-48-7 | 65 U | 63 U | 1.6 U | 64 U | 65 U |
| 2-Nitroaniline | 88-74-4 | 50 U | 48 U | 1.1 U | 49 U | 50 U |
| 2-Nitrophenol | 88-75-5 | 61 U | 58 U | 1.4 U | 59 U | 60 U |
| 3,3-Dichlorobenzidine | 91-94-1 | 67 U | 65 U | 1.1 U | 66 U | 67 U |
| 3+4-Methylphenols | 106-44-5 | 62 U | 60 U | 1.4 U | 60 U | 62 U |
| 3-Nitroaniline | 99-09-2 | 51 U | 49 U | 1.1 U | 50 U | 51 U |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 76 U | 74 U | 1.7 U | 74 U | 76 U |
| 4-Bromophenyl-phenylether | 101-55-3 | 59 U | 57 U | 1.6 U | 57 U | 59 U |
| 4-Chloro-3-methylphenol | 59-50-7 | 54 U | 52 U | 1.4 U | 53 U | 54 U |
| 4-Chloroaniline | 106-47-8 | 47 U | 45 U | 0.900 U | 46 U | 47 U |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 62 U | 60 U | 1.4 U | 61 U | 62 U |
| 4-Nitroaniline | 100-01-6 | 67 U | 65 U | 1.2 U | 65 U | 67 U |
| 4-Nitrophenol | 100-02-7 | 49 U | 47 U | 3.3 U | 47 U | 49 U |
| Acenaphthene | 83-32-9 | 320 J | 790 | 1.4 U | 240 J | 760 |
| Acenaphthylene | 208-96-8 | 64 U | 210 J | 1.4 U | 62 U | 64 U |
| Acetophenone | 98-86-2 | 58 U | 55 U | 1.3 U | 56 U | 57 U |
| Anthracene | 120-12-7 | 59 U | 130 J | 1.5 U | 87 J | 210 J |
| Atrazine | 1912-24-9 | 60 U | 58 U | 1.3 U | 59 U | 60 U |
| Benzaldehyde | 100-52-7 | 81 U | 78 U | 1.7 U | 79 U | 81 U |
| Benzo(a)anthracene | 56-55-3 | 55 U | 63 J | 1.2 U | 54 U | 110 J |
| Benzo(a)pyrene | 50-32-8 | 63 U | 61 U | 1.2 U | 61 U | 63 U |
| Benzo(b)fluoranthene | 205-99-2 | 43 U | 42 U | 0.790 U | 42 U | 69 J |
| Benzo(g,h,i)perylene | 191-24-2 | 65 U | 63 U | 1.1 U | 63 U | 65 U |
| Benzo(k)fluoranthene | 207-08-9 | 87 U | 83 U | 2.0 U | 84 U | 86 U |
| bis(2-Chloroethoxy)methane | 111-91-1 | 65 U | 62 U | 1.4 U | 63 U | 65 U |
| bis(2-Chloroethyl)ether | 111-44-4 | 62 U | 60 U | 1.5 U | 61 U | 62 U |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 75 U | 73 U | 1.6 U | 73 U | 75 U |
| Butylbenzylphthalate | 85-68-7 | 64 U | 61 U | 1.5 U | 62 U | 64 U |
| Caprolactam | 105-60-2 | 63 U | 61 U | 1.3 U | 62 U | 63 U |
| Carbazole | 86-74-8 | 60 U | 310 J | 1.3 U | 890 | 320 J |
| Chrysene | 218-01-9 | 71 U | 68 U | 1.8 U | 69 U | 97 J |
| Dibenz(a,h)anthracene | 53-70-3 | 49 U | 48 U | 0.910 U | 48 U | 49 U |
| Dibenzofuran | 132-64-9 | 220 J | 560 | 1.4 U | 180 J | 430 |
| Diethylphthalate | 84-66-2 | 68 U | 65 U | 1.4 U | 66 U | 68 U |
| Dimethylphthalate | 131-11-3 | 63 U | 61 U | 1.3 U | 62 U | 63 U |
| Di-n-butylphthalate | 84-74-2 | 60 U | 58 U | 1.4 U | 58 U | 60 U |
| Di-n-octyl phthalate | 117-84-0 | 67 U | 64 U | 1.4 U | 65 U | 67 U |
| Fluoranthene | 206-44-0 | 160 J | 470 | 1.3 U | 100 J | 930 |
| Fluorene | 86-73-7 | 180 J | 620 | 1.5 U | 340 J | 650 |
| Hexachlorobenzene | 118-74-1 | 63 U | 61 U | 1.3 U | 61 U | 63 U |
| Hexachlorobutadiene | 87-68-3 | 61 U | 58 U | 1.4 U | 59 U | 60 U |
| Hexachlorocyclopentadiene | 77-47-4 | 63 U | 60 U | 1.2 U | 61 U | 63 U |
| Hexachloroethane | 67-72-1 | 67 U | 64 U | 1.2 U | 65 U | 67 U |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 50 U | 48 U | 0.870 U | 49 U | 50 U |
| Isophorone | 78-59-1 | 59 U | 57 U | 1.3 U | 58 U | 59 U |
| Naphthalene | 91-20-3 | 520 | 980 | 1.5 U | 1100 | 1200 |
| Nitrobenzene | 98-95-3 | 110 U | 86 U | 86 U | 83 U | 83 U |
| N-Nitroso-di-n-propylamine | 621-64-7 | 65 U | 63 U | 1.5 U | 63 U | 65 U |
| N-Nitrosodiphenylamine | 86-30-6 | 65 U | 62 U | 1.3 U | 63 U | 65 U |
| Pentachlorophenol | 87-86-5 | 91 U | 88 U | 1.7 U | 89 U | 91 U |
| Phenanthrene | 85-01-8 | 520 | 1800 | 1.5 U | 500 | 1900 |
| Phenol | 108-95-2 | 60 U | 57 U | 1.3 U | 58 U | 59 U |
| Pyrene | 129-00-0 | 92 J | 250 J | 1.5 U | 68 U | 520 |
| | | | | | | |
| | | 2012 | 6103 | 0 | 3607 | 7336 |
| | | 2879 | 4880 | 10 | 4119 | 6060 |

## Queens West Development-Parcel 9

**Soil Samples**

Semi-Volatile Organic Compounds

| Sample ID | | P-17(28-30) | P-17(28-30)DL | P-17(28-30)DL2 |
|---|---|---|---|---|
| Lab Sample Number | | T2561-16 | T2561-16DL | T2561-16DL2 |
| Sampling Date | | 04/27/05 | 04/27/05 | 04/27/05 |
| Matrix | | SOIL | SOIL | SOIL |
| Dilution Factor | | 10.0 | 100.0 | 1000.0 |
| Units | | ug/Kg | ug/Kg | ug/Kg |
| COMPOUND | CAS # | | | |
| 1,1-Biphenyl | 92-52-4 | 1300 U | 13000 UD | 130000 UD |
| 2,2-oxybis(1-Chloropropane) | 108-60-1 | 1300 U | 13000 UD | 130000 UD |
| 2,4,5-Trichlorophenol | 95-95-4 | 1200 U | 12000 UD | 120000 UD |
| 2,4,6-Trichlorophenol | 88-06-2 | 1200 U | 12000 UD | 120000 UD |
| 2,4-Dichlorophenol | 120-83-2 | 1500 U | 15000 UD | 150000 UD |
| 2,4-Dimethylphenol | 105-67-9 | 1300 U | 13000 UD | 130000 UD |
| 2,4-Dinitrophenol | 51-28-5 | 6900 U | 69000 UD | 690000 UD |
| 2,4-Dinitrotoluene | 121-14-2 | 1.3 U | 1.3 U | 56 U |
| 2,6-Dinitrotoluene | 606-20-2 | 1.3 U | 1.3 U | 54 U |
| 2-Chloronaphthalene | 91-58-7 | 1300 U | 13000 UD | 130000 UD |
| 2-Chlorophenol | 95-57-8 | 1300 U | 13000 UD | 130000 UD |
| 2-Methylnaphthalene | 91-57-6 | 570000 E | 580000 D | 760000 JD |
| 2-Methylphenol | 95-48-7 | 1300 U | 13000 UD | 130000 UD |
| 2-Nitroaniline | 88-74-4 | 1000 U | 10000 UD | 100000 UD |
| 2-Nitrophenol | 88-75-5 | 1200 U | 12000 UD | 120000 UD |
| 3,3-Dichlorobenzidine | 91-94-1 | 1400 U | 14000 UD | 140000 UD |
| 3+4-Methylphenols | 108-44-5 | 1300 U | 13000 UD | 130000 UD |
| 3-Nitroaniline | 99-09-2 | 1100 U | 11000 UD | 110000 UD |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | 1600 U | 16000 UD | 160000 UD |
| 4-Bromophenyl-phenylether | 101-55-3 | 1200 U | 12000 UD | 120000 UD |
| 4-Chloro-3-methylphenol | 59-50-7 | 1100 U | 11000 UD | 110000 UD |
| 4-Chloroaniline | 106-47-8 | 960 U | 9600 UD | 96000 UD |
| 4-Chlorophenyl-phenylether | 7005-72-3 | 1300 U | 13000 UD | 130000 UD |
| 4-Nitroaniline | 100-01-6 | 1400 U | 14000 UD | 140000 UD |
| 4-Nitrophenol | 100-02-7 | 1000 U | 10000 UD | 100000 UD |
| Acenaphthene | 83-32-9 | 240000 E | 620000 D | 960000 D |
| Acenaphthylene | 208-96-8 | 1300 U | 13000 UD | 130000 UD |
| Acetophenone | 98-86-2 | 1200 U | 12000 UD | 120000 UD |
| Anthracene | 120-12-7 | 170000 E | 200000 D | 230000 JD |
| Atrazine | 1912-24-9 | 1200 U | 12000 UD | 120000 UD |
| Benzaldehyde | 100-52-7 | 1700 U | 17000 UD | 170000 UD |
| Benzo(a)anthracene | 56-55-3 | 71000 E | 84000 D | 110000 UD |
| Benzo(a)pyrene | 50-32-8 | 27000 | 27000 JD | 130000 UD |
| Benzo(b)fluoranthene | 205-99-2 | 55000 | 44000 JD | 89000 UD |
| Benzo(g,h,i)perylene | 191-24-2 | 3800 J | 13000 UD | 130000 UD |
| Benzo(k)fluoranthene | 207-08-9 | 18000 | 18000 UD | 100000 UD |
| bis(2-Chloroethoxy)methane | 111-91-1 | 1300 U | 13000 UD | 130000 UD |
| bis(2-Chloroethyl)ether | 111-44-4 | 1300 U | 13000 UD | 130000 UD |
| bis(2-Ethylhexyl)phthalate | 117-81-7 | 1600 U | 16000 UD | 160000 UD |
| Butylbenzylphthalate | 85-68-7 | 1300 U | 13000 UD | 130000 UD |
| Caprolactam | 105-60-2 | 1300 U | 13000 UD | 130000 UD |
| Carbazole | 86-74-8 | 100000 E | 71000 JD | 120000 UD |
| Chrysene | 218-01-9 | 61000 | 78000 JD | 150000 UD |
| Dibenz(a,h)anthracene | 53-70-3 | 1800 J | 10000 UD | 100000 UD |
| Dibenzofuran | 132-64-9 | 210000 E | 520000 D | 720000 JD |
| Diethylphthalate | 84-66-2 | 1400 U | 14000 UD | 140000 UD |
| Dimethylphthalate | 131-11-3 | 1300 U | 13000 UD | 130000 UD |
| Di-n-butylphthalate | 84-74-2 | 1200 U | 12000 UD | 120000 UD |
| Di-n-octyl phthalate | 117-84-0 | 1400 U | 14000 UD | 140000 UD |
| Fluoranthene | 206-44-0 | 410000 E | 490000 D | 630000 JD |
| Fluorene | 86-73-7 | 210000 E | 530000 D | 720000 JD |
| Hexachlorobenzene | 118-74-1 | 1300 U | 13000 UD | 130000 UD |
| Hexachlorobutadiene | 87-68-3 | 1200 U | 12000 UD | 120000 UD |
| Hexachlorocyclopentadiene | 77-47-4 | 1300 U | 13000 UD | 130000 UD |
| Hexachloroethane | 67-72-1 | 1400 U | 14000 UD | 140000 UD |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 1300 J | 10000 UD | 100000 UD |
| Isophorone | 78-59-1 | 1200 U | 12000 UD | 120000 UD |
| Naphthalene | 91-20-3 | 1200000 E | 1400000 ED | 2600000 D |
| Nitrobenzene | 98-95-3 | 1.7 U | 18000 UD | 180000 UD |
| N-Nitroso-di-n-propylamine | 621-64-7 | 1300 U | 13000 UD | 130000 UD |
| N-Nitrosodiphenylamine | 86-30-6 | 24000 | 13000 UD | 130000 UD |
| Pentachlorophenol | 87-86-5 | 1900 U | 19000 UD | 190000 UD |
| Phenanthrene | 85-01-8 | 880000 E | 1100000 ED | 1900000 D |
| Phenol | 108-95-2 | 1200 U | 12000 UD | 120000 UD |
| Pyrene | 129-00-0 | 170000 E | 300000 D | 360000 JD |
| | | | | |
| | | 4422900 | 6044000 | 8880000 |
| | | 886000 | 0 | 0 |

# Queens West Development-Parcel 9
## Soil Samples
TCLP

| Sample ID | P-2(10-14) | P-5(14-18) | P-6(12-16) | P-10(12-16) | P-11(16-20) | P-12(8-12) | P-15(10-12) | P-17(20-24) |
|---|---|---|---|---|---|---|---|---|
| Lab Sample Number | T2581-09 | T2582-20 | T2528-23 | T2527-24 | T2527-14 | T2632-01 | T2632-15 | T2561-10 |
| Sampling Date | 04/28/05 | 04/28/05 | 04/25/05 | 04/25/05 | 04/25/05 | 05/02/05 | 05/02/05 | 04/27/05 |
| Matrix | TCLP | TCLP | TCLP | TCLP | TCLP | TCLP | TCLP | TCLP |
| Dilution Factor | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Units | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L | ug/L |
| COMPOUND | | | | | | | | |
| Vinyl Chloride | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| 1,1-Dichloroethene | 2.1 U | 2.1 U | 2.1 U | 2.1 U | 2.1 U | 2.1 U | 2.1 U | 2.1 U |
| 2-Butanone | 5.7 U | 5.7 U | 5.7 U | 5.7 U | 5.7 U | 5.7 U | 5.7 U | 5.7 U |
| Carbon Tetrachloride | 5.7 U | 5.7 U | 5.7 U | 5.7 U | 5.7 U | 5.7 U | 5.7 U | 5.7 U |
| Chloroform | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U |
| Benzene | 450 | 90 | 8.1 J | 320 | 62 | 9.0 J | 1.9 U | 1.9 U |
| 1,2-Dichloroethane | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U | 1.7 U |
| Trichloroethene | 2.3 U | 2.3 U | 2.3 U | 2.3 U | 2.3 U | 2.3 U | 2.3 U | 2.3 U |
| Tetrachloroethene | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U | 2.4 U |
| Chlorobenzene | 2.3 U | 2.3 U | 2.3 U | 2.3 U | 2.3 U | 2.3 U | 2.3 U | 2.3 U |
| Total Confident Conc. VOC | 450 | 90 | 8.1 | 320 | 62 | 9 | 0 | 0 |
| Total TICs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SVOCs | | | | | | | | |
| Pyridine | 0.980 U | 0.980 U | 0.980 U | 0.980 U | 0.980 U | 0.980 U | 0.980 U | 0.980 U |
| 1,4-Dichlorobenzene | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2-Methylphenol | 2.0 J | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U | 1.5 U |
| 3+4-Methylphenols | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U | 1.3 U |
| Hexachloroethane | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| Nitrobenzene | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| Hexachlorobutadiene | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U | 1.4 U |
| 2,4,5-Trichlorophenol | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| 2,4,6-Trichlorophenol | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U | 1.1 U |
| 2,4-Dinitrotoluene | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| Hexachlorobenzene | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U | 1.2 U |
| Pentachlorophenol | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U | 1.6 U |
| Total Confident Conc. SVOC | ? | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total TICs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pesticides | | | | | | | | |
| gamma-BHC | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.12 P | 0.007 U |
| Heptachlor | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U | 0.02 U |
| Heptachlor epoxide | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U | 0.01 U |
| Endrin | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U |
| Methoxychlor | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U | 0.007 U |
| Toxaphene | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U | 0.09 U |
| Chlordane | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U | 0.19 U |
| HERBICIDES | | | | | | | | |
| 2,4-D | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U | 0.050 U |
| 2,4,5(TP-Silvex) | 0.03 U | 0.030 U | 0.030 U | 0.030 U | 0.030 U | 0.03 U | 0.03 U | 0.030 U |
| Metals | | | | | | | | |
| Arsenic | 33.2 U | 33.2 U | 33.2 U | 33.2 U | 33.2 U | 33.2 U | 39.3 J | 33.2 U |
| Barium | 181 J | 191 J | 620 J | 185 J | 667 J | 355 J | 506 J | 39.3 J |
| Cadmium | 3.270 U | 3.270 U | 3.270 U | 3.270 U | 3.270 U | 3.270 U | 3.270 U | 3.270 U |
| Chromium | 3.430 U | 3.430 U | 3.430 U | 14.6 J | 3.430 U | 3.430 U | 3.430 U | 3.550 J |
| Lead | 236 | 33.6 J | 187 | 21.8 U | 33.0 J | 27.0 J | 402 | 21.8 U |
| Selenium | 30.4 U | 30.4 U | 30.4 U | 30.4 U | 30.4 U | 30.4 U | 30.4 U | 30.4 U |
| Silver | 16.4 U | 16.4 U | 16.4 U | 16.4 U | 16.4 U | 16.4 U | 16.4 U | 16.4 U |
| Mercury | 0.330 U | 0.720 J | 0.330 U | 0.330 U | 0.330 U | 0.825 U | 0.825 U | 0.330 U |
| Ignitability | NO | NO | NO | NO | NO | NO | NO | NO |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-1(0-2) | P-2(0-2) | P-2(2-4) | P-2(4-6) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2561-19 | T2581-01 | T2581-02 | T2581-03 |
| Sampling Date | | 04/27/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.378 U | 0.878 J | 0.359 U | 0.378 U |
| Arsenic | 7440-38-2 | 5.040 | 30.9 | 5.120 | 9.760 |
| Beryllium | 7440-41-7 | 0.448 J | 0.317 J | 0.350 J | 0.409 J |
| Cadmium | 7440-43-9 | 0.038 U | 0.036 U | 0.036 U | 0.038 U |
| Chromium | 7440-47-3 | 25.9 | 18.4 | 25.8 | 17.5 |
| Copper | 7440-50-8 | 53.9 | 61.1 | 47.9 | 42.9 |
| Lead | 7439-92-1 | 108 | 114 | 71.4 | 88.1 |
| Mercury | 7439-97-6 | 0.152 | 0.538 | 0.528 | 0.284 |
| Nickel | 7440-02-0 | 22.3 | 26.9 | 12.1 | 14.1 |
| Selenium | 7782-49-2 | 0.393 U | 0.369 U | 0.412 J | 0.713 J |
| Silver | 7440-22-4 | 2.540 | 5.240 | 0.086 U | 0.091 U |
| Thallium | 7440-28-0 | 0.607 U | 0.571 U | 0.577 U | 0.607 U |
| Zinc | 7440-66-6 | 187 | 123 | 138 | 263 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-2(6-8) | P-2(8-10) | P-3(0-2) | P-3(2-4) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2581-04 | T2581-05 | T2543-01 | T2543-02 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/26/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.394 U | 0.396 U | 0.372 U | 0.353 U |
| Arsenic | 7440-38-2 | 7.710 | 1.650 | 5.030 | 24.6 |
| Beryllium | 7440-41-7 | 0.384 J | 0.363 J | 0.420 J | 0.412 J |
| Cadmium | 7440-43-9 | 0.040 U | 0.040 U | 0.037 U | 0.035 U |
| Chromium | 7440-47-3 | 18.7 | 10.3 | 19.2 | 50.2 |
| Copper | 7440-50-8 | 18.4 | 9.360 | 45.3 | 7610 |
| Lead | 7439-92-1 | 17.0 | 83.1 | 150 | 488 |
| Mercury | 7439-97-6 | 0.075 | 0.009 J | 0.819 | 3.8 |
| Nickel | 7440-02-0 | 6.630 | 12.5 | 17.6 | 6090 |
| Selenium | 7782-49-2 | 0.588 J | 0.411 U | 0.387 U | 4.380 |
| Silver | 7440-22-4 | 0.095 U | 1.070 J | 1.990 | 4.230 |
| Thallium | 7440-28-0 | 0.633 U | 0.636 U | 0.598 U | 0.567 U |
| Zinc | 7440-66-6 | 38.9 | 26.3 | 173 | 440 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-3(4-6) | P-3(6-8) | P-4(0-2) | P-4(2-4) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2543-03 | T2543-04 | T2581-19 | T2581-20 |
| Sampling Date | | 04/26/05 | 04/26/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.367 U | 0.379 U | 0.395 U | 0.408 U |
| Arsenic | 7440-38-2 | 3.660 | 5.710 | 2.240 | 8.230 |
| Beryllium | 7440-41-7 | 0.398 J | 0.372 J | 0.423 J | 0.496 J |
| Cadmium | 7440-43-9 | 0.037 U | 0.038 U | 0.040 U | 0.041 U |
| Chromium | 7440-47-3 | 11.7 | 12.0 | 15.0 | 18.6 |
| Copper | 7440-50-8 | 15.7 | 16.7 | 39.2 | 56.4 |
| Lead | 7439-92-1 | 42.9 | 50.1 | 71.8 | 118 |
| Mercury | 7439-97-6 | 0.362 | 0.059 | 0.402 | 2.6 |
| Nickel | 7440-02-0 | 15.9 | 14.1 | 18.8 | 25.6 |
| Selenium | 7782-49-2 | 0.382 U | 0.394 U | 0.411 U | 0.425 U |
| Silver | 7440-22-4 | 0.088 U | 0.467 J | 0.466 J | 0.098 U |
| Thallium | 7440-28-0 | 0.590 U | 0.609 U | 0.635 U | 0.656 U |
| Zinc | 7440-66-6 | 39.3 | 59.6 | 93.8 | 228 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-4(4-6) | P-5(0-2) | P-5(2-4) | P-5(4-6) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2581-21 | T2582-11 | T2582-12 | T2582-13 |
| Sampling Date | | 04/28/05 | 04/28/05 | 04/28/05 | 04/28/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.452 U | 0.436 U | 0.371 U | 0.389 U |
| Arsenic | 7440-38-2 | 1.710 | 2.730 | 2.840 | 0.658 J |
| Beryllium | 7440-41-7 | 0.357 J | 0.349 J | 0.337 J | 0.307 J |
| Cadmium | 7440-43-9 | 0.045 U | 0.044 U | 0.037 U | 0.039 U |
| Chromium | 7440-47-3 | 6.450 | 13.2 | 20.9 | 6.590 |
| Copper | 7440-50-8 | 24.1 | 25.2 | 27.1 | 3.310 |
| Lead | 7439-92-1 | 7.990 | 52.1 | 44.7 | 2.170 |
| Mercury | 7439-97-6 | 0.029 | 0.280 | 0.370 | 0.007 U |
| Nickel | 7440-02-0 | 13.9 | 10.1 | 13.0 | 8.000 |
| Selenium | 7782-49-2 | 0.470 U | 0.453 U | 0.386 U | 0.404 U |
| Silver | 7440-22-4 | 0.109 U | 0.105 U | 2.290 | 0.094 U |
| Thallium | 7440-28-0 | 0.726 U | 0.700 U | 0.597 U | 0.624 U |
| Zinc | 7440-66-6 | 14.1 | 73.2 | 58.6 | 20.2 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-5(6-8) | P-6(0-2) | P-6(2-4) | P-6(4-6) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2582-14 | T2528-15 | T2528-16 | T2528-17 |
| Sampling Date | | 04/28/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.395 U | 0.374 U | 0.364 U | 0.365 U |
| Arsenic | 7440-38-2 | 6.490 | 5.560 | 5.380 | 14.1 |
| Beryllium | 7440-41-7 | 0.281 J | 0.404 J | 0.317 J | 0.313 J |
| Cadmium | 7440-43-9 | 0.040 U | 0.038 U | 0.234 J | 0.037 U |
| Chromium | 7440-47-3 | 10.6 | 17.0 | 13.0 | 13.9 |
| Copper | 7440-50-8 | 37.7 | 64.9 | 38.3 | 30.8 |
| Lead | 7439-92-1 | 231 | 109 | 87.6 | 60.4 |
| Mercury | 7439-97-6 | 0.366 | 1.3 | 0.974 | 0.233 |
| Nickel | 7440-02-0 | 6.940 | 25.2 | 11.8 | 12.8 |
| Selenium | 7782-49-2 | 0.411 U | 0.388 U | 0.379 U | 0.380 U |
| Silver | 7440-22-4 | 0.095 U | 0.316 J | 0.201 J | 0.088 U |
| Thallium | 7440-28-0 | 0.635 U | 0.600 U | 0.586 U | 0.587 U |
| Zinc | 7440-66-6 | 131 | 186 | 95.9 | 123 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-6(6-8) | P-6(8-10) | P-7(0-2) | P-7(2-4) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-18 | T2528-19 | T2527-25 | T2527-26 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.379 U | 0.413 U | 0.358 U | 0.359 U |
| Arsenic | 7440-38-2 | 5.110 | 4.860 | 5.180 | 3.660 |
| Beryllium | 7440-41-7 | 0.171 J | 0.206 J | 0.415 J | 0.341 J |
| Cadmium | 7440-43-9 | 0.038 U | 0.110 J | 0.100 J | 0.036 U |
| Chromium | 7440-47-3 | 6.080 | 11.7 | 22.9 | 11.7 |
| Copper | 7440-50-8 | 8.640 | 20.7 | 71.7 | 12.5 |
| Lead | 7439-92-1 | 47.0 | 52.0 | 141 | 30.5 |
| Mercury | 7439-97-6 | 0.319 | 1.6 | 0.702 | 0.669 |
| Nickel | 7440-02-0 | 4.440 J | 13.0 | 20.8 | 14.0 |
| Selenium | 7782-49-2 | 0.394 U | 2.210 | 0.372 U | 0.373 U |
| Silver | 7440-22-4 | 0.091 U | 1.370 | 0.086 U | 0.086 U |
| Thallium | 7440-28-0 | 0.609 U | 0.663 U | 0.575 U | 0.577 U |
| Zinc | 7440-66-6 | 48.6 | 47.8 | 258 | 35.1 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-7(4-6) | P-7(6-8) | P-7(8-10) | P-7(8-10)DUP |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-01 | T2528-02 | T2528-03 | T2528-04 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.391 U | 0.387 U | 0.407 U | 0.406 U |
| Arsenic | 7440-38-2 | 5.140 | 9.920 | 1.970 | 1.440 |
| Beryllium | 7440-41-7 | 0.415 J | 0.460 J | 0.358 J | 0.354 J |
| Cadmium | 7440-43-9 | 0.039 U | 0.159 J | 0.041 U | 0.041 U |
| Chromium | 7440-47-3 | 10.7 | 13.7 | 12.7 | 13.0 |
| Copper | 7440-50-8 | 15.0 | 47.1 | 12.1 | 9.900 |
| Lead | 7439-92-1 | 71.6 | 97.0 | 3.490 | 3.270 |
| Mercury | 7439-97-6 | 0.241 | 7.3 | 0.007 U | 0.016 |
| Nickel | 7440-02-0 | 12.8 | 12.8 | 15.5 | 14.5 |
| Selenium | 7782-49-2 | 0.406 U | 0.403 U | 0.424 U | 0.423 U |
| Silver | 7440-22-4 | 0.108 J | 0.093 U | 0.409 J | 0.098 U |
| Thallium | 7440-28-0 | 0.628 U | 0.622 U | 0.655 U | 0.653 U |
| Zinc | 7440-66-6 | 64.1 | 457 | 33.4 | 39.8 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-7(16-20) | P-8(0-2) | P-9(0-2) | P-9(2-4) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-12 | T2603-01 | T2527-01 | T2527-02 |
| Sampling Date | | 04/25/05 | 04/29/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.459 U | 3.400 J | 0.365 U | 0.386 U |
| Arsenic | 7440-38-2 | 3.510 | 6.530 | 6.960 | 9.410 |
| Beryllium | 7440-41-7 | 0.404 J | 0.261 J | 0.306 J | 0.477 J |
| Cadmium | 7440-43-9 | 0.046 U | 0.036 J | 0.157 J | 0.128 J |
| Chromium | 7440-47-3 | 12.8 | 19.0 | 23.7 | 21.7 |
| Copper | 7440-50-8 | 10.3 | 42.6 | 78.8 | 278 |
| Lead | 7439-92-1 | 3.170 | 277 | 211 | 356 |
| Mercury | 7439-97-6 | 0.086 | 0.405 | 0.620 | 2.8 |
| Nickel | 7440-02-0 | 14.8 | 13.5 | 12.5 | 18.4 |
| Selenium | 7782-49-2 | 0.477 U | 0.370 U | 0.379 U | 0.401 U |
| Silver | 7440-22-4 | 0.905 J | 0.086 U | 0.321 J | 0.093 U |
| Thallium | 7440-28-0 | 0.737 U | 0.572 U | 0.586 U | 0.620 U |
| Zinc | 7440-66-6 | 275 | 114 | 175 | 343 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-9(2-4) | P-9(4-6) | P-9(4-6) | P-10(0-2) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2603-14 | T2527-03 | T2603-15 | T2527-15 |
| Sampling Date | | 04/29/05 | 04/25/05 | 04/29/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 2.160 J | 9.870 | 2.220 J | 0.374 U |
| Arsenic | 7440-38-2 | 8.690 | 10.6 | 6.260 | 7.540 |
| Beryllium | 7440-41-7 | 0.313 J | 0.355 J | 0.216 J | 0.319 J |
| Cadmium | 7440-43-9 | 0.196 J | 0.084 J | 0.041 J | 2.220 |
| Chromium | 7440-47-3 | 18.4 | 14.4 | 19.5 | 12.3 |
| Copper | 7440-50-8 | 65.5 | 51.9 | 44.6 | 75.0 |
| Lead | 7439-92-1 | 268 | 519 | 174 | 556 |
| Mercury | 7439-97-6 | 1.9 | 0.815 | 0.417 | 0.905 |
| Nickel | 7440-02-0 | 13.3 | 13.5 | 12.6 | 15.0 |
| Selenium | 7782-49-2 | 0.389 U | 0.419 U | 0.403 U | 0.389 U |
| Silver | 7440-22-4 | 0.090 U | 0.097 U | 0.093 U | 7.680 |
| Thallium | 7440-28-0 | 0.601 U | 0.647 U | 0.622 U | 0.601 U |
| Zinc | 7440-66-6 | 204 | 192 | 162 | 374 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-10(2-4) | P-10(4-6) | P-10(6-8) | P-11(0-2) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-16 | T2527-17 | T2527-18 | T2527-04 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 04/25/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.385 U | 0.371 U | 0.374 U | 0.356 U |
| Arsenic | 7440-38-2 | 11.3 | 4.750 | 4.900 | 6.610 |
| Beryllium | 7440-41-7 | 0.335 J | 0.349 J | 0.356 J | 0.322 J |
| Cadmium | 7440-43-9 | 0.258 J | 0.037 U | 0.038 U | 0.179 J |
| Chromium | 7440-47-3 | 15.4 | 10.2 | 10.5 | 19.4 |
| Copper | 7440-50-8 | 63.8 | 16.8 | 18.4 | 46.1 |
| Lead | 7439-92-1 | 687 | 61.9 | 165 | 128 |
| Mercury | 7439-97-6 | 0.325 | 0.056 | 0.050 | 1.2 |
| Nickel | 7440-02-0 | 20.2 | 12.7 | 12.9 | 18.5 |
| Selenium | 7782-49-2 | 0.400 U | 0.386 U | 0.389 U | 0.370 U |
| Silver | 7440-22-4 | 8.360 | 0.089 U | 0.090 U | 0.086 U |
| Thallium | 7440-28-0 | 0.618 U | 0.597 U | 0.601 U | 0.572 U |
| Zinc | 7440-66-6 | 480 | 251 | 209 | 182 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-11(2-4) | P-11(4-6) | P-11(6-8) | P-12(0-2) |
|---|---|---|---|---|---|
| Lab Sample Number | | T2527-05 | T2527-06 | T2527-07 | T2631-14 |
| Sampling Date | | 04/25/05 | 04/25/05 | 04/25/05 | 05/02/05 |
| Matrix | | SOIL | SOIL | SOIL | SOIL |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 0.364 U | 0.377 U | 0.380 U | 1.090 J |
| Arsenic | 7440-38-2 | 7.830 | 6.560 | 4.480 | 4.390 |
| Beryllium | 7440-41-7 | 0.381 J | 0.295 J | 0.276 J | 0.313 J |
| Cadmium | 7440-43-9 | 0.037 U | 0.038 U | 0.038 U | 0.036 U |
| Chromium | 7440-47-3 | 10.3 | 9.930 | 9.520 | 29.9 |
| Copper | 7440-50-8 | 20.5 | 31.6 | 20.1 | 50.0 |
| Lead | 7439-92-1 | 31.3 | 242 | 84.1 | 457 |
| Mercury | 7439-97-6 | 1.2 | 0.402 | 0.050 | 0.374 |
| Nickel | 7440-02-0 | 8.500 | 12.2 | 9.910 | 25.4 |
| Selenium | 7782-49-2 | 0.379 U | 0.392 U | 0.395 U | 0.376 U |
| Silver | 7440-22-4 | 0.088 U | 0.450 J | 0.092 U | 0.087 U |
| Thallium | 7440-28-0 | 0.586 U | 0.606 U | 0.611 U | 0.580 U |
| Zinc | 7440-66-6 | 82.1 | 99.5 | 53.7 | 207 |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | P-14(2-4) | P-17(2-4) | P-17(4-6) | FIELDBLANK2 |
|---|---|---|---|---|---|
| Lab Sample Number | | T2604-02 | T2561-02 | T2561-03 | T2543-16 |
| Sampling Date | | 04/29/05 | 04/27/05 | 04/27/05 | 04/26/05 |
| Matrix | | SOIL | SOIL | SOIL | WATER |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | mg/Kg | mg/Kg | mg/Kg | ug/L |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 2.570 J | 0.384 U | 0.420 U | 3.170 U |
| Arsenic | 7440-38-2 | 10.4 | 3.280 | 6.870 | 3.320 U |
| Beryllium | 7440-41-7 | 0.299 J | 0.320 J | 0.338 J | 0.150 J |
| Cadmium | 7440-43-9 | 0.316 J | 0.039 U | 0.042 U | 0.327 U |
| Chromium | 7440-47-3 | 17.4 | 10.9 | 6.400 | 0.343 U |
| Copper | 7440-50-8 | 97.7 | 19.7 | 12.5 | 3.640 U |
| Lead | 7439-92-1 | 207 | 44.7 | 165 | 2.180 U |
| Mercury | 7439-97-6 | 0.366 | 0.845 | 0.309 | 0.0400 J |
| Nickel | 7440-02-0 | 15.1 | 8.430 | 14.5 | 1.560 U |
| Selenium | 7782-49-2 | 0.384 U | 0.399 U | 0.436 U | 3.040 U |
| Silver | 7440-22-4 | 0.089 U | 0.092 U | 0.349 J | 1.640 U |
| Thallium | 7440-28-0 | 0.594 U | 0.617 U | 0.674 U | 3.050 U |
| Zinc | 7440-66-6 | 201 | 103 | 145 | 0.611 U |

# Queens West Development-Parcel 9

## Soil Samples

Metals

| Sample ID | | FIELDBLANK | FIELDBLANK-3 | FIELDBLANK | FIELDBLANK |
|---|---|---|---|---|---|
| Lab Sample Number | | T2528-27 | T2561-12 | T2603-02 | T2581-17 |
| Sampling Date | | 04/25/05 | 04/27/05 | 04/29/05 | 04/28/05 |
| Matrix | | WATER | WATER | WATER | WATER |
| Dilution Factor | | 1.0 | 1.0 | 1.0 | 1.0 |
| Units | | ug/L | ug/L | ug/L | ug/L |
| COMPOUND | CAS # | | | | |
| Antimony | 7440-36-0 | 3.170 U | 3.170 U | 3.170 U | 3.170 U |
| Arsenic | 7440-38-2 | 3.320 U | 3.320 U | 3.320 U | 3.320 U |
| Beryllium | 7440-41-7 | 0.165 J | 0.090 U | 0.190 J | 0.875 J |
| Cadmium | 7440-43-9 | 0.327 U | 0.327 U | 0.327 U | 0.327 U |
| Chromium | 7440-47-3 | 0.343 U | 0.343 U | 0.343 U | 0.343 U |
| Copper | 7440-50-8 | 3.640 U | 3.640 U | 3.640 U | 3.640 U |
| Lead | 7439-92-1 | 3.380 J | 2.180 U | 2.180 U | 2.180 U |
| Mercury | 7439-97-6 | 0.0300 U | 0.0300 U | 0.0300 U | 0.0300 U |
| Nickel | 7440-02-0 | 1.560 U | 1.560 U | 1.560 U | 1.560 U |
| Selenium | 7782-49-2 | 3.040 U | 3.040 U | 3.040 U | 3.040 U |
| Silver | 7440-22-4 | 1.640 U | 1.780 J | 1.640 U | 1.640 U |
| Thallium | 7440-28-0 | 3.050 U | 3.120 J | 3.050 U | 3.050 U |
| Zinc | 7440-66-6 | 0.611 U | 0.611 U | 0.611 U | 0.611 U |

Qualifiers

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

B - The analyte was found in the laboratory blank as well as the sample. This indicates possible laboratory contamination of the environmental sample.

P - For dual column analysis, the percent difference between the quantitated concentrations on the two columns is greater than 40%.

* - For dual column analysis, the lowest quantitated concentration is being reported due to coeluting interference.

NR - Not analyzed

# APPENDIX C
# TECHNICAL SPECIFICATIONS

# Queens West Development
# Parcel 9

**QUEENS, NEW YORK**

## Technical Specifications for Soil Removal

**AKRF Project Number: 10516**

**Prepared for:**

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New York, New York 10017

**Prepared by:**

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**AUGUST 2005**

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Appendix A NYCDEP Effluent Discharge Limits

# 1.0 PART 1 - INTRODUCTION

## 1.1 General Description

This section covers specifications for the excavation and off-site treatment and/or disposal of contaminated soil from two areas on the site, including soil below the groundwater surface, located at Parcel 9 of the Queens West Development, Queens, New York. All excavation and loading will be performed under a containment structure equipped with a vapor emission control system. These specifications have been prepared for AvalonBay Communities by AKRF Engineering, P.C. in accordance with the Remedial Action Work Plan (RAWP) dated May 2005. The RAWP has been submitted to the New York State Department of Environmental Conservation (NYSDEC) and is currently undergoing revisions based upon their comments. These Technical Specifications have incorporated the planned changes to the RAWP. The Contractor shall adhere to all of the requirements of the final RAWP approved by the NYSDEC.

Parcel 9 is located in the Hunters Point section of Queens, New York (Figure 1). A Site Survey prepared by Montrose Surveying Company, LLP, dated October 10, 2003, is included in the RAWP. The parcel is bounded by 5th Street on the east, 48th Avenue on the south, Center Boulevard on the west, and 47th Road on the north (Figure 2). It has a total area of approximately 1.79 acres and is vacant and unpaved; all former structures were demolished in 2001. The entire parcel is surrounded by a chain-link fence. According to the Montrose survey, Parcel 9 is generally at an elevation of 8 to 10 feet, currently with a mound in the middle of the parcel rising to an elevation of approximately 15 feet (elevations relative to Queens Borough Datum). The East River is located approximately 500 feet west of the site.

The surrounding areas are mixed uses. Parcel 10, located across 48th Avenue south of the site, is occupied by a high-rise residential building and a public elementary school, P.S. 78. Parcel 8, located across Center Boulevard, west of the site, is vacant. The area between Parcel 8 and the East River is part of the Queens West waterfront park. The area north of the site, across 47th Road, is currently undergoing remediation and is slated for future residential development. The area east of the site, across 5th Street, is not part of the Queens West Development. This area is occupied by a mix of light industrial, commercial, and residential uses.

The Supplemental Remedial Investigation Report for Queens West Parcel 9 (April 2005) identified two areas of contamination on the site: an area of petroleum contamination in the north-central portion of the site, around the location where a vault with three 10,000-gallon tanks was discovered; and an area of contamination associated with coal tar detected in a deep well in the southwestern corner of the site and extending along the western boundary of the site adjacent to Center Boulevard. Figure 3 shows the approximate areal extent of contamination.

## 1.2 General Intention

This section describes the general intent of these technical specifications. The work plan, these technical specifications, and figures describe the performance requirements, quality requirements, and extent of work to be performed under this contract. The figures also show the location and general arrangement of materials, equipment, and services.

These specifications, figures, attached appendices, and other related specifications shall be used together to establish the total requirements of the work to be performed. It is not the intent of this specification or of the figures to show the exact location of every item or of all details of the design or construction. The Contractor shall be responsible for providing the services, facilities,

materials and equipment that have been designed and prepared in accordance with industry standards, good working practices, and appropriate Federal, State, and local regulations.

Where specific construction details, engineering of systems, and design of systems or structures are required by the Contractor, the work shall be performed and sealed by a Professional Engineer registered in New York.

The Contractor's bid shall include all labor, services, time, work permits, material and equipment to successfully complete the work of the project in its entirety. The Contractor shall perform all work in accordance with the project specifications and figures, subject to the terms and conditions of the contract with the Owner (AvalonBay) for this project.

There shall be no change orders or extras for rock or obstructions encountered during excavation. There shall be no change orders or extras for coordination with other construction activities on the site.

AvalonBay (Owner) shall select an Engineer on Record (Engineer) who will be responsible for overseeing the Contractor. AvalonBay shall provide a Construction Manager to schedule and coordinate the various Contractors. AvalonBay shall select an Environmental Consultant who will be responsible for overseeing the hazardous materials work on the project. The Engineer and Environmental Consultant may be the same.

The Contractor shall provide 24-hour security for the site. The Contractor shall be responsible for the overall implementation of the work of the project. Any changes or modifications to the work or construction (as directed by the Owner or the Engineer) made necessary as a result of poor construction techniques, unsafe working conditions, or inadequate equipment or services provided by the Contractor shall be at no extra cost to the Owner. The Owner or the Engineer will inspect the work and make any such determinations.

All labor used on this project shall be conducted by union trades. The Contractor is responsible to ensure that all subcontractors comply with the provisions of this Specification. See AvalonBay Contract Documents for warranty and extra work items.

## 1.3 Site Geology and Subsurface Characteristics

Mueser Rutledge Consulting Engineers performed a geotechnical study on the site, the results of which are reported in a Geotechnical Report dated May 25, 2004. The study included 37 soil borings to bedrock and the installation of two piezometers to monitor groundwater levels. The Mueser Rutledge report indicates that the top 10 to 12 feet of soil on the parcel is miscellaneous fill. This is underlain in most borings by a layer of alluvial sand up to 17 feet thick. About two-thirds of the borings encountered a stratum of soft gray organic silty clay, representing old marsh deposits. The organic deposits were generally less than 10 feet thick, and were found directly below the fill at some locations, and interlayered with the sand stratum at others. Below the sand and organic deposits is a layer of glacial till up to 30 feet thick. This consists of compact fine to coarse sand with some gravel, silt, clay, clay pockets, and boulders. The surface of the till is at an elevation of -10 to -12 feet over most of the parcel, but dips sharply to a depth of -30 feet in the southwestern corner of the parcel. Figure 4 shows the upper surface elevation of the till layer. Bedrock was encountered at elevation -20 to -30 feet over most of the parcel, but similarly dips in the southwestern corner, to a minimum elevation of -55 feet. Figure 5 shows the bedrock surface elevation. Figures 6A and 6B provide geological cross sections for the site.

Mueser Rutledge reported the presence of oil in a number of the borings. In the southwestern portion of Parcel 9, they noted many samples as "soil saturated with oil". Where oil was reported,

the oily soil extended from the bottom of the fill layer (around the groundwater surface), through the organic deposits (where present) and into the sand layer. At some locations, oil extended as deep as the top of the till layer.

## 1.4 Hydrogeology

Groundwater studies performed by TRC Engineers in publicly accessible off-site areas north and west of Parcel 9 show local groundwater flowing towards a depression in 47th Road, approximately 150 feet west of 5th Street. The groundwater surface elevation at that location is approximately -2.4 feet. The groundwater surface elevation rises to approximately -0.5 feet near the corner of 47th Road and Center Boulevard, and to -1.0 feet on 48th Avenue. The groundwater depression in 47th Road was also noted in the studies performed by AKRF in 1989. Groundwater studies performed elsewhere in the Queens West area have shown groundwater flow to the west, towards the East River, with some tidal influence at locations close to the river.

Recent on-site groundwater elevations were measured on March 1 to March 4, 2005, and again on April 21, 2005. The groundwater surface elevation contours from the April measurements are shown in Figure 7B. The March measurements were taken following a series of heavy rains, so the groundwater surface may be unusually high, and the contours may not be typical of conditions in drier weather. The measurements taken in April showed the groundwater elevations in most of the monitoring wells to be about one foot lower than levels measured in March. In both the March and April measurements, the groundwater gradient indicates a general flow from northeast to southwest, towards the East River, with a two to three foot gradient over the site.

## 1.5 Description of Soil Removal Intervals

The Contractor shall be responsible for the removal of soil from two areas of contamination on the site, one in the north-central portion of the site and another area in the southwestern corner of the site and extending along the western boundary of the site adjacent to Center Boulevard. In both areas of contamination, the contaminated soil is overlain by historic fill material. The Contractor shall excavate to the upper limits of the contaminated soil, and shall not intermingle the contaminated soil with the historic fill material. The excavation shall terminate at the bottom limits of the contaminated soil and shall not extend into the till layer or the non-contaminated soil, which in some areas lies between the contaminated soil interval and the till layer.

Figure 3 identifies the locations of the soil borings conducted at the site. Figure 8 shows the approximate surface elevations that currently exist at the site. Figure 9 shows the approximate top elevations of the contaminated interval. Figure 10 shows the approximate bottom elevations of contaminated soil. Figure 4 shows approximate upper elevations of the till layer, into which the sheet piling will extend.

## 1.6 Nearby Public Areas of Concern

A high-rise residential building and a public elementary school south of the site, across 48th Avenue. Peninsular Park, a portion of the Queens West waterfront park, is located immediately west of Parcel 8, approximately 200 feet from the site. The area east of the site contains a mix of light industrial, commercial, and residential uses.

## 1.7 Contractor Use of Premises

The Contractor shall minimize the use of the site area for storage. Storage and laydown areas are to be agreed upon and approved by the Engineer. Approximate locations of these areas and schematics of the remediation phasing are shown on Figure 11. The Contractor shall assume full

responsibility for the protection and safe keeping of products under this Contract that are stored on-site during the work activities. The Contractor shall move, without additional compensation, any material or equipment of the project that interferes with the operations of the Owner or any separate contractor or utility company. The Contractor shall be responsible to immediately remove any dirt or debris tracked onto public roads from the site during the work. The Contractor shall also be responsible for providing electricity and protecting any air monitoring stations and/or perimeter controls installed by the Environmental Consultant required for the project.

## 1.8 Site Access

Vehicle access to the site is from 47th Road between Center Boulevard and 5th Street. Figure 12 shows the truck route from the site to the Brooklyn-Queens Expressway (BQE). The Contractor shall provide sufficient space for site operations and for truck movement into and out of the containment structure. There is an existing perimeter chain link fence around the site, which will be replaced with construction fencing. The fencing shall remain intact during the duration of the project.

## 1.9 Scope of Work

The scope of the project includes, but is not limited to, soil excavation and appropriate off-site treatment and/or disposal of contaminated soil and overlying historic fill in the two areas identified as "areas of contamination", as shown in Figure 3 and described in Section 1.5 of these Specifications. Historic fill material and contaminated soil shall be excavated and handled separately from each other since most of the fill is expected to qualify for reuse on site. All excavation will be performed under a containment structure with an integral vapor management system to prevent the generation of nuisance odors and emissions above Federal, State and local standards.

Prior to the beginning of excavation by the Contractor, a survey will be provided to the Contractor depicting the horizontal extent of the areas to be excavated. Temporary and permanent sheet piling must be designed and installed by the Contractor around this areal extent of contamination to safely and adequately remove soil to the depths indicated on Figure 10, which displays the bottom elevations of the contaminated soil, with minimal groundwater infiltration.

The work of the project shall include, but not be limited to:

- The Contractor is responsible for compliance with the Environmental Health and Safety Plan (HASP) for the work contained in the RAWP, which addresses all tasks including excavation and removal of contaminated soil. The work shall be executed in such a way as to avoid hazards to persons and property. For performance of the work on this project, all Contractor personnel involved in the day-to-day site work shall have proper OSHA hazardous waste training, in addition to USDOT training in the proper handling, labeling and transporting of hazardous materials. Other personnel involved in ancillary, or support activities, including transportation of material for disposal, shall have the proper training as required by Federal, State and local regulations. The Contractor shall be responsible for providing personal protective equipment (PPE) and performing any required personnel monitoring, or other requirements specified in the Contractor's own corporate health and safety program.
- The Contractor shall acquire all permits and approvals necessary to perform the work of the project, including, but not limited to, New York City Department of State (DOS) permit for trucking, New York City Fire Department permits for fuel storage, and all other permits not specified herein that may be required by Federal, State, or local agencies. The Environmental Consultant will be responsible for obtaining the New York City Department of

Environmental Protection (NYCDEP) permit for discharge of water from dewatering operations to the sanitary City sewer and obtaining the required air permit/approval from the NYSDEC. Contractor shall prepare the required application and/or provide supporting documentation, as requested by the Environmental Consultant, for the water and air discharge permits.

- The Contractor shall mobilize to the site and prepare the site as necessary to provide support for the work, including establishment of work zones, truck routes, support facilities, decontamination facilities, temporary electricity and utilities, erosion control measures, and installation of a fabric along the fence line. The Contractor shall provide 24-hour security for the site.
- The Contractor shall provide the NYSDEC representative with an office space (heated/air conditioned) on the site, containing a desk, telephone, and power supply for a desktop computer and fax machine. The space must be adequate for a confidential phone conversation. A space shall be provided for the Environmental Consultant personnel and field equipment.
- The Contractor shall protect existing site features and adjacent properties during the course of the work and be responsible for any restoration, if damaged.
- The Contractor shall confirm that all site utilities are shut off and work will be performed in a manner to protect the utility mains in the streets from damage. Notify Underground Utilities Call Center a minimum of three (3) days before any excavation. The Contractor shall be responsible for damages to any utilities caused by the work performed under this Contract.
- The Contractor shall furnish signs, lights, barricades, fencing, and other equipment as may be necessary for the safe execution of its work. All protection shall be removed when work is completed and all hazards removed.
- The Contractor shall design, furnish and install permanent sheet piling around the areal extent of contamination, as depicted on Figures 11A and 11B, to safely and adequately remove soil to the depths indicated on Figure 10, which displays the bottom elevations of the contaminated soil, with minimal groundwater infiltration. All sheet piling will be left in place.
- The Contractor shall install, maintain, and disassemble a temporary containment structure with an integral vapor management system to prevent the generation of nuisance odors and emissions above Federal, State and local standards and guidelines. Owner will procure the temporary containment structure. All excavation activities and contaminated soil loading shall be performed within the temporary containment structure or enclosure. The vapor management system shall be designed to allow work within the structure at Level D, as defined in the HASP, which at a minimum shall include five to six air changes per hour, inclusive of the volume of the enclosure and open excavation. The levels should be as such to meet the requirements of the Air Monitoring Work Plan contained in the RAWP. The Contractor shall provide the labor and equipment to move the temporary enclosure, as needed, to complete the required work.
- The air treatment equipment shall be located on the north side of site. At the conclusion of each work day, exposed contaminated soil within the structure shall be covered with plastic, long-duration foam, and/or Biosolve to minimize emission of vapors, and then the air handling system may be turned off. Operation of the air handling system shall be resumed the next work morning at a sufficient time before the full work crew arrives on-site to ensure

conditions are suitable for Level D work, as specified in the HASP, and to prevent nuisance conditions outside the enclosure when work activities resume that would violate the limitations specified in the Air Monitoring Work Plan. If the covering of the exposed contaminated soil proves to be inadequate to control vapors/odors as specified in the Air Monitoring Work Plan, as a contingency measure, at least one blower shall be operated during non-working hours to create negative pressure within the structure.

- The Contractor shall provide all labor, material, and equipment to excavate, load, and dispose of contaminated soil and overlying historic fill material in accordance with the RAWP, HASP, the Air Monitoring Work Plan, and all applicable NYSDEC guidelines and regulations.
- Contaminated soil shall be excavated in the containment structure and directly loaded onto trucks, to the extent practicable, for off-site disposal. If it becomes infeasible to directly load the soil onto trucks due to inaccessibility within the excavation or excess water requiring stabilization, a maximum of 500 cubic yards will be allowed to be staged within the structure at any one time. The staged contaminated soil shall be covered with plastic sheeting if loading operations are not being conducted.
- Any fill overlying the contaminated soil areas or the existing pile located on the center portion of the site shall be stockpiled on and covered with plastic sheeting in discrete 1,000 cubic yard piles in the designated stockpile area located on the southeastern portion of the site. Environmental Consultant will collect composite samples of the stockpiled fill material to determine suitability for reuse in accordance with the RAWP. The fill meeting the site Specific Soil Action Levels (SSSALs) in the RAWP, as directed by the Environmental Consultant, shall be reused on-site as backfill material, which shall be placed above the water table to the extent practicable. Fill material not meeting the SSSALs, as directed by the Environmental Consultant, shall be loaded, transported, and disposed off-site by the Contractor.
- If dewatering of the contaminated soil is required prior to transporting to the treatment and/or disposal facility, the Contractor must remove excess liquids in accordance with Federal, State, and local DOT and disposal facility requirements, including temporary staging and/or mixing of additives (e.g., with kiln dust). All such activities shall be conducted inside the containment structure. The Contractor must provide adequate space inside the containment structure for these operations, and all other materials handling and equipment/truck movements. The Contractor shall label all stockpiled soil as "contaminated soil" and cover as required.
- To delineate the vertical depths of soil intervals, the Environmental Consultant will perform field-screening during excavation operations and collect post-excavation soil samples within the areas excavated in accordance with the RAWP. The areas remediated cannot be backfilled until the confirmatory soil sample results demonstrate attainment of the SSSALs. The Contractor shall adhere to the limits specified by the Environmental Consultant.
- The Contractor shall design and furnish all labor, equipment and materials for performing all operations for dewatering during excavation activities and treatment of dewatering fluids prior to discharge to the sanitary City sewer, as required for performing the work in the work plan. The Contractor shall be responsible for monitoring and maintaining the equipment and ensure the equipment is operating as per the design. The Contractor is also responsible for the sampling of the dewatering fluids prior to discharge to the sewer to ensure NYCDEP effluent discharge criteria is met (Appendix A). The amount of discharge from dewatering

operations shall be limited to the quantity allowed in the NYCDEP dewatering permit application of 96,000 gallons per day (GPD). The Contractor shall furnish and install the temporary sewer connection in accordance with the NYCDEP dewatering permit.

- The Contractor shall provide all labor, material, and equipment to perform all operations for importing and backfilling excavated areas with certified clean fill to an approximate elevation of +4.5 feet (approximately 5 feet below grade relative the sidewalk). Imported fill materials will be required to bring excavated areas to required grades.
- The Contractor shall transport the excavated contaminated material and fill material not meeting the reuse criteria for treatment and/or disposal at an appropriate facility off-site. Contaminated and historical fill material shall not be intermingled. All trucks shall have the required waste-transporter permits from NYSDEC. The trucks shall be lined, equipped with tight-fitting covers (not canvas), and loads shall be covered before the trucks leave the containment structure. A decontamination pad shall be located at the exit gate, where soil will be washed off the exterior, undercarriage, and wheels of the trucks before leaving the site. Wash water shall be collected for treatment and disposal. All loaded trucks will exit the site on the north side, of the site, turn right (east) onto 47th Road, and proceed directly to the Brooklyn-Queens Expressway (BQE), as shown in Figure 15. Once loaded, trucks shall be strictly prohibited from stopping or idling in the local neighborhood (must proceed directly to BQE). Failure to adhere to this requirement would result in potential suspension of the project, fines, and penalties imposed by the NYSDEC, which would be the responsibility of the Contractor.
- The Contractor is responsible for site demobilization activities, including removal of temporary construction facilities, temporary containment structure and associated vapor management system, dewatering system and associated water treatment system, security fencing, and decontamination pad. The Contractor shall perform final site grading necessary to provide proper site drainage. Erosion control measures shall be performed in accordance with the Storm Water Pollution Prevention Plan contained in the RAWP, and shall remain in place until adequate permanent stabilization is achieved, after which time they may be removed.
- The Contractor is responsible to ensure that all subcontractors comply with the provisions of this Specification.

## 1.10 Submittals

The Contractor shall provide submittals, including design, calculations, specifications, and drawings, for review and acceptance by the Owner, Engineer, Environmental Consultant, and/or NYSDEC. Design, calculations, specifications, and drawings shall be done to meet the performance criteria as specified in this Specification and must be signed and sealed by a Professional Engineer licensed to practice in the State of New York. Any comments by the Owner, Engineer, Environmental Consultant, and/or NYSDEC shall be revised by the Contractor or addressed by the Contractor in satisfactory fashion at no extra cost to the Owner. The Contractor is responsible for making any required revisions to the plans and for compliance with all agency policies and regulations. The Contactor is also responsible for ensuring the equipment is operating as per the performance criteria established within these Specifications, and for replacing any and all equipment and/or system(s) if the design is not able to meet the performance criteria, at no additional cost to the Owner. The following submittals shall be provided:

1. Containment Structure & Air Handling and Air Treatment System - Design drawings, calculations, and technical specifications for temporary structure, including the size and construction details of the containment structure, foundation details, and details of the air handling/vapor management system. Equipment sizing and flow rates for the vapor management system shall be provided. Assumptions shall be documented. Details for moving the structure from one location to the next shall be provided. The submittal shall demonstrate compliance with relevant emissions standards in accordance with the NYSDEC publication "Air Guide 1" and the Air Monitoring Work Plan. Air changes shall be sufficient to allow work within the structure in level D, as defined by the HASP for the project, with a minimum of five to six air changes per hour (inclusive of the volume of the structure and the open excavation),.

2. Permanent Sheet Piling - Design drawings, calculations, and technical specifications detailing the permanent interlocking steel sheet piling with a hydrocarbon-resistant, liquid-tight seal along the entire perimeter of the excavation to form a box, as shown in Figures 11A and 11B. The sheeting will extend into the till layer to the depth designed by the Contractor. Approximate surface elevations of the till layer are indicated on Figure 4. The seams of the sheeting shall be sealed with hydrocarbon-resistant gaskets to prevent infiltration of separate phase hydrocarbons and dissolved contaminants back onto the site. The Contractor shall provide the techniques for installation and specifications of the interlocking seal.

3. Dewatering Design - The Contractor shall design the system for dewatering. The design shall specify all equipment, estimated pumping rates, locations for the system components, and monitoring and maintenance procedures.

4. Water Treatment from Dewatering Operations - All water collected during dewatering operations will be processed through an on-site treatment system prior to discharge to the sanitary sewer, in accordance with NYCDEP requirements. The water treatment system must be designed to meet NYCDEP's effluent discharge limits (Appendix A). In addition, the Contractor shall furnish the Engineer with the Contractor's plan for maintaining and monitoring the on-site water treatment system, including sampling of the effluent per NYCDEP, as well as procedures for meeting any other NYCDEP requirements.

5. Additional Dewatering of Excavated Soil, Stabilization and Handling - Upon selection of a preferred soil treatment/disposal facility, the Contractor shall be informed of the treatment facility's acceptable moisture content range. It is anticipated that additional dewatering of the excavated soil may be required and will be accomplished by a combination of gravity drainage and the addition of cement kiln dust or similar material. This submittal shall specify the location and design of any facility for dewatering of excavated material, which must take place in the containment structure.

6. Material Handling and Disposal - The facility or facilities contracted by the Contractor to receive the excavated wastes shall be identified for Environmental Consultant and NYSDEC approval before the beginning of excavation on the site. Copies of all required permits shall be obtained from haulers and disposal facilities and submitted to the Owner before initiation of excavation.

7. Site Management Plan/Construction Phasing Plan - This plan shall provide the measures, procedures and operation sequencing of how the work will be performed. Assumptions shall be documented. This plan shall include planned inspections, and other quality control measures.

8. Final record drawings of the site after completion of the work, demobilization of temporary construction facilities, and final site grading. These drawings shall provide grade elevations, and existing site features.
9. The Contractor shall prepare a Site Security Plan and Truck Routing and Truck Staging Plan for review and approval by the Environmental Consultant and Owner.

# 2.0 PART 2 - MATERIALS

## 2.1 Equipment

Equipment, systems, machines, storage containers and tanks brought on-site to be utilized for the purpose of handling or storage of contaminated materials shall be clean and certified decontaminated prior to entry to the site.

Storage containers utilized for the storage and/or transport of contaminated materials shall be structurally sound and tight to prevent leakage or spillage of materials.

## 2.2 Erosion and Sediment Controls

All materials shall be suitable for their intended use and shall conform to the Stormwater Pollution Prevention Plan (SWPPP) in the RAWP and applicable codes and standards. Manufacturers' requirements shall be strictly adhered to. Used materials may be utilized provided that they are sound and capable of performing the intended function.

## 2.3 Permanent Sheet Piling

Steel sheet piling shall be of equivalent section to that shown on the plans, as designed by the Contractor, and shall include all necessary waling, bracing, and/or tiebacks. The sheet piling shall be new and unused, conforming to the requirements of ASTM A328, unless otherwise indicated on the plans. Stock steel may be used. The Contractor shall furnish certified copies of physical and chemical test results to the Engineer, which shall include a sworn statement by a qualified mill representative to the effect that the subject material conforms to the requirements of the steel specified in the design. The sheet piling must conform to all applicable codes and standards. The seams in the sheeting shall be sealed with hydrocarbon-resistant gaskets.

## 2.4 Containment Structure with Air Handling/Treatment System

The containment structure shall be self-supporting, covered with a material compatible with the proposed environment capable of preventing vapor emissions, adequately lighted, and large enough to encompass the entire excavation operations, or able to be moved to encompass the excavation operations in stages. The enclosure shall meet all local building codes, with regard to loadings and structural considerations, including foundation structural support for the enclosure. If the enclosure will be moved in stages, no contaminated soil in the excavation or above ground may be exposed. Adequate vapor controls must be maintained at all times to comply with the action levels specified in the Air Monitoring Work Plan in the RAWP.

The containment structure shall be fully-enclosed and provided with an air handling/treatment system. The air handling system shall maintain a negative air pressure within the structure so that vapors and odors are contained. The vapor management system shall be designed to allow work within the structure at Level D, as defined in the HASP with a minimum of six air exchanges per hour. The levels should be as such to meet the Air Monitoring Work Plan requirements. The enclosure must contain an air treatment system to treat air exhaust designed to assure compliance

of the discharged air with relevant emissions standards in accordance with the NYSDEC publication "Air Guide 1".

## 2.5 Dewatering System

Pumps, sumps, hoses, piping and related equipment necessary to perform the dewatering using well points shall be provided and sized by the Contractor to meet the requirements of the work. Sufficient storage shall be provided for potential liquids that accumulate during dewatering operations that may need to be stored to limit the flow rate to sanitary sewer(s) per NYCDEP permit requirements.

## 2.6 Water Treatment System

Pumps, sumps, hoses, piping and related equipment necessary to perform the treatment of the water from dewatering operations shall be provided and sized by the Contractor to meet the requirements of the work. The Contractor shall provide sufficient storage tanks for potential excess liquids. All vents from any process equipment shall be connected to and treated with appropriately sized vapor phase granular activated carbon units.

## 2.7 Cement Kiln Dust or Similar Material

Cement kiln dust or similar additive, may be required for mixing with excavated soil prior to transportation to a treatment facility. The Contractor shall provide copies of the material cut-sheets and MSDS's to the Engineer and/or Owner for approval.

## 2.8 Synthetic Foam

Synthetic foam shall be long-duration and capable of minimizing emission of vapors from contaminated soil. The Contractor shall provide copies of the material cut-sheets to the Engineer and/or Owner for approval.

## 2.9 "Biosolve"

Biosolve®, is a patented, water based biosurfactant/bioremediation accelerant that offers desorption and/or solubilization of a wide range of contaminates in the soil matrix. Refer to www.biosolve.com. The Contractor shall provide copies of the material cut-sheets to the Engineer and/or Owner for approval.

## 2.10 Soil Covers

All trucks shall be lined with and equipped with tight-fitting covers for covering loads before the trucks leave the enclosed containment structure. The primary covers directly over the soil for each truck must not be canvas. It may be necessary, dependent on NYSDEC requirements, to spray Biosolve or synthetic foam on the load prior to placement of the cover, contingent upon this practice being acceptable by the receiving facility.

## 2.11 Water

Water used for dust control or compaction purposes may be obtained from any clean source. Contractor shall procure any permits required for using fire hydrants.

## 2.12 Fill Materials

On-Site Fill Material - Any fill overlying the contaminated soil areas or the existing pile located on the center portion of the site shall be stockpiled on and covered with plastic sheeting in discrete 1,000 cubic yard piles in the designated stockpile area located on the southeastern portion

of the site. Environmental Consultant will collect composite samples of the stockpiled fill material to determine suitability for reuse in accordance with the RAWP. The fill meeting the SSSALs, as directed by the Environmental Consultant, shall be reused on-site as backfill material, which shall be placed above the water table to the extent practicable. Fill material not meeting the SSSALs, as directed by the Environmental Consultant, shall be loaded, transported, and disposed off-site by the Contractor.

Off-Site Fill Material - The Contractor shall furnish sufficient amounts of certified clean fill material from an off-site source, as needed. Any backfill material that must be brought in to restore grades prior to development will be clean, granular soil and must be free of organic matter, debris, cinders, combustibles, wood, roots, and any staining or odors. Less than 12% of the material by weight shall pass the No. 200 sieve (after removing all particles not passing the No. 4 sieve). Not more than 30% should be retained on a ¾" sieve. All particles larger than 4 inches shall be removed. The Contractor shall provide samples of the proposed off-site fill material for analysis and acceptance by Owner. Any off-site material used as backfill must be either from a NYSDOT approved source, or must qualify as "exempt fill" under 6 NYCRR Part 360. Backfill materials from a non-DOT approved source must be tested for volatile organic compounds (VOCs), PCBs, semi-volatile organic compounds (SVOCs), pesticides, herbicides, and metals at a rate of one sample per 200 cubic yards, and the source must have a pre-approved NYSDEC Beneficial Use Determination (BUD).

# 3.0 PART 3 - EXECUTION

## 3.1 Compliance with Environmental HASP and Other Requirements

The Contractor is responsible for compliance with the HASP for the work within the RAWP, which addresses all tasks including excavation and removal of contaminated soil. The work shall be executed in such a way as to avoid hazards to persons and property. For performance of the work on this project, all Contractor personnel involved in the day-to-day site work shall have proper OSHA hazardous waste training including 40-hour HAZWOPER, up-to-date 8-hour refresher, and respirator fit testing, in addition to USDOT training in the proper handling, labeling and transporting of hazardous materials. The Contractor and all subcontractors shall be trained in confined space. Other personnel involved in ancillary, or support activities, including transportation of material for disposal, shall have the proper training as required by Federal, State and local regulations. The Contractor shall be responsible for providing personal protective equipment (PPE) and any required personnel monitoring. The Contractor is responsible to ensure that all subcontractors comply with the provisions of this Specification.

## 3.2 Permits

The Contractor shall acquire all permits and approvals necessary to perform the work of the project, including, but not limited to, appropriate air permits for the vapor management system, New York City Department of Sanitation (DOS) permit for trucking, New York City Fire Department permits for fuel storage, and all other permits not specified herein that may be required by Federal, State, or local agencies. The Environmental Consultant will be responsible for obtaining the New York City Department of Environmental Protection (NYCDEP) permit for discharge of water from dewatering operations to the sanitary City sewer. Owner will be responsible for obtaining the required sidewalk and street closure permits for the project.

## 3.3 Protection of Existing Facilities

The Contractor shall verify the existing site conditions and coordinate with the Owner to locate any underground utilities, facilities, equipment, and structures, with particular attention to the locations near sheet piling operations. The Contractor shall get confirmation from the Underground Utilities that all site utilities are shut off. The Contractor shall notify Underground Utilities Call Center a minimum of three (3) days before any excavation. The Contractor shall be responsible for damages to any utilities caused by the work performed under this Contract.

The Contractor shall protect existing underground and aboveground facilities from damage, whether or not they lie within the limits of work shown, unless specifically designated for removal. Where such existing facilities must be removed to properly carry out the work, or are damaged during construction, the Contractor shall restore them to their original condition unless otherwise directed by the Owner or Engineer. If the Contractor damages existing utilities, equipment, or structures, the Contractor shall be responsible for notifying the Engineer and the appropriate utility company, and fully repairing all damages at no additional cost to the Owner. Repairs, if necessary, shall be completed in accordance with all requirements of the utility company and to the satisfaction of the Owner and Engineer.

The Contractor shall notify utility offices that are affected by work activities verbally as soon as possible. Under no circumstances shall the Contractor expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, the Contractor shall locate, expose, and provide temporary support for the utilities.

In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of work activities, the Contractor shall promptly notify the proper authority, the Owner and the Engineer. The Contractor shall cooperate with said authority in restoration as promptly as possible and pay for repair. The Contractor shall take all measures necessary to prevent interruption of utility service unless so granted by the utility owner.

The Contractor shall notify the applicable utilities if conflicts or emergencies arise during the work. For any work performed in close proximity to the properties of businesses, utilities or other parties, the Contractor shall utilize every precaution to protect the property, utility lines, trees, walls and other structures from damage. Any damage that the Contractor may inflict shall be repaired or replaced in a prompt manner, as directed by the Engineer and at no cost to the Owner.

The Contractor shall take all measures required to eliminate impacts from execution of the work on residences and businesses adjacent to the site and shall not interfere with their operations.

The Contractor shall take precautions to ensure that project operations do not cause interference with nearby vehicular and pedestrian traffic and are protective of the public. Traffic barriers, signs, or similar warnings may be required to control traffic flow in the work area. If Contractor's operations cause damage, harm, upset, or similar impact to roads or private/public property, the Contractor shall remedy such impact to the satisfaction of Owner/Engineer at no additional cost to the Owner.

## 3.4 Mobilization and Site Management

The Contractor shall provide necessary bonds, insurances, and prefinancing, as required by local or State law or regulation. Contractor shall obtain performance and payment bonds for the project.

The Contractor shall mobilize to the site and prepare the site as necessary to provide support for the work, including establishment of work zones, truck routes, support facilities, decontamination facilities, and erosion control measures in accordance with the SWPPP in the RAWP.

The Contractor shall provide the NYSDEC representative with an office space (heated/air conditioned) on the site, containing a desk, telephone, and power supply for a desktop computer and fax machine. The space must be adequate for a confidential phone conversation. A space shall be provided for the Environmental Consultant and the Engineer personnel and field equipment.

The Contractor shall provide 24-hour security for the site. The Contractor shall furnish signs, lights, barricades, fencing, and other equipment as may be necessary for the safe execution of its work. All protection shall be removed when work is completed and all hazards removed.

The Contractor is responsible for providing generators and electrical connections for all electricity necessary on the site, including the containment structure's air system, dewatering pumps and water treatment system, site lighting, site trailer(s), AirLogics air monitoring system (24 hours per day, 7 days per week), and any other systems or operations, as required on the site.

In addition to electricity, the Contractor shall provide all temporary utilities, such as telephone, water, etc., as required for the completion of the work involved in the project.

All work shall be performed in accordance with the HASP and the specified plans in Section 1.10.

The Contractor is responsible to ensure that all subcontractors comply with the provisions of this Specification.

## 3.5 Erosion and Sediment Controls

The Contractor shall be responsible for designing, furnishing and installing all temporary site facilities required for the performance of work. The work includes furnishing all labor, equipment, supplies and materials, and performing all operations required for providing temporary environmental controls during the performance of the work of the project, in accordance with the SWPPP in the RAWP, and shall remain in place until adequate permanent stabilization is achieved, after which time they may be removed.

Environmental protection is defined as the retention of the environment in its natural state to the greatest extent possible during project construction and to enhance the natural appearance in its final condition. Environmental protection requires consideration of air, water, and land resources and involves noise, solid waste-management and management of other pollutants. The Contractor and any subcontractors shall comply with all applicable or relevant and appropriate federal, state and local laws to provide for abatement and control of any environmental pollution arising from the construction activities in performance of this Contract.

The Engineer will notify the Contractor in writing of any non-compliance with the Federal, State and/or local laws. Such notice, when delivered to the Contractor or his authorized representative at the site, shall be deemed sufficient for the purpose. The Contractor shall, after receipt of such notice, immediately inform the Engineer of the proposed corrective action and take such action as may be approved. If the Contractor fails or refuses to comply promptly, the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. Claims for extension of time, or for excess costs or damages by the Contractor due to the stop orders described above, will be denied.

The Contractor shall provide and maintain all temporary environmental controls as necessary for protection of the environment throughout the performance of the work of the project. All methods, procedures and measures utilized by the Contractor to provide temporary controls are subject to approval by the Engineer.

The Contractor shall remove all temporary environmental controls and restore disturbed areas as the work progresses or when the need for such controls is gone.

The Contractor shall provide and maintain proper barricades and warning signs at all closures, holes, hazards, or material stockpile and equipment storage areas. The Contractor shall furnish and install temporary fences, gates and demarcation tape barriers as indicated on the drawings or as required during the work.

Special emphasis for dust, vapor, and noise control shall be provided as part of this contract.

The Contractor shall be responsible for the operation and maintenance of all equipment and systems to ensure that necessary environmental controls and services are provided without disruption.

The Environmental Consultant will perform air monitoring in accordance with the HASP in the RAWP. Contractor shall perform any required personnel monitoring, other monitoring specified in Contractor's corporate health and safety program, and any other monitoring required by Federal, State and local regulations and guidelines.

The Contractor shall not pollute any sewers, streams, rivers, or waterways with fuels, oils, bitumens, calcium chloride, acids, insecticides, herbicides or other harmful materials. The Contractor shall comply with all applicable or relevant and appropriate Federal, State and local laws.

Disposal of any debris resulting from the contract work and any wastes, effluents, trash, garbage, oil, grease, chemicals, etc., in or adjacent to the work area is not acceptable. If any waste material is dumped in unauthorized areas, the Contractor shall remove the material and restore the area to its original condition. If necessary, contaminated areas shall be excavated, disposed of, replaced with suitable fill material, compacted, and otherwise restored to a useable condition, as directed by the Engineer, at no cost to the Owner.

All contaminated debris resulting from work activities of this Contract shall be disposed of in accordance with all applicable, relevant and appropriate Federal and State laws. Such materials shall be removed from the site before the completion of remediation.

The Contractor shall take all necessary precautions and furnish materials, equipment and services as required for handling all water, sewage, storm, seepage, surface and flood flows which may be encountered at any time during work activities.

The Contractor shall maintain the excavation area free of water, and provide, operate, and maintain pumping/dewatering equipment.

The Contractor shall protect sites of any storage facilities or material stockpiles from ponding or running water; and provide barriers as required for erosion control. The Contractor shall take all necessary measures to keep the ground surface well drained, but in a manner to avoid erosion of embankments, excavation, the work area and public and private property.

The Contractor shall plan and execute the work by methods to prevent erosion and sedimentation of the work area, in accordance with the Contract Documents and the New York State "Guidelines for Urban Erosion and Sediment Control".

The Contractor shall minimize the amount of bare soil exposed at one time.

The Contractor shall provide temporary measures such as berms, dikes and drains, to prevent water flow during remediation. The construction of any temporary drainage facilities shall be considered as incidental to the construction of the project and no additional payment will be allowed.

The Contractor shall periodically inspect earthwork to detect evidence of erosion and sedimentation and promptly apply corrective measures, as required.

The Contractor shall meet all the requirements of these Contract Documents and of all regulatory agencies having jurisdiction over this portion of the work.

Failure of the Contractor to meet these requirements is sufficient grounds for suspension of the affected portion of the work until such time as proper conditions are provided. No additional compensation or extension of time will be considered to correct the deficiency.

The Contractor shall ensure that all subcontractors comply with the provisions of this section.

## 3.6 Dust Control

The Contractor shall execute work by methods to minimize raising dust from construction operations in accordance with the SWPPP and Air Monitoring Work Plan in the RAWP. Dust control measures shall be implemented by the Contractor during all operations conducted on-site. Dust control shall consist of furnishing a water supply, required equipment, additives, accessories and incidentals, and carrying out proper and efficient measures wherever and as often as necessary to reduce dust nuisance, and to prevent dust originating from work activities from causing damage to dwellings or surrounding areas, or causing a nuisance to persons during the completion of the work.

The Contractor shall immediately apply water as a means to control dust at locations and in such quantities and frequencies as required to prevent dust from becoming a nuisance to the surrounding area. All equipment used for application of water shall be equipped with a positive means of shut-off.

The Air Monitoring Work Plan specifies visible dust as an action limit along the site perimeter. Contractor shall provide adequate measures to prevent this condition. Costs for adequate dust control measures shall be the responsibility of the Contractor. Owner shall not be responsible for any costs associated with delays caused by inadequate dust controls.

Dust control methods shall be submitted for review and approval by the Engineer.

## 3.7 Noise Control

The Contractor's vehicles and equipment shall be equipped with appropriate noise control devices to maintain noise levels that conform to the latest OSHA standards and all State and local regulations. Contractor shall immediately take steps to correct any deficiencies noticed or as directed by the Engineer.

The Contractor shall properly maintain all mufflers and noise control devices and replace them when necessary. The Contractor shall operate all construction equipment in the manner in which it was intended. Excessive noise and vibration due to improper use of vehicles and equipment shall be prohibited.

All pumps and other equipment that are required to operate during normal non-working hours shall, to the maximum extent possible, be electrically driven.

## 3.8 Sanitary Waste System

The Contractor shall provide and maintain self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion-type, properly vented and fully enclosed in a fiberglass or other approved non-absorbent shell, properly secluded from public observation. These units shall be maintained at all times without nuisance. Upon completion of the work, the toilet facilities shall be removed by the Contractor from the premises, leaving the premises clean.

The waste from sanitary facilities shall be collected in holding tanks for subsequent transfer to an off-site septage disposal facility by the Contractor. Holding tanks may be stationary tanks or tank trucks of suitable size.

## 3.9 Permanent Sheet Piling

The Contractor shall design, furnish and install the permanent steel sheet piling with interlocking seals along the entire perimeter of the excavation area, as depicted on Figures 11A and 11B. The sheeting will extend into the till layer to the depth designed by the Contractor to accomplish the excavation work under this Contract. Approximate surface elevations of the till layer are indicated on Figure 4. Sheet piling shall be tight or continuous and the seams in the sheeting shall be sealed with hydrocarbon-resistant gaskets to prevent infiltration of separate phase hydrocarbons and dissolved contaminants back onto the site. The Contractor shall provide the techniques for installation and specifications of the interlocking seal. Permanent sheet piling will be left in place.

The Contractor is responsible for designing and installing both the permanent sheet piling to provide groundwater cut-off and to prevent against piping and heaving. Piping and heaving may occur due to seepage of groundwater into the excavation beneath the sheets if an effective sheeting cut-off is not established. The Contractor should make sure to carefully review the Geotechnical Study and to perform his/her own data collection and analysis as necessary. The Contractor's sheet piling design and installation must allow for the safe and adequate removal of soil to the depths required, with minimal groundwater infiltration. The amount of discharge to the sanitary sewer from dewatering operations shall be limited to the quantity allowed in the NYCDEP dewatering permit.

Steam, vibratory, pneumatic or diesel powered hammers shall be used to drive all sheeting. The Contractor shall submit the plans for the method of driving all sheeting to the Engineer for approval prior to beginning construction. Any material that obstructs the driving of sheeting shall be removed by the Contractor.

It shall be the Contractor's responsibility to provide protection adequate to ensure the safety of workers and the public exposed to the hazard of falling or sliding material, or from the operation and construction area where sheet piling is being installed. The procedures, as set forth in Title 29 Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction (OSHA), must be followed during all sheeting operations, including whenever an excavation exceeds five feet in depth. It shall be the Contractor's responsibility to install sheeting in accordance with the State and Federal Safety Codes.

## 3.10 Vapor Control/Containment Structure

To prevent the off-site migration of odors and vapors from the excavation operations, all excavation work shall be performed within a temporary containment structure that is to be installed, operated, and maintained by the Contractor.

The containment structure shall be erected and maintained by the Contractor for the duration of the excavation operations. The containment structure shall be designed and engineered by the Contractor, self-supporting, covered with a material compatible with the proposed environment capable of preventing vapor emissions, adequately lighted, and shall be large enough to encompass the excavation operations, or able to be moved to encompass the excavation operations in stages. The enclosure shall be designed in accordance with local building codes with regard to loadings and structural considerations. The Contractor shall design the foundation structural support for the enclosure, and obtain any permits required for erecting the temporary enclosure.

The containment structure shall be fully-enclosed and shall be provided with an integral air handling/treatment system. The Contractor shall design, install and operate a vapor management system for the proposed temporary containment structure capable of creating negative pressure within the enclosure and capturing and treating anticipated emissions from the excavation area, prior to discharge to atmosphere. Air changes shall be sufficient to allow work within the structure in level D, as defined by the HASP in the RAWP, with a minimum of six air changes per hour (inclusive of the enclosure and open excavation volume). Selection of the vapor control measures is subject to acceptance by the Engineer. The levels should be as such to meet the community air monitoring requirements, as specified in the Air Monitoring Work Plan. Exhaust air will be treated by an air treatment system designed to assure compliance of the discharged air with relevant emissions standards in accordance with the NYSDEC publication "Air Guide 1". The proposed system shall be in accordance with Federal, State and local regulations and be approved by the Engineer and the Owner. The Contractor shall obtain any permits required for constructing and operating the vapor management system.

The Contractor shall provide the labor and equipment to move the temporary enclosure, as needed, to complete the required work.

The Contractor shall also provide a supplemental emission control (e.g., synthetic foam, "Biosolve", and/or soil liners) in the event that failure or overburdening of the vapor management system or a spill of contaminated material outside the temporary enclosure occurs. When the air ventilation is turned off (i.e. during off-hours), the Contractor shall apply synthetic foam, Biosolve, and/or cover the exposed soil to minimize vapors. The air ventilation system must be turned on prior to commencement of excavation operations at the beginning of each day, with sufficient time to rid enclosure of odors and provide conditions within the structure to allow work at Level D, as defined in the HASP, and to prevent nuisance conditions outside the enclosure when work activities resume that would violate the limitations specified in the Air Monitoring Work Plan. If the covering of the exposed contaminated soil proves to be inadequate to control vapors/odors as specified in the Air Monitoring Work Plan, as a contingency measure, at least one blower shall be operated during non-working hours to create negative pressure within the structure.

Contaminated soil containers and roll-off containers shall be covered to prevent vapor emissions and the migration of odors and to prevent the infiltration of rainwater.

## 3.11 Air Monitoring

The Environmental Consultant is responsible for air monitoring specified in the HASP for worker protection and the Air Monitoring Work Plan to ensure emissions outside the site do not exceed levels that could be harmful to sensitive populations in the surrounding neighborhood. The Contractor is responsible to ensure that his/her operations comply with the requirements of the HASP, community air monitoring program, and for modifying operational procedures to comply

with this program if directed to do so by the Engineer and/or Environmental Consultant. Contractor shall perform any personnel monitoring or additional monitoring required by Contractor's corporate health and safety program

## 3.12 Dewatering

The Contractor shall provide all labor, equipment, and materials to design, furnish, install, and operate, all equipment associated with dewatering during excavation activities and treatment of dewatering fluids prior to discharge to the sanitary City sewer, as required for performing the work in the RAWP. The Contractor shall be responsible for monitoring and maintaining the equipment and ensure the equipment is operating as per the design. The Contractor shall be responsible for the sampling of the dewatering fluids prior to discharge to the sewer to ensure NYCDEP criteria are met (Appendix A). The amount of discharge from dewatering operations shall be limited to the quantity allowed in the NYCDEP dewatering permit.

The Contractor is shall furnish and install the temporary sewer connection in accordance with the NYCDEP dewatering permit.

The Contractor shall provide all materials, drawings, installation, testing and services as specified in this section for complete and proper dewatering operations.

All work shall be performed in accordance with the HASP and RAWP.

The Contractor shall maintain and operate all pumps and other temporary works needed to remove water from the excavation area or other parts of the work area (i.e., decontamination pad, etc.). The Contractor shall maintain these areas free of ponded/standing water or otherwise provide for timely and effective removal of accumulated surface and groundwater from any source.

The Contractor shall remove all such temporary works and equipment after they have served their purposes.

## 3.13 Water Treatment

The work shall consist of the treatment of water generated from dewatering operations, as needed, to perform the required work activities in accordance with the Technical Specifications. The work shall include:

- Furnishing, installing, operating, monitoring, and maintaining all necessary pumps, tanks, filters, carbon units, piping and other facilities and equipment required to treat groundwater at a rate in excess of infiltration into the excavation or other parts of the work area.
- Vents from any water treatment process units (e.g., separators, tanks, and vessels) shall be connected to appropriately sized vapor phase granular activated carbon units to prevent emissions of nuisance odors and volatile organic compounds.
- Sampling water effluent and maintaining data records in compliance with the NYCDEP permit.
- Removing all such temporary works and equipment after they have served their purposes.

The Contractor shall provide all materials, drawings, installation, testing and services as specified in this section for complete and proper water treatment operations. All work shall be performed in accordance with the HASP and the RAWP.

The Contractor shall remove all such temporary works and equipment after they have served their purposes.

## 3.14 Soil Excavation

The Contractor shall provide all labor, material, and equipment to excavate, load, and dispose of contaminated soil and segregating any overlying historic fill material in accordance with the RAWP, the associated HASP, Air Monitoring Work Plan, and applicable NYSDEC guidelines and regulations, in the two areas identified as "areas of contamination", as shown in Figure 3 and described in Section 1.5 of this Specification.

Prior to any disturbance, the Contractor shall establish erosion control measures in accordance with Section 3.5 of this Specification.

The Contractor shall perform excavation only within the proposed temporary containment structure. Contaminated soil shall be excavated in the containment structure and directly loaded onto trucks, to the extent practicable, for off-site disposal. If it becomes infeasible to directly load the soil onto trucks due to inaccessibility within the excavation or excess water requiring stabilization, a maximum of 500 cubic yards will be allowed to be staged within the structure at any one time. The staged contaminated soil shall be covered with plastic sheeting if loading operations are not being conducted.

Any fill overlying the contaminated soil areas or the existing pile located on the center portion of the site shall be stockpiled on and covered with plastic sheeting in discrete 1,000 cubic yard piles in the designated stockpile area located on the southeastern portion of the site. Environmental Consultant will collect composite samples of the stockpiled fill material to determine suitability for reuse in accordance with the RAWP. The fill meeting the SSSALs, as directed by the Environmental Consultant, shall be reused on-site as backfill material, which shall be placed above the water table to the extent practicable. Fill material not meeting the SSSALs, as directed by the Environmental Consultant, shall be loaded, transported, and disposed off-site by the Contractor.

Prior to the beginning of excavation by the Contractor, a survey will be provided to the Contractor depicting the horizontal extent of the areas to be excavated. Permanent sheeting must be designed and installed by the Contractor around this areal extent of contamination to safely and adequately remove contaminated soil to the required depths, with minimal groundwater infiltration. The sheeting design shall be approved by the Engineer and shall be submitted at least two weeks prior to construction.

During excavation, to further locate the boundary between the historic fill material and the contaminated soil, as well as the lower limits of the excavation which corresponds to the bottom elevation of the contaminated soil, the Environmental Consultant will field-screen the soil for volatile organic compounds and visual indications of contamination. Post-excavation sampling will be performed by the Environmental Consultant to confirm that the vertical limit of all soils exceeding the SSSALs has been reached. The Contractor shall adhere to the limits specified by the Environmental Consultant.

All excavation activities shall conform to safety requirements as specified in OSHA Part 1926.

The Contractor shall maintain all work areas free from excess dust to such reasonable degree as to avoid causing a hazard or nuisance to others. Dust control shall be performed as the work proceeds and wherever a dust nuisance or hazard occurs, in accordance with the Air Monitoring Work Plan (refer to Sections 3.5 and 3.6 of this Specification).

The Contractor shall cooperate with the Owner or the Environmental Consultant during the sampling and any associated field testing and equipment cleaning. No delay claims will be accepted associated with the sampling and testing procedures performed by the Owner or the Environmental Consultant.

Excavation of contaminated soil shall cease at the direction of the Owner or the Environmental Consultant.

The Contractor shall perform dewatering activities in accordance with Section 3.12 of this Specification.

The Contractor shall decontaminate all equipment prior to performing backfill activities or removal from the site.

### 3.15 Additional Dewatering of Soil

Additional dewatering of the soil may be required prior to transporting to the treatment and/or disposal facility in order to meet the moisture content levels required by the treatment facilities. If additional dewatering is required, the Contractor must remove excess liquids in accordance with Federal, State, and local DOT and disposal facility requirements, including temporary staging and/or mixing of additives (e.g. with kiln dust). All such activities shall be conducted inside the containment structure. The Contractor must provide adequate space inside the containment structure for these operations, and all other materials handling and equipment/truck movements. The Contractor shall label all stockpiled soil as "contaminated soil" or "historic fill material" and foam and cover as required. The Contractor shall provide and mix cement kiln dust or similar material with soil to provide additional dewatering

### 3.16 Contaminated Material Handling

The contaminated materials handling includes storage and/or stockpiling of excavated soil and material on-site in containers, storage of dewatering discharge and decontamination fluids in transportable tanks on-site, waste characterization for disposal and subsequent off-site transport and disposal at a regulated, licensed, and NYSDEC and Owner-approved facility.

The Contractor shall handle contaminated material in a manner that will protect site personnel, the public, and the environment in accordance with all applicable Federal, State, and local laws and regulations.

The Contractor shall decontaminate all equipment used for handling contaminated material in accordance with the RAWP and HASP.

The Contractor shall not combine contaminated materials from this site with any other materials.

### 3.17 Stockpiling of Excavated Soils

To the maximum extent possible, all excavated soil shall be directly loaded from the excavation into trucks for off-site treatment/disposal. If it becomes infeasible to directly load the soil onto trucks due to inaccessibility within the excavation or excess water requiring stabilization, a maximum of 500 cubic yards will be allowed to be staged within the structure at any one time. The staged contaminated soil shall be covered with plastic sheeting if loading operations are not being conducted. Application of foam and/or Biosolve shall be completed, as necessary.

The Contractor will be responsible for foaming, applying Biosolve, and/or covering any open excavated areas when the ventilation system in the containment structure is shut down (at night), to minimize emission of vapors from contaminated soil. Soil covers shall be sized and lapped to

completely enclose the stockpiled soils. The Contractor shall be responsible for maintaining the stockpiled soils and soil covers in good condition until the soil can be removed from the site. The Contractor must provide adequate space inside the containment structure for these operations, and all other materials handling and equipment/truck movements.

All soil placed in trucks for off-site disposal must be covered when full, before being removed from the temporary enclosure. Immediately after leaving the temporary enclosure, the container and transport truck shall enter the decontamination pad and be decontaminated prior to transfer of the container for off-site disposal.

The Contractor shall maintain access to the historic fill placed in discrete soil stockpile(s) not exceeding 1,000 cubic yards. The Environmental Consultant will collect samples from the historic fill soil stockpiles and submit them for analysis and disposal characterization. The fill meeting the SSSALs, as directed by the Environmental Consultant, shall be reused on-site as backfill material, which shall be placed above the water table to the extent practicable. Fill material not meeting the SSSALs, as directed by the Environmental Consultant, shall be loaded, transported, and disposed off-site by the Contractor in a regulated landfill or recycled in accordance with all local, State and Federal regulations.

The Contractor shall cooperate with the Owner or the Environmental Consultant during the sampling and any associated field testing and equipment cleaning. No delay claims will be accepted associated with the sampling and testing procedures performed by the Owner or the Environmental Consultant.

The Contractor shall label all stockpiled soil as "contaminated soil" or "historic fill material" and cover, as required.

All on-site storage of contaminated materials shall be in accordance with Federal, State and local regulations, specifically with regard to the on-site storage area, inspection, and labeling of containers.

The storage containers shall be kept covered with an impermeable liner of sufficient strength and durability for its intended use, and the covering shall be maintained in good condition for the duration of use.

All dewatering discharges and decontamination fluids shall be conveyed to the on-site water treatment system prior to discharge to the sanitary sewer. Such transfers shall be made, as necessary, to maintain adequate working conditions and shall be done in accordance with the requirements in the NYCDEP permit for discharge to the sanitary sewer.

During transfer of liquids from the on-site storage tanks to a transporter vehicle, if necessary, the Contractor shall ensure that no leaks or spills occur. Secondary containment shall be provided by the Contractor around all hoses or other containers designed to store petroleum products or separate phase hydrocarbons. Spill response materials shall be maintained in the immediate area while transfer operations are taking place.

## 3.18 Backfilling

The Contractor shall provide all labor, material, and equipment to perform all operations for importing and backfilling excavated areas with certified clean fill to an approximate elevation of +4.5 feet (approximately 5 feet below grade relative the sidewalk).

The Contractor shall maintain dewatering activities to minimize water in the excavation areas prior to commencement of backfilling activities.

Historic fill determined suitable for reuse on-site shall be backfilled above the water table to the extent practicable. Any imported backfill material must meet the requirements, as discussed in Section 2.12 of this Specification.

Backfill material shall be placed in loose lifts no thicker than twelve inches and compacted in accordance with the Owner's requirements. Excavated and filled areas and adjacent transition areas shall be reasonably smooth, compacted, and free from irregular surface changes.

The Engineer shall perform air monitoring during all site preparation and backfilling activities in accordance with the HASP and the Air Monitoring Work Plan.

It is the Contractor's responsibility to properly construct and maintain all temporary construction roads, temporary fences and gates during the course of construction. The Contractor shall perform the necessary surveys during the performance of the required work and submit the results to the Engineer for acceptance. All equipment and material supplied by the Contractor shall be in good working condition and shall not be contaminated.

## 3.19 Transportation of Contaminated Material

The Contractor shall transport the contaminated material for treatment or disposal at an appropriate facility off-site. Contaminated soil and historical fill material shall not be intermingled. All trucks shall have the required waste-transporter permits from NYSDEC. The trucks shall be lined, equipped with tight-fitting covers (not canvas), and loads shall be covered before the truck leaves the containment structure. It may be necessary, dependent on NYSDEC requirements, to spray Biosolve or foam on the load prior to placement of the soil cover, contingent upon this practice being acceptable to the receiving facility.

A decontamination pad shall be located at the exit gate, where soil will be washed off the exterior, undercarriage, and wheels of the trucks before leaving the site. Wash water shall be collected for treatment and disposal. Prior to leaving the excavation area, all contaminated material containers and transport vehicles shall be visually inspected for evidence of exterior contamination by the Contractor (including wheels and undercarriage). Any such contamination shall be removed on the decontamination pad before the container exits the site.

All loaded trucks will exit the site on the north side and turn east onto 47$^{th}$ Road. No trucks will enter or leave the site on 48$^{th}$ Avenue. The truck route will be determined after potential disposal sites are identified, but the route to the Brooklyn-Queens Expressway (BQE) is as shown in Figure 12. After being loaded, the trucks shall proceed immediately to the BQE and at no point along the route shall trucks be allowed to stage or stop after soil is loaded into the trucks. Non-compliance with this requirement would be considered a material breach of the RAWP and the Contractor would be subject to and responsible for any fines, penalties, or delays imposed by the NYSDEC.

The Contractor shall be responsible for any and all actions necessary to remedy situations involving material spilled or leaked in transit, or mud or dirt tracked off-site. Cleanup shall be performed immediately by the Contractor in accordance with Federal, State and local regulations at no additional cost to Owner.

The Contractor shall utilize the services of Owner-approved transporters for this work. All transporters used shall be properly licensed and certified for this service.

The Contractor shall not combine contaminated materials from this site with any other materials.

Transport Bills of Lading and/or Manifests will be signed by the Owner. The Owner will provide a hazardous waste generator number, if required. The Contractor shall maintain on-site copies of all documents involving off-site transportation of contaminated materials from the site. Copies of these records shall be submitted to the Engineer at a frequency agreed to by the Contractor and Owner. All records shall be turned over to the Owner at completion of the project.

The Contractor shall ensure that transport vehicles are properly labeled and placarded prior to exiting the site.

### 3.20 Disposal of Contaminated Material

The Contractor shall dispose of all petroleum and coal tar-contaminated soil and historic fill material not suitable for on-site reuse at off-site facilities. For all items requiring disposal, the Contractor shall inform the Owner of the analytical and transport requirements of the appropriate disposal facility. The Contractor shall provide all required permits from chosen haulers and disposal facilities and submit them to the Owner and Environmental Consultant before initiation of excavation. The Contractor shall use due diligence to confirm that the haulers and disposal facilities have adequate capacity to receive the volume of waste required for the project, have valid permits and licenses, are in good standing with all Federal, State and local authorities and agencies, and have no record of violations or are under pending investigation. Proper documentation certifying the above shall be submitted to the Owner. The final selection of a disposal facility will be subject to approval by the Owner and the NYSDEC.

Contingent on analytical results of the waste classification sampling of the soil and any other material contaminated above the NYSDEC guidance values, the Contractor shall remove, transport and dispose of the material at a regulated landfill/treatment facility or recycle the material in accordance with all local, State, and Federal regulations or any specific requirement of the Owner.

The following weights shall be taken for each truck load:

- Truck weight empty.
- Truck weight on arriving at the disposal facility and before dumping the soil.

For all off-site weighing, the Contractor shall submit an official weight certificate on the weighing station's stationery, signed by the operator or the owners of that facility no later than 24 hours after the weighing time. In addition to the weight, the Certificate shall show the type and license plate of the truck, and the truck driver's name.

Certification from disposal facility that all contaminated soil, historic fill and other wastes have been properly disposed of, and copies of completed and signed waste manifest forms shall be submitted to the Environmental Consultant promptly after the soil removal has been completed.

The Contractor is responsible for the acceptance of both contaminated and historic fill materials at the facilities. In the event that the identified and approved facilities cease to accept the contaminated materials, the Contractor shall be responsible for identifying alternate facilities, and making arrangements with such facilities to accept contaminated materials from the site. Alternate facilities are subject to review and approval by the Owner and NYSDEC.

### 3.21 Site Restoration

The Contractor is responsible for site demobilization activities including removal of temporary construction facilities, trailers, temporary electricity and utilities, temporary containment structure

and associated vapor management system, water treatment system, security fencing, and decontamination pad.

The Contractor shall perform final site grading necessary to provide proper site drainage.

The Contractor shall remove the remediation support equipment from the site not required for the site restoration.

Erosion control measures shall remain in place until adequate permanent stabilization is achieved.

Once placement of the backfill is completed to the satisfaction of the Engineer, the Contractor shall remove all temporary soil and erosion control measures.

# FIGURES







QUADRANGLE

SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'

N

SOURCE:

USGS TOPOGRAPHIC MAP - BROOKLYN, N.Y.
QUADRANGLE - DATED 1967, PHOTOREVISED 1979

# QUEENS WEST PARCEL 9

Queens, New York

## PROJECT SITE LOCATION

AKRF

**Environmental Consultants**

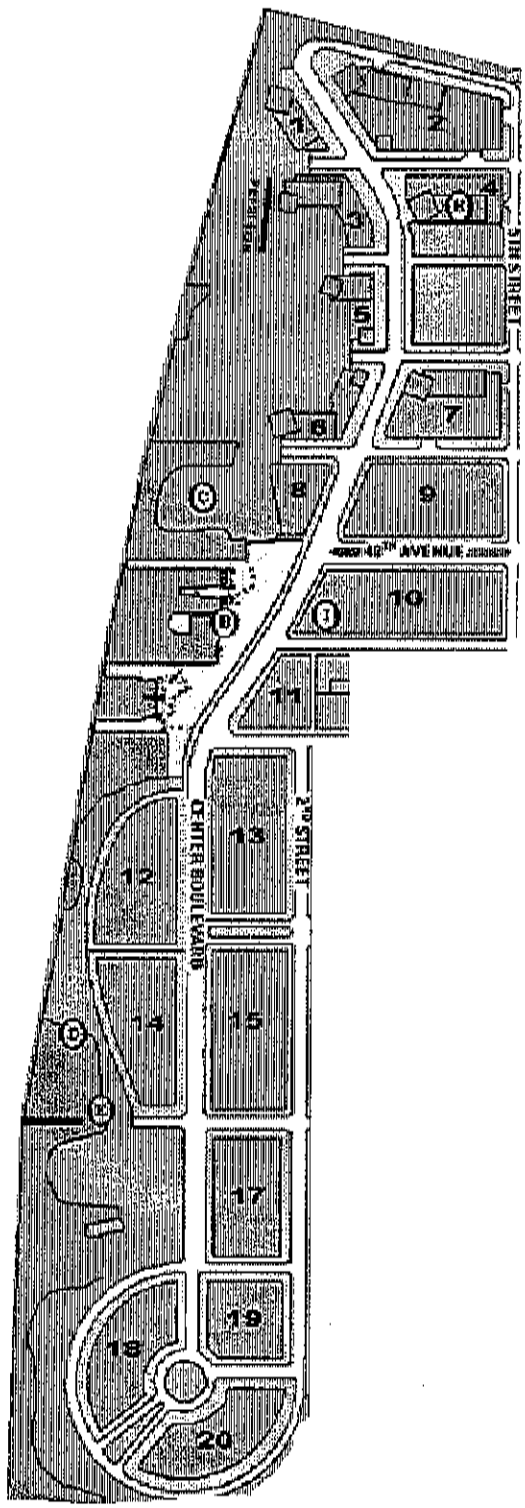
440 Park Avenue South, New York, NY 10016

DATE
**8.16.05**

PROJECT No.
**10516**

FIGURE No.
**1**

2004 AKRF, Inc. Environmental Consultants Q:\akrf-data\10516 Queens West Parcel 9\10516-0001_F1_site location plan.pub




Legend:

10 PARCEL NUMBER

**QUEENS WEST PARCEL 9**
**Queens, New York**

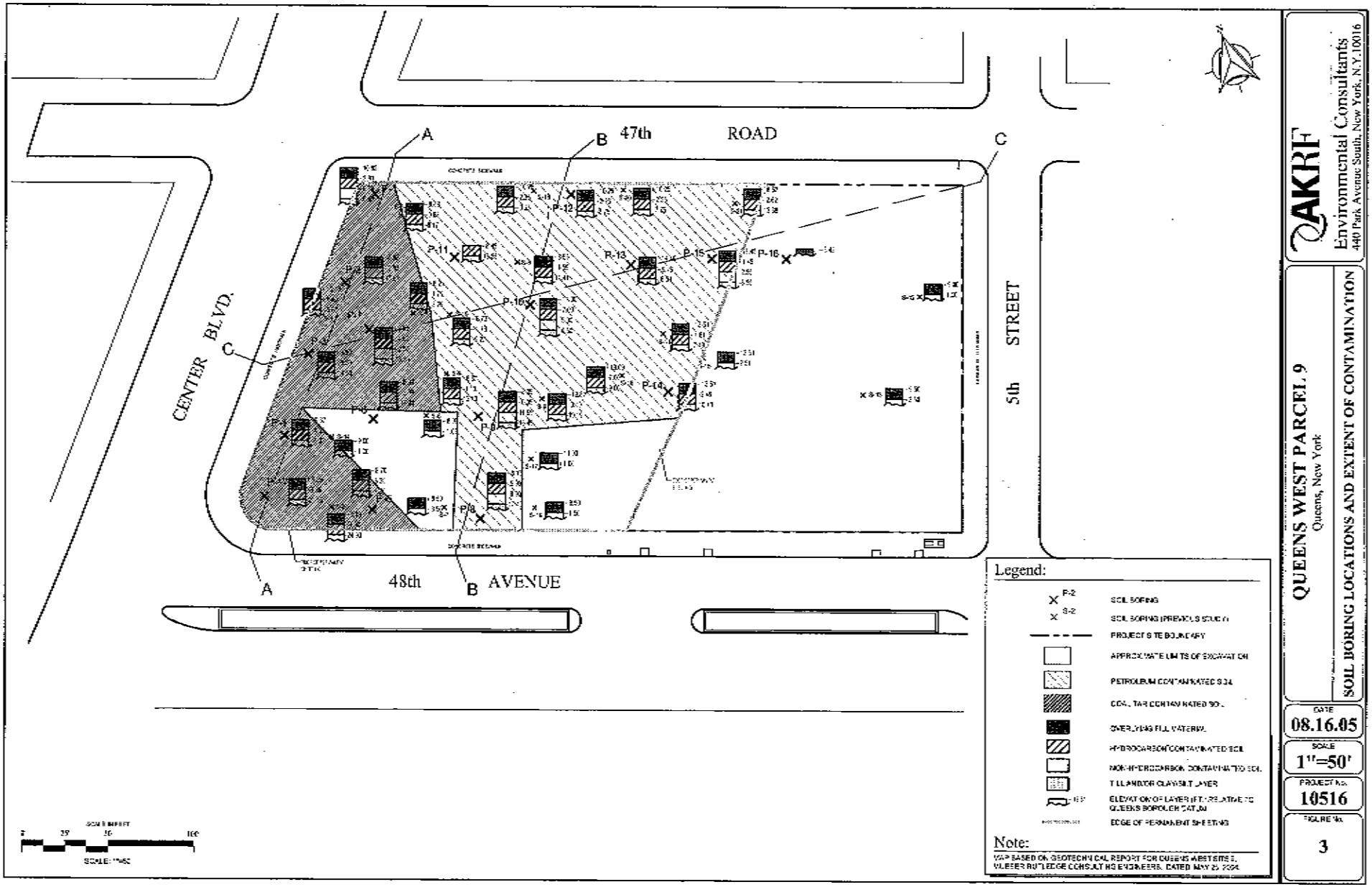
**QUEENS WEST DEVELOPMENT PARCELS**

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Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE 07.19.05
PROJECT No. 10516
FIGURE No. 2

2004 AKRF, Inc. Environmental Consultants

S:\10516 - Queens West Sites 8 & 9\Drawings\Technical Specifications\Figures 1,2,12.dwg, parcels, 7/19/2005 11:44:32 AM, Letter




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Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

**QUEENS WEST PARCEL 9**
Queens, New York

**SOIL BORING LOCATIONS AND EXTENT OF CONTAMINATION**

DATE: 08.16.05
SCALE: 1"=50'
PROJECT No.: 10516
FIGURE No.: 3

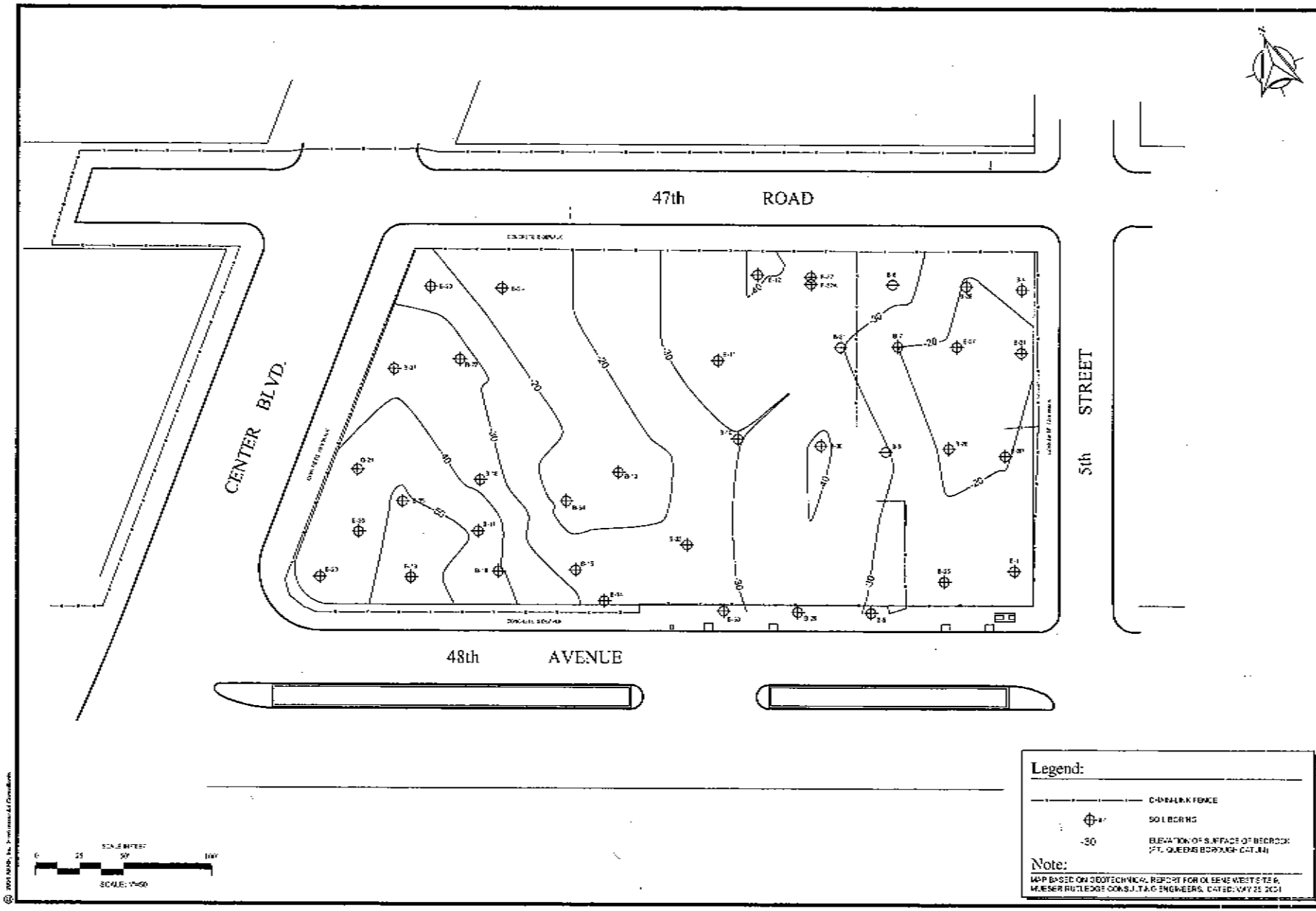
# QUEENS WEST PARCEL 9

Queens, New York

**UPPER ELEVATIONS OF TILL AND/OR CLAY/SILT LAYER**

| DATE | SCALE | PROJECT NO. | FIGURE NO. |
|---|---|---|---|
| 07.19.05 | 1"=50' | 10516 | 4 |

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440 Park Avenue South, New York, N.Y. 10016

**QUEENS WEST PARCEL 9**
Queens, New York

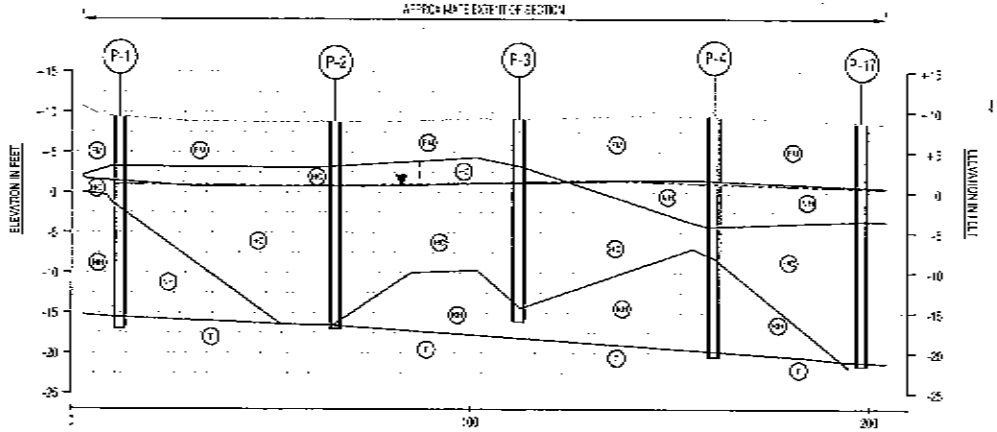
**ELEVATION OF SURFACE OF BEDROCK**

DATE: 07.19.05
SCALE: 1"=50'
PROJECT No.: 10516
FIGURE No.: 5

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A
NORTH

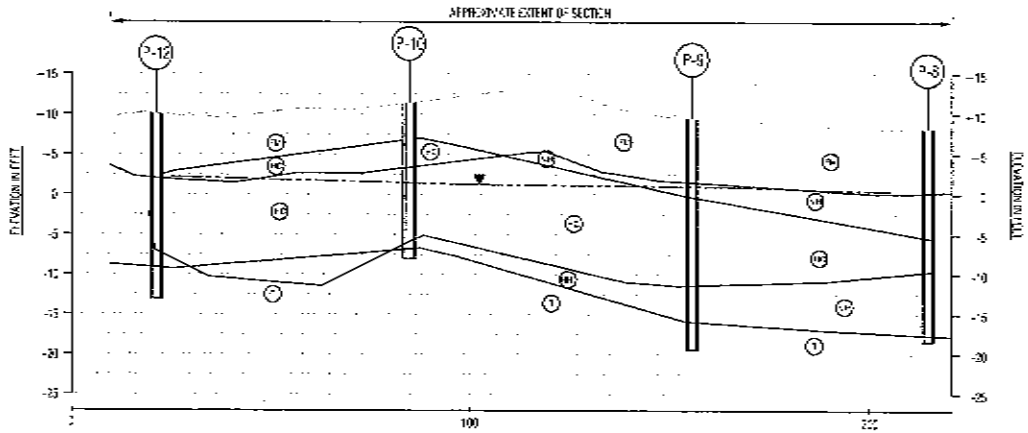
A
SOUTH




GEOLOGICAL CROSS SECTION A-A

B
NORTH

B
SOUTH




GEOLOGICAL CROSS SECTION B-B

Legend:

- EXISTING GROUND SURFACE
- SOIL BORING
- GROUNDWATER SURFACE
- OVERLYING FILL MATERIAL
- HYDROCARBON CONTAMINATED FILL
- NON-HYDROCARBON CONTAMINATED FILL
- GLACIAL TILL
- LOCATION AND DESIGNATION OF SOIL BORING

HORIZONTAL SCALE: 1"=50'

VERTICAL SCALE: 1"=15'

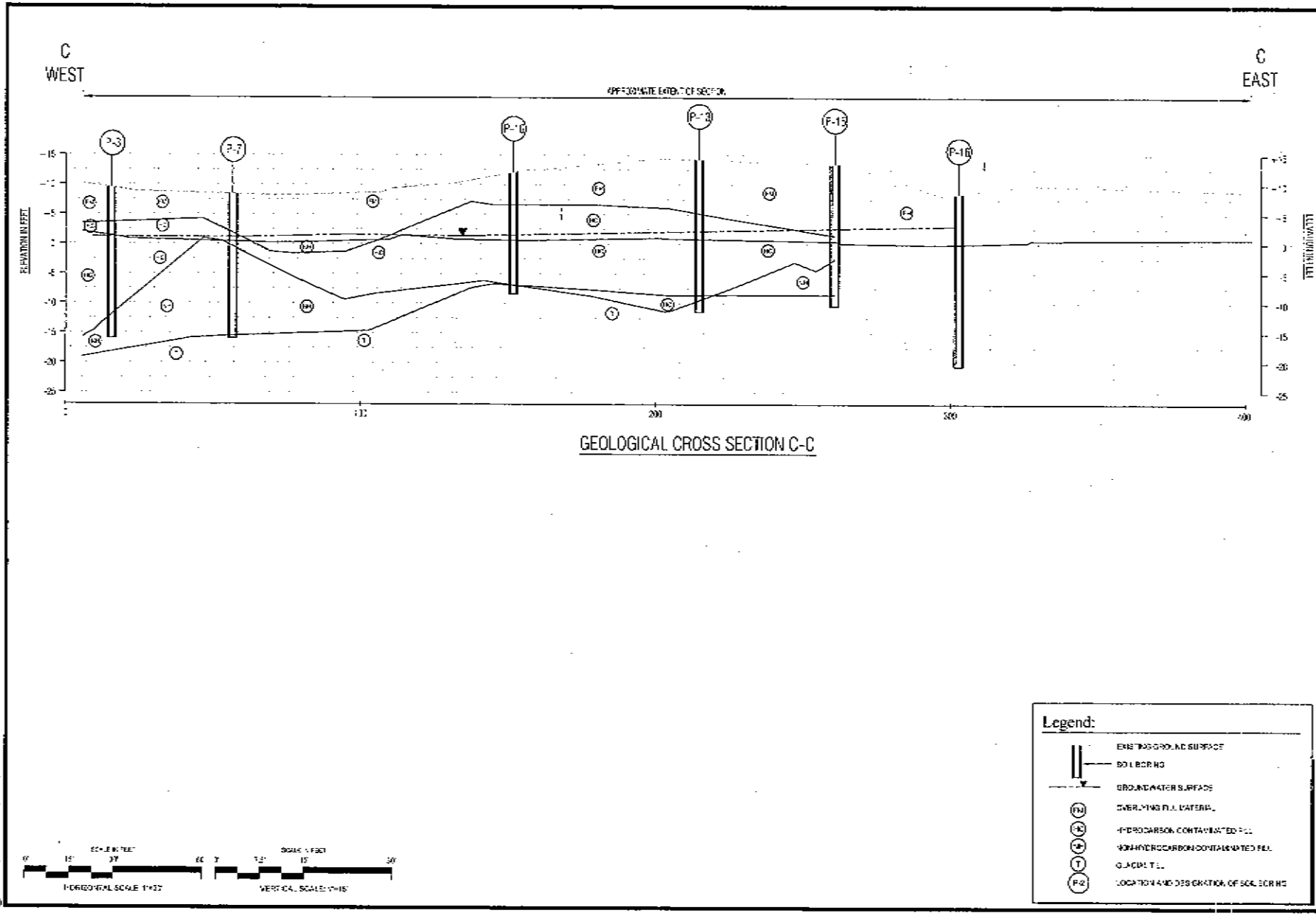
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**QUEENS WEST PARCEL 9**
Queens, New York

**GEOLOGICAL CROSS SECTION (A-A AND B-B)**

DATE: 07.19.05
SCALE: AS SHOWN
PROJECT No.: 10516
FIGURE No.: 6A




GEOLOGICAL CROSS SECTION C-C

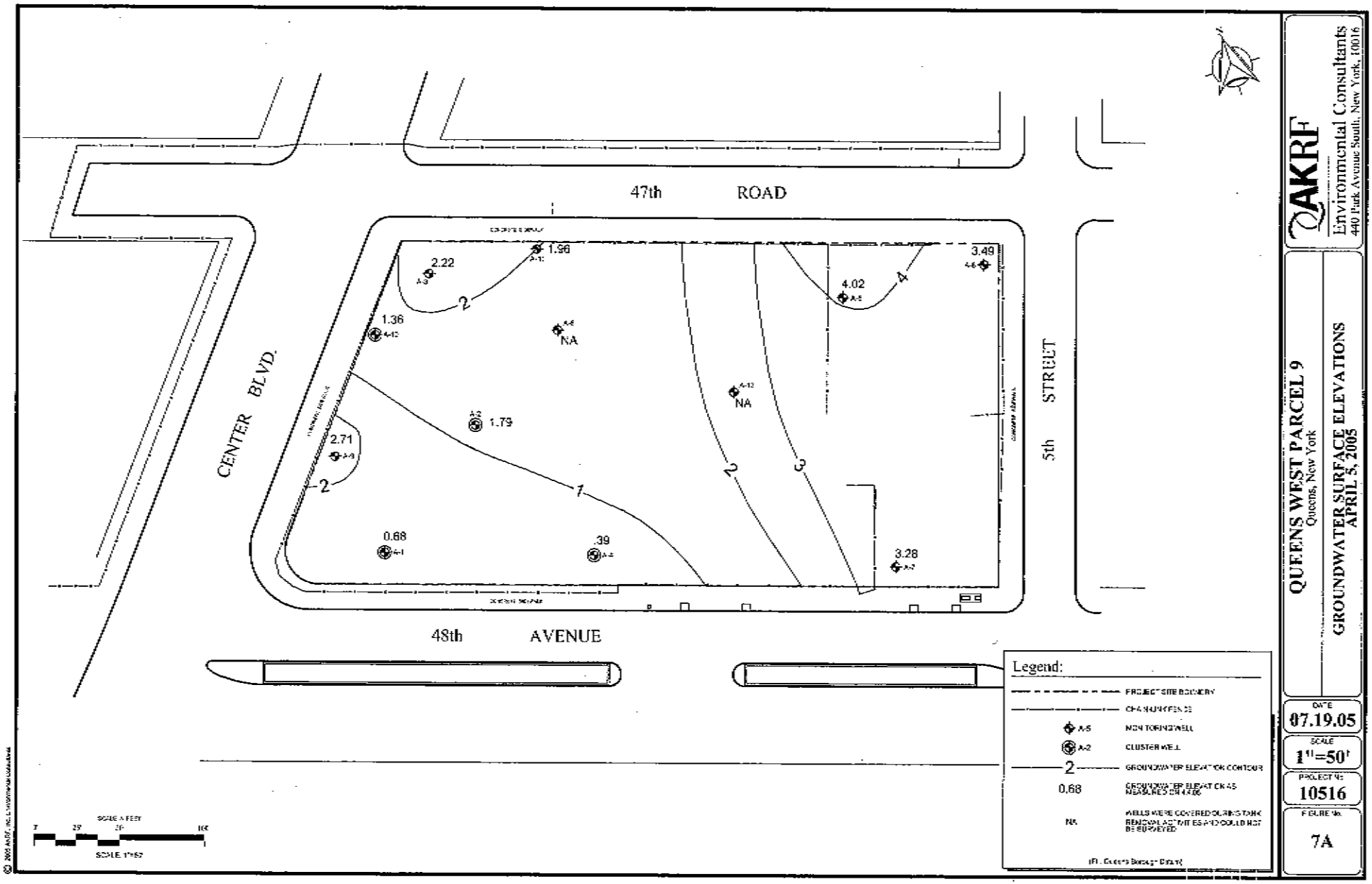
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**QUEENS WEST PARCEL 9**
Queens, New York

**GEOLOGICAL CROSS SECTION C-C**

DATE: 07.19.05
SCALE: AS SHOWN
PROJECT No.: 10516
FIGURE No.: 6B

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47th ROAD
CENTER BLVD.
5th STREET
48th AVENUE
1.96
2.22
1.36
NA
4.02
3.49
NA
1.79
2.71
0.68
.39
3.28
2
1
2
3
4
Legend:
PROJECT SITE BOUNDARY
CHAIN LINK FENCE
MONITORING WELL
CLUSTER WELL
GROUNDWATER ELEVATION CONTOUR
GROUNDWATER ELEVATION AS MEASURED ON 4/4/05
WELLS WERE COVERED OR UNDER TANK REMOVAL ACTIVITIES AND COULD NOT BE SURVEYED
SCALE IN FEET
SCALE 1"=50'
AKRF
Environmental Consultants
440 Park Avenue South, New York, 10016
QUEENS WEST PARCEL 9
Queens, New York
GROUNDWATER SURFACE ELEVATIONS
APRIL 5, 2005
DATE
07.19.05
SCALE
1"=50'
PROJECT NO.
10516
FIGURE NO.
7A

# QUEENS WEST PARCEL 9

Queens, New York

## GROUND SURFACE ELEVATIONS

| FIGURE No. | PROJECT No. | SCALE | DATE |
|---|---|---|---|
| 8 | 10516 | 1"=50' | 07.19.05 |


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# QUEENS WEST PARCEL 9

Queens, New York

TOP ELEVATIONS OF HYDROCARBON CONTAMINATED SOIL

| DATE | SCALE | PROJECT No. | FIGURE No. |
|---|---|---|---|
| 07.19.05 | 1"=50' | 10516 | 9 |

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440 Park Avenue South, New York, N.Y. 10016

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CENTER BLVD.

48th AVENUE

47th ROAD

5th STREET

SCALE IN FEET
0 35 50 100
SCALE: 1"=50'

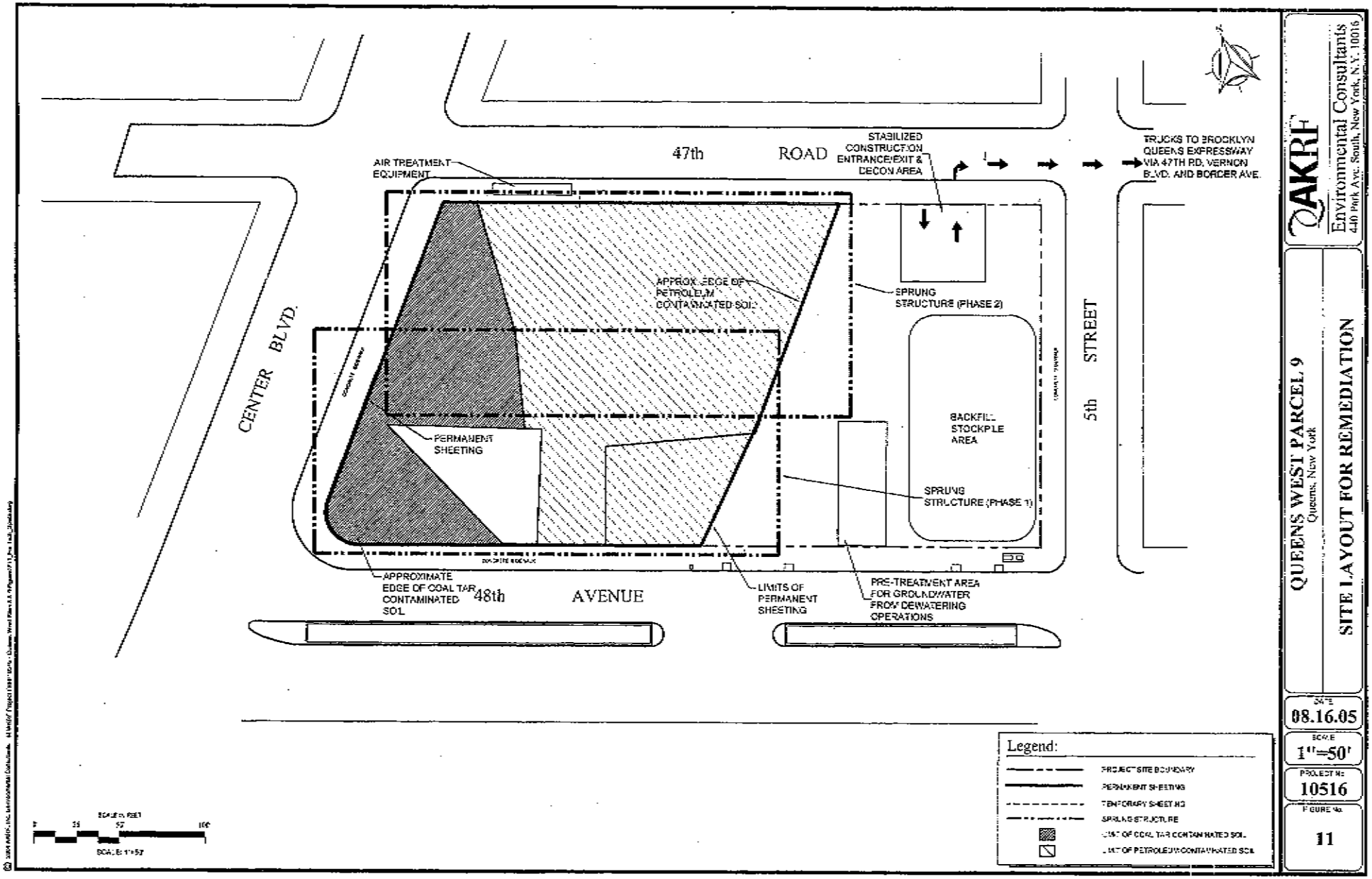
Legend:

- X P-2 SOIL BORING
- PROJECT SITE BOUNDARY
- -12 BOTTOM ELEVATION OF HYDROCARBON CONTAMINATED SOIL
- LIMIT OF SOIL CONTAMINATION WEST SIDE OF 47th ROAD
- LIMIT OF PETROLEUM CONTAMINATED SOIL

Note:
1. SEE REPORT FOR GENERAL NOTES.
2. SEE ENGINEERING DRAWINGS FOR SITE PLAN.

| QUEENS WEST PARCEL 9<br>Queens, New York | DATE: 07.19.05 | SCALE: 1"=50' | PROJECT NO.: 10516 | FIGURE NO.: 10 |
|---|---|---|---|---|
| BOTTOM ELEVATIONS OF HYDROCARBON CONTAMINATED SOIL | | | | |

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440 Park Avenue South, New York, N.Y. 10016

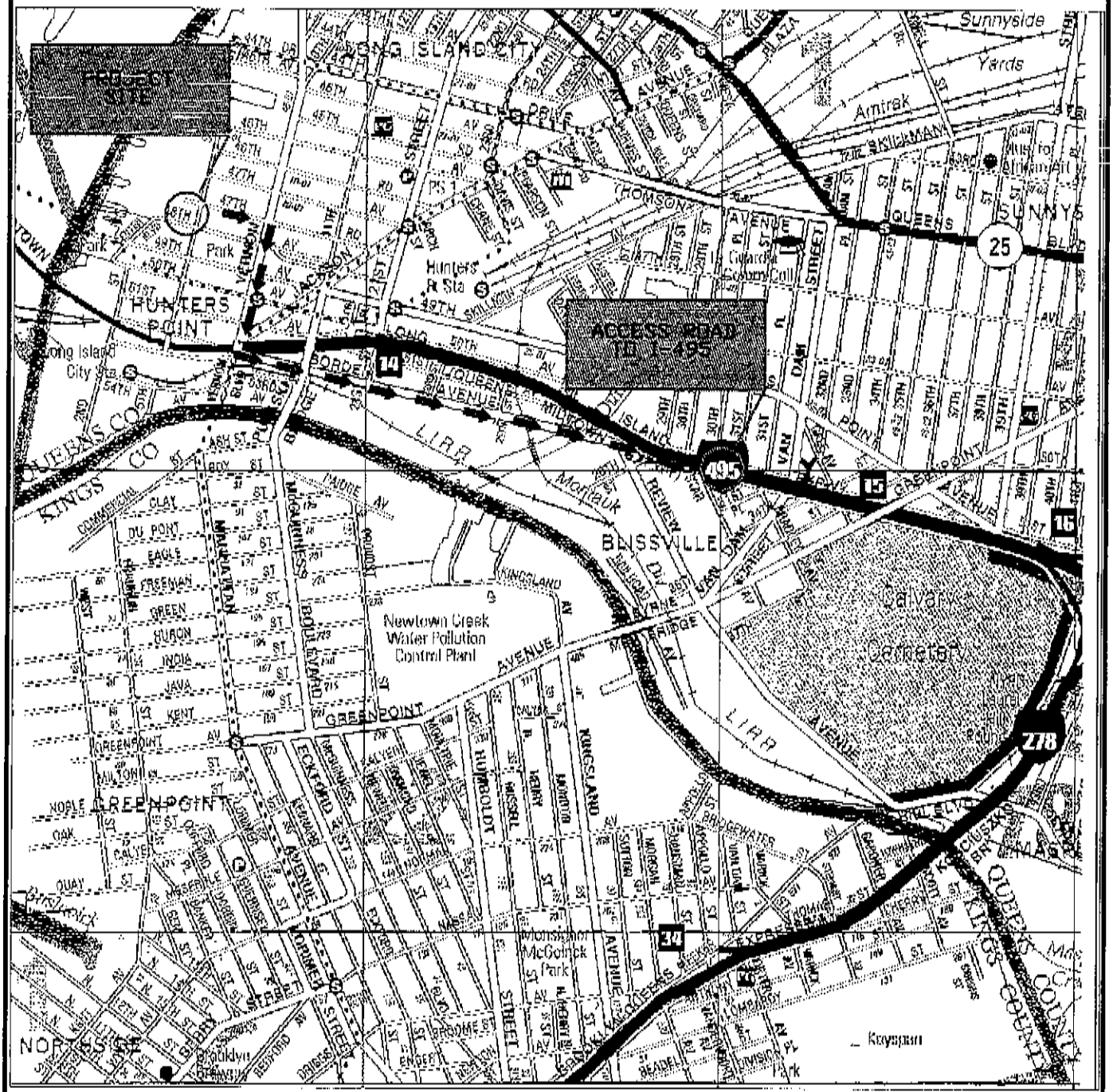



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QUEENS WEST PARCEL 9
Queens, New York

SITE LAYOUT FOR REMEDIATION

DATE: 08.16.05
SCALE: 1"=50'
PROJECT NO: 10516
FIGURE No: 11




QUADRANGLE

SOURCE:
HAGSTROM MAP - NEW YORK CITY 5 BOROUGH ATLAS DATED 1994.

**QUEENS WEST PARCEL 9**
**Queens, New York**

**TRUCK ROUTES**

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DATE 07.19.05
PROJECT No. 10516
FIGURE No. 12

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S:\10516 - Queens West Sites 8 & 9\Drawings\Technical Specifications\Figures 1,3,12.dwg, rudkowa, 7/19/2005 12:03:09 PM, Letter

# APPENDIX A

# NYCDEP EFFLUENT DISCHARGE LIMITS

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTEWATER TREATMENT

## LIMITATIONS FOR EFFLUENT TO *SANITARY OR COMBINED* SEWERS

| Parameter | Daily Limit | Units | Sample Type | Monthly Limit |
|---|---|---|---|---|
| Non-polar material * | 50 | mg/l | Instantaneous | |
| pH (range) | 5 - 11 | SU's | Instantaneous | |
| Benzene | 134 | ppb | Instantaneous | 57 |
| Ethylbenzene | 380 | ppb | Instantaneous | 142 |
| Toluene | 74 | ppb | Instantaneous | 28 |
| Xylenes ( Total ) | 74 | ppb | Instantaneous | 28 |
| Temperature | <150 | degrees F | Instantaneous | |
| Cadmium | 2<br>0.69 | mg/l<br>mg/l | Instantaneous<br>Composite | |
| Chromium (VI) | 5 | mg/l | Instantaneous | |
| Copper | 5 | mg/l | Instantaneous | |
| Lead | 2 | mg/l | Instantaneous | |
| Mercury | 0.05 | mg/l | Instantaneous | |
| Nickel | 3 | mg/l | Instantaneous | |
| Zinc | 5 | mg/l | Instantaneous | |
| Flash Point | >140 | degrees F | Instantaneous | |
| Total Suspended Solids | 350 | ppm | Instantaneous | |
| PCB's ( Total )** | 1 | ppb | Composite | |
| Perc (Tetrachloroethylene) | 20 | ppb | Instantaneous | |
| MTBE (Methyl-Tert-Butyl-Ether) | 50 | ppb | Instantaneous | |
| Naphthalene | 47 | ppb | Composite | 19 |
| Other: | | | | |

* Analysis for ***non-polar materials*** must be done by method 1664 Rev. A by EPA;
* * Analysis for PCB's are requested ***only*** if ***both*** conditions listed below are met:
1) if proposed discharge> 10,000 gpd;
2) if duration of a discharge > 10 days.
***Analysis for PCB's must be done by method 608 by EPA only with MDL=65 ppt***

*revised 11/14/03*

# APPENDIX D
# STORM WATER POLLUTION PREVENTION PLAN

# Queens West Development
# Parcel 9

**QUEENS, NEW YORK**

## Stormwater Pollution Prevention Plan

**AKRF Project Number: 10516**

**Prepared for:**

AvalonBay Communities
535 Fifth Avenue
New York, New York 10017

**Prepared by:**

**AKRF Engineering, P.C.**
440 Park Avenue South
New York, NY 10016
212-696-0670

**AUGUST 2005**

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# SECTION 1: NARRATIVE REPORT

## A. INTRODUCTION

AvalonBay Communities, Inc. proposes to conduct soil remediation for Parcel 9 of the Queens West Development, in the Hunter's Point section of Queens, New York (Block 19, Lots 5 and 19) (Figure 1) to accommodate future development on the site. AvalonBay Communities was selected to be the developer of the subject site.

The remediation activities will be conducted in accordance with New York State Department of Environmental Conservation (NYSDEC) approved Remedial Work Plan (RWP). The stormwater discharges resulting from the disturbed areas of the site will be authorized under a NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP-02-01). This Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with NYSDEC GP-02-01 and other published NYSDEC guidance documents.

The objective of this SWPPP is to protect the quality of the receiving water body (East River). This objective will be accomplished by utilizing control measures to encourage on-site deposition of sediment during the remediation phases.

## B. EXISTING SITE CONDITIONS

Parcel 9 of the Queens West Development occupies approximately 1.79 acres and is bounded by 48th Avenue to the south, 5th Street to the east, 47th Road to the north, and Center Boulevard to the west (Figure 2). The entire 1.79 acre site currently consists of pervious land. The site slopes toward the property lines along the perimeter. The underlying soils consist mainly of overlying fill, hydrocarbon-contaminated soil, non-hydrocarbon-contaminated soil, and till. A New York City owned storm sewer system within the surrounding streets collects and discharges stormwater runoff to the East River. Two driveways access the site on 47th Road.

Geotechnical borings were completed on the subject site to evaluate subsurface conditions (Mueser Rutledge Consulting Engineers, *Geotechnical Report for Queens West – Site 9, Long Island City, New York.* May 25, 2004). The following summarizes the report findings on the geological, subsurface, and groundwater conditions at the site.

> The study included 37 soil borings to bedrock and the installation of two piezometers to monitor groundwater levels. The Mueser Rutledge report indicated that the top 10 to 12 feet of material on the parcel is miscellaneous fill. This is underlain in most borings by a layer of alluvial sand up to 17 feet thick. About two-thirds of the borings encountered a stratum of soft gray organic silty clay, representing old marsh deposits. The organic deposits were generally less than 10 feet thick, and were found directly below the fill at some locations, and interlayered with the sand stratum at others. Below the sand and organic deposits is a layer of glacial till up to 30 feet thick. This consists of compact fine to coarse sand with some gravel, silt, clay, clay pockets, and boulders. The surface of the till is at an elevation of -10 to -12 feet (relative to Queens Borough Datum) over most of the parcel, but dips sharply to a depth of -30 feet in the southwestern corner of the parcel. Bedrock was encountered at elevation -20 to -30 feet (QBD) over most of the parcel, but similarly dips in the southwestern corner, to a minimum elevation of -55 feet.

Mueser Rutledge reported the presence of oil in a number of the borings. In the southwestern portion of Parcel 9, they noted many samples as "soil saturated with oil". Where oil was reported, the oily soil extended from the bottom of the fill layer (around the groundwater surface), through the organic deposits (where present) and into the sand layer. At some locations, oil extended as deep as the top of the till layer.

## C. PROPOSED PROJECT

As part of the remediation project, approximately 1.00 acres of the existing area will be disturbed by removing the contaminated soil, backfilling the area, and re-grading it for future development. The remaining 0.79 acres remains unexcavated for remediation phases.

Along the 1.79-acre project area, five (5) inlets will connect to the existing storm sewer system and discharge to the East River.

Due to the storm system discharge into the East River, infiltration is not the only feasible stormwater treatment alternative. Therefore, an engineered structure to treat the stormwater runoff through filtration will be used. The proposed structure, SiltSack® inlet protection (or approved equal), will be installed for all five (5) catch basins along the project area. The SiltSack® inlet protection will serve as sediment filters and treat the stormwater runoff prior to discharging to the river.

## D. REMEDIATION PHASING PLAN

The following describes the anticipated remediation sequencing at the site:

- Install security fence and temporary erosion and sediment controls, including hay bales and/or silt fence along the perimeter of the site, drainage inlet protection in existing drainage inlets, and stabilized construction pads at each construction vehicle access point;
- Complete permanent and temporary sheeting;
- Complete and operate dewatering and air treatment systems, and perform remediation work within a sprung structure;
- Complete site remediation activities, including excavation of contaminated soil, transportation of contaminated soil from the site, and backfilling the disturbed land area;
- Remove sprung structure, temporary sheeting, and dewatering and air treatment systems, and remove temporary erosion and sediment controls.

## E. TEMPORARY SEDIMENT & EROSION CONTROLS

The following describes the temporary erosion and sediment controls that will be implemented at the site (locations and details for the controls are shown Section 5):

Stabilized Construction Entrance/Exit: All construction entrances and exits will have a stabilized aggregate pad underlain with filter cloth to prevent vehicles from tracking sediment off-site.

Decontamination: All trucks leaving the site will be decontaminated by pressure washing the tires and undercarriage on a containment pad. All decontamination water will be collected in a sump and treated using the water treatment system prior to discharge to the existing stormwater sewer system. Built up sediment will be removed from the sump when it has reached one-third the depth of the sump pit and properly disposed of off-site.

Hay Bales and/or Silt Fence: Hay bales and/or silt fence will be installed around the perimeter of the site. Hay bales are to be inhibited along the areas of the construction fence perimeter where paved sidewalk prevents the proper installation of silt fence. Otherwise, silt fence is to be used where fence posts can be properly driven into the ground as per the Silt Fence Barrier Detail contained in sheet #3 of the drawings. Hay bales and silt fence control sediment runoff where the soil has been disturbed by stopping the water containing the sediment long enough for the sediment to drop out while the water passes through the hay bale or silt fence. Built-up sediment will be removed from hay bales and silt fences when it has reached one-third the height of the bale/fence and properly disposed of off-site.

Siltsack® Inlet Protection: Siltsack® inlet protection, or approved equal, will be installed in inlets that are located in existing paved areas. Siltsack® is a sediment control device that mounts under the grate in catch basins. Made of a permeable geotextile, the device allows water to pass but prevents silt and sediment from clogging the drain system. The Siltsack® is to be inspected every 7 calendar days and 24 hours after each rainfall event and emptied as required.

Dust Control: A sprung structure will be erected to prevent stormwater runoff from contaminated areas and to provide for dust control on the site during excavation activities in both phases of remediation.

## F. INSPECTIONS & RECORD KEEPING DURING CONSTRUCTION

The *Inspection Report* will be completed by a qualified professional to fully document each inspection. A qualified professional is a person knowledgeable in the principles and practice of erosion and sediment controls.

Inspections shall be conducted by the qualified professional at least every seven (7) calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. During each inspection, the qualified professional should fill out the *Inspection Form* as directed below:

On the *Inspection Form* site map, show the following:

- Disturbed site areas and drainage pathways.
- Site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period.
- Site areas that have undergone temporary or permanent stabilization.

Record the following information on the *Inspection Form*:

- For each structural measure, circle YES, NO, or N/A (not applicable) to indicate if the pollutant control measure is in conformance with specifications.

- For each structural measure, circle YES, NO, or N/A to indicate whether the structural measure is performing effectively in minimizing stormwater pollution.
- Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of the sediment storage volume in the allocated location on the Inspection Form Chart (i.e., 10 percent, 20 percent, 50 percent).

The project manager will give a brief explanation for all locations where he/she noted that the structural practice was either not in conformance with specifications or not effective in preventing stormwater pollution. This should be included under "Non-Compliance Items Noted" section of the *Inspection Report*. He/she will then give a brief recommendation for remedial activities for the locations where structural protection failed or was not adequate. Recommendations should be included under "Recommended Remedial Alternatives" on the *Inspection Report*.

The *Project Rainfall Log* will be used to record all rainfall events of 0.5 inches or greater. The *Record of Stabilization and Construction Activities* will document major grading activities on-site, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated. The project manager will maintain all reports and forms with the SWPPP on-site. As per NYSDEC regulations, the completed forms and SWPPP shall be kept on-site for three years after final site stabilization is achieved.

## G. CERTIFICATIONS

The preparer of and the contractor responsible for implementation of the SWPPP must sign the attached certification statements (refer to Section 3 – Certifications) before construction activities begin.

# SECTION 2: FORMS

# INSPECTION REPORT

INSPECTOR: _____ DATE: _____

| CONTROL MEASURE (Enter Description) | EFFECTIVE (Yes/No) | IN COMFORMANCE (Yes, No) | APPROXIMATE SEDIMENT ACCUMULATION (%) | COMMENTS |
|---|---|---|---|---|
| Silt Fencing | | | | |
| Hay Bales | | | | |
| Stabilized Construction Entrance | | | NA | |
| Siltsack Inlet Protection | | | -- | |
| Dust Control | | | NA | |
| Decontamination Sump | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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# INSPECTION REPORT

INSPECT AND RECORD THE FOLLOWING:

Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of the barrier. Document any excessive deposition of sediment or ponding water along barrier.

MAINTENANCE PERFORMED:

NON-COMPLIANCE ITEMS NOTED: (Explain each "NO" circled above, Use back of sheet if necessary)

RECOMMENDED REMEDIAL ACTIONS:

COMMENTS:

Based on the results of the inspection, necessary control modifications shall be implemented within 7 calendar days. These reports shall be kept on file as part of the Stormwater Pollution Prevention Plan for at least three years from the date of completion of submission of the Final Stabilization Certification/Termination Checklist and Notice of Termination. A copy of the SWPPP shall be kept at the site at all times during construction. This completed form shall be placed in the log book on-site.

INSPECTOR: _____ DATE: _____

(Signature)

# PROJECT RAINFALL LOG

**Year 20__**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
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| 29 | | | | | | | | | | | | |
| 30 | | NA | | | | | | | | | | |
| 31 | | NA | | NA | | NA | | | NA | | NA | |

Enter rainfall amount. If the amount is greater than 0.5 inches, inspection of control measures must be completed within 24 hours. Maintain this form in log book at the project site. The daily rainfall may be recorded from www.accuweather.com . Readings of rainfall in inches over the past 24 hours shall be recorded every morning. The rainfall can be found by selecting "My Local Forecast", typing in the site zip code, selecting "Past 24 hours". The total precipitation is listed at the bottom of the page. Readings may also be taken by using an on-site rain gauge.

# RECORD OF STABILIZATION AND CONSTRUCTION ACTIVITIES

A record of dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be maintained until final site stabilization is achieved and the Notice of Termination is filed. Maintain this form in log book at the project site.

**MAJOR GRADING, CONSTRUCTION OR STABILIZATION ACTIVITIES**

Description of Activity:_____

Begin Date:_____ Site Contractor:_____

Location:_____

End Date:_____

Description of Activity:_____

Begin Date:_____ Site Contractor:_____

Location:_____

End Date:_____

Description of Activity:_____

Begin Date:_____ Site Contractor:_____

Location:_____

End Date:_____

Description of Activity:_____

Begin Date:_____ Site Contractor:_____

Location:_____

End Date:_____

Description of Activity:_____

Begin Date:_____ Site Contractor:_____

Location:_____

End Date:_____

# SECTION 3: CERTIFICATIONS

## CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

SIGNED: _____ DATE: _____

NAME: _____

FIRM: _____

ADDRESS: _____

_____

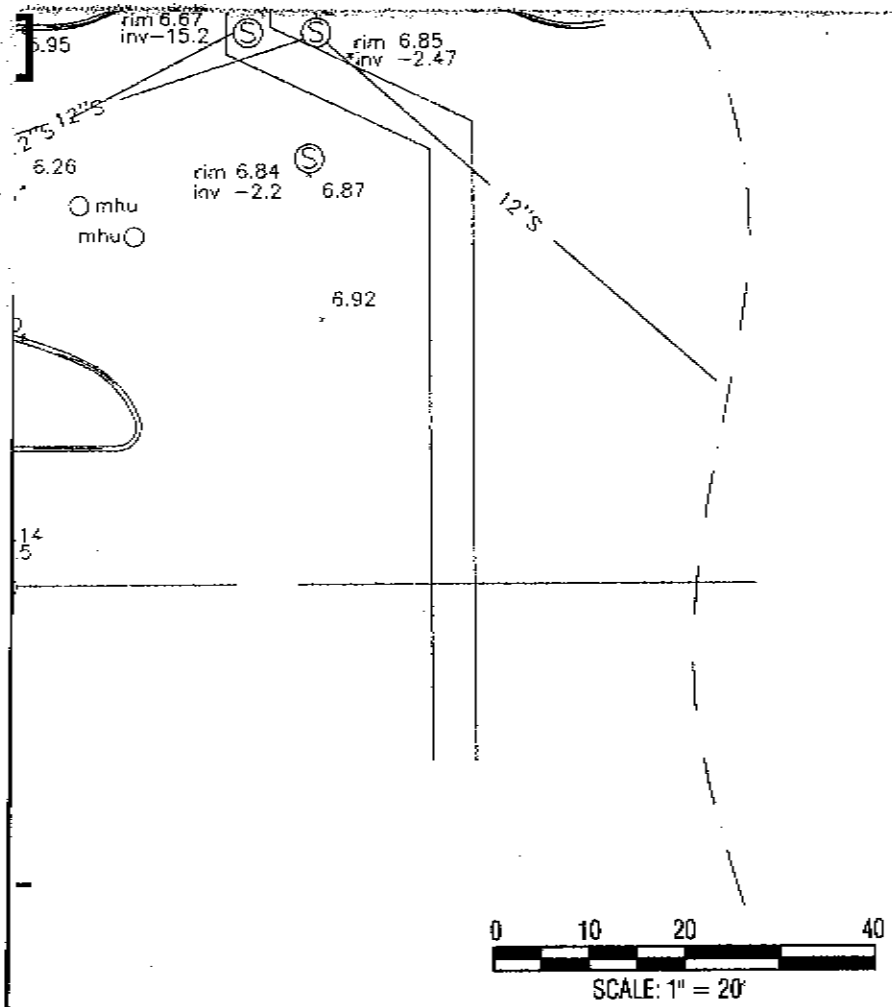
PHONE: _____

# PREPARER'S CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

| | | | |
|---|---|---|---|
| SIGNED: | | DATE: | |
| NAME: | Andrew Malek, P.E. | TITLE: | Technical Director |
| FIRM: | AKRF Engineering, P.C. | | |
| ADDRESS: | 440 Park Avenue South | | |
| | New York, NY 10016 | | |
| PHONE: | (646)-388-9746 | | |

# SECTION 4: FIGURES




QUEENS WEST - PARCEL 9
LONG ISLAND CITY, NEW YORK

SHEET TITLE

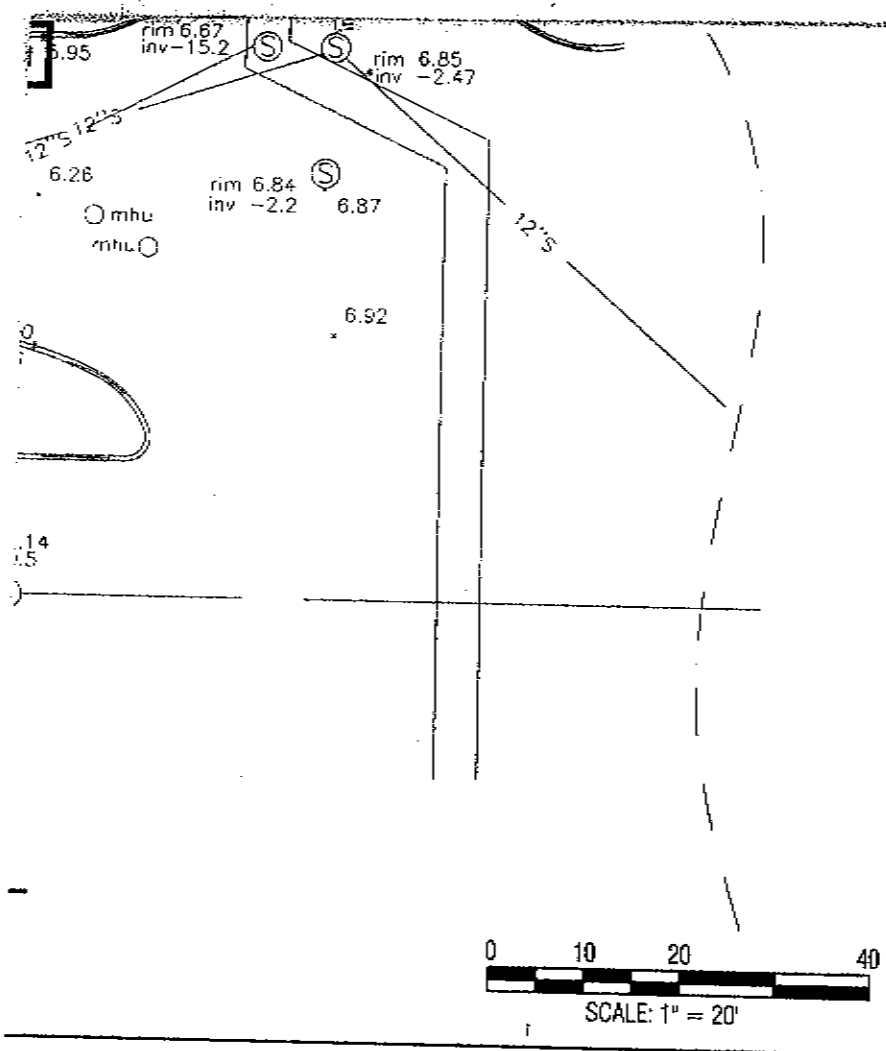
EROSION & SEDIMENT CONTROL PLAN
PHASE 1

| | |
|---|---|
| DRAWN BY RC | ORIG. DATE 8.23.05 |
| CHECKED BY KF | PROJECT No. 10516 |
| | SHEET No. 1 |

STATE OF NEW YORK
ANDREW MALEK
077251
LICENSED PROFESSIONAL ENGINEER

ANDREW MALEK, P.E.

oversized original




NEW YORK, NY 10017

QUEENS WEST - PARCEL 9
LONG ISLAND CITY, NEW YORK

SHEET TITLE

EROSION & SEDIMENT CONTROL PLAN
PHASE 2

| DRAWN BY | ORIG. DATE |
|---|---|
| RC | 8.23.05 |
| CHECKED BY | PROJECT No. |
| KF | 10516 |

STATE OF NEW YORK
ANDREW MALEK
077251
LICENSED PROFESSIONAL ENGINEER

SHEET No.

2

ANDREW MALEK, P.E.

oversized original

PLAN VIEW

UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING

AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED
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TIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL
NOT TO INTERFERE WITH THE PROPER FUNCTIONING

HAPED TO LINE, GRADE, AND CROSS SECTION AS
IFIED HEREIN AND BE FREE OF BANK PROJECTIONS
IMPEDE NORMAL FLOW.
MOVING EQUIPMENT.
ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL
OF THE SWALE.
EDDING, PVC LINER, AND CRUSHED STONE
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MAINTENANCE MUST BE PROVIDED AFTER

ORARY SWALE

Oversized original

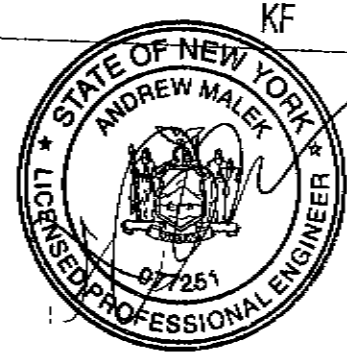
NEW YORK, NY 10017

QUEENS WEST - PARCEL 9
LONG ISLAND CITY, NEW YORK

SHEET TITLE

EROSION & SEDIMENT CONTROL DETAILS

| | |
|---|---|
| DRAWN BY RC | ORIG. DATE 8.23.05 |
| CHECKED BY KF | PROJECT No. 10516 |




SHEET No. 3

ANDREW MALEK, P.E.

# APPENDIX E
# ENVIRONMENTAL HEALTH AND SAFETY PLAN

# Queens West Development
# Parcel 9

**QUEENS, NEW YORK**

## Environmental Health and Safety Plan

**AKRF Project Number: 10516**

**Prepared for:**

AvalonBay Communities
535 Fifth Avenue
New York, New York 10017

**Prepared by:**

**AKRF Engineering, P.C.**
440 Park Avenue South
212-696-0670

**AUGUST 2005**

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ATTACHMENT A — OSHA Job Safety and Health Protection Poster
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ATTACHMENT D — Information on Heat Street Monitoring
ATTACHMENT E — Incident Form
ATTACHMENT F — Emergency Hand Signals

# 1.0 INTRODUCTION

Parcel 9 is located in the Hunters Point section of Queens, New York. The parcel is bounded by 5th Street on the east, 48th Avenue on the south, Center Boulevard on the west, and 47th Road on the north. It has a total area of about 1.79 acres and is vacant and unpaved; all former structures were demolished in 2001. The entire parcel is surrounded by a chain-link fence. According to a survey performed by Montrose Surveying Company in 2003, Parcel 9 is generally at an elevation of 8 to 10 feet, currently with a mound in the middle of the parcel rising to an elevation of 15 feet. (All elevations given are relative to Queens Borough Datum.) The East River is located roughly 500 feet west of the site.

The surrounding areas are a mix of uses. Parcel 10, located across 48th Avenue south of the site, is occupied by a high-rise residential building which also includes a public elementary school, P.S. 78. Parcel 8, located across Center Boulevard west of the site, is vacant. The area between Parcel 8 and the East River is part of the Queens West waterfront park. The area north of the site, across 47th Road, is currently undergoing remediation and is slated for future residential development. The area east of the site, across 5th Street, is not part of the Queens West Development. This area is occupied by a mix of light industrial, commercial, and residential uses.

The Supplemental Remedial Investigation Report for Queens West Parcel 9 (April 2005) identified two areas of hydrocarbon contamination on the site: an area of petroleum contamination in the north-central portion of the site, around the location where a vault with three 10,000-gallon tanks was discovered; and an area of contamination associated with coal tar detected in a deep well in the southwest corner of the site and extending along the western boundary of the site adjacent to Center Boulevard.

This environmental Health and Safety Plan (HASP) has been developed for implementation of remediation activities conducted by all personnel on-site, both AKRF employees and others. This HASP does not discuss other routine health and safety issues common to general construction/excavation, including but not limited to slips, trips, falls, shoring, and other physical hazards. All AKRF employees are directed that all work must also be performed in accordance with the Company's Generic HASP and all OSHA applicable regulations for the work activities required for the project. For issues both related and unrelated to contaminated materials, all non-AKRF employees are to be bound by all applicable OSHA regulations as well as any more stringent requirements specified by their employer in their corporate HASP or otherwise. This oversight shall be the responsibility of the employer of that worker or other official designated by that employer.

The OSHA Job Safety and Health Protection Poster must be posted prominently during field activities. Attachment A contains example of the poster to be used in the field. The actual poster must be an 11 inch by 17 inch size version of the attachment. The OSHA 300 Log of injuries and illnesses is maintained in the home office of each AKRF employee.

## 1.1 Scope of Work

The scope of the project includes soil excavation and appropriate off-site treatment and/or disposal for all identified "areas of contamination" of hydrocarbon-contaminated soil identified in two distinct areas of the site. There is a layer of unimpacted soil overlaying the contaminated areas that will be excavated within the limits of contamination, which will be stockpiled separately from contaminated soils and labeled as "non-impacted soils" for later use as fill. Below the unimpacted soil layer down to the clay or till layer (22 to 40 feet below grade) in the areas identified as "areas of contamination", the soil has been

identified as "impacted soils". The horizontal and vertical extent of the areas to be excavated will be determined and delineated, as described in the Remedial Action Work Plan, prior to the beginning of excavation based on the soil analysis data from the Supplemental Remedial Investigation and the additional subsequent delineation sampling. Permanent sheet piling will be installed in order to prevent migration of contaminants from off-site during and subsequent to remedial activities. Temporary sheet piling will be installed around areas of contamination to facilitate contaminated soil removal where permanent sheeting is not deemed necessary.

The areas of contamination will not be excavated below the depth of the clay or till layer, which was encountered at a depth of approximately 22 to 40 feet below grade during previous boring activities on the site, regardless of contamination levels. During excavation, to further locate the proper bounds for excavation, the soils will be field screened by visual inspection and perform field screening for volatile organic compounds. Post-excavation sampling will be performed to confirm that all soils exceeding the above levels have been removed from the identified areas of contamination.

All excavations will be performed under a containment structure with integral vapor management system to prevent the generation of nuisance odors and emissions above Federal, State and local standards. To the maximum extent possible, impacted soil will be directly loaded from the excavation into trucks for off-site treatment/disposal. Any temporary storage of contaminated soil will be within the containment structure. Open excavated areas will be foamed, for example when the containment structure is closed, to minimize emission of vapors from hydrocarbon-contaminated soil. Dewatering during excavation will be required, and treatment of dewatering fluids prior to discharge to the City sewer will be performed as necessary so that NYCDEP sewer discharge criteria are met. Dewatering will be maintained until the excavations can be backfilled; backfill will consist of off-site imported clean fill material.

**General Health and Safety Issues**

Identified issues related to work at this site include:

- LNAPL (i.e., petroleum contamination) and DNAPL (i.e., coal tar contamination);
- Vapor phase volatile organic compounds migrating from the subsurface wastes/materials;
- Dissolved phase petroleum and coal tar-related contamination migrating in the groundwater; and
- Adsorbed phase petroleum products and coal tar residuals in the soil.
- Hazards related to heavy equipment operating within a sprung containment structure, including buildup of carbon monoxide and combustible gases.

## 1.2 Project Team Organization and Responsibilities

The project team is designated in the RAWP. Project team responsibilities, particularly with respect to worker health and safety, are described below.

**Project Manager** - The project managers assumes total control over site activities and reports to upper-level management. He/she has the authority to direct response operations. Project manager responsibilities include:

- Prepares and organizes the background review of the site, the Work Plan, the site Health and Safety Plan, and the field team;
- Coordinates activities with the remediation contractor and appropriate officials;
- Ensures that the Work Plan is executed and on schedule;
- Briefs the field team on their specific assignments;
- Coordinates with the site Health and Safety Officer (HSO) to ensure that health and safety requirements are met;
- Prepares the final report and support files on the response activities; and
- Serves as the liaison with public officials.

**Field Safety Officer (FSO)** - The FSO advises the HSO and Project Manager on all aspects of health and safety on site. He/she can stop work if any operation threatens worker or public health or safety. FSO responsibilities include:

- Ensures that all necessary health and safety equipment is available on-site and that all equipment is functional;
- Periodically inspects protective clothing and equipment and ensures that they are properly stored and maintained;
- Controls entry and exit at the access control points;
- Coordinates health and safety program activities with the Project HSO;
- Confirms each team member's suitability for work based on a physician's recommendation;
- Monitors the work parties for signs of stress, such as cold exposure, heat stress, and fatigue;
- Implements the site Health and Safety Plan and conducts periodic inspections to determine if the site Health and Safety Plan is being followed.
- Knows emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire department, and police department;
- Notifies, when necessary, local public emergency officials;
- Coordinates emergency medical care and advises medical personnel of potential exposures and consequences;
- Sets up decontamination lines and the decontamination solutions appropriate for the type of chemical contamination on the site; and
- Controls the decontamination of all equipment, personnel, and samples from the contaminated areas, and assures proper disposal of contaminated clothing and materials.

**Field Team Leader-** The field team leader advises the Project Manager on all aspects of health and safety on site. He/she can stop work if any operation threatens worker or public health or safety. The field team leader is directly responsible for the field team and the safety of site operations. Responsibilities include:

- Manages field operations;
- Executes the Work Plan and schedule;
- Enforces safety procedures;
- Coordinates with the FSO in determining protection level;
- Enforces site control;
- Documents field activities and sample collection; and
- Serves as a liaison with public officials.

**Work Team** - Work team responsibilities include:

- Safely completes the on-site tasks required to fulfill the Work Plan;
- Complies with site Health and Safety Plan; and
- Notifies FSO or supervisor of suspected unsafe conditions.

# 2.0 HAZARD ANALYSIS

## 2.1 Chemical Hazards

Potential contaminants that may be encountered while conducting excavation activities include free phase petroleum and coal tar product, volatile organic compounds (VOCs), carcinogenic polycyclic aromatic hydrocarbons (PAHs), and metals. Exposure limits and associated health hazards of some of these compounds are summarized in the following table:

| Chemicals | REL/PEL/STEL (ppm) | Health Hazards |
|---|---|---|
| Benzene | REL = 0.1 ppm<br>PEL = 1 ppm<br>STEL = 5 ppm | Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude, dermatitis; bone marrow depression, potential occupational carcinogen. |
| Toluene | REL = 100 ppm<br>PEL – 200 ppm<br>STEL 300 ppm | Irritation eyes, nose; lassitude, confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage. |
| Ethylbenzene | REL = 100 ppm<br>PEL = 100 ppm | Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma. |
| Xylenes | REL = 100 ppm<br>PEL = 100 ppm | Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis |
| Naphthalene | REL – 10 ppm<br>PEL – 10 ppm | Irritation eyes; headache, confusion, excitement, malaise; nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage |
| Coal Tar | REL = 100 ppm<br>PEL = 100 ppm | Irritation eyes, skin, nose; dizziness, drowsiness; dermatitis; in animals: liver, kidney damage |
| Carbon Monoxide | REL – 35 ppm<br>PEL – 50 ppm | Headache, weakness, dizziness, nausea, vomiting, chest pain, confusion, loss of consciousness. |
| Mercury | REL= 0.1 mg/m$^3$<br>PEL = 0.1 mg/m$^3$ | Irritation eyes; headache, confusion, excitement, malaise; nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage |
| Lead | REL = 0.1 mg/m$^3$<br>PEL 0.05 mg/m$^3$ | Weak, lassitude, insomnia, facial pallor, pale eye, anorexia, low weight, malnutrition, constipation, abdominal pain, colic, anemia, gingival lead line, tremors, paralysis wrists and ankles, encephalopathy, kidney disease, irritation eyes, hypotension |
| Particulate | PEL = 15 mg/m$^3$ (total)<br>PEL = 5 mg/m$^3$ (respirable) | Irritation eyes, skin, throat, upper respiratory system |

**Comments:**

REL = NIOSH Recommended Exposure Limit
PEL = OSHA Permissible Exposure Limit
STEL = OSHA Short Term Exposure Limit

In addition to the compounds detected onsite, some of the solvents used in decontamination of equipment are potentially hazardous to human health if they are not used properly. Material Safety Data Sheets (MSDSs) for substances that will be used on site and a select number of site contaminants are included in Attachment B.

## 2.2 Radiation Hazards

No radiation hazards are known or expected at the site.

## 2.3 Biological Hazards

### 2.3.1 Animals

During site operations, animals such as dogs, pigeons, sea gulls, mice, and rats may be encountered. Workers will use discretion and avoid all contact with animals. Bites and scratches from dogs can be painful and can potentially transmit rabies. Contact with rat and mice droppings may lead to contracting hantavirus. Inhalation of dried pigeon droppings may lead to psittacosis; crytococcosis and histoplasmosis are also diseases associated with exposure to dried bird droppings but these are less likely to occur in this occupational setting.

### 2.3.2 Insects and West Nile Virus

Insects, including bees, wasps, hornets, mosquitoes, ticks and spiders, may be present at this site. Some individuals may have a severe allergic reaction to an insect bite or sting that can result in a life threatening condition. Mosquito bites may lead to St. Louis encephalitis or West Nile encephalitis. Tick bites may lead to Lyme disease. Personnel that have been bitten or stung by an insect at the site should notify the HSO or FSO of such immediately. Information on West Nile virus and St. Louis encephalitis prevention are provided in Attachment C.

The following is a list of preventive measures:

- Apply insect repellent prior to fieldwork and or as often as needed throughout the shift;
- Wear proper protective clothing (work boots, socks and light colored pants);
- When walking in wooded areas, to the extent possible avoid contact with bushes, tall grass, or brush; and
- Field personnel who may have insect allergies (e.g., bee sting) should provide this information to the HSO or FSO prior to commencing work, and will have allergy medication on site.

The HSO or FSO will instruct the project personnel in the recognition and procedures for encountering potentially hazardous insects at the site.

## 2.4 Physical Hazards

### 2.4.1 Explosion

The interior of the containment structure under which all excavation activities will be performed would be considered an enclosed space. Consequently, a build up of combustible gases (VOCs) and/or depleted oxygen levels would represent a significant hazard during remedial activities inside the containment strucutre. Measurement of these gases will be accomplished with a combined combustible gas indicator and oxygen meter ($CGI/O_2$). The CGI/O2 meter will be calibrated on a daily basis using factory-supplied calibration gas.

### 2.4.2 Heat Stress

The use of Level C protective equipment, or greater, may create heat stress. Monitoring of personnel wearing personal protective clothing should commence when the ambient temperature is 72°F or above. Attachment D includes information on frequency of monitoring for heat stress and assessing the risk for heat related illness. Heat stress monitoring should be performed by the FSO, who shall be able to recognize symptoms related to heat stress.

To monitor the workers, be familiar with the following heat-related disorders and their symptoms:

*Prickly Heat (Heat rash)*

Painful, itchy red rash. Occurs during sweating, on skin covered by clothing.

*Heat Cramps*

Painful spasm of arm, leg or abdominal muscles, during or after work.

*Heat Exhaustion*

Headache, nausea, dizziness. Cool, clammy, moist skin. Heavy sweating. Weak, fast pulse. Shallow respiration, normal temperature.

*Heat Fatigue*

Weariness, irritability, loss of skill for fine or precision work. Decreased ability to concentrate. No loss of temperature control.

*Heat Syncope (Heat Collapse)*

Fainting while standing in a hot environment.

*Heat Stroke*

Headache, nausea, weakness, hot dry skin, fever, rapid strong pulse, rapid deep respirations, loss of consciousness, convulsions, coma. **This is a life threatening condition.**

Do not permit a worker to wear a semi-permeable or impermeable garment if he/she is showing signs or symptoms of heat-related illness.

**Prevention of Heat Stress** - Proper training and preventative measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat

exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress the following steps should be taken:

- Adjust work schedules;
- Mandate work slowdowns as needed;
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided;
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods; and
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, i.e., eight fluid ounces (0.23 liters) of water must be ingested for approximately every eight ounces (0.23 kg) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be drunk to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:
  - Maintain water temperature 50° to 60°F (10° to 16.6°C).
  - Provide small disposal cups that hold about four ounces (0.1 liter).
  - Have workers drink 16 ounces (0.5 liters) of fluid (preferably water or dilute drinks) before beginning work.
  - Urge workers to drink a cup or two every 15 to 20 minutes, or at each monitoring break. A total of 1 to 1.6 gallons (4 to 6 liters) of fluid per day are recommended, but more may be necessary to maintain body weight.
  - Train workers to recognize the symptoms of heat related illness.

### 2.4.3 Noise

Work activities during the proposed construction activities may be conducted at locations with high noise levels from the operation of equipment. Hearing protection must be used as necessary.

### 2.4.4 Slips, Trips and Fall Hazards

Care should be exercised when walking at the site, especially when carrying equipment. The presence of open excavations, surface debris, uneven surfaces, facility equipment, and soil piles contribute to tripping hazards.

### 2.4.5 Utilities (Electrocution and Fire Hazards)

Underground utilities, facilities, equipment, and structures will be located prior to start of remedial excavation activities, and confirmation will be obtained that all site utilities are shut off prior to the start of work. The Underground Utilities Call Center will be notified a minimum of three (3) days before any excavation. The possibility of encountering underground utilities poses fire, explosion, and electrocution hazards. Potential adverse effects of electrical hazards include burns and electrocution, which could result in death.

### 2.5 Task Hazard Analysis

Excavation activities are inherently dangerous. As noted above, special attention should be given to establishing the location of any underground utilities prior to excavating. Chemical exposure may occur as impacted soil is handled. Activities should be conducted using the appropriate Personal Protective Equipment (PPE) for the associated exposure, as described in Section 3.0. Excavation within a containment structure involves additional hazards including the buildup of combustible gases and carbon monoxide. Care should be taken within the work zone to avoid general physical hazards as described above.

## 3.0 PERSONAL PROTECTION AND MONITORING

### 3.1 Medical Surveillance

All personnel performing site remediation activities are required to have passed a complete medical surveillance examination in accordance with 29 CFR 1910.120 (f). A physician's medical release for work will be confirmed by the FSO before an employee can begin site activities. The medical release shall consider the type of work to be performed and the required PPE. The medical examination will, at a minimum, be provided annually and upon termination of hazardous waste site work.

### 3.2 OSHA Training

All on-site personnel who will be actively involved in the day-to-day site work activities must have completed hazardous waste operations-related training, as required by OSHA Regulations 29 CFR 1910.120. Personnel who completed this training more than 12 months prior to the start of the project must have completed an 8-hour refresher course within the past 12 months. Documentation of OSHA training for project personnel must be provided to AKRF prior to starting work. Other personnel involved in ancillary, or support activities, including transportation of material for disposal, shall have the proper training as required by Federal, State and local regulations

### 3.3 Site-Specific Training

The FSO or his/her designee will conduct a health and safety at the start of the project to train all on-site personnel about potential hazards, proper health and safety measures, and emergency response procedures. The FSO will conduct subsequent meetings any time new personnel start work on the project or as warranted by a change in conditions. The training should include the following topics:

- General requirements of this HASP;
- Review of the Scope of Work;
- Names of personnel responsible for site safety and health;
- Potential hazards and acute effects of compounds present at the site;
- Air monitoring procedures;
- Proper use of personal protective equipment;
- Safe use of engineering controls and equipment on the site; and
- Decontamination procedures.

- Work practices by which the employee can minimize risk from hazards. This may include a specific review of heavy equipment safety, safety during inclement weather, changes in common escape rendezvous point, site security measures, or other site-specific issues that need to be addressed before work begins.

## 3.4 Air Monitoring

The purpose of the air monitoring program is to identify any exposure of the field personnel and the public to potential environmental hazards in the soil and groundwater. Results of the air monitoring will be used to determine the appropriate response action, if needed. All excavation will be performed under a containment structure in which a negative air pressure and integral vapor management system is maintained to prevent the generation of nuisance odors and emissions above Federal, State and local standards.

### 3.4.1 Volatile Organic Compounds

A photoionization detector (PID) will be used to perform air monitoring during all activities conducted at the site to determine airborne levels of total VOCs. The PID will be calibrated daily with a 100 ppm isobutylene standard.

### 3.4.2 Particulates

A particulate monitor will be used to measure airborne levels of respirable particulates (less than 10 microns) during all soil disturbance activities. The particulate monitor will be used in accordance with the manufacturer's specifications. Particulates are of concern on their own, and also when VOCs, SVOCs, and/or metals are attached to them. The particulate monitor will be zeroed daily according to manufacturer specifications.

### 3.4.3 Oxygen and Combustible Gases

The interior of the containment structure under which all excavation activities will be performed would be considered an enclosed space. Consequently, a build up of combustible gases (VOCs) and/or depleted oxygen levels would represent a significant hazard during remedial activities inside the containment strucutre. Measurement of these gases will be accomplished with a combined combustible gas indicator and oxygen meter (CGI/$O_2$). The CGI/O2 meter will be calibrated on a daily basis using factory-supplied calibration gas.

### 3.4.4 Carbon Monoxide

Since diesel or gasoline powered equipment will be used inside the containment structures during remedial activities, monitoring for buildup of carbon monoxide (CO) from exhaust will be performed. The CO meter will be calibrated daily using factory-supplied calibration gas.

### 3.4.5 Work Zone Air Monitoring

Real time air monitoring within the work area during all remedial tasks will be performed with the PID, particulate monitor, CGI/$O_2$ meter, and CO meter. Measurements will be taken prior to commencement of work and continuously during the work as outlined in the table below. Measurements will be made as close to the workers as practical and at the breathing height of the workers.

The FSO shall set up the equipment and confirm that it is working properly. His/her designee may oversee the air measurements during the day. The initial measurement for the day will be performed before the start of work and will establish the background level for that day. The final measurement for the day will be performed after the end of work. The action levels and required responses are listed in the table below.

| Instrument | Action Level | Response Action |
|---|---|---|
| PID | Less than 10 ppm in breathing zone. | Level D or D-Modified |
| | Between 10 and 500 ppm | Level C |
| | More than 500 ppm | Stop work. Resume work when readings are less than 500 ppm. |
| Particulate monitor | Less than 5 $mg/m^3$ | Level D |
| | Between 5 $mg/m^3$ and 125 $mg/m^3$ | Level C. Apply dust suppression measures. If < 2.5 $mg/m^3$, resume work using Level D. Otherwise, use Level C. |
| | Above 125 $mg/m^3$ | Stop work. Apply additional dust suppression measures. Resume work when less than 125 $mg/m^3$. |
| Combustible Gas Indicator | Less than 20% LEL | Continue Work |
| | Between 20% LEL and 80% LEL | Stop Work. Resume work when less than 20% LEL |
| | Above 80% LEL | **EVACUATE CONTAINMENT STRUCTURE** |
| Oxygen monitor | Above 19.5% | Continue Work |
| | Below 19.5% | Stop Work. Resume work when more than 19.5% |
| Carbon Monoxide Monitor | Less than 25 ppm | Continue Work |
| | Above 25 ppm | Stop work. Resume work when less than 25 ppm |

### 3.4.6 Community Air Monitoring

Community air monitoring will be performed in accordance with in the Air Monitoring Plan.

## 3.5 Personal Protection Equipment

The personal protection equipment required for various kinds of site investigation tasks are based on 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, Appendix B, "General Description and Discussion of the Levels of Protection and Protective Gear."

All on-site site personnel shall wear, at a minimum, Level D personal protective equipment. There is known LNAPL and DNAPL contamination on the site. When work is conducted in areas near potential NAPL contamination is present, workers shall where, at a minimum, Level D modified personal protective equipment. The protection will be based on the air monitoring described in Section 3.4.

| LEVEL OF PROTECTION & PPE | | |
|---|---|---|
| **Level D**<br>(x) Steel Toe Shoes<br>(x) Hard Hat (within 25 ft of drill rig/excavator)<br>(x) Work Gloves | (x) Safety Glasses<br>( ) Face Shield<br>(x) Ear Plugs (within 25 ft of drill rig/excavator)<br>(x) Latex Gloves | Yes |
| Level D Modified<br>***(in addition to Level D)***<br>(x) Tyvek Coveralls -or- | (x) Nitrile Gloves<br>( ) Overboots<br>(x ) Saranex Coveralls | Potential Contact with NAPL |
| **Level C *(in addition to Level D – Modified)***<br>( ) Half-Face Respirator<br>(x) Full Face Respirator<br>( ) Full-Face PAPR | ( ) Particulate Cartridge<br>( ) Organic Cartridge<br>(x) Dual Organic/ Particulate Cartridge | If PID > 10 ppm (breathing zone) |

All personal protective equipment used during the course of this field investigation must meet the following OSHA standards:

| Type of Protection | Regulation | Source |
|---|---|---|
| Eye and Face | 29 CFR 1910.133<br>29 CFR 1926.102 | ANSI Z87.1-1968 |
| Respiratory | 29 CFR 1910.134<br>29 CFR 1926.103 | ANSI Z88.1-1980 |
| Head | 29 CFR 1910.135<br>29 CFR 1926.100 | ANSI Z89.1-1969 |
| Foot | 29 CFR 1910.136<br>29 CFR 1926.96 | ANSI Z41.1-1967 |

ANSI – American National Standards Institute

Both the respirator and cartridges specified for use in Level C protection must be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910.1025; 29 CFR 1910.134).

Based on performance criteria of air purifying respirators, they cannot be worn under the following conditions:

- Oxygen deficiency;
- IDLH concentrations;
- High relative humidity; and
- If contaminant levels exceed designated use concentrations.

# 4.0 WORK ZONES AND DECONTAMINATION

## 4.1 Site Access

All vehicle access to the site will be from 47th Road between Center Boulevard and 5th Street, and with specific truck routes and truck staging areas designated. There is an existing perimeter chain link fence around the site which shall remain intact during the duration of the project. Signs, lights, barricades, fencing, and other equipment to delineate work zones, excavation areas, and appropriate site access will be posted as necessary. Twenty-four hour security at the site will be utilized during the duration of work.

## 4.2 Site Work Zones

During any activities involving subsurface disturbance, the work area must be divided into various zones to prevent the spread of contamination, ensure that proper protective equipment is donned, and provide an area for decontamination.

The Exclusion Zone is defined as the area where exposure to impacted media could be encountered. The Contamination Reduction Zone (CRZ) is the area where decontamination procedures take place and is located next to the Exclusion Zone. The Support Zone is the area where support facilities such as vehicles, fire extinguisher, and first aid supplies are located. The emergency staging area (part of the Support Zone) is the area where all workers on-site would assemble in the event of an emergency. A summary of these areas is provided below. These zones may be changed by FSO, depending on that day's activities. All field personnel will be informed of the location of these zones before work begins.

| **Exclusion Zone** | **CRZ** | **Support Zone** |
|---|---|---|
| 25 ft from open excavation (when moving fill or grading activities)<br>OR<br>Within containment structure | 50 ft from open excavation (when moving fill or grading activities)<br>OR<br>Outside of containment structure | As needed |
| **Comments:**<br>Control measures such as signs, caution tape, temporary fencing and/or traffic cones will be placed around the perimeter of the work area when work is being done in the areas of concern to prevent entrance into the CRZ and/or Support Zone.<br>The emergency staging area shall be the available gated entrance to the site on 47th Road. | | |

## 4.3 Decontamination Procedures

### 4.3.1 Personnel Decontamination

Personnel decontamination (decon), if deemed necessary by the FSO, will take place in a designated decontamination area. This area will be delineated during each stage of work. Personnel decontamination will consist of the following steps:

- Soap and potable water wash and potable water rinse of gloves;
- Coverall removal (if applicable);
- Glove removal;
- Disposable clothing removal; and
- Field wash of hands and face.

### 4.3.2 Equipment Decontamination

Any non-disposable sampling equipment for confirmatory sampling or other equipment that is contact with contaminated materials will be decontaminated in accordance with the following procedure:

- Double wash with solution of Simple Green® and clean tap water;
- Double rinse with clean tap water;
- Rinse with clean distilled water; and
- Allow equipment to air dry.

### 4.3.3 Vehicle Decontamination

Vehicle access to the site is from 47th Road between Center Boulevard and 5th Street, and specific truck routes and truck staging areas will be designated. A decontamination pad shall be located at the exit gate, where soil will be washed off the exterior, undercarriage, and wheels of the trucks before leaving the site. Wash water will be collected for treatment and disposal. All loaded trucks will exit the site on the north side and turn east onto 47th Road. No trucks will enter or leave the site on 48th Avenue.

# 5.0 ACCIDENT PREVENTION

## 5.1 Site-Specific Training

The FSO will conduct health and safety training for all on-site personnel at the start of the project, as described in Section 3.1. On a day-to-day basis, individual personnel should be constantly alert for indicators of potentially hazardous situations and for signs and symptoms in themselves and others that warn of hazardous conditions and exposures. Rapid recognition of dangerous situations can avert an emergency. Before daily work assignments, a regular meeting should be held. Discussion should include:

- Tasks to be performed;
- A review of on-site hazards specific to the tasks;
- Daily weather conditions that may effect the work (e.g., heat, wind, rain);
- Time constraints (e.g., rest breaks, cartridge changes);
- Emergency procedures.

## 5.2 Vehicles and Heavy Equipment

Working with large motor vehicles and heavy equipment could be a major hazard at this site. Injuries can result from equipment hitting or running over personnel, impacts from flying objects, or overturning of vehicles. Vehicle and heavy equipment design and operation will be in accordance with 29 CFR, Subpart O, 1926.600 through 1926.602. In particular, the following precautions will be utilized to help prevent injuries/accidents.

- Brakes, hydraulic lines, light signals, fire extinguishers, fluid levels, steering, tires, horn, and other safety devices will be checked at the beginning of each shift;
- Large construction motor vehicles will not be backed up unless:
  - The vehicle has a reverse signal alarm audible above the surrounding noise level; or
  - The vehicle is backed up only when an observer signals that it is safe to do so;
- Heavy equipment or motor vehicle cable will be kept free of all nonessential items, and all loose items will be secured;
- Large construction motor vehicles and heavy equipment will be provided with necessary safety equipment (such as seat belts, roll-over protection, emergency shut-off in case of roll-over, backup warning lights and audible alarms); and
- Blades and buckets will be lowered to the ground and parking brakes will be set before shutting off any heavy equipment or vehicles.

## 5.3 Spill Control Plan

All personnel must take every precaution to minimize the potential for spills during site operations. Any spill shall be reported immediately to the FSO. Spill control apparatus (sorbent materials) will be located on-site. All materials used for the clean up of spills will be containerized and labeled separately from other wastes.

# 6.0 EMERGENCY RESPONSE

## 6.1 Emergency Procedures

In the event that an emergency develops on site, the procedures delineated herein are to be immediately followed. Emergency conditions are considered to exist if:

- Any member of the field crew is involved in an accident or experiences any adverse effects or symptoms of exposure while on site; and
- A condition is discovered that suggests the existence of a situation more hazardous than anticipated.

General emergency procedures, and specific procedures for personal injury, chemical exposure and radiation exposure, are described below. In the event of an accident or emergency, an Incident Report form should be filled out and placed in the project file. An example Incident Report form is provided in Attachment D. Information on emergency hand signals is provided in Attachment E.

### 6.1.1 Chemical Exposure

If a member of the field crew demonstrates symptoms of chemical exposure the procedures outlined below should be followed:

- Another team member (buddy) should remove the individual from the immediate area of contamination. The buddy should communicate to the Field Team Leader (via voice and hand signals) of the chemical exposure. The Field Team Leader should contact the appropriate emergency response agency.
- Precautions should be taken to avoid exposure of other individuals to the chemical.
- If the chemical is on the individual's clothing, the chemical should be neutralized or removed if it is safe to do so.
- If the chemical has contacted the skin, the skin should be washed with copious amounts of water.
- In case of eye contact, an emergency eye wash should be used. Eyes should be washed for at least 15 minutes.
- All chemical exposure incidents must be reported in writing to the AKRF Health and Safety Officer. The FSO or Field Team Leader is responsible for completing the Incident Report Form.

### 6.1.2 Personal Injury

In case of personal injury at the site, the following procedures should be followed:

- Another team member (buddy) should signal the Field Team Leader that an injury has occurred.
- A field team member trained in first aid can administer treatment to an injured worker.

- If deemed necessary, the victim should then be transported to the nearest hospital or medical center. If necessary, an ambulance should be called to transport the victim.
- The Field Team Leader or FSO is responsible for making certain that an Incident Report Form is completed. This form is to be submitted to the AKRF Health and Safety Officer. Follow-up action should be taken to correct the situation that caused the accident.
- Any incident (near miss, property damage, first aid, medical treatment, etc.) must be reported.

A first-aid kit, eye-wash, and blood-born pathogens kit will be kept on-site during the field activities.

### 6.1.3 Evacuation Procedures

- The Field Team Leader will initiate evacuation procedures by signaling to leave the site or containment structure;
- All personnel in the work area should evacuate the area and meet in the common designated area;
- All personnel suspected to be in or near the contract work area should be accounted for and the whereabouts or missing persons determined immediately; and
- The Field Team Leader will then give further instruction.

### 6.1.4 Procedures Implemented in the Event of a Major Fire, Explosion, or Emergency

- Notify the paramedics and/or fire department, as necessary;
- Signal the evacuation procedure previously outlined and implement the entire procedure;
- Isolate the area;
- Stay upwind of any fire;
- Keep the area surrounding the problem source clear after the incident occurs;
- Complete accident report for and distribute to appropriate personnel.

## 6.2 Hospital Directions

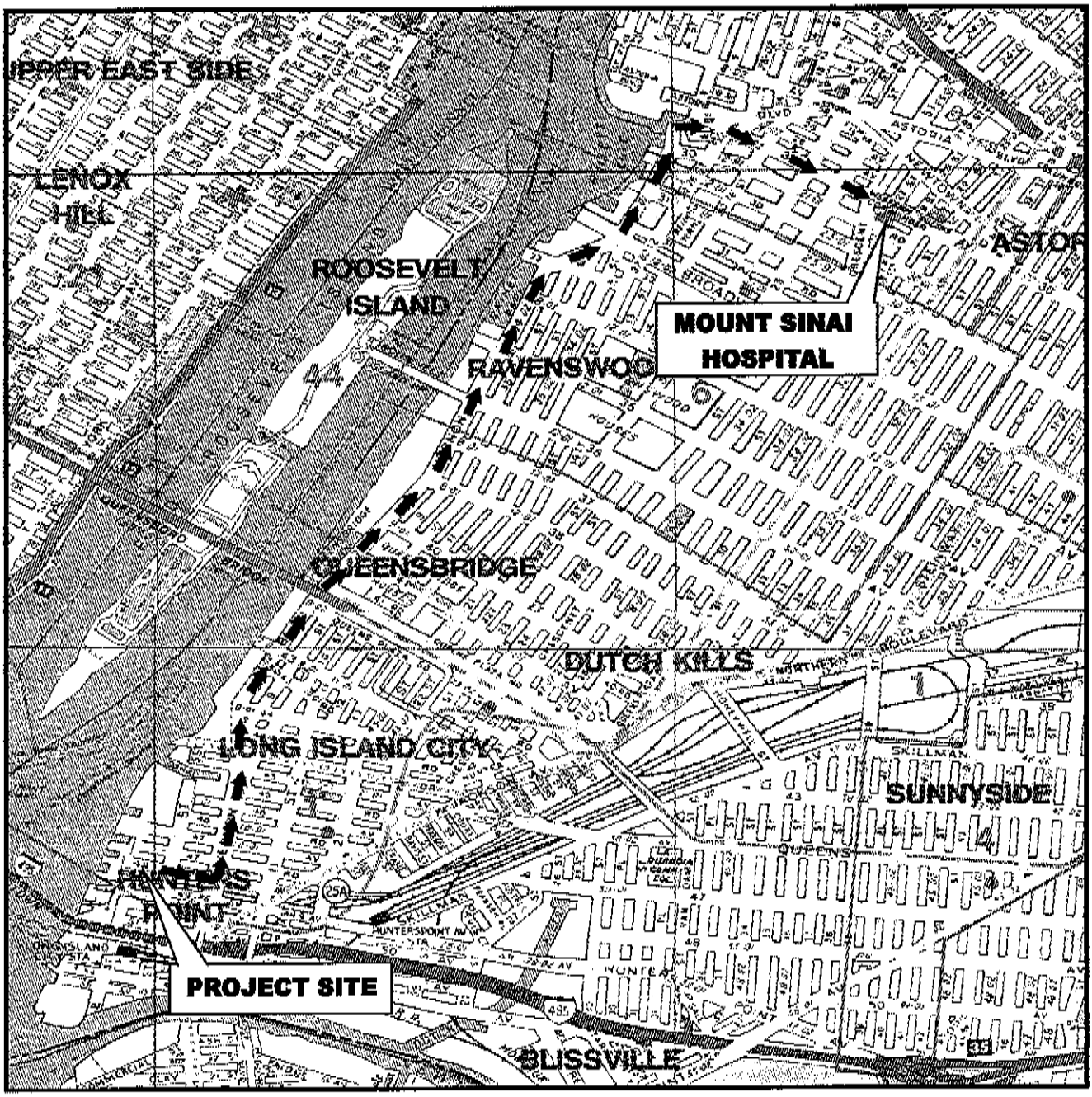
The address and directions to the nearest hospital to the project site are provided below:

| | |
|---|---|
| **Hospital Name:** | Mt. Sinai Hospital of Queens |
| **Phone Number:** | 718-932-1000 |
| **Address/Location:** | 25-10 30th Ave., – Long Island City, New York<br>(30th Ave between Crescent Street and 29th Street) |
| **Directions:** | Go EAST on 48th Ave to *Vernon Blvd*<br>LEFT onto *Vernon Blvd*<br>RIGHT onto *30th Ave*<br>Go past Crescent Street, the hospital will be on the right. |

A map showing the driving route to the hospital is provided on the following page.

## 6.3 EMERGENCY CONTACTS

| Company | Individual Name | Title | Contact Number |
|---|---|---|---|
| AKRF | Michelle Lapin | Project Director | 646-388-9520 |
| | Andy Rudko | Investigation Project Manager | 646-388-9526 |
| | Marc Godick | Remediation Project Manager | 914-947-7336 |
| AvalonBay Communities | Steve Spiro | Client Representative | 212-309-1616 |
| QWDC | David Parker | Dir. Of Operations | 212-803-3633 |
| Remediation Contractor (TBD) | TBD | TBD | TBD |
| NYSDEC | Vadim Brevdo | Project Manager | 718-482-4891 |
| | Spill Hotline | | 800-457-7362 |
| NYSDOH | Dawn Hettrick | | 800-458-1158 ext. 27880 |
| Ambulance, Fire Department and Police Department | | | 911 |
| National Response Center | | | 800-424-8802 |
| Poison Control Center | | | 800-222-1222 |

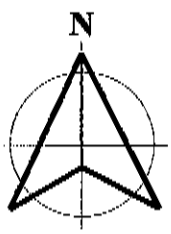






QUADRANGLE

SOURCE:
HAGSTROM MAP - NEW YORK CITY 5 BOROUGH ATLAS DATED 1994.




**QUEENS WEST PARCEL 9**
Queens, New York

**HOSPITAL ROUTE MAP**

AKRF
**Environmental Consultants**
440 Park Avenue South, New York, N.Y.

DATE
**08.16.05**
PROJECT NO.
**10516**
FIGURE NO.
**1**

2004 AKRF, Inc. Environmental Consultants M:\DRIVE\10516 QUEENS WEST SITE 8&9\10516-0001_hosp-route.pub

# 7.0 APPROVAL AND ACKNOWLEDGEMENT OF HASP

**HASP APPROVAL:**

| | | | |
|---|---|---|---|
| Signed: | | Date: | |
| | Project Manager | | |
| Signed: | | Date: | |
| | Field Safety Officer | | |

Below is an affidavit that must be signed by all workers who enter the site. A copy of the HASP must be on-site at all times and will be kept by the FSO.

**AFFIDAVIT**

I, _____ (name), of _____ (company name), have read the Health and Safety Plan (HASP) for the Queens West site. I agree to conduct all on-site work in accordance with the requirements set forth in this HASP and understand that failure to comply with this HASP could lead to my removal from the site.

| | | | |
|---|---|---|---|
| Signed: | | Date: | |
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**ATTACHMENT A**

**OSHA JOB SAFETY & HEALTH PROTECTION POSTER**

# You Have a Right to a Safe and Healthful Workplace.

# IT'S THE LAW!

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in the inspection.
- You can file a complaint with OSHA within 30 days of discrimination by your employer for making safety and health complaints or for exercising your rights under the *OSH Act*.
- You have a right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violation.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records or records of your exposure to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.



The *Occupational Safety and Health Act of 1970 (OSH Act)*, P.L. 91-596, assures safe and healthful working conditions for working men and women throughout the Nation. The Occupational Safety and Health Administration, in the U.S. Department of Labor, has the primary responsibility for administering the *OSH Act*. The rights listed here may vary depending on the particular circumstances. To file a complaint, report an emergency, or seek OSHA advice, assistance, or products, call 1-800-321-OSHA or your nearest OSHA office • Atlanta (404) 562-2300 • Boston (617) 565-9860 • Chicago (312) 353-2220 • Dallas (214) 767-4731 • Denver (303) 844-1600 • Kansas City (816) 426-5861 • New York (212) 337-2378 • Philadelphia (215) 861-4900 • San Francisco (415) 975-4310 • Seattle (206) 553-5930. Teletypewriter (TTY) number is 1-877-889-5627. To file a complaint online or obtain more information on OSHA federal and state programs, visit OSHA's website at www.osha.gov. If your workplace is in a state operating under an OSHA-approved plan, your employer must post the required state equivalent of this poster.

## 1-800-321-OSHA

## www.osha.gov

U.S. Department of Labor • Occupational Safety and Health Administration • OSHA 3165

**ATTACHMENT B**

**MATERIAL SAFETY DATA SHEETS**

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

# BENZENE
## CAS # 71-43-2



**This fact sheet answers the most frequently asked health questions (FAQs) about benzene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**HIGHLIGHTS: Benzene is a widely used chemical formed from both natural processes and human activities. Breathing benzene can cause drowsiness, dizziness, and unconsciousness; long-term benzene exposure causes effects on the bone marrow and can cause anemia and leukemia. Benzene has been found in at least 813 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

### What is benzene?

(Pronounced bĕn/zēn′)

Benzene is a colorless liquid with a sweet odor. It evaporates into the air very quickly and dissolves slightly in water. It is highly flammable and is formed from both natural processes and human activities.

Benzene is widely used in the United States; it ranks in the top 20 chemicals for production volume. Some industries use benzene to make other chemicals which are used to make plastics, resins, and nylon and synthetic fibers. Benzene is also used to make some types of rubbers, lubricants, dyes, detergents, drugs, and pesticides. Natural sources of benzene include volcanoes and forest fires. Benzene is also a natural part of crude oil, gasoline, and cigarette smoke.

### What happens to benzene when it enters the environment?

- Industrial processes are the main source of benzene in the environment.
- Benzene can pass into the air from water and soil.
- It reacts with other chemicals in the air and breaks down within a few days.
- Benzene in the air can attach to rain or snow and be carried back down to the ground.
- It breaks down more slowly in water and soil, and can pass through the soil into underground water.
- Benzene does not build up in plants or animals.

### How might I be exposed to benzene?

- Outdoor air contains low levels of benzene from tobacco smoke, automobile service stations, exhaust from motor vehicles, and industrial emissions.
- Indoor air generally contains higher levels of benzene from products that contain it such as glues, paints, furniture wax, and detergents.
- Air around hazardous waste sites or gas stations will contain higher levels of benzene.
- Leakage from underground storage tanks or from hazardous waste sites containing benzene can result in benzene contamination of well water.
- People working in industries that make or use benzene may be exposed to the highest levels of it.
- A major source of benzene exposures is tobacco smoke.

### How can benzene affect my health?

Breathing very high levels of benzene can result in death, while high levels can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Eating or drinking foods containing high levels of benzene can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, and death.

The major effect of benzene from long-term (365 days or longer) exposure is on the blood. Benzene causes harmful effects on the bone marrow and can cause a decrease in red blood cells leading to anemia. It can also cause excessive bleeding and can affect the immune system, increasing the chance for infection.

Some women who breathed high levels of benzene for many months had irregular menstrual periods and a decrease in the size of their ovaries. It is not known whether benzene exposure affects the developing fetus in pregnant women or fertility in men.

Animal studies have shown low birth weights, delayed bone formation, and bone marrow damage when pregnant animals breathed benzene.

## How likely is benzene to cause cancer?

The Department of Health and Human Services (DHHS) has determined that benzene is a known human carcinogen. Long-term exposure to high levels of benzene in the air can cause leukemia, cancer of the blood-forming organs.

## Is there a medical test to show whether I've been exposed to benzene?

Several tests can show if you have been exposed to benzene. There is test for measuring benzene in the breath; this test must be done shortly after exposure. Benzene can also be measured in the blood, however, since benzene disappears rapidly from the blood, measurements are accurate only for recent exposures.

In the body, benzene is converted to products called metabolites. Certain metabolites can be measured in the urine. However, this test must be done shortly after exposure and is not a reliable indicator of how much benzene you have been exposed to, since the metabolites may be present in urine from other sources.

## Has the federal government made recommendations to protect human health?

The EPA has set the maximum permissible level of benzene in drinking water at 0.005 milligrams per liter (0.005 mgL). The EPA requires that spills or accidental releases into the environment of 10 pounds or more of benzene be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a permissible exposure limit of 1 part of benzene per million parts of air (1 ppm) in the workplace during an 8-hour workday, 40-hour workweek.

## Glossary

Anemia: A decreased ability of the blood to transport oxygen.

Carcinogen: A substance with the ability to cause cancer.

CAS: Chemical Abstracts Service.

Chromosomes: Parts of the cells responsible for the development of hereditary characteristics.

Metabolites: Breakdown products of chemicals.

Milligram (mg): One thousandth of a gram.

Pesticide: A substance that kills pests.

## References

This ToxFAQs information is taken from the 1997 Toxicological Profile for Benzene (update) produced by the Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services, Public Health Service in Atlanta, GA.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

# ETHYLBENZENE
## CAS # 100-41-4



**This fact sheet answers the most frequently asked health questions (FAQs) about ethylbenzene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**HIGHLIGHTS: Ethylbenzene is a colorless liquid found in a number of products including gasoline and paints. Breathing very high levels can cause dizziness and throat and eye irritation. Ethylbenzene has been found in at least 731 of the 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

### What is ethylbenzene?

(Pronounced ĕth′ əl bĕn′ zēn′)

Ethylbenzene is a colorless, flammable liquid that smells like gasoline. It is found in natural products such as coal tar and petroleum and is also found in manufactured products such as inks, insecticides, and paints.

Ethylbenzene is used primarily to make another chemical, styrene. Other uses include as a solvent, in fuels, and to make other chemicals.

### What happens to ethylbenzene when it enters the environment?

- Ethylbenzene moves easily into the air from water and soil.
- It takes about 3 days for ethylbenzene to be broken down in air into other chemicals.
- Ethylbenzene may be released to water from industrial discharges or leaking underground storage tanks.
- In surface water, ethylbenzene breaks down by reacting with other chemicals found naturally in water.
- In soil, it is broken down by soil bacteria.

### How might I be exposed to ethylbenzene?

- Breathing air containing ethylbenzene, particularly in areas near factories or highways.
- Drinking contaminated tap water.
- Working in an industry where ethylbenzene is used or made.
- Using products containing it, such as gasoline, carpet glues, varnishes, and paints.

### How can ethylbenzene affect my health?

Limited information is available on the effects of ethylbenzene on people's health. The available information shows dizziness, throat and eye irritation, tightening of the chest, and a burning sensation in the eyes of people exposed to high levels of ethylbenzene in air.

Animals studies have shown effects on the nervous system, liver, kidneys, and eyes from breathing ethylbenzene in air.

### How likely is ethylbenzene to cause cancer?

The EPA has determined that ethylbenzene is not classifiable as to human carcinogenicity.

No studies in people have shown that ethylbenzene exposure can result in cancer. Two available animal studies suggest that ethylbenzene may cause tumors.

## How can ethylbenzene affect children?

Children may be exposed to ethylbenzene through inhalation of consumer products, including gasoline, paints, inks, pesticides, and carpet glue. We do not know whether children are more sensitive to the effects of ethylbenzene than adults.

It is not known whether ethylbenzene can affect the development of the human fetus. Animal studies have shown that when pregnant animals were exposed to ethylbenzene in air, their babies had an increased number of birth defects.

## How can families reduce the risk of exposure to ethylbenzene?

Exposure to ethylbenzene vapors from household products and newly installed carpeting can be minimized by using adequate ventilation.

Household chemicals should be stored out of reach of children to prevent accidental poisoning. Always store household chemicals in their original containers; never store them in containers children would find attractive to eat or drink from, such as old soda bottles. Gasoline should be stored in a gasoline can with a locked cap.

Sometimes older children sniff household chemicals, including ethylbenzene, in an attempt to get high. Talk with your children about the dangers of sniffing chemicals.

## Is there a medical test to show whether I've been exposed to ethylbenzene?

Ethylbenzene is found in the blood, urine, breath, and some body tissues of exposed people. The most common way to test for ethylbenzene is in the urine. This test measures substances formed by the breakdown of ethylbenzene. This test needs to be done within a few hours after exposure occurs, because the substances leave the body very quickly.

These tests can show you were exposed to ethylbenzene, but cannot predict the kind of health effects that might occur.

## Has the federal government made recommendations to protect human health?

The EPA has set a maximum contaminant level of 0.7 milligrams of ethylbenzene per liter of drinking water (0.7 mg/L).

The EPA requires that spills or accidental releases into the environment of 1,000 pounds or more of ethylbenzene be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set an occupational exposure limit of 100 parts of ethylbenzene per million parts of air (100 ppm) for an 8-hour workday, 40-hour workweek.

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for ethylbenzene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

# CREOSOTE

CAS # 8021-39-4, 8001-58-9, 8007-45-2

Division of Toxicology ToxFAQs™ September 2002

**This fact sheet answers the most frequently asked health questions (FAQs) about creosote. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It is important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**HIGHLIGHTS: Creosote is a mixture of many chemicals. Eating food or drinking water with high levels of creosote may cause burning in the mouth and throat, and stomach pain. Long-term contact with creosote has been associated with increased risk of contracting cancer. Creosote has been found in at least 46 of the 1,613 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

## What is creosote?

Creosote is the name used for a variety of products: wood creosote, coal tar creosote, coal tar, coal tar pitch, and coal tar pitch volatiles. These products are mixtures of many chemicals created by burning of beech and other woods, coal, or from the resin of the creosote bush.

Wood creosote is a colorless to yellowish greasy liquid with a smoky odor and burned taste. Coal tar creosote is a thick, oily liquid typically amber to black in color. Coal tar and coal tar pitch are usually thick, black, or dark-brown liquids or semi-solids, with a smoky odor.

Wood creosote has been used as a disinfectant, a laxative, and a cough treatment, but has since been replaced by better medicines. Coal tar products are used in medicines to treat skin diseases such as psoriasis, and also as animal and bird repellents, insecticides, animal dips, and fungicides. Coal tar creosote is the most widely used wood preservative in the United States. Coal tar, coal tar pitch, and coal tar pitch volatiles are used for roofing, aluminum smelting, and coking.

## What happens to creosote when it enters the environment?

- Coal tar creosote is released to water and soil mainly as a result of its use in the wood preservation industry.
- Components of creosote that do not dissolve in water will remain in place in a tar-like mass.
- Some components of coal tar creosote dissolve in water and may move through the soil to groundwater.
- Once in groundwater, it may take years for it to break down.
- Coal tar creosote can build up in plants and animals.
- We do not know what happens to wood creosote when it enters the environment.

## How might I be exposed to creosote?

- Using products that contain creosote to improve skin problems such as eczema or psoriasis.
- Eating herbal remedies containing the leaves from the creosote bush, which are sold as dietary supplements.
- Working in the wood preservative, coke-producing, or asphalt industries.
- Using creosote-treated wood in building fences, bridges, or railroad tracks, or installing telephone poles.
- Living in treated-wood houses that may result in air or skin contact with creosote.
- Drinking water contaminated by a hazardous waste site.

## How can creosote affect my health?

Eating food or drinking water contaminated with high levels of creosotes may cause a burning in the mouth and throat, and stomach pains. Taking large amounts of herbal remedies containing creosote bush leaves may cause damage to the liver or kidney.

Brief direct contact with large amounts of coal tar creosote may result in a rash or severe irritation of the skin, chemical burns of the surfaces of the eyes, convulsions and mental confusion, kidney or liver problems, unconsciousness, and even death. Longer direct skin contact with low levels of

creosote mixtures or their vapors can result in increased light sensitivity, damage to the cornea, and skin damage. Longer exposure to creosote vapors can cause irritation of the respiratory tract.

## How likely is creosote to cause cancer?

Long-term exposure to low levels of creosote, especially direct contact with the skin during wood treatment or manufacture of coal tar creosote-treated products, has resulted in skin cancer and cancer of the scrotum. Cancer of the scrotum in chimney sweeps has been associated with long-term skin exposure to soot and coal tar creosotes. Animal studies have also shown skin cancer from skin exposure to coal tar products.

The International Agency for Research on Cancer (IARC) has determined that coal tar is carcinogenic to humans and that creosote is probably carcinogenic to humans. The EPA has determined that coal tar creosote is a probable human carcinogen.

## How can creosote affect children?

There is no unique exposure pathway of children to creosote. Children exposed to creosote will probably experience the same health effects seen in adults exposed to creosote. Children who played on soil contaminated with creosote had more skin rashes than children who played in uncontaminated areas. We do not know whether children differ from adults in their susceptibility to health effects from creosote.

Studies in animals have shown birth defects in the young of mothers exposed to high levels of creosote during pregnancy, but we do not know whether the same effects would occur in humans. Some animal studies indicate that creosotes may cross the placenta and reach the fetus. Because chemical components (PAHs, cresol, phenols) of coal tar creosote may be stored in body fat, they may be found in breast milk and could pass to nursing infants.

## How can families reduce the risk of exposure to creosote?

- ❑ If you live in a residential area that used to have a wood preservation facility or gas manufacturing plant nearby, wear long-sleeved shirts and long pants when working or playing outside and avoid using water contaminated with creosote.
- ❑ Instruct children not to come in contact with creosote-treated wood when playing on or near railroad tracks, in ditches close to utility poles, in old barns or other farm structures, or on bridges or piers.
- ❑ Avoid using herbal remedies containing the leaves of the creosote bush and seek alternatives to skin remedies containing creosote.
- ❑ If you are exposed to creosote in the workplace, make sure you do not carry the chemical home in your clothing, skin, hair, tools, or other objects from the workplace (shower before going home).

## Is there a medical test to show whether I've been exposed to creosote?

There is no medical test to determine if you have been exposed to creosote. Some components of creosote mixtures can be measured in body tissues, urine, or blood after exposure to creosote. These tests cannot tell whether harmful health effects will occur. The tests are not routinely available at the doctor's office because they require special equipment.

## Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) has set an exposure limit of 0.2 milligrams of coal tar pitch volatiles per cubic meter of air (0.2 mg/m$^3$) in workplace air during an 8-hour day, 40-hour workweek.

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 2002. Toxicological Profile for Creosote (Update). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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# LEAD
## CAS # 7439-92-1



**This fact sheet answers the most frequently asked health questions (FAQs) about lead. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**HIGHLIGHTS: Exposure to lead can happen from breathing workplace air or dust, eating contaminated foods, or drinking contaminated water. Children can be exposed from eating lead-based paint chips or playing in contaminated soil. Lead can damage the nervous system, kidneys, and reproductive system. Lead has been found in at least 1,026 of 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

### What is lead?

(Pronounced lĕd)

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead can be found in all parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing.

Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays.

Because of health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years.

### What happens to lead when it enters the environment?

- Lead itself does not break down, but lead compounds are changed by sunlight, air, and water.
- When lead is released to the air, it may travel long distances before settling to the ground.
- Once lead falls onto soil, it usually sticks to soil particles.
- Movement of lead from soil into groundwater will depend on the type of lead compound and the characteristics of the soil.
- Much of the lead in inner-city soils comes from old houses painted with lead-based paint.

### How might I be exposed to lead?

- Eating food or drinking water that contains lead.
- Spending time in areas where lead-based paints have been used and are deteriorating.
- Working in a job where lead is used.
- Using health-care products or folk remedies that contain lead.
- Engaging in certain hobbies in which lead is used (for example, stained glass).

### How can lead affect my health?

Lead can affect almost every organ and system in your body. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the reproductive system. The effects are the same whether it is breathed or swallowed.

At high levels, lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can also damage the male reproductive system. The connection between these effects and exposure to low levels of lead is uncertain.

### How likely is lead to cause cancer?

The Department of Health and Human Services has determined that lead acetate and lead phosphate may reasonably

be anticipated to be carcinogens based on studies in animals. There is inadequate evidence to clearly determine lead's carcinogenicity in people.

## How can lead affect children?

Small children can be exposed by eating lead-based paint chips, chewing on objects painted with lead-based paint, or swallowing house dust or soil that contains lead.

Children are more vulnerable to lead poisoning than adults. A child who swallows large amounts of lead may develop blood anemia, severe stomachache, muscle weakness, and brain damage. A large amount of lead might get into a child's body if the child ate small pieces of old paint that contained large amounts of lead. If a child swallows smaller amounts of lead, much less severe effects on blood and brain function may occur. Even at much lower levels of exposure, lead can affect a child's mental and physical growth.

Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common if the mother or baby was exposed to high levels of lead.

## How can families reduce the risk of exposure to lead?

Avoid exposure to sources of lead. Do not allow children to chew or mouth painted surfaces that may have been painted with lead-based paint (homes built before 1978). Run your water for 15 to 30 seconds before drinking or cooking with it. This will get rid of lead that may have leached out of pipes. Some types of paints and pigments that are used as make-up or hair coloring contain lead. Keep these kinds of products away from children. Wash children's hands and faces often to remove lead dusts and soil, and regularly clean the house of dust and tracked in soil.

## Is there a medical test to show whether I've been exposed to lead?

A blood test is available to measure the amount of lead in your blood and to estimate the amount of your exposure to lead. Blood tests are commonly used to screen children for lead poisoning. Lead in teeth and bones can be measured with X-rays, but this test is not as readily available. Medical treatment may be necessary in children if the lead concentration in blood is higher than 45 micrograms per deciliter (45 µg/dL).

## Has the federal government made recommendations to protect human health?

The Centers for Disease Control and Prevention (CDC) recommends that children ages 1 and 2 be screened for lead poisoning. Children who are 3 to 6 years old should be tested for lead if they have never been tested for lead before and if they receive services from public assistance programs; if they live in or regularly visit a building built before 1950; if they live in or visit a home built before 1978 that is being remodeled; or if they have a brother, sister, or playmate who has had lead poisoning. CDC considers children to have an elevated level of lead if the amount in the blood is 10 µg/dL.

The EPA requires lead in air not to exceed 1.5 micrograms per cubic meter (1.5 $\mu g/m^3$) averaged over 3 months. EPA limits lead in drinking water to 15 µg per liter.

The Occupational Health and Safety Administration (OSHA) develops regulations for workers exposed to lead. The Clean Air Act Amendments of 1990 banned the sale of leaded gasoline. The Federal Hazardous Substance Act bans children's products that contain hazardous amounts of lead.

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for lead. Atlanta, GA; U.S. Department of Health and Human Services, Public Health Service.

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# MERCURY
## CAS # 7439-97-6



**This fact sheet answers the most frequently asked health questions (FAQs) about mercury. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**HIGHLIGHTS: Exposure to mercury occurs from breathing contaminated air, ingesting contaminated water and food, and having dental and medical treatments. Mercury, at high levels, may damage the brain, kidneys, and developing fetus. This chemical has been found in at least 714 of 1,467 National Priorities List sites identified by the Environmental Protection Agency.**

### What is mercury?

(Pronounced mûr'kyə-rē)

Mercury is a naturally occurring metal which has several forms. The metallic mercury is a shiny, silver-white, odorless liquid. If heated, it is a colorless, odorless gas.

Mercury combines with other elements, such as chlorine, sulfur, or oxygen, to form inorganic mercury compounds or "salts," which are usually white powders or crystals. Mercury also combines with carbon to make organic mercury compounds. The most common one, methylmercury, is produced mainly by microscopic organisms in the water and soil. More mercury in the environment can increase the amounts of methylmercury that these small organisms make.

Metallic mercury is used to produce chlorine gas and caustic soda, and is also used in thermometers, dental fillings, and batteries. Mercury salts are sometimes used in skin lightening creams and as antiseptic creams and ointments.

### What happens to mercury when it enters the environment?

- Inorganic mercury (metallic mercury and inorganic mercury compounds) enters the air from mining ore deposits, burning coal and waste, and from manufacturing plants.
- It enters the water or soil from natural deposits, disposal of wastes, and volcanic activity.
- Methylmercury may be formed in water and soil by small organisms called bacteria.
- Methylmercury builds up in the tissues of fish. Larger and older fish tend to have the highest levels of mercury.

### How might I be exposed to mercury?

- Eating fish or shellfish contaminated with methylmercury.
- Breathing vapors in air from spills, incinerators, and industries that burn mercury-containing fuels.
- Release of mercury from dental work and medical treatments.
- Breathing contaminated workplace air or skin contact during use in the workplace (dental, health services, chemical, and other industries that use mercury).
- Practicing rituals that include mercury.

### How can mercury affect my health?

The nervous system is very sensitive to all forms of mercury. Methylmercury and metallic mercury vapors are more harmful than other forms, because more mercury in these forms reaches the brain. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus. Effects on brain functioning may result in irritability, shyness, tremors, changes in vision or hearing, and memory problems.

Short-term exposure to high levels of metallic mercury vapors may cause effects including lung damage, nausea,

vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation.

## How likely is mercury to cause cancer?

There are inadequate human cancer data available for all forms of mercury. Mercuric chloride has caused increases in several types of tumors in rats and mice, and methylmercury has caused kidney tumors in male mice. The EPA has determined that mercuric chloride and methylmercury are possible human carcinogens.

## How can mercury affect children?

Very young children are more sensitive to mercury than adults. Mercury in the mother's body passes to the fetus and may accumulate there. It can also can pass to a nursing infant through breast milk. However, the benefits of breast feeding may be greater than the possible adverse effects of mercury in breast milk.

Mercury's harmful effects that may be passed from the mother to the fetus include brain damage, mental retardation, incoordination, blindness, seizures, and inability to speak. Children poisoned by mercury may develop problems of their nervous and digestive systems, and kidney damage.

## How can families reduce the risk of exposure to mercury?

Carefully handle and dispose of products that contain mercury, such as thermometers or fluorescent light bulbs. Do not vacuum up spilled mercury, because it will vaporize and increase exposure. If a large amount of mercury has been spilled, contact your health department. Teach children not to play with shiny, silver liquids.

Properly dispose of older medicines that contain mercury. Keep all mercury-containing medicines away from children.

Pregnant women and children should keep away from rooms where liquid mercury has been used.

Learn about wildlife and fish advisories in your area from your public health or natural resources department.

## Is there a medical test to show whether I've been exposed to mercury?

Tests are available to measure mercury levels in the body. Blood or urine samples are used to test for exposure to metallic mercury and to inorganic forms of mercury. Mercury in whole blood or in scalp hair is measured to determine exposure to methylmercury. Your doctor can take samples and send them to a testing laboratory.

## Has the federal government made recommendations to protect human health?

The EPA has set a limit of 2 parts of mercury per billion parts of drinking water (2 ppb).

The Food and Drug Administration (FDA) has set a maximum permissible level of 1 part of methylmercury in a million parts of seafood (1 ppm).

The Occupational Safety and Health Administration (OSHA) has set limits of 0.1 milligram of organic mercury per cubic meter of workplace air (0.1 mg/m$^3$) and 0.05 mg/m$^3$ of metallic mercury vapor for 8-hour shifts and 40-hour work weeks.

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 1999. Toxicological profile for mercury. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

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# NAPHTHALENE
## CAS # 91-20-3



**This fact sheet answers the most frequently asked health questions (FAQs) about naphthalene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**SUMMARY: Exposure to naphthalene happens mostly from breathing air contaminated from the burning of wood or fossil fuels, industrial discharges, tobacco smoke, or moth repellents. Exposure to large amounts of naphthalene may damage or destroy some of your red blood cells. Naphthalene has been found in at least 536 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

### What is naphthalene?

(Pronounced năf'thə-lēn')

Naphthalene is a white solid that is found naturally in fossil fuels. Burning tobacco or wood produces naphthalene. It has a strong, but not unpleasant smell.

The major products made from naphthalene are moth repellents. It is also used for making dyes, resins, leather, tanning agents, and the insecticide, carbaryl.

### What happens to naphthalene when it enters the environment?

- Naphthalene enters the environment from industrial uses, and from its use as a moth repellent.
- It also enters from the burning of wood or tobacco, and from accidental spills.
- Naphthalene evaporates easily.
- In air, moisture and sunlight break it down, often within 1 day.
- Naphthalene in water is destroyed by bacteria or evaporates into the air.
- Naphthalene binds weakly to soils and sediment.
- It does not accumulate in animals or fish.
- If dairy cows are exposed to naphthalene, some of it will be in their milk.
- If laying hens are exposed, some of it will be in their eggs.

### How might I be exposed to naphthalene?

- Breathing low levels in outdoor air.
- Breathing air contaminated from industrial discharges or from burning wood or fossil fuels.
- Breathing air in homes or businesses where cigarettes are smoked, wood is burned, or moth repellents are used.
- Drinking water from contaminated wells.
- Touching clothing, blankets, or coverlets that are treated with naphthalene.

### How can naphthalene affect my health?

Exposure to large amounts of naphthalene may damage or destroy some of your red blood cells. This could cause you to have too few red blood cells until your body replaces the destroyed cells. People, particularly children, have developed this problem after eating naphthalene-containing mothballs or deodorant blocks. Some of the symptoms of this

problem are fatigue, lack of appetite, restlessness, and pale skin. Exposure to large amounts of naphthalene may also cause nausea, vomiting, diarrhea, blood in the urine, and a yellow color to the skin.

Animals sometimes develop cloudiness in their eyes after swallowing naphthalene. It is not clear if this also develops in people.

When mice were repeatedly exposed to naphthalene vapors for 2 years, their noses and lungs became inflamed and irritated.

## How likely is naphthalene to cause cancer?

The Department of Health and Human Services (DHHS), the International Agency for Research on Cancer (IARC) and the EPA have not classified naphthalene as to its human carcinogenicity.

No studies are available in people. Naphthalene has caused cancer in studies in female mice, but not in male mice or in rats of either sex.

## Is there a medical test to show whether I've been exposed to naphthalene?

Tests are available that measure levels of naphthalene and its breakdown products in urine, stool, blood, or maternal milk. A small sample of your body fat can also be removed and analyzed for naphthalene. These tests are not routinely available in a doctor's office. However, a sample taken in a doctor's office can be sent to a special laboratory, if needed.

These tests cannot determine exactly how much naphthalene you were exposed to or predict whether harmful effects will occur.

## Has the federal government made recommendations to protect human health?

The EPA recommends that children not drink water containing over 0.5 parts of naphthalene per million parts of water (0.5 ppm) for more than 10 days, or 0.4 ppm for longer than 7 years. Adults should not drink water with more than 1 ppm for more than 7 years. For water consumed over a lifetime, the EPA suggests it contain no more than 0.02 ppm naphthalene. The EPA requires that discharges or spills into the environment of 100 pounds or more be reported.

The Occupational Safety and Health Administration (OSHA) has set a limit of 10 parts per million (10 ppm) for the level of naphthalene in workplace air over an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) considers more than 250 ppm of naphthalene in air to be immediately dangerous to life or health. This is the exposure level of a chemical that is likely to cause permanent health problems or death.

## Glossary

Carcinogenicity: Ability of a substance to cause cancer.

CAS: Chemical Abstracts Service.

Insecticide: A substance that kills insects.

Sediment: Mud and debris that have settled to the bottom of a body of water.

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene (update). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Services.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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# POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

Agency for Toxic Substances and Disease Registry ToxFAQs September 1996

**This fact sheet answers the most frequently asked health questions (FAQs) about polycyclic aromatic hydrocarbons (PAHs). For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**SUMMARY: Exposure to polycyclic aromatic hydrocarbons usually occurs by breathing air contaminated by wild fires or coal tar, or by eating foods that have been grilled. PAHs have been found in at least 600 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

## What are polycyclic aromatic hydrocarbons?

(Pronounced pŏl'ĭ-sī'klĭk ăr'ə-măt'ĭk hī'drə-kar'bənz)

Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot.

Some PAHs are manufactured. These pure PAHs usually exist as colorless, white, or pale yellow-green solids. PAHs are found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides.

## What happens to PAHs when they enter the environment?

- PAHs enter the air mostly as releases from volcanoes, forest fires, burning coal, and automobile exhaust.
- PAHs can occur in air attached to dust particles.
- Some PAH particles can readily evaporate into the air from soil or surface waters.
- PAHs can break down by reacting with sunlight and other chemicals in the air, over a period of days to weeks.
- PAHs enter water through discharges from industrial and wastewater treatment plants.
- Most PAHs do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers.
- Microorganisms can break down PAHs in soil or water after a period of weeks to months.
- In soils, PAHs are most likely to stick tightly to particles; certain PAHs move through soil to contaminate underground water.
- PAH contents of plants and animals may be much higher than PAH contents of soil or water in which they live.

## How might I be exposed to PAHs?

- Breathing air containing PAHs in the workplace of coking, coal-tar, and asphalt production plants; smokehouses; and municipal trash incineration facilities.
- Breathing air containing PAHs from cigarette smoke, wood smoke, vehicle exhausts, asphalt roads, or agricultural burn smoke.
- Coming in contact with air, water, or soil near hazardous waste sites.
- Eating grilled or charred meats; contaminated cereals, flour, bread, vegetables, fruits, meats; and processed or pickled foods.
- Drinking contaminated water or cow's milk.

- Nursing infants of mothers living near hazardous waste sites may be exposed to PAHs through their mother's milk.

## How can PAHs affect my health?

Mice that were fed high levels of one PAH during pregnancy had difficulty reproducing and so did their offspring. These offspring also had higher rates of birth defects and lower body weights. It is not known whether these effects occur in people.

Animal studies have also shown that PAHs can cause harmful effects on the skin, body fluids, and ability to fight disease after both short- and long-term exposure. But these effects have not been seen in people.

## How likely are PAHs to cause cancer?

The Department of Health and Human Services (DHHS) has determined that some PAHs may reasonably be expected to be carcinogens.

Some people who have breathed or touched mixtures of PAHs and other chemicals for long periods of time have developed cancer. Some PAHs have caused cancer in laboratory animals when they breathed air containing them (lung cancer), ingested them in food (stomach cancer), or had them applied to their skin (skin cancer).

## Is there a medical test to show whether I've been exposed to PAHs?

In the body, PAHs are changed into chemicals that can attach to substances within the body. There are special tests that can detect PAHs attached to these substances in body tissues or blood. However, these tests cannot tell whether any health effects will occur or find out the extent or source of your exposure to the PAHs. The tests aren't usually available in your doctor's office because special equipment is needed to conduct them.

## Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) has set a limit of 0.2 milligrams of PAHs per cubic meter of air (0.2 mg/m$^3$). The OSHA Permissible Exposure Limit (PEL) for mineral oil mist that contains PAHs is 5 mg/m$^3$ averaged over an 8-hour exposure period.

The National Institute for Occupational Safety and Health (NIOSH) recommends that the average workplace air levels for coal tar products not exceed 0.1 mg/m$^3$ for a 10-hour workday, within a 40-hour workweek. There are other limits for workplace exposure for things that contain PAHs, such as coal, coal tar, and mineral oil.

## Glossary

Carcinogen: A substance that can cause cancer.

Ingest: Take food or drink into your body.

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for polycyclic aromatic hydrocarbons. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs Internet address via WWW is http://www.atsdr.cdc.gov/toxfaq.html ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

# TOLUENE
## CAS # 108-88-3

Division of Toxicology ToxFAQs™ February 2001

**This fact sheet answers the most frequently asked health questions (FAQs) about toluene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**HIGHLIGHTS: Exposure to toluene occurs from breathing contaminated workplace air, in automobile exhaust, some consumer products paints, paint thinners, fingernail polish, lacquers, and adhesives. Toluene affects the nervous system. Toluene has been found at 959 of the 1,591 National Priority List sites identified by the Environmental Protection Agency.**

### What is toluene?

Toluene is a clear, colorless liquid with a distinctive smell. Toluene occurs naturally in crude oil and in the tolu tree. It is also produced in the process of making gasoline and other fuels from crude oil and making coke from coal.

Toluene is used in making paints, paint thinners, fingernail polish, lacquers, adhesives, and rubber and in some printing and leather tanning processes.

### What happens to toluene when it enters the environment?

❑ Toluene enters the environment when you use materials that contain it. It can also enter surface water and groundwater from spills of solvents and petroleum products as well as from leasking underground storage tanks at gasoline stations and other facilities.

❑ When toluene-containing products are placed in landfills or waste disposal sites, the toluene can enter the soil or water near the waste site.

❑ Toluene does not usually stay in the environment long.

❑ Toluene does not concentrate or buildup to high levels in animals.

### How might I be exposed to toluene?

❑ Breathing contaminated workplace air or automobile exhaust.

❑ Working with gasoline, kerosene, heating oil, paints, and lacquers.

❑ Drinking contaminated well-water.

❑ Living near uncontrolled hazardous waste sites containing toluene products.

### How can toluene affect my health?

Toluene may affect the nervous system. Low to moderate levles can cause tiredness, confusion, weakness, drunken-type actions, memory loss, nausea, loss of appetite, and

hearing and color vision loss. These symptoms usually disappear when exposure is stopped.

Inhaling High levels of toluene in a short time can make you feel light-headed, dizzy, or sleepy. It can also cause unconsciousness, and even death.

High levels of toluene may affect your kidneys.

## How likely is toluene to cause cancer?

Studies in humans and animals generally indicate that toluene does not cause cancer.

The EPA has determined that the carcinogenicity of toluene can not be classified.

## How can toluene affect children?

It is likely that health effects seen in children exposed to toluene will be similar to the effects seen in adults. Some studies in animals suggest that babies may be more sensitive than adults.

Breathing very high levels of toluene during pregnancy can result in children with birth defects and retard mental abilities, and growth. We do not know if toluene harms the unborn child if the mother is exposed to low levels of toluene during pregnancy.

## How can families reduce the risk of exposure to toluene?

❑ Use toluene-containing products in well-ventilated areas.

❑ When not in use, toluene-containing products should be tightly covered to prevent evaporation into the air.

## Is there a medical test to show whether I've been exposed to toluene?

There are tests to measure the level of toluene or its breakdown products in exhaled air, urine, and blood. To determine if you have been exposed to toluene, your urine or blood must be checked within 12 hours of exposure. Several other chemicals are also changed into the same breakdown products as toluene, so some of these tests are not specific for toluene.

## Has the federal government made recommendations to protect human health?

EPA has set a limit of 1 milligram per liter of drinking water (1 mg/L).

Discharges, releases, or spills of more than 1,000 pounds of toluene must be reported to the National Response Center.

The Occupational Safety and Health Administration has set a limit of 200 parts toluene per million of workplace air (200 ppm).

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 2000. Toxicological Profile for Toluene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

**Where can I get more information?** For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop F-32, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 770-488-4178. ToxFAQs™ Internet address is http://www.atsdr.cdc.gov/toxfaq.html. ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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# XYLENE
## CAS # 1330-20-7



**This fact sheet answers the most frequently asked health questions (FAQs) about xylene. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**SUMMARY: Exposure to xylene occurs in the workplace and when you use paint, gasoline, paint thinners and other products that contain it. People who breathe high levels may have dizziness, confusion, and a change in their sense of balance. This substance has been found in at least 658 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).**

### What is xylene?

(Pronounced zī'lēn)

Xylene is a colorless, sweet-smelling liquid that catches on fire easily. It occurs naturally in petroleum and coal tar and is formed during forest fires. You can smell xylene in air at 0.08–3.7 parts of xylene per million parts of air (ppm) and begin to taste it in water at 0.53–1.8 ppm.

Chemical industries produce xylene from petroleum. It's one of the top 30 chemicals produced in the United States in terms of volume.

Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

### What happens to xylene when it enters the environment?

- Xylene has been found in waste sites and landfills when discarded as used solvent, or in varnish, paint, or paint thinners.
- It evaporates quickly from the soil and surface water into the air.
- In the air, it is broken down by sunlight into other less harmful chemicals.
- It is broken down by microorganisms in soil and water.
- Only a small amount of it builds up in fish, shellfish, plants, and animals living in xylene-contaminated water.

### How might I be exposed to xylene?

- Breathing xylene in workplace air or in automobile exhaust.
- Breathing contaminated air.
- Touching gasoline, paint, paint removers, varnish, shellac, and rust preventatives that contain it.
- Breathing cigarette smoke that has small amounts of xylene in it.
- Drinking contaminated water or breathing air near waste sites and landfills that contain xylene.
- The amount of xylene in food is likely to be low.

### How can xylene affect my health?

Xylene affects the brain. High levels from exposure for short periods (14 days or less) or long periods (more than 1 year) can cause headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Exposure of

people to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties; stomach discomfort; and possibly changes in the liver and kidneys. It can cause unconsciousness and even death at very high levels.

Studies of unborn animals indicate that high concentrations of xylene may cause increased numbers of deaths, and delayed growth and development. In many instances, these same concentrations also cause damage to the mothers. We do not know if xylene harms the unborn child if the mother is exposed to low levels of xylene during pregnancy.

## How likely is xylene to cause cancer?

The International Agency for Research on Cancer (IARC) has determined that xylene is not classifiable as to its carcinogenicity in humans.

Human and animal studies have not shown xylene to be carcinogenic, but these studies are not conclusive and do not provide enough information to conclude that xylene does not cause cancer.

## Is there a medical test to show whether I've been exposed to xylene?

Laboratory tests can detect xylene or its breakdown products in exhaled air, blood, or urine. There is a high degree of agreement between the levels of exposure to xylene and the levels of xylene breakdown products in the urine. However, a urine sample must be provided very soon after exposure ends because xylene quickly leaves the body. These tests are not routinely available at your doctor's office.

## Has the federal government made recommendations to protect human health?

The EPA has set a limit of 10 ppm of xylene in drinking water.

The EPA requires that spills or accidental releases of xylenes into the environment of 1,000 pounds or more must be reported.

The Occupational Safety and Health Administration (OSHA) has set a maximum level of 100 ppm xylene in workplace air for an 8-hour workday, 40-hour workweek.

The National Institute for Occupational Safety and Health (NIOSH) and the American Conference of Governmental Industrial Hygienists (ACGIH) also recommend exposure limits of 100 ppm in workplace air.

NIOSH has recommended that 900 ppm of xylene be considered immediately dangerous to life or health. This is the exposure level of a chemical that is likely to cause permanent health problems or death.

## Glossary

Evaporate: To change from a liquid into a vapor or a gas.

Carcinogenic: Having the ability to cause cancer.

CAS: Chemical Abstracts Service.

ppm: Parts per million.

Solvent: A liquid that can dissolve other substances.

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for xylenes (update). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

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# ZINC
# CAS # 7440-66-6



**This fact sheet answers the most frequently asked health questions (FAQs) about zinc. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. It's important you understand this information because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

**SUMMARY: Exposure to high levels of zinc occurs mostly from eating food, drinking water, or breathing workplace air that is contaminated. Exposure to large amounts of zinc can be harmful. However, zinc is an essential element for our bodies, so too little zinc can also be harmful. This chemical has been found in at least 801 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.**

## What is zinc?

(Pronounced zĭngk)

Zinc is one of the most common elements in the earth's crust. It's found in air, soil, and water, and is present in all foods. Pure zinc is a bluish-white shiny metal.

Zinc has many commercial uses as coatings to prevent rust, in dry cell batteries, and mixed with other metals to make alloys like brass and bronze. A zinc and copper alloy is used to make pennies in the United States.

Zinc combines with other elements to form zinc compounds. Common zinc compounds found at hazardous waste sites include zinc chloride, zinc oxide, zinc sulfate, and zinc sulfide. Zinc compounds are widely used in industry to make paint, rubber, dye, wood preservatives, and ointments.

## What happens to zinc when it enters the environment?

- Some is released into the environment by natural processes, but most comes from activities of people like mining, steel production, coal burning, and burning of waste.
- It attaches to soil, sediments, and dust particles in the air.
- Rain and snow remove zinc dust particles from the air.
- Zinc compounds can move into the groundwater and into lakes, streams, and rivers.
- Most of the zinc in soil stays bound to soil particles.
- It builds up in fish and other organisms, but it doesn't build up in plants.

## How might I be exposed to zinc?

- Ingesting small amounts present in your food and water.
- Drinking contaminated water near manufacturing or waste sites.
- Drinking contaminated water or a beverage that has been stored in metal containers or flows through pipes that have been coated with zinc to resist rust.
- Eating too many dietary supplements that contain zinc.
- Breathing zinc particles in the air at manufacturing sites.

## How can zinc affect my health?

Zinc is an essential element in our diet. **Too** little zinc can cause health problems, but too much zinc is also harmful.

The recommended dietary allowance (RDA) for zinc is 15 milligrams a day for men (15 mg/day); 12 mg/day for women; 10 mg/day for children; and 5 mg/day for infants. Not enough zinc in your diet can result in a loss of appetite, a decreased sense of taste and smell, slow wound healing and

skin sores, or a damaged immune system. Young men who don't get enough zinc may have poorly developed sex organs and slow growth. If a pregnant woman doesn't get enough zinc, her babies may have growth retardation.

Too much zinc, however, can also be damaging to your health. Harmful health effects generally begin at levels from 10-15 times the RDA (in the 100 to 250 mg/day range). Eating large amounts of zinc, even for a short time, can cause stomach cramps, nausea, and vomiting. Taken longer, it can cause anemia, pancreas damage, and lower levels of high density lipoprotein cholesterol (the good form of cholesterol).

Breathing large amounts of zinc (as dust or fumes) can cause a specific short-term disease called metal fume fever. This is believed to be an immune response affecting the lungs and body temperature. We do not know the long-term effects of breathing high levels of zinc.

It is not known if high levels of zinc affect human reproduction or cause birth defects. Rats that were fed large amounts of zinc became infertile or had smaller babies. Irritation was also observed on the skin of rabbits, guinea pigs, and mice when exposed to some zinc compounds. Skin irritation will probably occur in people.

## How likely is zinc to cause cancer?

The Department of Health and Human Services, the International Agency for Research on Cancer, and the Environmental Protection Agency (EPA) have not classified zinc for carcinogenicity.

## Is there a medical test to show whether I've been exposed to zinc?

Zinc can be measured in your blood or feces. This can tell you how much zinc you have been exposed to. Zinc can also be measured in urine, saliva, and hair. The amount of zinc in your hair tells us something about long-term exposure, but the relationship between levels in your hair and the amount that you were exposed to is not clear. These tests are not routinely performed at doctors' offices, but your doctor can take samples and send them to a testing laboratory.

## Has the federal government made recommendations to protect human health?

EPA recommends that there be no more than 5 parts of zinc in 1 million parts of drinking water (5 ppm) because of taste. EPA also requires that releases of more than 1,000 (or in some cases 5,000) pounds of zinc or its compounds into the environment be reported.

The Occupational Safety and Health Administration (OSHA) has set a maximum concentration limit for zinc chloride fumes in workplace air of 1 milligram of zinc per cubic meter of air (1 mg/m$^3$) for an 8-hour workday over a 40-hour work week and 5 mg/m$^3$ for zinc oxide fumes. The National Institute for Occupational Safety and Health (NIOSH) has set the same standards for up to a 10-hour workday over a 40-hour workweek.

## Glossary

Anemia: A decreased ability of the blood to transport oxygen.

Carcinogenicity: Ability to cause cancer.

Milligram (mg): One thousandth of a gram.

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 1994. Toxicological profile for zinc. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

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**ATTACHMENT C**

**INFORMATION ON WEST NILE VIRUS AND ST. LOUIS ENCEPHALITIS PREVENTION**

## WEST NILE VIRUS/ ST. LOUIS ENCEPHALITIS PREVENTION

## "AVOID MOSQUITO BITES TO AVOID INFECTION"

***TO REDUCE THE CHANCE OF MOSQUITO CONTACT:***

- Stay indoors at dawn, dusk, and in the early evening.
- Wear long-sleeved shirts and long pants whenever you are outdoors.
- Spray clothing with repellents containing permethrin or DEET since mosquitoes may bite through thin clothing.
- Apply insect repellent sparingly to exposed skin. An effective repellent will contain 35% DEET (N,N-diethyl-meta-toluamide). DEET in high concentrations (greater than 35%) provides no additional protection.
- Repellents may irritate the eyes and mouth, so avoid applying repellent to the hands of children.
- Whenever you use an insecticide or insect repellent, be sure to read and follow the manufacturer's DIRECTIONS FOR USE, as printed on the product.

Note: Vitamin B and "ultrasonic" devices are NOT effective in preventing mosquito bites.

***SYMPTOMS OF WEST NILE VIRUS***

Most infections are mild, and symptoms include fever, headache, and body aches, occasionally with skin rash and swollen lymph glands. More severe nfection may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death.

***SYMPTOMS OF ST. LOUIS ENCEPHALITIS***

Mild infections occur without apparent symptoms other than fever with headache. More sever infection is marked by headache, high fever, neck stiffness, stupor, disorientation , coma, tremors, occasional convulsions (especially infants) and spastic (but rarely flaccid) paralysis.

Information provided by the CDC Division of Vector-Borne Infectious Diseases. For additional information go to the Center for Disease Control and Prevention's website located at: http://www.cdc.gov/ or the New York City Department of Health's website located at: http://nyedoh.com/

# ATTACHMENT D

# INFORMATION ON HEAT STRESS MONITORING

**Information on Heat Stress Monitoring**

To monitor worker a worker for heat stress, measure:

- **Heart rate.** Count the radial pulse during a 30-second period as early as possible in the rest period.
- If the heart rate exceeds 100 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same.
- If the heart rate still exceeds 100 beats per minute at the next rest period, shorten the following work cycle by one-third. A worker cannot return to work after a rest period until their heart rate is below 100 beats per minute.
- **Oral temperature.** Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking).
- If oral temperature exceeds 99.6°F (37.6°C), shorten the next work cycle by one-third without changing the rest period. A worker cannot return to work after a rest period until their oral temperature is below 99.6°F.
- If oral temperature still exceeds 99.6°F (37.6°C) at the beginning of the next rest period, shorten the following cycle by one-third.
- Do not permit a worker to wear a semi-permeable or impermeable garment when oral temperature exceeds 100.6°F (38.1°C).

Determine the frequency of monitoring based on the following table:

| Adjusted Temperature[b] | Normal Work Ensemble[c] | Impermeable Ensemble |
|---|---|---|
| 90°F or above (32.2°C) or above | After each 45 min. of work | After each 15 min. of work |
| 87.5°F (30.8°-32.2°C) | After each 60 min. of work | After each 30 min. of work |
| 82.5°-87.5°F (28.1°-30.8°C) | After each 90 min. of work | After each 60 min. of work |
| 77.5°-82.5°F (25.3°-28.1°C) | After each 120 min. of work | After each 90 min. of work |
| 72.5°-77.5°F (22.5°-25.3°C) | After each 150 min. of work | After each 120 min. of work |

a For work levels of 250 kilocalories/hour.

b Calculate the adjusted air temperature (ta adj) by using this equation: ta adj $^{o}$F = ta $^{o}$F + (13 x % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine – no shadows.)

c A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

**ATTACHMENT E**

**INCIDENT REPORT FORM**

# INCIDENT REPORT FORM

Date of Report: _____

Injured: _____

Employer: _____

Site: _____ Site Location: _____

Report Prepared By: _____ _____
Signature Title

**ACCIDENT/INCIDENT CATEGORY** (check all that applies)

| | | |
|---|---|---|
| ___ Injury | ___ Illness | ___ Near Miss |
| ___ Property Damage | ___ Fire | ___ Chemical Exposure |
| ___ On-site Equipment | ___ Motor Vehicle | ___ Electrical |
| ___ Mechanical | ___ Spill | ___ Other |

**DATE AND TIME OF ACCIDENT/INCIDENT:** Narrative report of Accident/Incident: Identify: 1) actions leading to or contributing to the accident/incident; 2) the accident/incident occurrence; and 3) actions following the accident/incident.

_____

_____

_____

_____

_____

_____

**WITNESS TO ACCIDENT/INCIDENT:**

Name _____ Company: _____

Address: _____

Phone No.: _____

Name _____ Company: _____

Address: _____

Phone No.: _____

**INJURED - ILL:**

Name _____ SSN: _____

Address: _____ Age: _____

_____ _____

Length of Service: _____ Time on Present Job: _____

Time/Classification: _____

**SEVERITY OF INJURY OR ILLNESS:**

| | | |
|---|---|---|
| ____ Disabling | ____ Non-disabling | ____ Fatality |
| ____ Medical Treatment | ____ First Aid Only | |

**ESTIMATED NUMBER OF DAYS AWAY FROM JOB:** _____

**NATURE OF INJURY OR ILLNESS:** _____

_____

_____

_____

**CLASSIFICATION OF INJURY:**

| | | |
|---|---|---|
| ____ Abrasions | ____ Dislocations | ____ Punctures |
| ____ Bites | ____ Faint/Dizziness | ____ Radiation Burns |
| ____ Blisters | ____ Fractures | ____ Respiratory Allergy |
| ____ Bruises | ____ Frostbite | ____ Sprains |
| ____ Chemical Burns | ____ Heat Burns | ____ Toxic Resp. Exposure |
| ____ Cold Exposure | ____ Heat Exhaustion | ____ Toxic Ingestion |
| ____ Concussion | ____ Heat Stroke | ____ Dermal Allergy |
| ____ Lacerations | | |

Part of Body Affected: _____

Degree of Disability: _____

Date Medical Care was Received: _____

Where Medical Care was Received: _____

Address (if off-site): _____

(If two or more injuries, record on separate sheets)

**PROPERTY DAMAGE:**

Description of Damage: _____

Cost of Damage: $

**ACCIDENT/INCIDENT LOCATION:**

**ACCIDENT/INCIDENT ANALYSIS:** Causative agent most directly related to accident/incident (Object, substance, material, machinery, equipment, conditions)

Was weather a factor?:

Unsafe mechanical/physical/environmental condition at time of accident/incident (Be specific):

Personal factors (Attitude, knowledge or skill, reaction time, fatigue):

**ON-SITE ACCIDENTS/INCIDENTS:**

Level of personal protection equipment required in Site Safety Plan:

Modifications:

Was injured using required equipment?:

If not, how did actual equipment use differ from plan?:

ACTION TAKEN TO PREVENT RECURRENCE: (Be specific. What has or will be done? When will it be done? Who is the responsible party to insure that the correction is made?

**ACCIDENT/INCIDENT REPORT REVIEWED BY:**

FSO Name Printed

FSO Signature

**OTHERS PARTICIPATING IN INVESTIGATION:**

Signature

Title

Signature

Title

Signature

Title

**ACCIDENT/INCIDENT FOLLOW-UP:** Date: _____

Outcome of accident/incident: _____

_____

_____

_____

Physician's recommendations: _____

_____

_____

_____

Date injured returned to work: _____

Follow-up performed by:

_____ _____

Signature Title

**ATTACH ANY ADDITIONAL INFORMATION TO THIS FORM**

**ATTACHMENT F**

**EMERGENCY HAND SIGNALS**

## EMERGENCY SIGNALS

In most cases, field personnel will carry portable radios for communication. If this is the case, a transmission that indicates an emergency will take priority over all other transmissions. All other site radios will yield the frequency to the emergency transmissions.

Where radio communications is not available, the following air-horn and/or hand signals will be used:

## EMERGENCY HAND SIGNALS

**OUT OF AIR, CAN'T BREATH!**



**Hand gripping throat**

**LEAVE AREA IMMEDIATELY, NO DEBATE!**

**( No Picture) Grip partner's wrist or place both hands around waist**

**NEED ASSISTANCE!**



**Hands on top of head**

**OKAY! – I'M ALL RIGHT!**

**- I UNDERSTAND!**



**Thumbs up**

**NO! - NEGATIVE!**



**Thumbs down**

# APPENDIX F
# NYCDEP WASTEWATER QUALITY CONTROL APPLICATION/ NYSDEC AIR FACILITY REGISTRATION

# Queens West Development

# Parcel 9

## 5th Street and 48th Avenue

**QUEENS, NEW YORK**

---

## Dewatering Plan

**AKRF Project Number: 10516**

**Prepared for:**

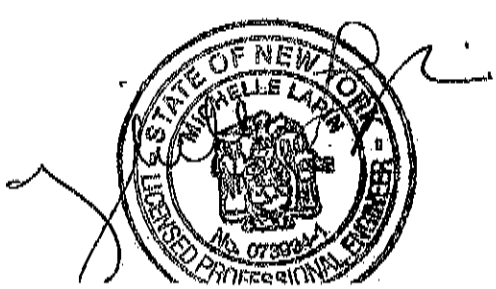
AvalonBay Communities
535 Fifth Avenue
New York, New York 10017

**Prepared by:**

**AKRF Engineering, P.C.**
440 Park Avenue South
New York, New York 10016
212-696-0670

---

**JULY 2005**



# TABLE OF CONTENTS

1.0 General Description ..... 1
2.0 Estimated Flows ..... 2
3.0 Pumps ..... 2
4.0 Permitting ..... 2
5.0 Reporting ..... 2

# APPENDICES

Appendix A – Montrose Survey
Appendix B – Site Plan
Appendix C – Continuous Discharge Water Treatment System Flow Diagram
Appendix D – Pump Specifications

# 1.0 GENERAL DESCRIPTION

AKRF Engineering, P.C. (AKRF) has prepared this dewatering plan for Parcel 9 of the Queens West Development, being constructed by AvalonBay Communities. The site is bounded by 5th Street to the east, Center Boulevard to the west, 47th Road to the north, and 48th Avenue to the south, in the Hunters Point section of Queens. The site has a total area of approximately 1.79 acres and is vacant and unpaved; all former structures were demolished in 2001. The entire parcel is surrounded by a chain-link fence. According to the Montrose survey dated October 1, 2003 (Appendix A), Parcel 9 is generally at an elevation of 8 to 10 feet, currently with a mound in the middle of the parcel rising to an elevation of approximately 15 feet (relative to Queens Borough Datum). The East River is located approximately 500 feet west of the site.

Groundwater studies performed by TRC Engineers, Inc. in publicly accessible off-site areas north and west of Parcel 9 show local groundwater flowing towards a depression in 47th Road, approximately 150 feet west of 5th Street. The groundwater surface elevation at that location is approximately -2.4 feet. The groundwater surface elevation rises to approximately -0.5 feet near the corner of 47th Road and Center Boulevard, and to -1.0 feet on 48th Avenue. The groundwater depression in 47th Road was also noted in the studies performed by AKRF in 1989. Groundwater studies performed elsewhere in the Queens West area have shown groundwater flow to the west, towards the East River, with some tidal influence at locations close to the river. The groundwater elevations observed in this study also indicate a general flow direction towards the west or southwest.

The proposed excavation for remediation is approximately 220 feet wide and 250 feet long (see Site Plan-Appendix B). Water-tight sheet piles with interlocking seals will be placed around the perimeter of the excavation to safely and adequately remove soil to the depths which indicate the bottom elevations of hydrocarbon-contaminated soil, ranging approximately from -10 feet to -25 feet, with minimal groundwater infiltration.

Treatment of fluids from dewatering activities during excavation will occur prior to discharge to the existing 12-inch sanitary City sewer in 48th Avenue. All equipment will be maintained and monitored during operations. The Contractor will be responsible for sampling the dewatering fluids prior to discharge to the sewer to ensure NYCDEP effluent discharge criteria is met. The amount of discharge from dewatering operations shall be limited to the quantity stated in the NYCDEP dewatering permit.

Sump pumps will be used during excavation and all water collected during dewatering operations will be processed through an on-site treatment system prior to discharge to the sanitary sewer, in accordance with NYCDEP requirements. The water treatment system is designed to meet NYCDEP's effluent discharge limits. A flow diagram of the pretreatment equipment is included as Appendix C.

The following sections discuss the components of the dewatering/treatment system.

## 2.0 ESTIMATED FLOWS

The discharge is estimated to be approximately 100 gallons per minute (GPM), and will occur over a total of 16 hours per day with an estimated total of 96,000 gallons per day (GPD). The maximum capacity of the treatment system is 100 GPM. The maximum capacity of the pumps at the anticipated head requirements are 150 GPM, but will be restricted to 100 GPM. In a period of 16 hours per day, the maximum estimated flow is 96,000 GPD.

The capacity of the 12-inch sewer in 48th Avenue between Center Boulevard and 5th Street is 1,000 GPM, with a 24 hour capacity of 1,440,000 GPD. The maximum discharge of 96,000 GPD represents approximately 6.7% of the sewer's total daily capacity.

## 3.0 PUMPS

The pumps that will be used to pump the water from the frac tanks through the oil/water separator and from the sumps to the frac tanks are Pumpex P 701 W. This single phase 1.8 hp pump has a capacity of approximately 150 GPM. The Pumpex P 1001 W will be used to pump the water from the carbon units to the point of discharge. This pump has a capacity of approximately 150 GPM at 35 feet of head. Specifications on these pumps along with other dewatering/treatment system cut sheets are included in Appendix D.

## 4.0 PERMITTING

A water sample will be collected from the discharge point prior to the sewer connection and analyzed for its conformance with the New York City Department of Environmental Protection (NYCDEP) discharge parameters. The results of the test will be submitted to NYCDEP once the dewatering/treatment system is in place and functional. The sample will be analyzed by a New York State-certified laboratory. Additional sampling and analysis of the dewatering discharge will be completed upon NYCDEP direction.

## 5.0 REPORTING

The results of the effluent monitoring will be summarized in a report prior to the start of construction dewatering. Any revisions to the dewatering plan, notes or details will be submitted.

# FORMS

FOR OFFICIAL USE ONLY
C -

BUREAU OF WASTEWATER POLLUTION CONTROL

DIVISION OF POLLUTION PREVENTION AND MONITORING
96-05 HORACE HARDING EXPRESSWAY
CORONA, NEW YORK 11368
**WASTEWATER QUALITY CONTROL APPLICATION**

**NOTE:** APPLICANT MUST FILL OUT BOTH SIDES OF THIS FORM. INCORRECT OR INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED AND WILL BE RETURNED. IF NOT APPLICABLE WRITE N/A. APPLICATION MUST BE TYPEWRITTEN.

| 1. LOCATION | | |
|---|---|---|
| TAX BLOCK #: 19 | | LOT #: 5,19 |
| PROJECT NAME: Queens West Parcel 9 | | BOROUGH: Queens |
| HOUSE #: | STREET NAME: 48th Avenue | ZIP: 11101 |
| IS THIS *DEP* JOB? YES [ ] NO [X] | IS THIS JOB *DEP* FUNDED YES [ ] NO [X] | |

| 2. APPLICANT | | | |
|---|---|---|---|
| LAST NAME: Lapin | FIRST NAME: Michelle | | M.I. |
| BUSINESS NAME: AKRF Engineering, P.C. | | TELEPHONE: ( 646 ) - 388-9520 | |
| ADDRESS 440 Park Avenue South | CITY: New York | STATE New York | ZIP: 10016 |
| CONTACT PERSON: Colleen Birnstiel | | TELEPHONE: ( 646 ) - 388-9822 | |

| 3. OWNER | | | |
|---|---|---|---|
| TYPE OF OWNERSHIP: [ ] INDIVIDUAL [X] CORPORATION [ ] PARTNERSHIP [ ] GOVERNMENT | | | |
| LAST NAME: Spiro | FIRST NAME: Steve | | M.I.: |
| BUSINESS NAME/AGENCY: Avalon Riverview III, LLC | | TELEPHONE :(646) - 309-2991 | |
| ADDRESS: c/o 535 Fifth Avenue | CITY: New York | STATE: NY | ZIP: 10017 |

| 4. PROJECT USE | | |
|---|---|---|
| [X] RESIDENTIAL | NUMBER OF DWELLING UNITS: | |
| COMMERCIAL TYPE: | GROSS FLOOR AREA: | SQ. FT.. |
| [ ] INDUSTRIAL TYPE: | GROSS FLOOR AREA: | SQ. FT. |
| [X] OTHER, EXPLAIN Construction Site | | |

**5. LOCATION**

PLOT MUST SHOW THE CORRECT STREET LINES FROM THE CITY PLAN; THE PLOT TO BE BUILT UPON IN RELATION TO THE STREET LINES AND THE PORTION OF THE LOT TO BE OCCUPIED BY THE BUILDING; THE HOUSE NUMBERS AND THE BLOCK AND LOT NUMBERS. OBTAIN THESE DATA IN EACH BOROUGH OFFICE.

| BLOCK | LOT(S) | HOUSE NO(S) | VERIFIED | DATE |
|---|---|---|---|---|

DIAGRAM (SHOW ARROW INDICATING NORTH)

See Attached Site Plan

| 6. WASTEWATER & SEWAGE | Not Applicable |
|---|---|
| EXISTING AVERAGE: | GALLONS/DAY |
| PROPOSED AVERAGE: | GALLONS/DAY |
| PROPOSED HOURLY PEAK: | GALLONS/HR |
| IF NO SEWERS AVAILABLE INDICATE DISPOSAL OF WASTEWATER: | |

| 7. INDUSTRIAL/COMMERCIAL/MANUFACTURING ONLY | Not Applicable | | |
|---|---|---|---|
| TYPE OF ESTABLISHMENT: | | FLOOR AREA: | SQ. FT. |
| WORK AREA: | SQ. FT. | STORAGE AREA: | SQ. FT. |
| [ ] NEW SEWER CONNECTION AT: | | | |
| [ ] EXISTING SEWER CONNECTION AT: | | | |
| CONNECTION TO: SANITARY [ ] COMBINED [ ] STORM [ ] OTHER [ ] | | | |
| JOB DESCRIPTION/PROJECT HISTORY: | | | |
| | | | |
| | | | |
| LIST ALL CHEMICALS OR HAZARDOUS WASTES, IF ANY, MSDS ATTACHED [ ] | | | |
| | | | |
| | | | |

| 8. PRETREATMENT EQUIPMENT | See Equipment Cut Sheets | | |
|---|---|---|---|
| [ ] INTERCEPTORS | [XX]SEPARATORS | [ ] pH NEUTRALIZER | |
| MANUFACTURER: | | FLOW: GPM / VOLUME: | GAL. |
| MODEL NUMBER: | | SERIAL NUMBER: | |
| MEA/BSA NUMBER: | | REAGENTS: | |
| OTHER PRETREATMENT [ ] | | EXPLAIN: | |

| 9. DEWATERING/SPECIAL DISCHARGES | | | |
|---|---|---|---|
| QUANTITY OF WASTEWATER/GROUNDWATER | | | |
| DISCHARGE FLOW RATE: 96,000 GPD (16 hr.) | | DURATION3 D/M/Y | |
| [X] GRAVITY To Sewer | [X] PUMP | PUMP CAPACITY: 150 GPM | |
| DISCHARGE TO SEWER: SIZE 12 IN | [X] SANITARY | [ ] COMBINED | [ ] STORM |
| QUALITY OF WASTEWATER/GROUNDWATER - | MSDS ATTACHED YES [ ] NO[X] | | |
| NYS LABORATORY ANALYSES: | ATTACHED[XX] | NOT AVAILABLE [ ] | |
| NYSDEC PERMIT: NA | ATTACHED [ ] | NOT AVAILABLE [ ] | |
| JOB DESCRIPTION / PROJECT HISTORY: | | | |
| Dewatering of excavation for soil remediation project. | | | |
| analysis attached. | | | |

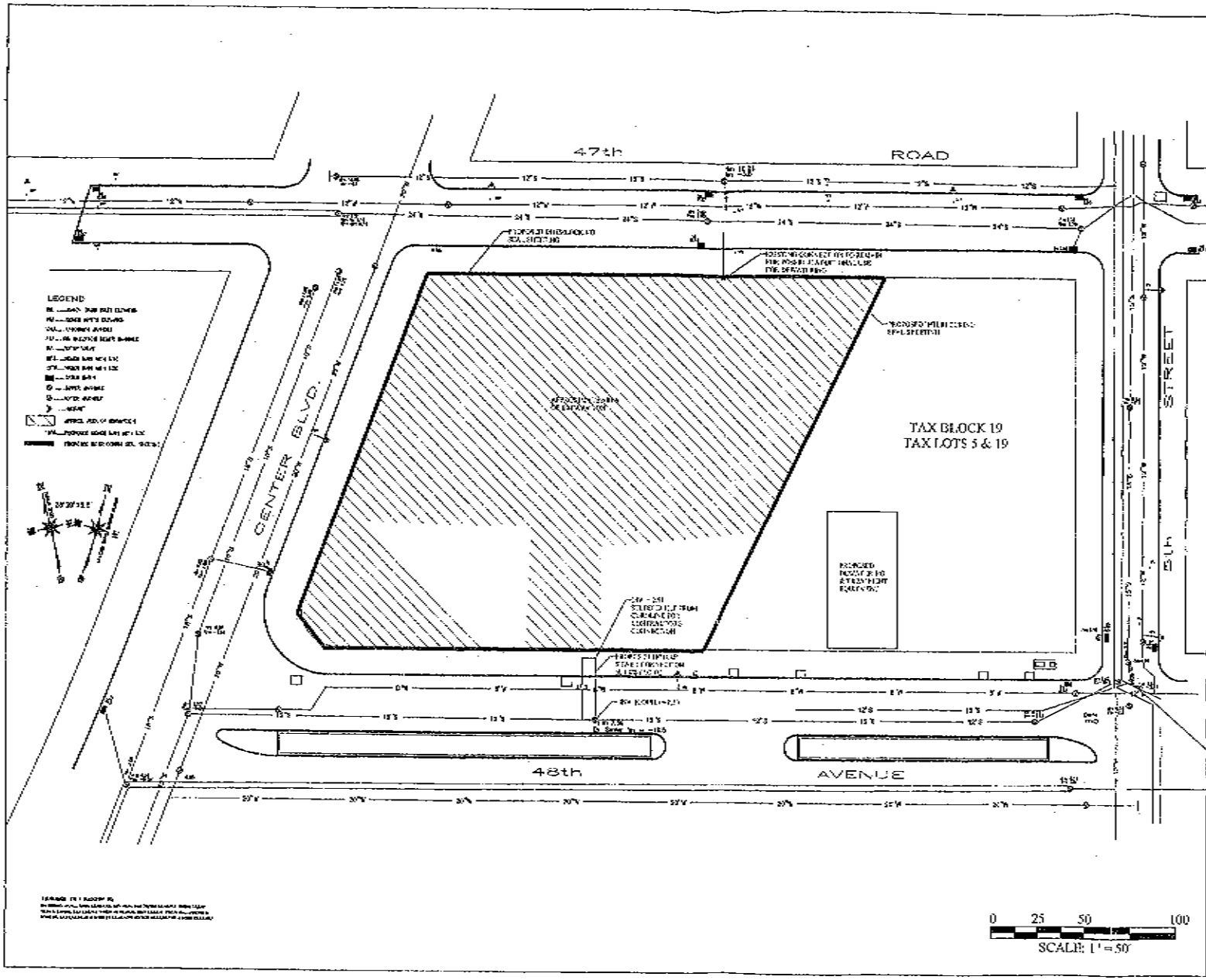
| 10. STATEMENTS AND SIGNATURES: | |
|---|---|
| APPLICANT'S NAME: MICHELLE LAPIN<br>SIGNATURE: | OWNER NAME:<br>SIGNATURE: |
| SEAL (P.E. OR R.A.) STATE OF NEW YORK MICHELLE LAPIN No. 073934-1 LICENSED PROFESSIONAL ENGINEER | I HAVE PREPARED OR SUPERVISED THE PREPARATION OF THE PLANS, SPECIFICATIONS AND OTHER DOCUMENTS HEREWITH SUBMITTED AND, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE PLANS AND WORK SHOWN THEREIN COMPLY WITH THE PROVISIONS OF ALL NEW YORK CITY AND STATE CODES AND OTHER APPLICABLE LAWS AND REGULATIONS.<br>FALSIFICATION OF ANY STATEMENT IS A MISDEMEANOR UNDER SECTION 26-124 OF NEW YORK CITY ADMINISTRATION CODE AND IS PUNISHABLE BY A FINE OR IMPRISONMENT, OR BOTH. |
| DATE: 7/15/05 | |

# APPENDIX A

## MONTROSE SURVEY

## APPENDIX B

## SITE PLAN




| REVISIONS | | |
|---|---|---|
| No. | DATE | DESCRIPTION |
| | | |

PROJECT
QUEENS WEST PARCEL 9
QUEENS, NEW YORK

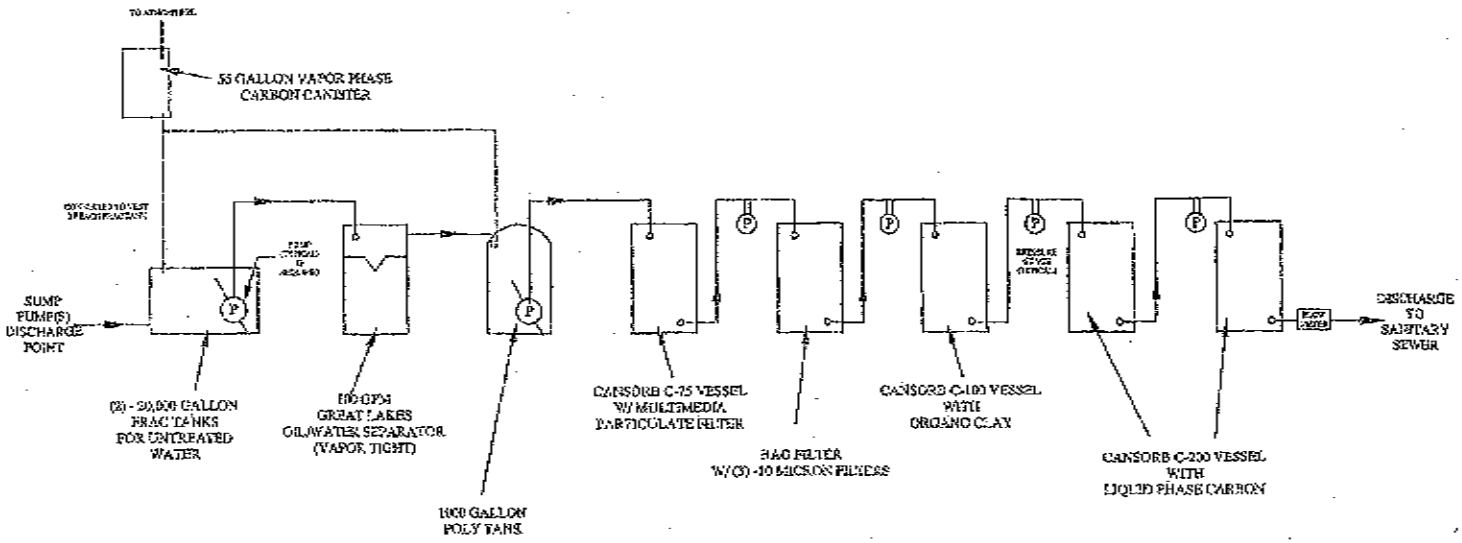
PREPARED BY
AKRF
AKRF ENGINEERING, P.C.
440 PARK AVENUE SOUTH
NEW YORK, NY 10016
Tel:(212)696-0670 Fax:(212)726-0942

SHEET TITLE
SITE PLAN

| DRAWN BY | ORIG. DATE |
|---|---|
| RC | 07/14/05 |
| CHECKED BY | PROJECT No. |
| CB | 10516 |
| | APPENDIX |
| | B |

## APPENDIX C

## CONTINUOUS DISCHARGE WATER TREATMENT SYSTEM FLOW DIAGRAM




Procedures:

1. Record flow meter readings two times per day.

2. Maintain an operators log book with relevant information on the systems operations(i.e. start and stop times).

3. Collect and analyze effluent samples for monitoring parameters to demonstrate compliance with discharge requirements.

4. Catalog cuts are an example of the equipment to be used. CBI will utilize the specified model or an equivalent model depending on availability.

| REVISIONS | | |
|---|---|---|
| No. | DATE | DESCRIPTION |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |




PROJECT
QUEENS WEST PARCEL 9
QUEENS, NEW YORK

PREPARED BY
AKRF
AKRF ENGINEERING, P.C.
440 PARK AVENUE SOUTH
NEW YORK, NY 10016
Tel:(212)696-0670 Fax:(212)726-0942

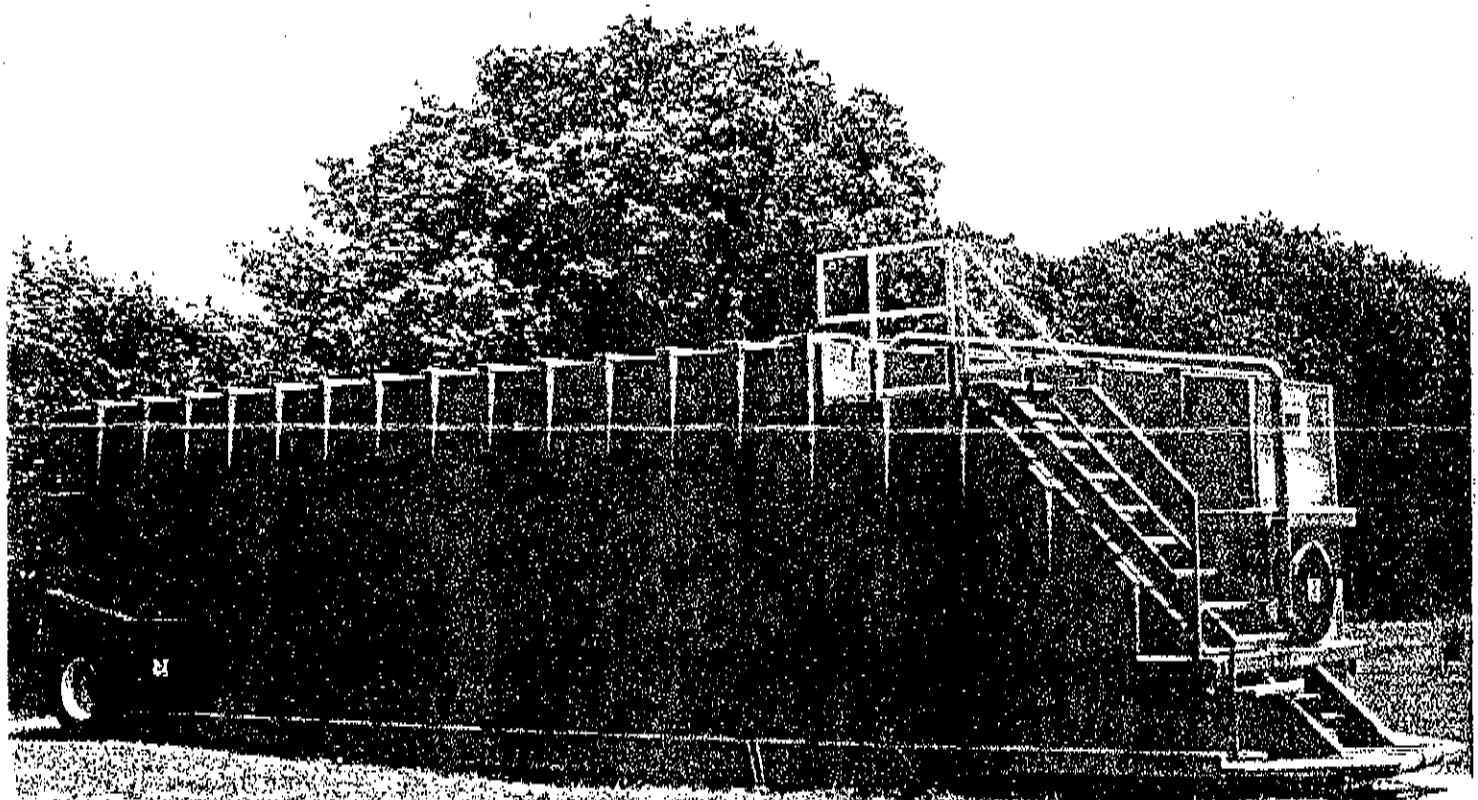
SHEET TITLE
CONTINUOUS DISCHARGE WATER TREATMENT SYSTEM

| DRAWN BY | ORIG. DATE |
|---|---|
| RC | 07/11/05 |
| CHECKED BY | PROJECT No. |
| CS | 10516 |
| | APPENDIX |
| | C |

# APPENDIX D

## PUMP SPECIFICATIONS

# The Smart STEP



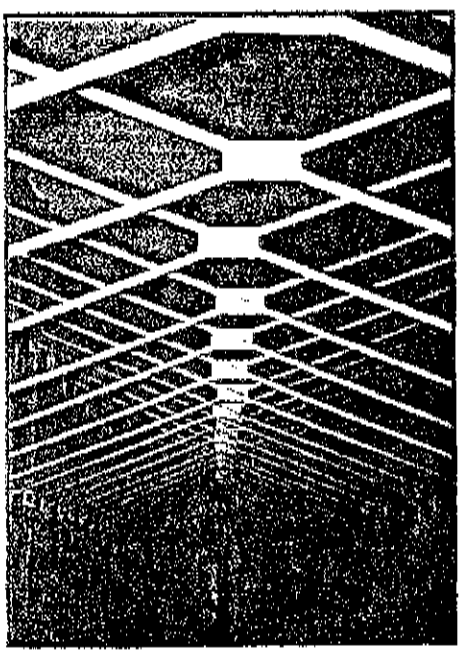
**FRONTIER TANKS, INC.**

*Manufacturers of*
*V-Bottom Mobile Tanks, Vacuum Transports, Containers,*
*Custom Environmental Tanks, and Trailers*

P.O. Box 704 • Ardmore, Oklahoma 73402 • 405/371-9502 • Fax 405/371-9504

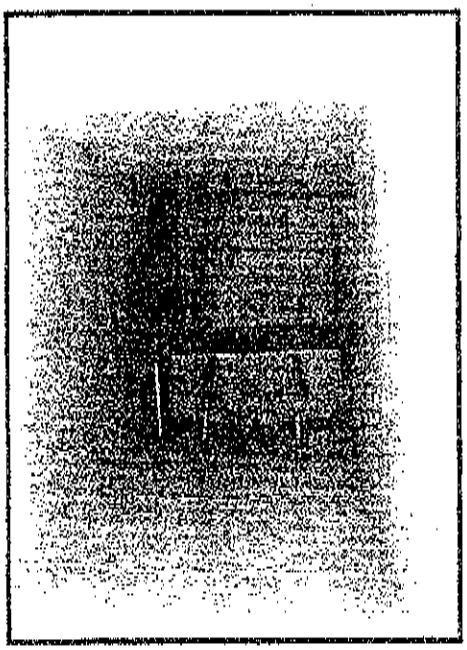
# STANDARD FEATURES OF RODLESS SMART STEP

1. 2 sizes available: 8½' W x 10'8" H x 43' L; capacity 500 BBL OR 21,000 GALLONS
   8' W x 10'8" H x 44'6" L; capacity 500 BBL
2. ¼" A36 Steel V-bottom floor with smooth 3/16" A36 steel top and walls
3. Inset stairway with fold-down safety rails
4. 3 - 22" hatches located at top, front and side
5. 2 - 4" butterfly valves (BFV) with cap at V-bottom, front and rear
6. 1 - 4" fluid line with BFV; cap located 12" off floor
7. 3" fill line with BFV and cap
8. Heavy-duty nose bar
9. DOT approved vapor-proof lights with S.O. cord in conduit; brake lines in conduit



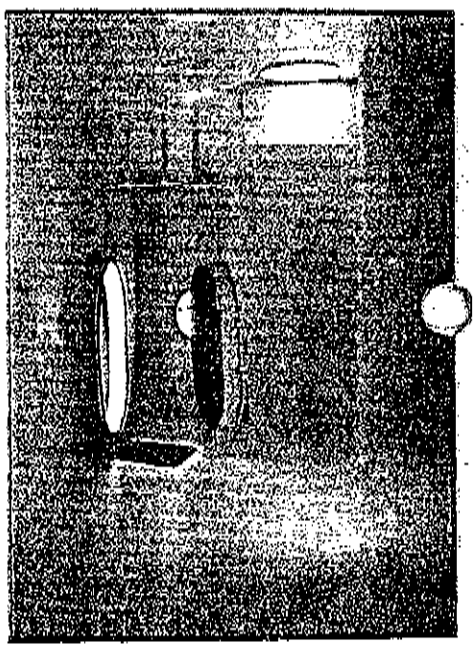
## ROD STYLE

- Rods in criss-cross style
- All seams and rod clips on corrugated walls welded solid



## INSIDE COATING

- Black Sher-tar
- White HI-Solids
- Gray Briner



## STEP-THROUGH HATCH

- ⅜" plate — 36" x 60"
- Fluid enhanced seal
- 8 - camlock latches

## OTHER OPTIONS:

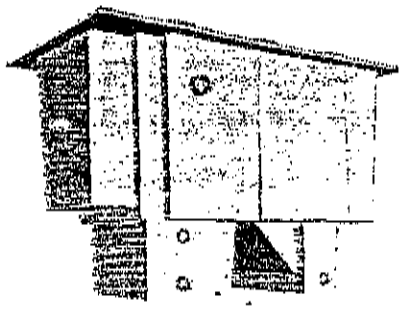
Custom valving • Steam or heat lines • Insulated walls • Inside or outside manifolds available

The Smart STEP

# TotlSep - Oil/Water Separator

Coalescing Type, Cross Corrugated Plate Design, Fiberglass Construction

- Integral Oil & Sludge Storage
- Wide Variety of Accessories
- Wide Selection of Media Types
- Flow Rates From 1 to 125 GPM
- Standard & Custom Configurations
- Designed According to API Criteria



OIL WATER SEPARATION

## THE PROBLEM

- Gross free oil in the wastestream prevents you from meeting discharge regulations for oil and grease.
- Removal of free and dispersed oil droplets needed to protect downstream treatment equipment.
- Need to reduce overall system operating cost by reducing oil pollutant load on downstream equipment.

## THE SOLUTION

Gravity Type - Rectangular Channel Coalescing Oil / Water Separators are excellent at removing gross free oil or similar flotable products fromwastewater flows.

Hydro-Flo Technologies Separators are suitably designed as end of pipe treatment or to protect other down stream treatment equipment.

Hydro-Flo Technologies Coalescing Separators have integral collection chambers for settleable sludge/solids and for recovered waste oil product.

The sludge/solids gathering chamber is located directly beneath the coalescing media to improve and simplify settleable solids removal. The recovered oil product reservoir is conveniently located in the separation chamber and has an adjustable rotating pipe oil skimming assembly.

Hydro-Flo Technologies Separators can handle a wide variety of temperatures and chemicals with five different coalescing media types. A selection of coalescing plate spacings are also available to handle high viscosity and high solids loading rates.

Hydro-Flo Technologies also offers a complete selection of accessories and custom configurations for your application. Freeze protection, level sensing, pump packs, special fittings, and special coatings are just some of the available options.

## THE COMMITMENT

Solving your wastewater problem is our goal. Our extensive experience in designing and building high quality wastewater treatment equipment is at your disposal.

Our engineers and fabricators constantly strive to design and build the finest American made equipment available today! You can be assured that the equipment we supply will provide you with performance, efficiency, adaptability, low maintenance and ease of operation.

Our oil / water separators are designed and sized according to the most recent API criteria for design and operation of oil water separators. We use the calculations found in API Publication 421 - 1990 to expertly design and size your separator for reliable and predictable wastewater treatment performance.

Let our experience, know-how, and resources go to work for you. Application specific consultations are available at no cost or obligation.

## TYPICAL APPLICATIONS

| | |
|---|---|
| Industrial Wastewater Treatment | Chemical Processing Industries |
| Petroleum Refinery | Light & Heavy Manufacturing |
| Groundwater Remediation | Metal Finishing Industries |
| Food Processing and Rendering | Equipment Washpad Recycling |

HYDRO-FLO TECHNOLOGIES, INC.

The Art & Science Of Wastewater Treatment

# *TotlSep* Fiberglass Oil/Water Separator

## STANDARD FEATURES

- 100% Fiberglass Mat Construction
- Integral Sludge Hopper
- Integral Oil Reservoir
- Adjustable Rotary Pipe Oil Skimmer
- Molded Fittings Standard
- Vapor Tight Lid Assembly
- PVC Coalescing Media
- Handles Wide Range of Flow Rates

## ENGINEERED PERFORMANCE

Designed - Built - & Sized according to API Publication 421 and Stokes Law.

Calculated performance based on oil specific gravity, viscosity, and flow rate assures reliable performance.

Integral sludge hopper eliminates media pack fouling due to solids accumulation.

Automatic surface oil skimming provides high purity recovered product.

## RUGGED CONSTRUCTION

- Heavy Duty Fiberglass Mat
- Uniform Thickness Throughout
- Internal Finish Sealed with Resin
- External Smooth Gel Coat Finish
- Heavy Duty Lid with Latches
- Standard Molded In Fittings
- Backed By A One Year Warranty

## BUILT-IN QUALITY

Performance oriented projected surface area calculations are performed for each separator to ensure predictable performance.

Over 40 manufacturing quality control points are inspected.

Separators are wet tested for trouble free start-up.

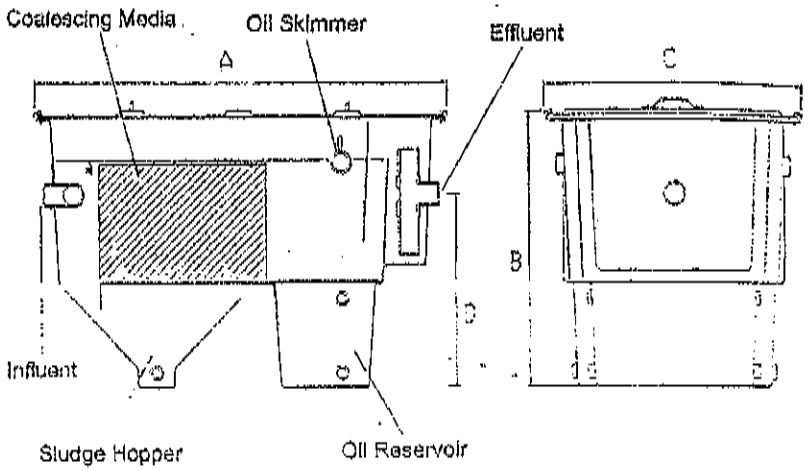
## GENERAL SPECIFICATIONS

The separator is designed as a specially fabricated rectangular channel fiberglass separator tank madewithfiberglass mat.

The oil/water separation and oil removal process is fully automatic requiring no moving parts.

The separator design satisfies the requirements of API Publication 421 Feb. 1990 and Stokes Law.

Performance enhancement is achieved by the use of DYNA-PAK cross corrugated coalescingmedia.




## STANDARD UNIT DIMENSION CHART

| MODEL | A LONG Inches | B TALL Inches | C WIDE Inches | D ELEV Inches | INLET FITTING (Inches) | OUTLET FITTING (Inches) | OIL OUTLET FITTING (Inches) |
|---|---|---|---|---|---|---|---|
| TS002 | 64 | 36 | 31 | 19 | 2 | 2 | 2 |
| TS004 | 76 | 39 | 31 | 21 | 2 | 2 | 2 |
| TS008 | 76 | 51 | 31 | 33 | 2 | 2 | 2 |
| TS012 | 76 | 51 | 43 | 33 | 3 | 3 | 3 |
| TS016 | 76 | 49 | 55 | 33 | 3 | 3 | 3 |
| TS024 | 88 | 57 | 55 | 39 | 4 | 4 | 3 |
| TS036 | 88 | 60 | 55 | 48 | 4 | 4 | 3 |

## OIL/WATER SEPARATOR SIZING CHART

| MODEL | TYPICAL FLOW RATE GPM | TOTAL SEPARATOR CAPACITY (gals) | SQ.FT. OF COALESCING AREA ½" PLATE SPACING | SQ.FT. OF COALESCING AREA ¼" PLATE SPACING | EMPTY WEIGHT (lbs.) | OIL CAPACITY (gals) |
|---|---|---|---|---|---|---|
| TS002 | 2-5 | 85 | 136 | 84 | 75 | 9 |
| TS004 | 4-10 | 106 | 272 | 168 | 150 | 11 |
| TS008 | 8-20 | 177 | 544 | 336 | 250 | 11 |
| TS012 | 15-30 | 300 | 816 | 504 | 350 | 25 |
| TS016 | 25-40 | 408 | 1088 | 672 | 450 | 39 |
| TS024 | 35-75 | 508 | 1632 | 1008 | 750 | 54 |
| TS036 | 60-125 | 673 | 2448 | 1512 | 1000 | 54 |

## ACCESSORIES AND OPTIONS

The following accessories & options are just a few of the more popular selections available from Hydro-Flo Technologies. If you have a specific option or configuration in mind, please call. Our marketing & engineering staff can help you design the perfect oil/water separator for your application.

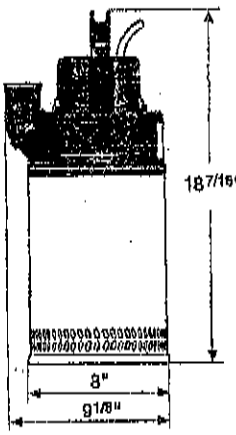
- Platforms and Walkways
- Special Fitting Configurations
- Special Resin Blends & Gel Coats for Corrosive Environments
- Optional Materials of Construction (Carbon Steel, Stainless Steel, Etc.)
- Freeze Protection Packages
- Pump Systems for Influent, Effluent, Oil & Sludge
- 1/2, 3/4, 1-1/4 Media Plate Spacing
- PVC, CPVC, FRP, Stainless Steel, Carbon Steel Coalescing Media

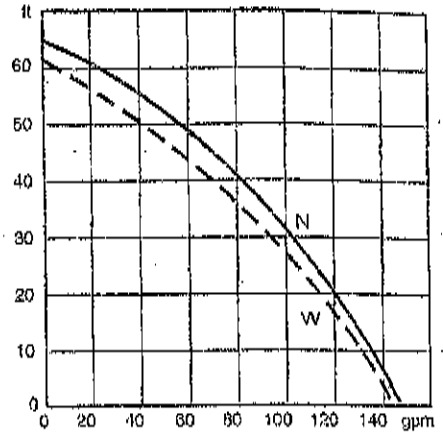
Represented By:

Drainage pumps

# PUMPEX P 601

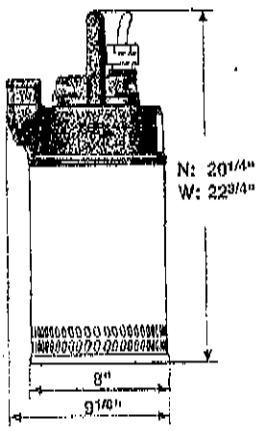
| | |
|---|---|
| **P 601 W** | **Single Phase** |
| Rating (HP): | 1.5 |
| Voltage (V): | Dual 115/230 |
| Full Load Amp. (A): | 13.0/6.5 |
| **P 601 N** | **Std. version, Three Phase** |
| Rating (HP): | 1.5 |
| Voltage (V): | Dual 230/460 or 575 |
| Full Load Amp. (A): | 4.4/2.2 or 1.8 |
| Speed: | 3400 rpm |
| Power cable | 65 ft |
| Discharge connection | NPT 2", 3" |
| | Smooth 1½", 2", 2½", 3" |
| Weight (excl. cable) | 35 lb |
| Strainer size | 1/4" x 5/8" |

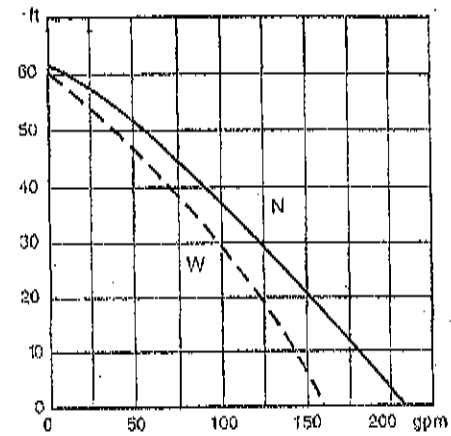



# PUMPEX P 701

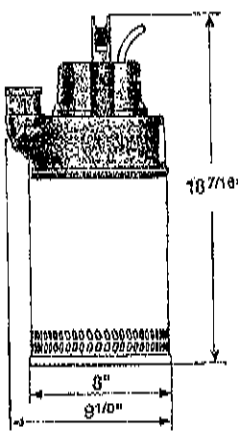
| | |
|---|---|
| **P 701 W** | **Single Phase** |
| Rating (HP): | 1.8 |
| Voltage (V): | Dual 115/230 |
| Full Load Amp. (A): | 16.7/8.3 |
| **P 701 N** | **Std. version, Three Phase** |
| Rating (HP): | 2.0 |
| Voltage (V): | Dual 230/460 or 575 |
| Full Load Amp. (A): | 5.8/2.9 or 2.3 |
| Speed: | 3400 rpm |
| Power cable | 65 ft |
| Discharge connection | NPT 2" (standard), 3" |
| | Smooth 1½", 2", 2½", 3" |
| Weight (excl. cable) | 40 lb (P 701 N) |
| | 44 lb (P 701 W) |
| Strainer size: | 1/4" x 5/8" |

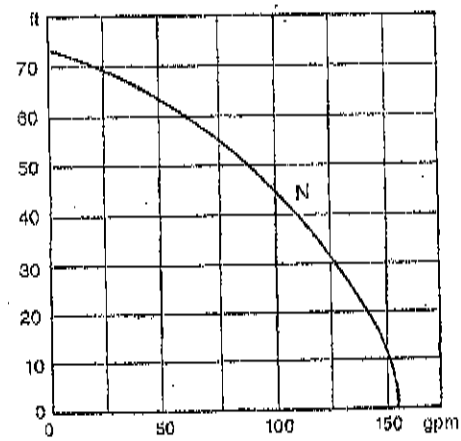



# PUMPEX P 801

| | |
|---|---|
| **P 801 N** | **Std. version, Three Phase** |
| Rating (HP): | 2.0 |
| Voltage (V): | Dual 230/460 or 575 |
| Full Load Amp. (A): | 5.4/2.7 or 2.2 |
| Speed: | 3400 rpm |
| Power cable | 65 ft |
| Discharge connection | NPT 2" (standard), 3" |
| | Smooth 1½", 2", 2½", 3" |
| Weight (excl. cable) | 36.5 lb |
| Strainer size | 1/4" x 5/8" |



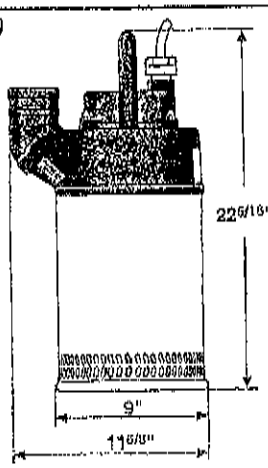



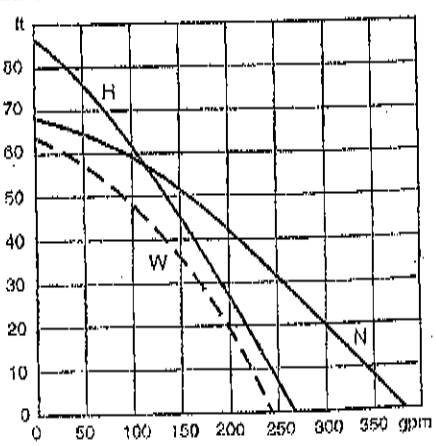

# PUMPEX P 1001

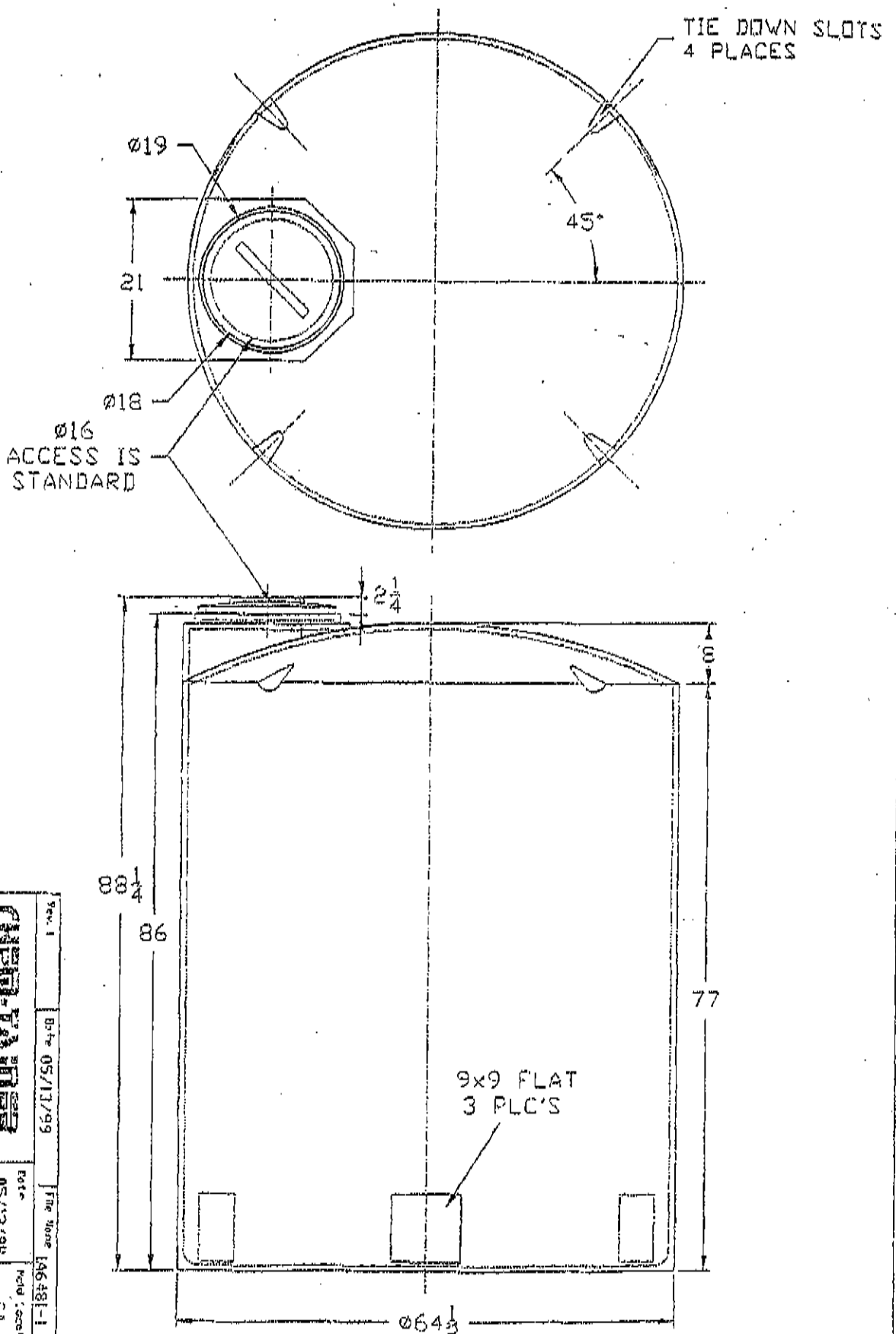
ENDURO LINING *)

| | |
|---|---|
| **P 1001 W** | **Single Phase** |
| Rating (HP): | 2.6 |
| Voltage (V): | 230 |
| Full Load Amp. (A): | 13.4 |
| **P 1001 N** | **Std. version, Three Phase** |
| **P 1001 H** | **High head, Three Phase** |
| Rating (HP): | 3.8 |
| Voltage (V): | Dual 230/460 or 575 |
| Full Load Amp. (A): | 10.4/5.2 or 4.2 |
| Speed: | 3400 rpm |
| Power cable | 65 ft |
| Discharge connection | NPT 3" (standard), 4" |
| | Smooth 2½", 3", 4" |
| Weight (excl. cable) | 60 lb |
| Strainer size | 5/16" x 11/16" |

*) *Enduro Lining™ available as option (N+H)*






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ALL DIMENSIONS SHOWN ARE OUTSIDE PART DIMENSIONS IN INCHES AND VARY BY THE STANDARD DIMENSIONAL TOLERANCE OF ±2%

| | | | |
|---|---|---|---|
| Rev. 1 | Date 05/13/99 | File Name 106481-1 | |
| CHEM-TAINER Industries Inc. 361 Neptune Ave W. Babylon, NY 11704 (631) 643-8300 Fax (631) 643-8329 | | Entered 05/13/99 | Mold Location C4 |
| | | Drawn By E JS | Cust Rep |
| TITLE 1000 GALLON VERTICAL BULK STORAGE TANK | | | |
| Part # 106481A/IC | | Dwg. # C-6481-IS | |

# ROSEDALE

MODEL 12
2 BASKETS

MODEL 18
3 BASKETS

MODEL 22
4 BASKETS

MODEL 24
6 BASKETS

MODEL 30
8 BASKETS

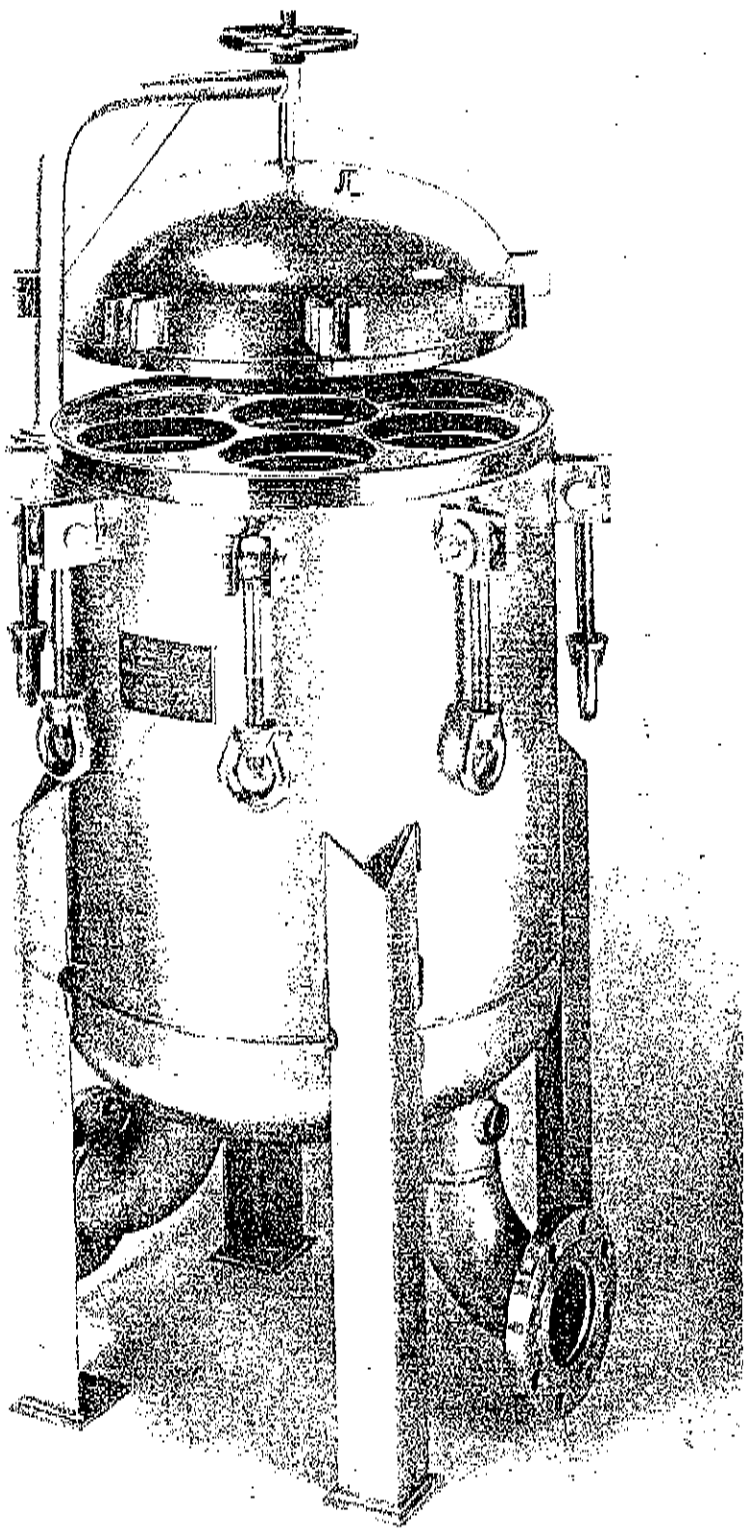
MODEL 36
12 BASKETS

MODEL 42
17 BASKETS

MODEL 48
24 BASKETS

EXTRA-HIGH CAPACITY

## MULTI-BASKET STRAINERS AND MULTI-BAG FILTERS



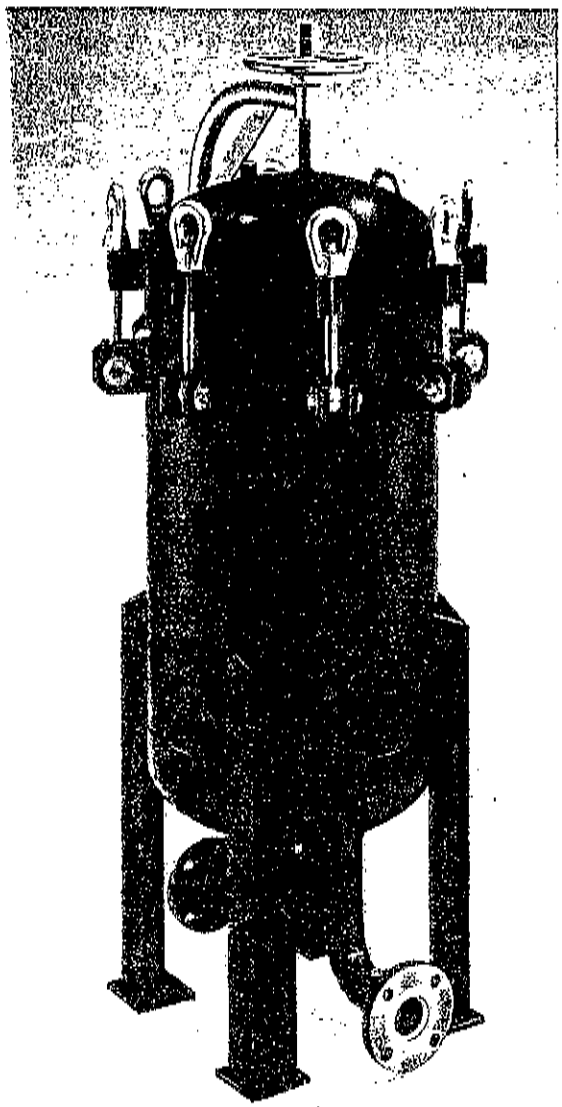
# Multi-basket Strainers and Multi-bag Filters

These multi-basket strainers and bag filters offer a wide range of flow capacities and contaminant-holding capabilities. They contain from 2 to 23 baskets, all the same size.

To serve as a strainer, a unit is ordered with perforated stainless steel baskets (mesh-lined if desired). When ordered as a filter, it's fitted with perforated stainless steel baskets designed to hold disposable or cleanable filter bags. Industry-standard size bags are used: the standard 30-inch baskets take bag size 2, the optional 15-inch baskets take size 1.

Dual-stage filtering and/or straining can be achieved by ordering inner baskets. Rosedale multi-basket strainers can always be converted to use as multi-bag filters (and vice versa) by simply installing the proper baskets (and bags).

The standard pressure rating for all models is 150 psi. All housings can be supplied with a ASME code stamp, if required.



## STANDARD FEATURES

- Large-area, heavy-duty baskets
- Low pressure drop
- Permanently-piped housings are opened without tools and without disturbing the piping
- Machined cover gasket groove provides positive O-ring sealing
- 30-inch deep baskets
- Easy cleanability
- Positive strainer basket seal prevents bypass
- In-line inlet and outlet

## STANDARD OPTIONS

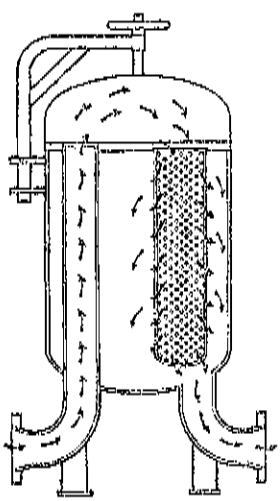
- Cleanable strainer baskets or filter bag baskets
- Mesh linings in baskets
- Inner baskets for dual-stage straining or filtering
- Carbon steel, 304, or 316 stainless steel housings
- 150-psi ASME code stamp
- Four gasket materials: Buna N, Ethylene Propylene, Viton, and Teflon
- Flanged connections for 2 through 12-inch pipe
- Shorter (15 in.) baskets instead of standard (30 in.)

## SPECIAL OPTIONS

- Sanitary fittings
- Higher pressure ratings
- Housings of alloy steel
- Corrosion allowances
- Steam jackets
- Special outlet locations
- NPT connections on 2 & 3-in. pipe sizes

## DUPLEX SYSTEMS

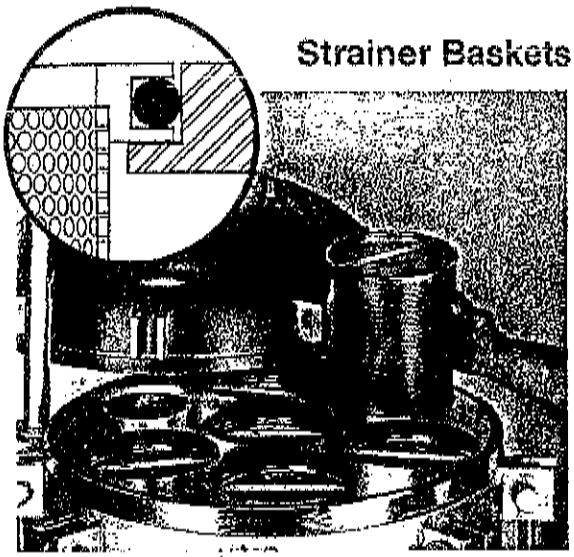
All multi-basket models described here are also available as duplex systems. Two units come piped together with valves to permit continuous use of either unit while servicing the other. One lever actuates all valves simultaneously. Ask for Catalog DF.



*Unfiltered fluid enters the bottom of the housing and moves up the inlet pipe, into the open area under the dome of the cover. Flow is distributed uniformly through the bags or baskets, from inside to outside. Solids are collected on the inside of the bags or baskets, where they can be removed easily and completely.*

# Choose baskets that strain or filter

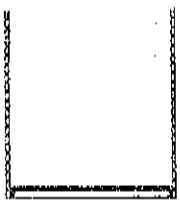
## Strainer Baskets



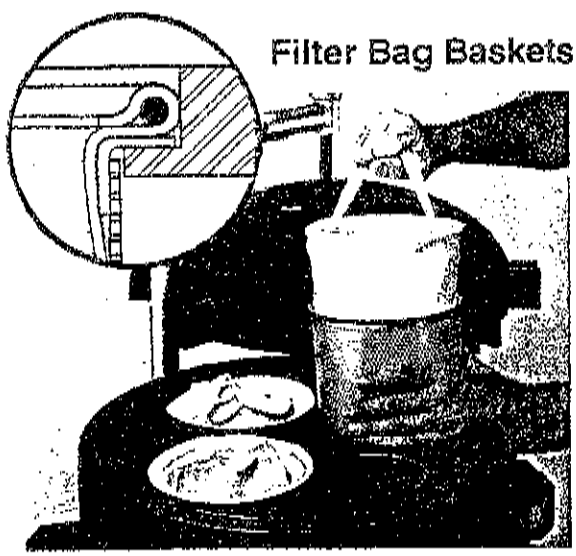
Strainer baskets are cleanable, reusable.

A gasket can be supplied on any strainer basket (just under the basket rim). It forms a seal between basket and housing, to prevent dirty fluid bypass.

Strainer baskets have flat, non-perforated bottoms.



## Filter Bag Baskets

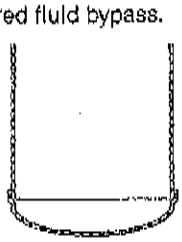


Filter bag baskets hold disposable filter bags.

Filter bags used in this filter have a steel ring sewn into their openings. This causes a seat to exist between bag and housing, to prevent unfiltered fluid bypass.

Filter bag baskets have rounded, perforated bottoms.

Filter bags are available in a wide variety of felt, monofilament and multifilament mesh materials. They're detailed completely in Rosedale Filter Bag Catalog FB-1.



DUAL-STAGE straining/filtering action can be achieved by ordering a second, inner basket. It is supported on the top flange of the outer basket. Both baskets can be strainers (with or without wire mesh linings) or both can be baskets for filter bags. They can also be mixed: one a strainer basket, the other a filter bag basket. Dual-stage action will increase strainer or filter life and reduce servicing needs.



Strainer baskets or filter bag baskets—whatever your need dictates.

### BASKET DATA

Surface area of each 30-in. basket: 4.4 sq. ft.

Volume of each 30-in. basket: 0.6 cu. ft.

### BASKET CONSTRUCTION

For cleanable strainer baskets, choose from the following perforation diameters: 1/4, 3/16, 9/64, 3/32, or 1/16 inch.

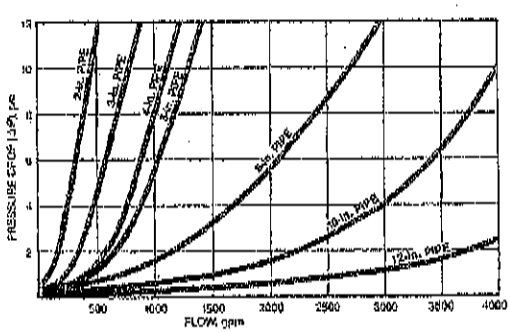
For filter bag baskets, standard 9/64-inch diameter perforations, with 51% open area, are supplied.

Any perforated basket may also be ordered lined with wire mesh. Stainless steel wire is used in mesh sizes 20, 30, 40, 50, 60, 70, 80, 100, 150 or 200. When ordered in a filter bag basket, these advantages are realized:

1. Fiber migration is minimized.
2. In the unlikely event of bag rupture, the wire mesh better contains the contaminant.

### PRESSURE DROP DATA

Basket strainers and bag filters are usually selected so that the pressure drop does not exceed 2 psi when they are clean. Higher pressure drops may be tolerated when contaminant loading is low.




### VISCOSITY FACTORS

| | CPS NUMBER | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 ($H_2O$) | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | 2000 |
| .66 | .85 | 1.00 | 1.10 | 1.20 | 1.40 | 1.50 | 1.60 | 1.80 |

**Determining housing pressure drop:**

The pressure drops shown on the graph are reliable for all multi-basket housings, including strainer baskets or filter bag baskets (perforated only or mesh lined). The pressure drop of any housing is governed by the size of the inlet and outlet, not the vessel itself.

1. Using the desired pipe size and approximate flow rate, determine the basic pressure drop from the graph.
2. Multiply the pressure drop obtained in step 1 by the viscosity correction factor found in the accompanying table.
3. You now have the pressure drop for a clean multi-basket unit. If filter bags are to be employed you must add the pressure drop they incur to get a true pressure drop for the assembly.

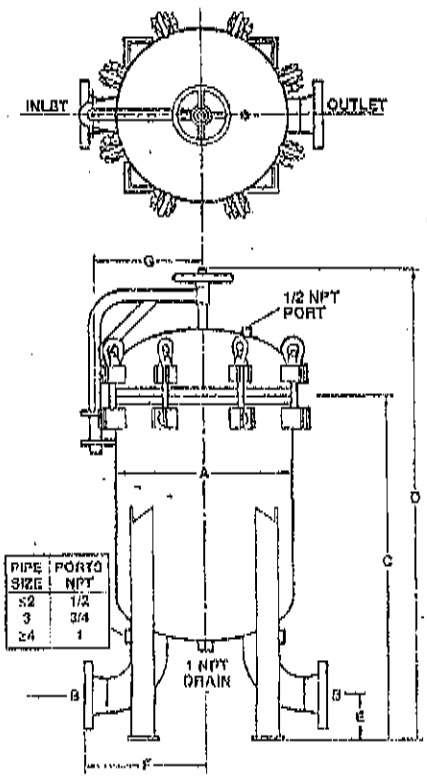
**Determining filter bag pressure drop:**

The Rosedale Filter Bag Catalog FB-1 will give you pressure drops per sq.-ft. of various bag media.

1. Divide the expected flow rate by the total number of sq. ft. of the bag area in the filter model involved (see model selection table).
2. Enter graph in Catalog FB-1 with this flow-per-sq.-ft. figure to find the pressure drop incurred by addition of bags.

## MODEL SELECTION (30-inch deep baskets)

| Model No. (and dia. in inches) | Number of baskets | Straining, filtering area, ft2 | Standard pipe sizes available, in. | Nominal flow rate, gpm |
|---|---|---|---|---|
| 16 | 2 | 8.8 | 2, 3, 4 | 400 |
| 18 | 3 | 13.2 | 2, 3, 4 | 600 |
| 22 | 4 | 17.6 | 3, 4, 6 | 800 |
| 24 | 6 | 26.4 | 3, 4, 6 | 1200 |
| 30 | 8 | 35.2 | 4, 6, 8 | 1600 |
| 36 | 12 | 52.8 | 6, 8, 10 | 2000 |
| 42 | 17 | 74.3 | 8, 10, 12 | 3500 |
| 48 | 23 | 101.2 | 8, 10, 12 | 4500 |




## DIMENSIONS, inches (30-inch-deep baskets)

| MODEL NUMBER & dim. A | Pipe sizes B | C | D | E | F | G | Leg bolt circle dia. | Weight (approx), lb |
|---|---|---|---|---|---|---|---|---|
| 16 | 2 | 40.2 | 55.2 | 4.50 | 10.5 | 10.9 | 14.0 | 400 |
| | 3 | 42.6 | 57.6 | 5.25 | 12.4 | 10.9 | 14.0 | 425 |
| | 4 | 44.8 | 59.9 | 6.00 | 14.0 | 10.9 | 14.0 | 450 |
| 18 | 2 | 40.6 | 56.1 | 4.50 | 11.1 | 11.9 | 16.0 | 410 |
| | 3 | 43.0 | 58.5 | 5.25 | 13.0 | 11.9 | 16.0 | 435 |
| | 4 | 45.3 | 60.8 | 6.00 | 14.8 | 11.9 | 16.0 | 460 |
| 22 | 3 | 43.9 | 60.4 | 5.25 | 13.8 | 14.0 | 20.0 | 500 |
| | 4 | 46.2 | 62.7 | 6.00 | 15.4 | 14.0 | 20.0 | 515 |
| | 6 | 50.4 | 66.9 | 7.00 | 18.9 | 14.0 | 20.0 | 560 |
| 24 | 3 | 44.2 | 61.2 | 5.25 | 14.9 | 15.0 | 22.0 | 535 |
| | 4 | 46.5 | 63.5 | 6.00 | 16.6 | 15.0 | 22.0 | 555 |
| | 6 | 50.6 | 67.6 | 7.00 | 20.1 | 15.0 | 22.0 | 590 |
| 30 | 4 | 47.6 | 66.1 | 6.00 | 18.7 | 18.0 | 28.0 | 665 |
| | 6 | 51.9 | 70.4 | 7.00 | 22.2 | 18.0 | 28.0 | 705 |
| | 8 | 56.4 | 74.9 | 8.25 | 25.7 | 18.0 | 28.0 | 850 |
| 36 | 6 | 53.4 | 73.4 | 7.00 | 24.1 | 21.0 | 34.0 | 870 |
| | 8 | 57.9 | 77.9 | 8.25 | 27.6 | 21.0 | 34.0 | 1010 |
| | 10 | 62.4 | 82.4 | 9.50 | 30.6 | 21.0 | 34.0 | 1150 |
| 42 | 8 | 59.2 | 80.7 | 8.25 | 29.1 | 24.0 | 40.0 | 1960 |
| | 10 | 63.5 | 85.0 | 9.50 | 65.1 | 24.0 | 40.0 | 2070 |
| | 12 | 68.0 | 89.5 | 11.00 | 72.2 | 24.0 | 40.0 | 2200 |
| 48 | 8 | 59.9 | 85.2 | 8.25 | 31.8 | 27.0 | 46.0 | 2200 |
| | 10 | 64.4 | 89.7 | 9.50 | 34.8 | 27.0 | 46.0 | 2350 |
| | 12 | 69.2 | 94.5 | 11.00 | 38.3 | 27.0 | 46.0 | 2530 |

## HOW TO ORDER MULTI-BASKET STRAINERS AND MULTI-BAG FILTERS Build an ordering code as shown in the example

**EXAMPLE: 24 30 4F 1 150 N C B S M 20 2P 1/16**

**MODEL NO.**
16 = 16 30 = 30
18 = 18 36 = 36
22 = 22 42 = 42
24 = 24

**BASKET DEPTH**
15-in. = 15
30-in. (std) = 30

**PIPE SIZE (FLANGED[1])**
2-in. (Models 16, 18, 22, 24) = 2F
3-in.( Models 16, 18, 22, 24, 30, 36) = 3F
4-in. (Models 16, 18, 22, 24, 30, 36) = 4F
6-in. (Models 22, 24, 30, 36) = 6F
8-in. (Models 30, 36, 42, 48) = 8F
10-in. (Models 36, 42, 48) = 10F
12-in. (Model 42, 48) = 12F

**OUTLET STYLE**
In-line, bottom (std) = 1

**PRESSURE RATING[2]**
150 psi = 150

**ASME CODE STAMP[3]**
None = N
Code (Models 16 & 18) = UM
Code (Model 22 & up) = U

**HOUSING MATERIAL**
Carbon steel = C
304 stainless steel = S
316 stainless steel = 316

**COVER GASKET**
Buna N = B
Ethylene Propylene = E
Viton® = V
Teflon® = T

**OPTIONAL INNER BASKET, MEDIA SIZE**
Perforation diameters (for type 2P baskets)
1/4, 3/16, 9/64, 3/32, 1/16
Mesh sizes (for type 2M & 2BM baskets)
20, 30, 40, 50, 60, 70, 80, 100, 150, or 200

**OPTIONAL INNER BASKET, TYPE**
2B = Filter bag basket, 9/64 perforations
2P = Strainer basket, perforated metal[4]
2BM = Filter basket, mesh lined[4]
2M = Strainer basket, perforated, mesh lined

**BASKET, MEDIA SIZE**
Perforation diameters (for type P baskets)
1/4, 3/16, 9/64, 3/32, 1/16
Mesh sizes (for type M & BM baskets)
20, 30, 40, 50, 60, 70, 80, 100, 150, or 200

**BASKET, TYPE**
B = Filter bag basket, 9/64 perforations[4]
P = Strainer basket, perforated metal
BM = Filter bag basket, perforated, mesh lined[4]
M = Strainer basket, perforated, mesh lined
HWM = Filter bag basket, heavy wire mesh[4]

**BASKET SEAL**
N = No seal
S = Seal required

1. ANSI 150-lb R.F. flanges provided as standard. Other styles and classes available. ANSI B16.5 Pressure-Temperature rating tables determine flange class for ASME code housings. Consult factory.
2. Higher pressure ratings available. Consult factory.
3. U stamp is available on all sizes.
4. Filter bags are specified separately. See Rosedale Filter Bag Catalog FB.


**ROSEDALE PRODUCTS, INC.**
Box 1085, Ann Arbor, MI 48106
Tel: 313-665-8201 Fax: 313-665-2214

CARBON VESSELS

# CANSORB® Disposable/Refillable

## MODULAR ADSORBERS for Flows up to 200 GPM

(U.S. PATENT 4,379,750, CANADA PATENT 1,167,075)

Specifications and Properties 4/10/92

| Unit | Design Maximum GPM(a) | Design Maximum psig.(b) | °F | Connections Flange | Diameter/ Height, Inches(c) | Adsorbent Pounds(d) | Minimum Contact, Min.(e) | Shipping Pounds(f) |
|---|---|---|---|---|---|---|---|---|
| C-35 | 35 | 12 | 230 | 1 1/2" | 38/71 | 660 | 4.8 | 1240 |
| C-50 | 50 | 12 | 230 | 2" | 47/68 | 1000 | 6.1 | 1610 |
| C-75 | 75 | 12 | 230 | 3" | 57/91 | 2000 | 6.8 | 2860 |
| C-100 | 100 | 10 | 230 | 3" | 66/97 | 3000 | 7.7 | 5200 |
| C-200 | 200 | 8 | 230 | 4" | 85/112 | 6000 | 7.7 | 9600 |

(a) Hydraulic maximum; adequate contact time may require lower flow, see (e).

(b) Per unit. Series pressure additive on upstream unit(s).

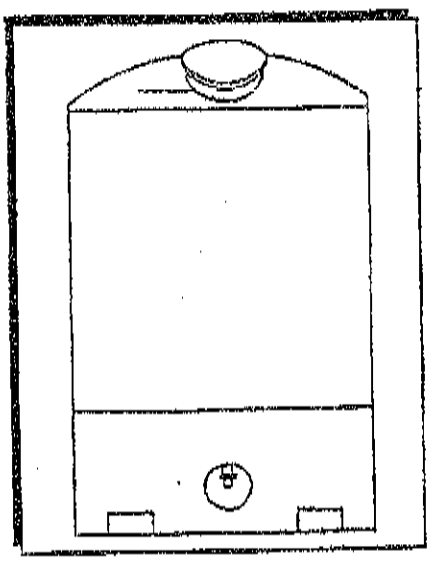
(c) Primary adsorber vessel, including support assembly.

(d) Virgin TIGG 6D 1240 Activated Carbon.

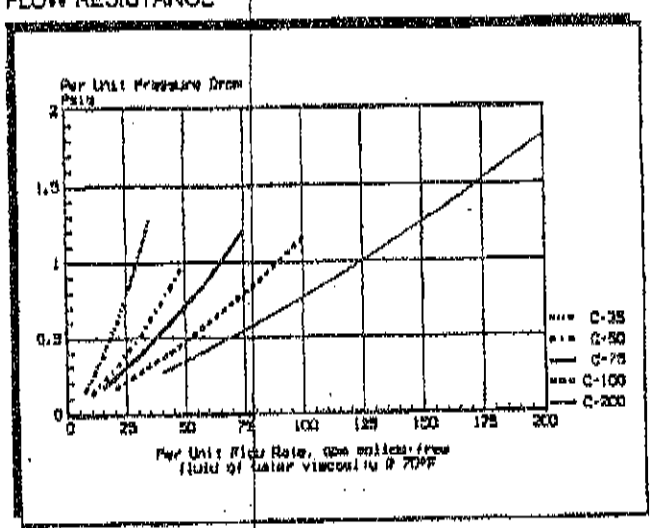
(e) Superficial at maximum flow.

(f) Active carbon basis. Other adsorbents, prewetting will change.

For applications comparable in conditions where smaller disposable CANSORB's would be used but where flow rates are higher or where more on-line adsorbent required. As with smaller disposable units, model numbers give maximum design GPM for water and other low viscosity liquids. Likewise, a patented liquid collection system promotes even flow distribution for efficient purification and adsorbent utilization, at low flow resistance. Construction is steel dished heads, side and skirt; vessels are lined with polyurethane coating throughout. Screened liquid drain for discharging excess liquid before disposal, top inspection port and welded, heavy fork tubes for transport and support are standard.



FLOW RESISTANCE




TIGG CORPORATION
BOX 11861
PITTSBURGH, PA 15228

TELEPHONE: (412) 563-4300
TELEX: 250312 (RCA)
FAX: 412-563-6155
CABLE: TIGGCOR PITTSBURGH
MANUFACTURING: TIGG SOUTHCENTRAL OPERATIONS
ROUTE 16 EAST
HEBER SPRINGS, ARKANSAS 72543

# CANSORB® Multimedia Filters

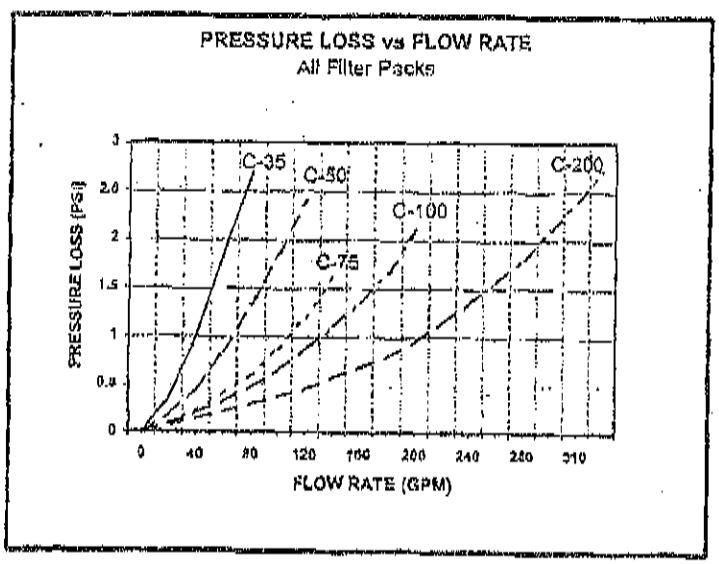
STEEL VESSELS

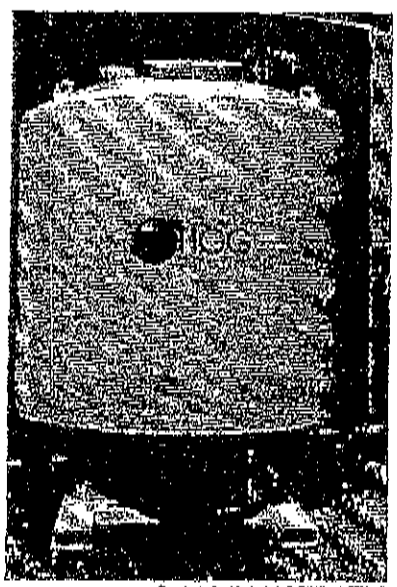
| MODEL | MAXIMUM FLOW (GPM) | MAX PRESS (PSIG) | FLG. INLET/ OUTLET (IN) | DIAMETER / HEIGHT (IN) | SHIPPING WEIGHT (w/ media) FILTER PACK A | SHIPPING WEIGHT (w/ media) FILTER PACK B | SHIPPING WEIGHT (w/ media) FILTER PACK C | SHIPPING WEIGHT (w/ media) FILTER PACK D |
|---|---|---|---|---|---|---|---|---|
| C-35 | 60 | 30 | 2 / 2 | 38 / 78 | 2750 | 2800 | 2400 | 2300 |
| C-50 | 90 | 30 | 3 / 3 | 46 / 94 | 4150 | 4400 | 3100 | 4350 |
| C-75 | 140 | 30 | 3 / 4 | 57 / 95 | 6175 | 6625 | 6225 | 6500 |
| C-100 | 200 | 30 | 3 / 4 | 68 / 99 | 8500 | 9100 | 8500 | 9000 |
| C-200 | 310 | 30 | 4 / 6 | 86 / 118 | 13650 | 14550 | 13600 | 14450 |

FILTER PACK:

A) Contains gravel and sand.
B) Contains gravel, garnet, and sand.
C) Contains gravel sand, and anthracite.
D) Contains gravel, garnet, sand, and anthracite.

The CANSORB Series Modular Filters are fabricated of carbon steel and provided with a high solids epoxy lining. Where process conditions dictate, the vessels can be fabricated from other materials such as stainless steel. In addition, a different lining can be substituted for the high solids epoxy. A drain line is provided with a ball valve. The liquid collection system is designed to promote even flow distribution and thus, efficient filtration and backwashing. The liquid outlet is designed to maintain a liquid level above the media bed. The manway is 18 inches in diameter for easy access and media filling and removal. The vessels are provided with lifting lugs and fork channels. A combination rupture disc-vent assembly is available. *Specifications and properties are subject to change without notice.*

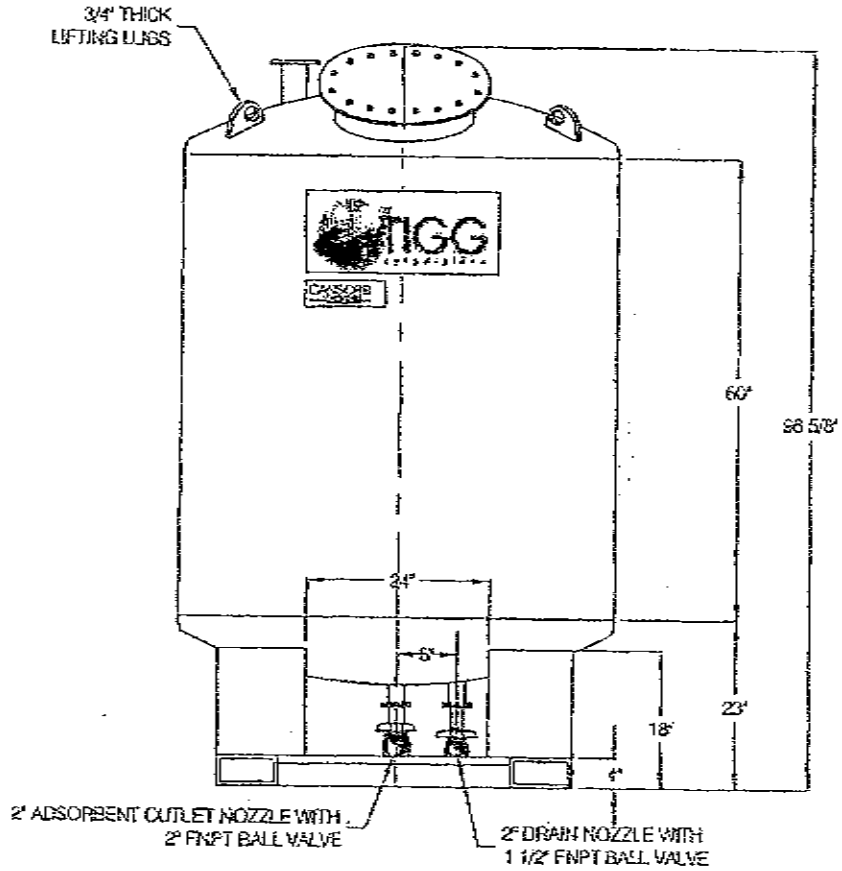


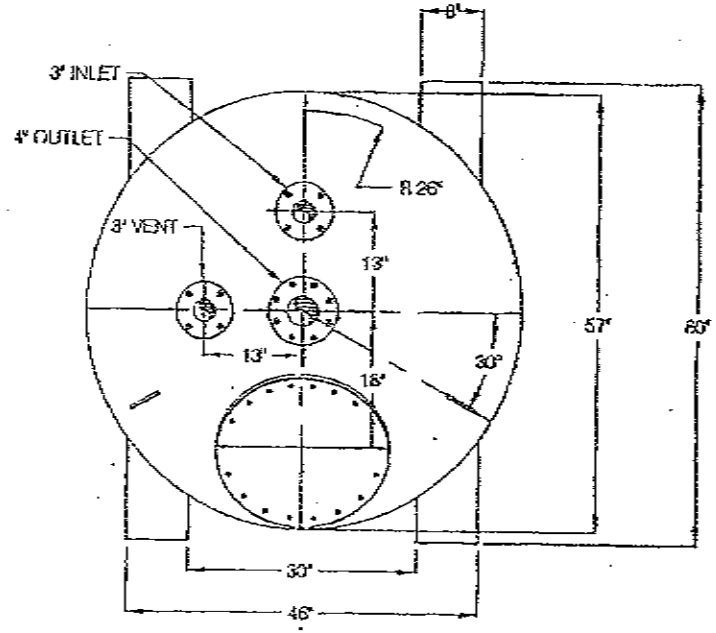
C-200 ILLUSTRATION

TIGG corporation

800 Old Pond Road, Suite 706
Bridgeville, PA 15017
(412) 257-9580
(412) 257-8520 (facsimile)
www.tigg.com
information@tigg.com




ELEVATION




PLAN

NOTES:
INLET & OUTLET INCLUDE 1" THICK POLYETHYLENE FLANGE

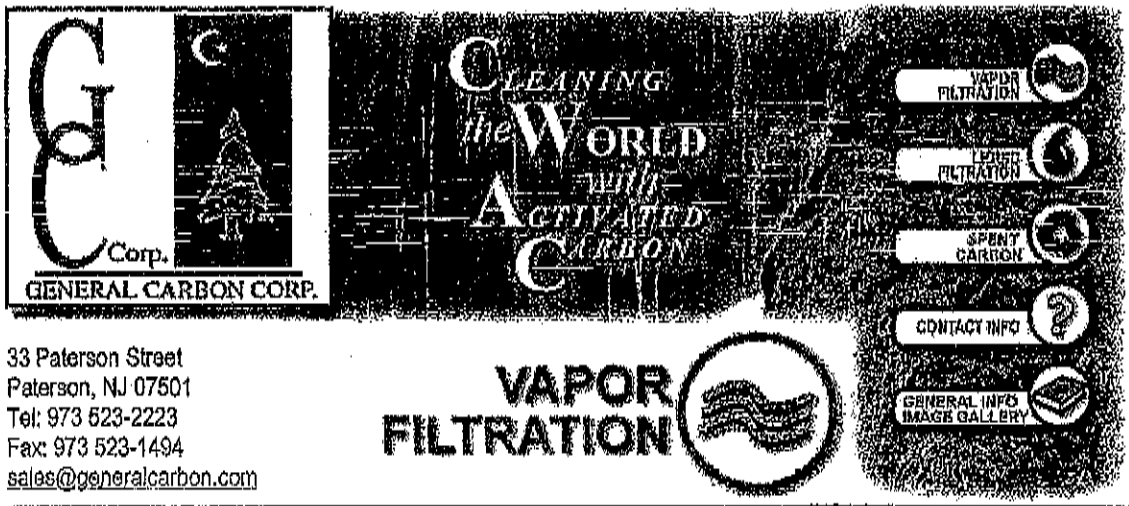
MAXIMUM TEMPERATURE CAN BE INCREASED W/OPTIONAL LININGS & INTERNALS

| VESSEL MATERIALS | LINING | EXTERIOR PAINT | HEAD THICKNESS | SHELL THICKNESS | INTERNALS | ADSORBENT OUTLET ASSEMBLY | LIQUID DRAIN ASSEMBLY | VOLUME OF VESSEL | STANDARD MAX CARBON FILL | SHIPPING / OPERATING WT. (STANDARD FILL) | CARBON TYPE | MAXIMUM OPERATING PRESSURE | MAXIMUM OPERATING TEMPERATURE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CARBON STEEL | HIGH SOLIDS EPOXY | ACRYLIC WASHDOWN PRIMER & ENAMEL | 3/16" | 3/16" | SCHEDULE 40 PVC | SCHEDULE 80 PVC | SCHEDULE 80 PVC | 97 FT³ (60 INCLUDES TOP HEAD) | 2000 LBS / 2500 LBS | 3400 LBS / 6150 LBS | TIGG GC 1240 LIQUID PHASE | 50 PSIG | 115°F |

TIGG Corporation
PHONE (412) 257-9580 FAX (412) 257-9520

C-75

DATE: 8/01/01

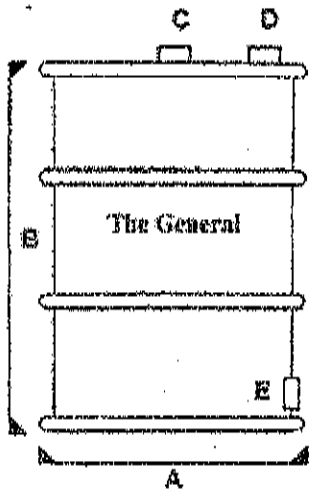



33 Paterson Street
Paterson, NJ 07501
Tel: 973 523-2223
Fax: 973 523-1494
sales@generalcarbon.com

VAPOR FILTRATION

# The General

***Air Pollution Control Barrels***




**The General Air Pollution Control Barrels** are ready to use, low cost, self contained air purification units that can treat air flows of up to 250 CFM. **The General** is available in three different sizes to better serve your treatment needs.

| ***Specifications*** | 55 Gallon | 85 Gallon | 110 Gallon |
|---|---|---|---|
| A-Diameter, Outside: | 24" | 28" | 32" |
| B-Height, Outside Wall: | 35" | 39" | 43" |
| Inlet Fitting: | E-2"MPT | C-4"FPT | C-4"FPT |
| Outlet Fitting: | D-2"MPT | D-4"FPT | D-4"FPT |
| Drain Fitting: | E-2"MPT | E-I"FPT | E-I"FPT |
| Carbon Weight, Lbs.: | 150 | 300 | 400 |
| Max. Recommended Flow Rate, CFM: | 100 | 180 | 250 |
| Maximum Pressure, psig: | 10 | 7 | 7 |
| Max. design Temp., Deg F: | 140 | 140 | 140 |
| Flow Direction: | Upflow | Upflow | Upflow |

**Activated Carbon - The General** vapor adsorbers are filled with virgin, high activity GC C-40 pelletized carbon. Other virgin coal, coconut shell, reactivated or impregnated carbons are available.

**Removable Lid** - 16 gauge lid with ring & bolt closure and poly-clad cellulose gasket.

**Connections** - Metal connectors with standard pipe threads insure easy, durable and leakproof hookup to your system. Unions or quick connect fittings are advised to make drum exchange easy. Drains let you remove any accumulated condensate.

**Flow Distributors** - The 55 gallon barrel uses an air chamber to insure even distribution of the air flow through the carbon. Low pressure drop, slotted Schedule 40 PVC collectors are used in the 85 gallon and 110 gallon drums for proper flow distribution. Stainless Steel internals and drums are available for special applications.

**Coatings** - The General pollution control barrels are coated on the inside with heat cured phenolic epoxy. The outside coating is industrial enamel. A polyethylene liner is available for extra corrosion resistance for the 55 gallon and 85 gallon units.

**Installation & Start Up - The General** air pollution control barrel requires no special procedure for start up Just connect the inlet and outlet to the treatment system and start it up. Multiple units are usually connecte in series with testing advised between the units to determine when the first unit needs to be changed out.

**Maintenance** - Once connected, **The General** requires no maintenance other than the monitoring of the influent and effluent air streams and the operating pressure of the system. Monitoring the air stream into th last Air Pollution Control Barrel in series mode is a recommended safeguard against breakthrough in the final discharge. When the concentration of contaminants in the outflow equals the concentration in the inflow, **The General** has reached its removal capacity and should be removed from the service. The workir life of each adsorber is dependent upon the type of contaminant in the air as well as its concentration and the air flow rate. A pressure relief device is advised to prevent damage to the canister in the event of excessive pressure buildup.

**Recharging The General** - Once the carbon has reached its pollutant removal capacity, the unit should be removed and replaced with a fresh one. To purchase replacement carbon or to arrange for a carbon chang out, please contact our office.

**Disposal** - Dispose of the spent carbon in accordance with Federal, State and Local regulations.

*WARNING!*

*Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels. Confined space/low oxygen procedures should be put in place before any entry is made. Such procedures should comply with all applicable local, ste and federal guidelines.*

---

33 Paterson Street • Paterson, NJ 07501 • Tel: 973 523-2223 Fax: 973 523-1494

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# Multimedia Particulate Filter

## Media Loading, Installation and Start-Up

The following is a list of filter media that will yield an efficient multimedia filter when installed in a downflow pressure vessel. The media starts with course material on the bottom, and then has successively smaller sized material as you go up. The bottom material provides support and stops the migration of the smaller media down through the filter bed. The top layers do the actual filtering. Multimedia filters are in direct contrast to deep-bed sand filters that have a large layer of the same size media. Depth filters rely on the large amount of media to trap particulate while multimedia filters rely on the top few inches of media to remove particulates. Depth filters run longer between backwashes but have lower processing rates. A multimedia filter needs to be backwashed more frequently but can flow more water in a similar sized vessel.

The following media should be loaded into the vessel, one size at a time and leveled with a rake or board. Loading should be done very gently until all internal pipes have been covered.

Filter Media Levels;

3/4" GRAVEL – Base material, covers bottom internals
3/8" GRAVEL – Second level media
1/4"x 1/8" GRAVEL – 3rd level
3/16"x#10 GRAVEL – 4th level
8x12 GARNET – 5th level
30x40 GARNET – 6th level
.45-.55 SAND – 7th level
#1 Anthracite – 8th level, top media layer

*This media arrangement should get you in the 20-10 micron filtration range.

After installation, the media should be backwashed at 12-15 gpm/sq ft to clean and classify the bed for proper operation. This media should be able to treat a maximum of around 10 gpm/sq ft. Pressure gauges on the inlet and outlet are needed to monitor the pressure drop across the bed. When the bed pressure or throughput reach unacceptable levels a backwash should be done.

**Backwashing** is required to clean accumulated debris from the media and restore optimal flow and pressure drop. Backwashing reverses the flow through the bed. Water flow is put into the bottom of the vessel and allowed to exit through the top. The flow should start at around 5 gpm/sq ft and increased to 12-15 gpm/sq ft over a period of 1-3 minutes. Peak flow should be run for 10-15 minutes or until the backwash water runs clear. A smaller backwash flow rate can be used if necessary, but the backwash will NOT provide complete cleaning and more frequent backwashing may be required.

ORGANO CLAY

# EC-100 *"The Carbon Extender"*

## Organically modified clay filtration medium

- Reduces waste water treatment costs by 50% or more
- Extends the life of activated carbon by 7 times
- Removes emulsified oil, chlorinated hydrocarbons, and heavy metals
- Protects Ion Exchange Resins, KDF, Sand Filters, Air Stripper Media.
- Protects Membranes, RO units, UF units from oils.

Biomin, Inc.

**EC-100 is a granular, organically modified clay filtration medium for water treatment systems. A blend of bentonite and anthracite treated with a quaternary amine, EC-100 removes mechanically emulsified oil and grease, large molecular weight chlorinated hydrocarbons, and heavy metals. And it does it 50% more efficiently than activated carbon.**

## A cost-saving filtration medium

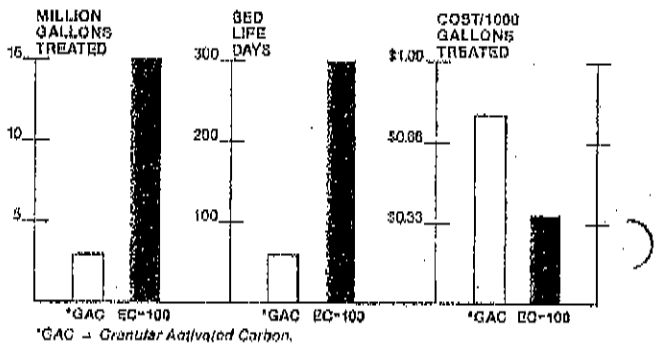
EC-100 is a highly versatile and effective filtration medium that can be used in pretreatment, post-treatment, or stand-alone treatment processes. When used as a pretreatment to carbon in oil and grease removal applications, EC-100 removes the water soluble organics with up to seven times greater efficiency than carbon filtration alone. Pretreatment with EC-100 also extends the life of activated carbon by seven times, reducing waste water treatment costs by 50% or more.

## Increases efficiency of activated carbon

The quaternary amine-treated clay platelets in EC-100 have the ability to capture up to 60% of their weight in oil, grease, and other low solubility organic compounds. Used upstream from activated carbon, EC-100 removes emulsified oil that would otherwise blind or block the pores of the carbon granules and inhibit their ability to remove more soluble compounds.

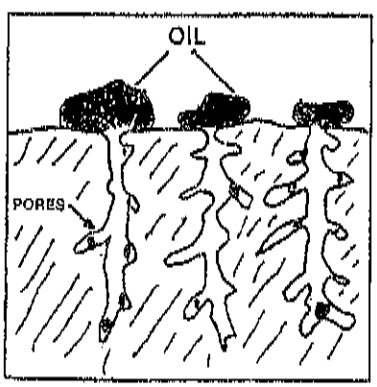
The graph below represents an example of anticipated filter media bed life, and media cost per 1000 gallons of waste water treatment.

Using EC-100 for removal of mechanically emulsified oil from waste water reduced the treatment cost by 55%.

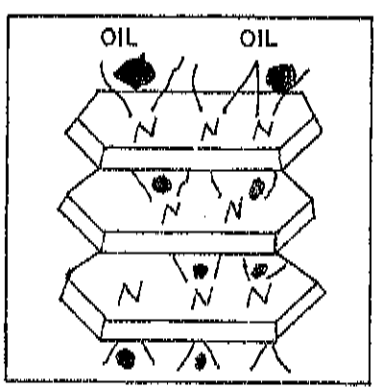


*GAC = Granular Activated Carbon.

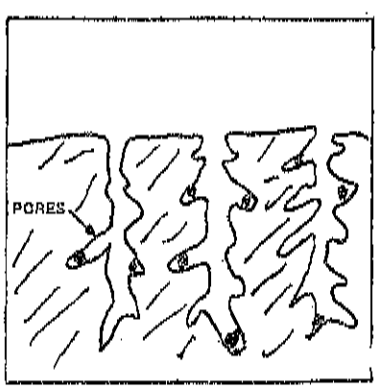
This waste water stream contains 25 ppm oil and grease, flow rate is 50 GPM during a 10 hour day. Sorption efficiency for oil removal is 50% for EC-100 and 10% for activated carbon.



*ACTIVATED CARBON GRANULE*
Porespaces of activated carbon, blinded by emulsified oil.



Clay Platelets, modified with quaternary amine, remove emulsified oil on the clay surface.



Activated Carbon downstream of EC-100, ready to remove the more soluble compounds.

## System Design Assistance is Available

EC-100 can be used in existing pressure filter vessels with proper influent distributors and underdrain systems. Expert system design and installation assistance is available to ensure optimal organic waste removal in specific applications. We also offer complete turnkey operations, including not only design and installation, but system servicing and disposal of spent medium, as well.

## Spent Medium Disposal is Easy

Disposal options are dependent upon the classification of the organics absorbed. Spent medium can be landfilled, land farmed, incinerated, bioremediated, or blended as a fuel source for firing in cement kilns. Spent EC-100 has a fuel value of up to 18,000 BTU/lb, depending on the fuel value of the absorbed organics.

## Call or Write for More Information

To find out how easy it is to cut the cost of wastewater treatment in half, call or write us today. We'll be happy to answer your questions about EC-100 and even help you estimate how much you could save by using it in your treatment process.

### Applications for EC-100

| Application | Contaminant Removed |
|---|---|
| Groundwater Treatment | Diesel fuel, gasoline, oils, greases, PCB, BTX, heavy metals |
| Parts Cleaning | Non-ionic surfactants |
| Wood Treatment | Pentachlorophenols and creosote |
| Pigment Production | Organic pigments |
| Boiler Feed Water | Oil, humic acid, fulvic acid |
| Gas Sweetening | Large molecular weight hydrocarbons |
| Dry Cleaning | Perchloroethylene |
| Drinking Water | Trihalomethanes, heavy metals, hydrocarbons |
| Electroplating | Heavy metals |
| Paint Stripping | Solvents, heavy metals |
| Natural Gas Compression | Condensate |
| Industrial Stormwater | Oil and grease |
| Vehicle and Heavy Equipment Cleaning | Oil and grease |
| Produced Water from Oil Production Wells | Oil, diesel fuel |

# EC-100

## Organically modified clay filtration medium

### Specifications

| | |
|---|---|
| U.S. Mesh Size | 8 × 30 |
| 80% passes through | No. 8 |
| 5% or less passes through | No. 50 |
| Water retention, drained | 10% |
| Moisture: | 8% or less |
| Density: | |
| Shipped | 61 lb/ft³ |
| Backwashed, settled in column | 50–57 lb/ft³ |

### Design Criteria

| | |
|---|---|
| Bed Depth: | 3 ft. Min. |
| Hydraulic Loading: | 2–5 gpm/ft² max. |
| Contact Time: | 15 minutes recommended |
| Bed Expansion (during back wash) | 20% |
| Standard Packaging: | 55 gal drums or bulk bags |

### Filter Design Features

Appropriate underdrain to ensure uniform water flow throughout the bed of EC-100 to prevent channeling.

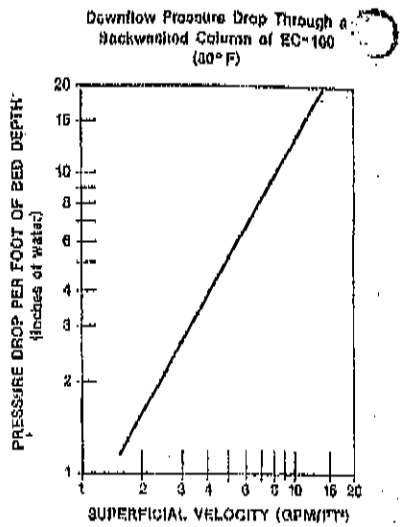
Support bed over underdrain (sand, gravel, anthracite, etc.)

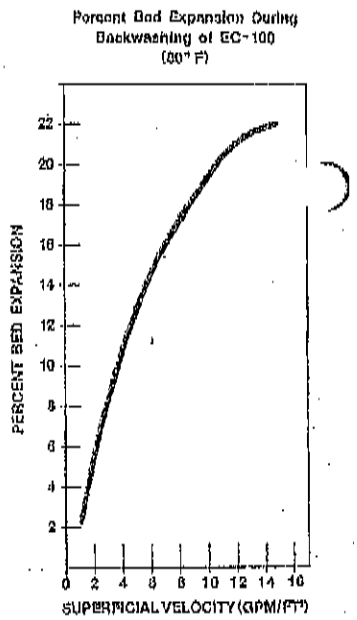
Adequate freeboard to allow for bed expansion if backwashed

Air eliminator

Access to mechanical vacuum of spent EC-100

Distributor or splash plate



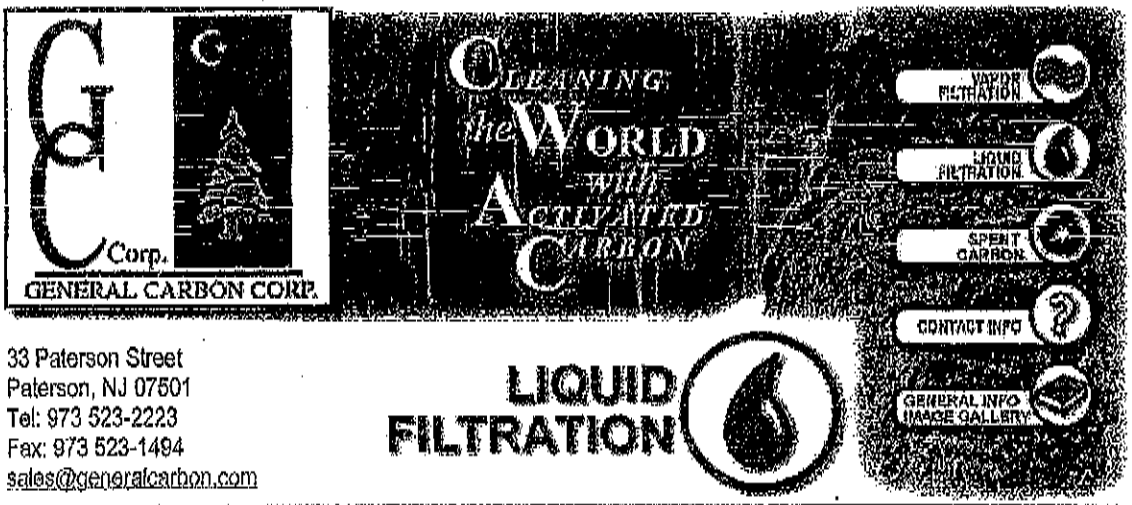


For more information, contact:

**BIOMIN, INC.**

26789 N. Woodward, Suite 107
Huntington Woods, MI 48070
U.S.A.
TEL: (810) 544-2552
FAX: (810) 544-3733
1-800-959-0830

Evers Anthrazitveredelung
Rheiner Str. 14
D-4447 Hopsten
Germany
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FAX: 49 54 58 818
Telex: 944114




33 Paterson Street
Paterson, NJ 07501
Tel: 973 523-2223
Fax: 973 523-1494
sales@generalcarbon.com

LIQUID FILTRATION

# GC 12x40

***GRANULAR ACTIVATED CARBON***

**GC 12x40** is a virgin activated carbon which is granular in form. Made from the finest grades of bituminous coal, it is ideal for many liquid phase applications including the removal of organics from water streams and the purification of potable water.

***Specifications***

| | |
|---|---|
| Mesh size - 12x40, %: | 90(min) |
| Less than No. 12, %: | 5(max) |
| Greater than No. 40, %: | 5(max) |
| Iodine Number, mg/g: | 1000(min) |
| Surface Area, $m^2/g$: | 1000(min) |
| Hardness, %: | 90(min) |
| Abrasion No.: | 80(min) |
| Moisture, % (as packaged): | 3.0(max) |
| Typical Density, lbs./cu.ft.: | 27-30 |
| g/cc: | 0.43-0.48 |

*Standard packaging is in 55 lb. vinyl bags. Other packaging is available upon request.

*Caution!*

*Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels. Confined space/low oxygen procedures should be put in place before any entry is made. Such procedures should comply with all applicable local, sta and federal guidelines.*



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Site Designed By Slimlab.net

# New York State Department of Environmental Conservation
# Air Facility Registration

| DEC ID |
|---|
| - - - - - - - - - |

## Owner/Firm

| Taxpayer ID |
|---|
| |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Name | AvalonBay Communities | | | | | | |
| Street Address | 535 Fifth Avenue | | | | | | |
| City / Town / Village | New York | State or Province | NY | Country | USA | Zip | 10017 |

## Owner/Firm Contact

| | | | |
|---|---|---|---|
| Name | AKRF Engineering, P.C. | Phone No. | ( 212 )696-0670 |

## Facility

| | | | |
|---|---|---|---|
| Name | Queens West - Parcel 9 - Soil Remediation | | |
| Location Address | South side of 47th Road between Center Boulevard & 5th Street | | |
| ❑ City / ❑ Town / ❑ Village | Hunters Point, Queens, NY | Zip | 11101 |

## Facility Information

Total Number of Emission Points: 6 ❑ Cap by Rule

## Description

Soil remediation to be conducted in accordance with NYSDEC-approved RWP and BCP Agreement (Site No. C241049), making activities exempt from obtaining air permit. Remediation to be conducted under temporary structure with ventilation using six (6) 20,000 CFM blowers. Air from each blower to be treated with 16,000 lb GAC units (total of six (6) TIGG NB-20-1001). Inlet & outlet of each GAC vessel to be monitored each work day with a PID and periodic VOC sampling via Summa canisters (TO-15) to determine breakthrough and subsequent GAC replacement in accordance with RWP. Approximate project duration - 4 months.

## Standard Industrial Classification Codes

| | | | | | |
|---|---|---|---|---|---|
| 4925 | | | | | |

## HAP CAS Numbers

| | | | | | |
|---|---|---|---|---|---|
| 71 - 43 - 2 | 108 - 88 - 3 | 100 - 41 - 4 | 108 - 38 - 3 | 95 - 47 - 6 | 106 - 42 - 3 |
| 91 - 20 - 3 | 100 - 42 - 5 | - - | - - | - - | - - |

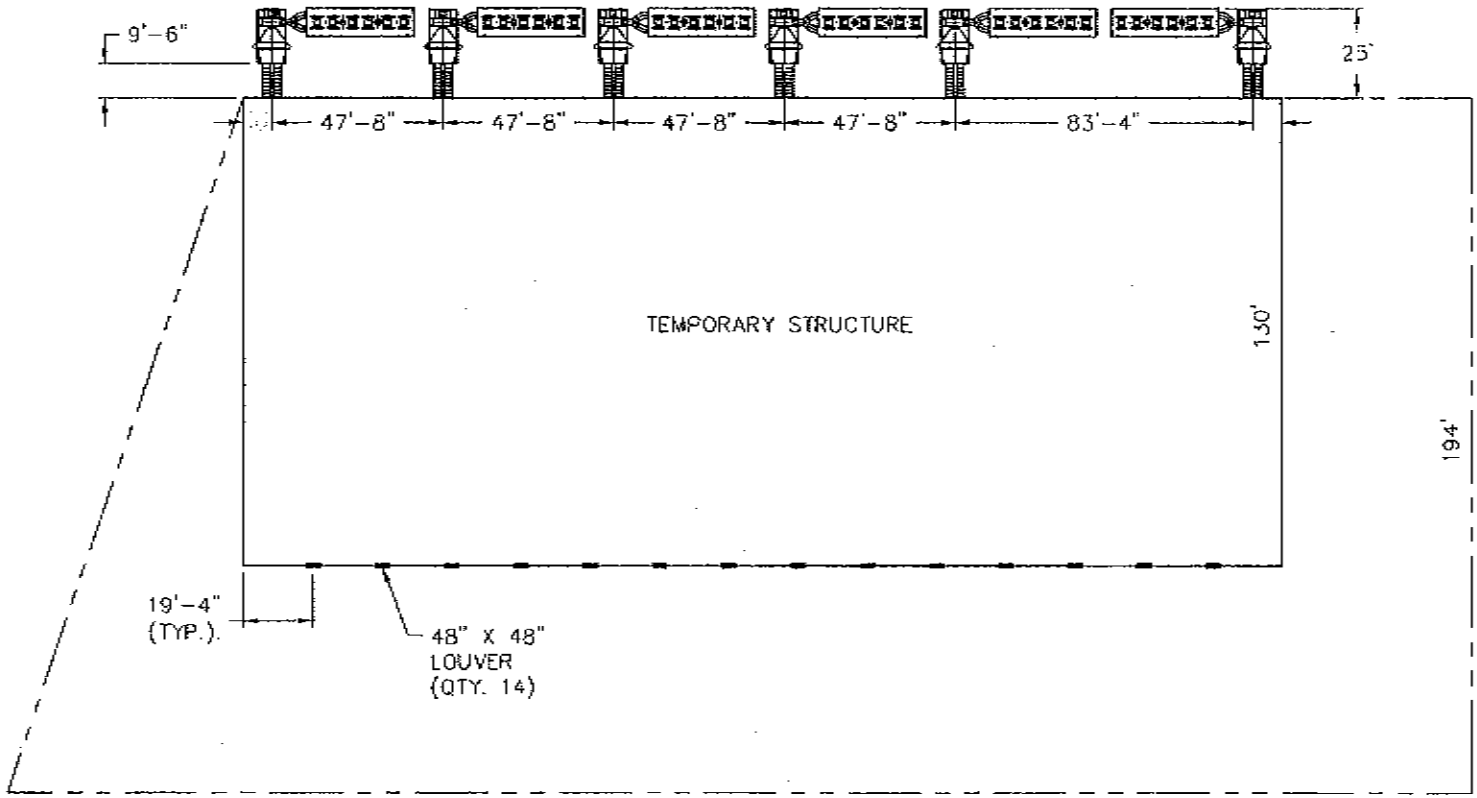
## Applicable Federal and New York State Requirements (Part Nos.)

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

## Certification

I certify that this facility will be operated in conformance with all provisions of existing regulations.

| | | | |
|---|---|---|---|
| Responsible Official | Marc S. Godick | Title | Vice President |
| Signature | | Date | 8 / 24 / 05 |




| NO. | REVISION | BY | DATE |
|---|---|---|---|
| | | | |

TIGG corporation

PROJECT

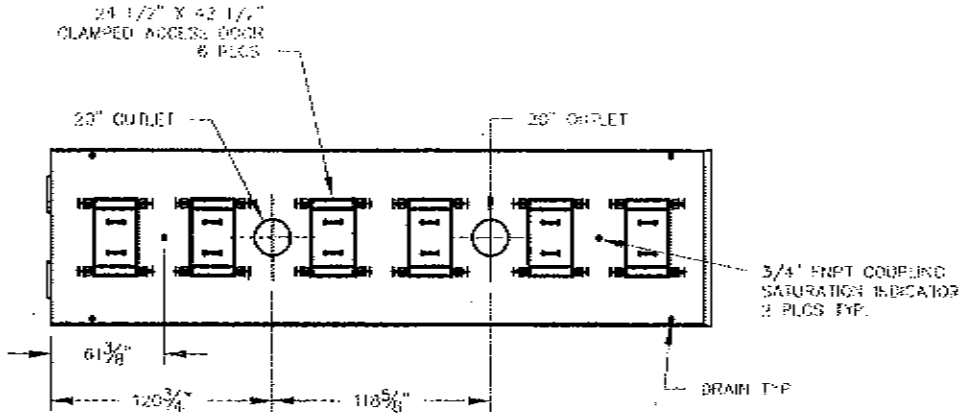
| | |
|---|---|
| PROJ. NO. | E05-048-JK |
| P.O. NO | |
| DRAWN BY | JB |
| DESIGN BY | BB |
| CHKD. BY | BB |
| DATE | 7/15/05 |
| SCALE | NTS |

SYSTEM LAYOUT

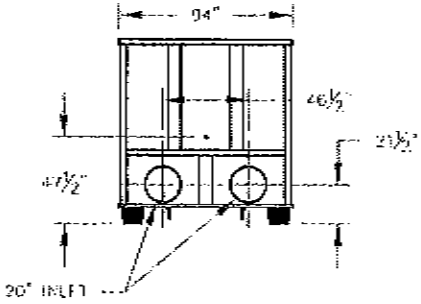
DWG NO. C05-1043 REV. 0

NOTES: TIGG CORPORATION RESERVES THE RIGHT TO CHANGE ANY AND ALL DIMENSIONS AND DESIGNS
OVERALL OUT TO OUT DIMENSIONS AND INLET/OUTLET LOCATIONS ARE FIXED.

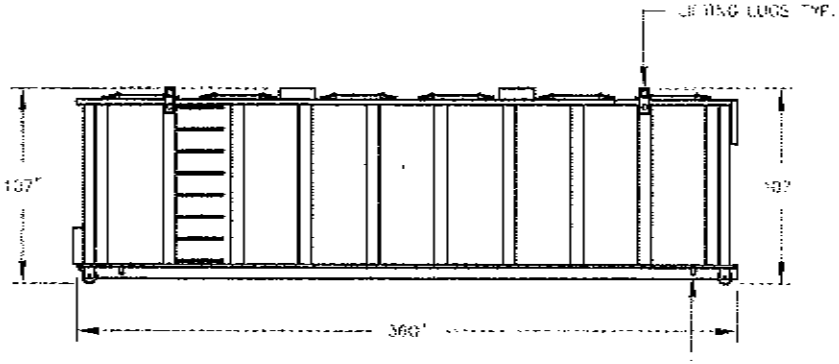
CONTAMINATED AIR SHALL ENTER UNIT THROUGH BOTH INLETS AND MUST EXIT USING BOTH OUTLETS.



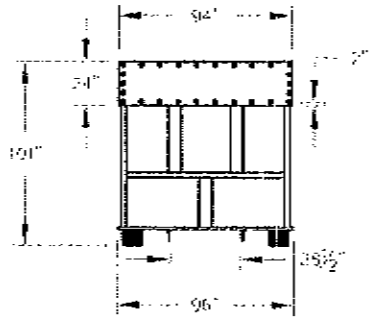

TOP VIEW




LEFT SIDE




FRONT VIEW




RIGHT SIDE

| NO. | REVISION | BY | DATE |
|---|---|---|---|
| 1 | REVISE STANDARDS | JB | 6/10/03 |

# VESSEL STANDARDS

| | |
|---|---|
| VESSEL MATERIALS : CARBON STEEL | OCD VOLUME STD/MAX : 640 FT³ / 780 FT³ |
| LINING : HIGH SOLIDS EPOXY | STD / MAX CARBON FILL : 17,000 LBS/20,000 LBS |
| EXTERIOR PAINT : ACRYLIC WATERBORNE PRIMER & PAINT | SHIP WT. EMPTY/MAX FILL : 15,000 LBS/35,000 LBS |
| WALL THICKNESS : 12 GAUGE STD. | CARBON TYPE : TIGG 5CP--4MM VAPOR PHASE |
| FLOOR THICKNESS : 3/16" STD. | MAX. OPERATING PRESSURE : 4"H,C |
| INTERNALS : CARBON STEEL & POLYPROPYLENE | MAX. OPERATING TEMP. : 140F |
| ADSORBENT OUTLET ASSEMBLY : 24" X 42" ACCESS AND HINGED DOORS | |

PROJECT

| | |
|---|---|
| PROJ. NO. | SALES |
| P.O. NO. | |
| DRAWN BY | JB |
| DESIGN BY | BL |
| CHKD. BY | BL |
| DATE | 05/15/02 |
| SCALE | NTS |

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TIGG corporation

NB--20--1001

DWG NO. NB--20--1001 REV 1

# NIXTOX® BOX NB20

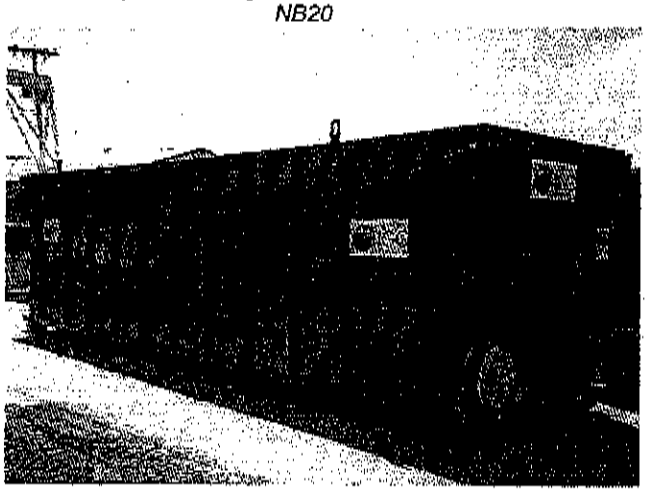
| MODEL | MAX FLOW (CFM) | MAX PRESS (PSIG) | MAX TEMP (deg F) | INLET / OUTLET (IN) | DIMENSIONS L X W X H (FT) | STANDARD ADSORBENT FILL (LBS) | MAXIMUM ADSORBENT FILL (LBS) | SHIPPING WEIGHT (EMPTY) (LBS) |
|---|---|---|---|---|---|---|---|---|
| NB-20 | 20000 | 1 | 140 | 20 /20 | 30 X 8 X 9.3 | 16000 | 20000 | 15000 |

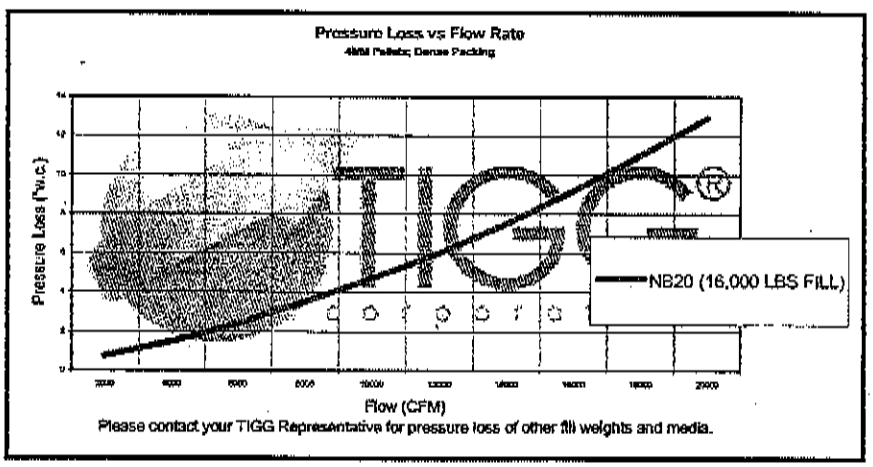
NOTES:

1) Nominal flow may be conservative. Desired contact time may allow higher or lower flow rates.
2) Dry virgin activated or reactivated carbon provided as standard adsorbent.
3) Adsorbent fill is based on a bed density of 27 lb/ft$^3$.
4) Adsorbent fill can differ based on variable bed density and alternate adsorbents.
5) Pressure drop curves are based on a dense packed bed of activated carbon. Please contact your TIGG sales representative for more specific information.

The NIXTOX Box Series Modular Adsorbers are designed for applications with high flow rates or where more on-line adsorbent is required. Model numbers reflect maximum design flow for air and other vapors. The vessels are fabricated of carbon steel and provided with a high solids epoxy lining. The vessels are provided with lifting lugs. *Specifications and properties are subject to change without notice.*

*NB20*

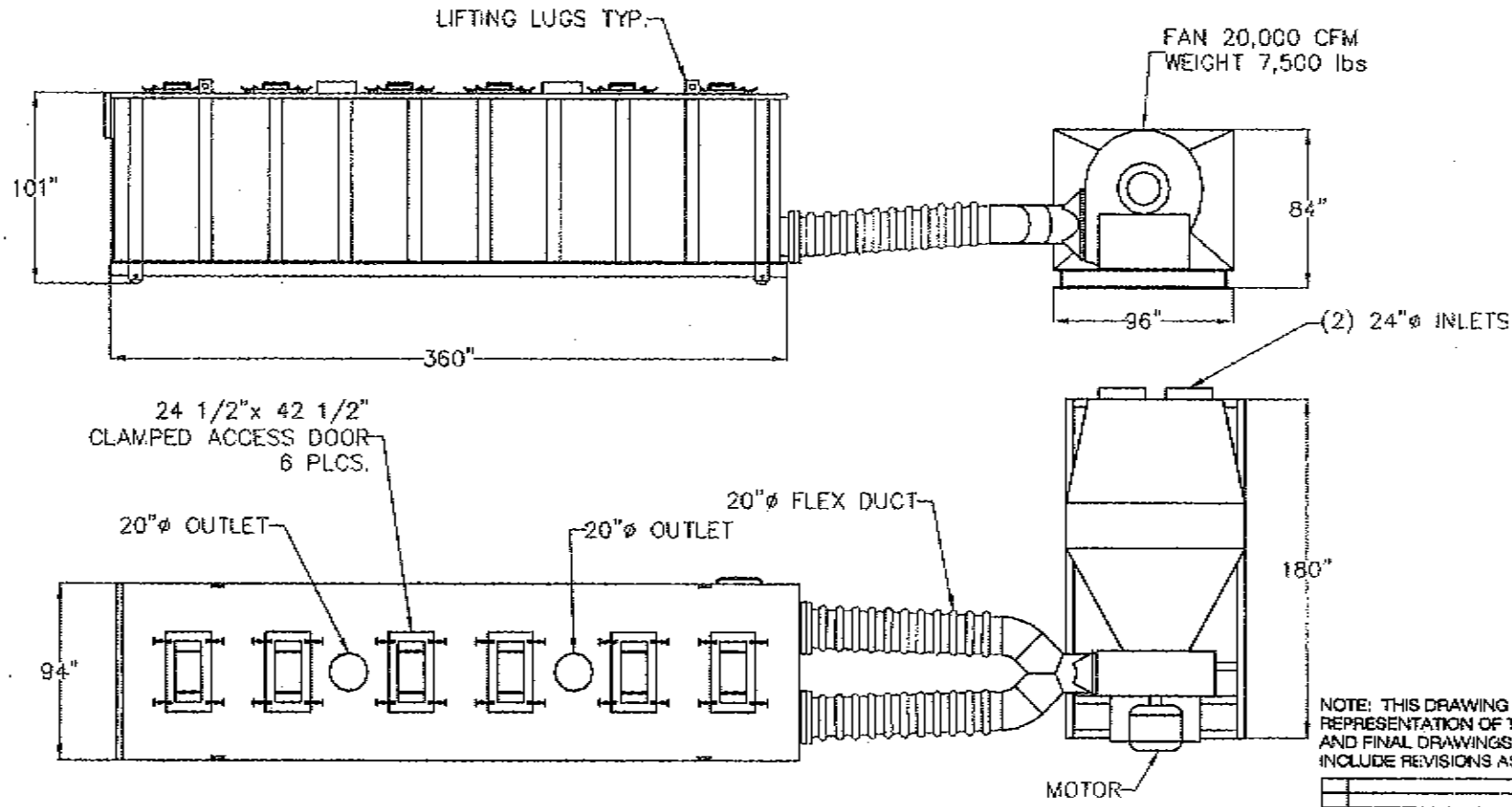





Please contact your TIGG Representative for pressure loss of other fill weights and media.

TIGG corporation

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Bridgeville, PA 15017
(412) 257-9580 phone
(412) 257-8520 fax
www.tigg.com
info@tigg.com




NOTE: THIS DRAWING IS A REPRESENTATION OF THE DESIGN AND FINAL DRAWINGS WILL INCLUDE REVISIONS AS REQUIRED.

NOTE: TIGG CORPORATION RESERVES THE RIGHT TO CHANGE ANY AND ALL DIMENSION-DESIGNS OVERALL OUT TO OUT DIMENSIONS AND INLET/OUTLET LOCATIONS ARE FIXED.

NOTE: CONTAMINATED AIR SHALL ENTER UNIT THROUGH BOTH INLETS AND MUST EXIT USING BOTH OUTLETS.

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|---|---|---|---|
| 1 | CHANGE BLOWER | JB | 10/04/01 |

PROJECT: GENERAL LAYOUT

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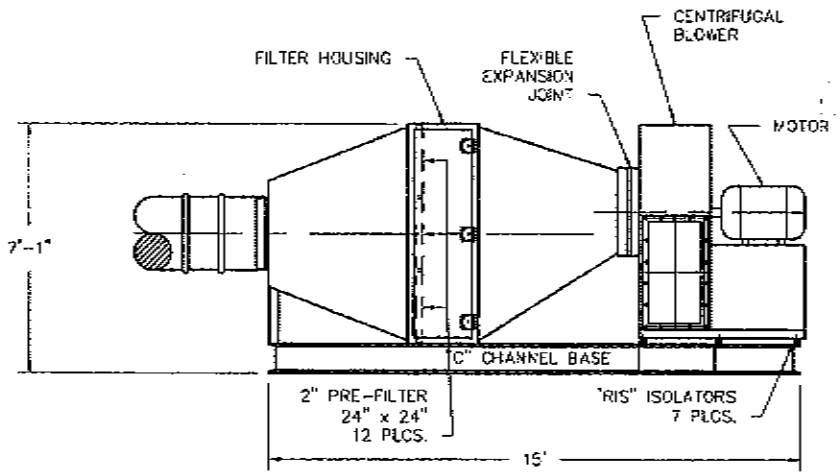
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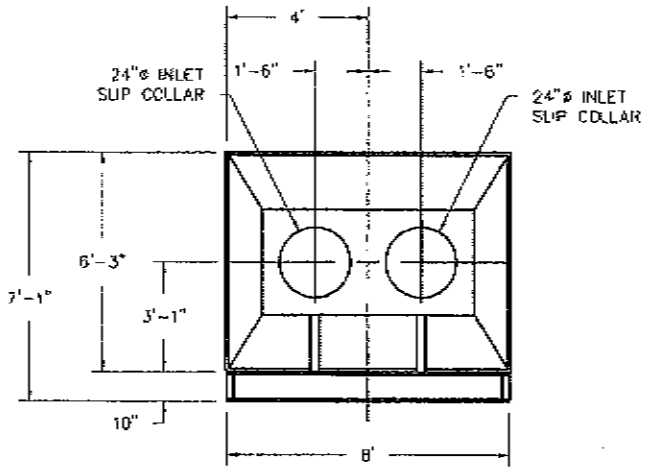
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CARBON ADSORBER, AIR HANDLING SYSTEM

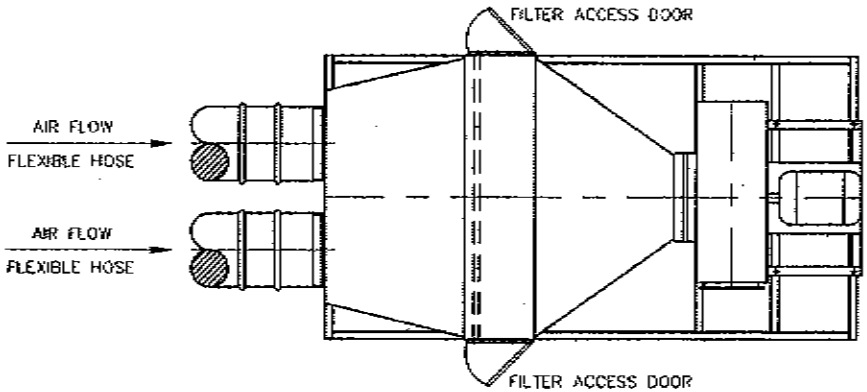
DWG. NO. NB-20-1002 REV. 1




ELEVATION VIEW




END VIEW




PLAN VIEW

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PROJECT

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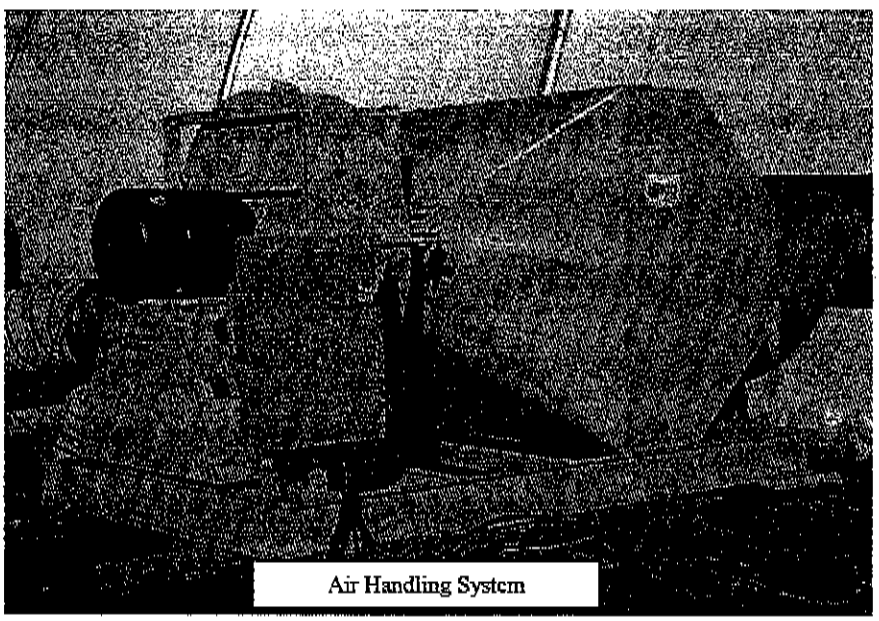
N8-20-PVU

DWG. NO. N-01-0022 REV. 0

# NIXTOX® Air Handler System

| Maximum Flow (CFM) | Static Pressure in (WC) | Max Temp (deg F) | DIMENSIONS L X W X H (FT) | HORSE POWER | UTILITIES | SHIPPING WEIGHT (EMPTY) (LBS) |
|---|---|---|---|---|---|---|
| 20000 | 20 | 140 | 15 X 8 X 7.1 | 100 | 460v/3 ø/60Hz | 8000 |

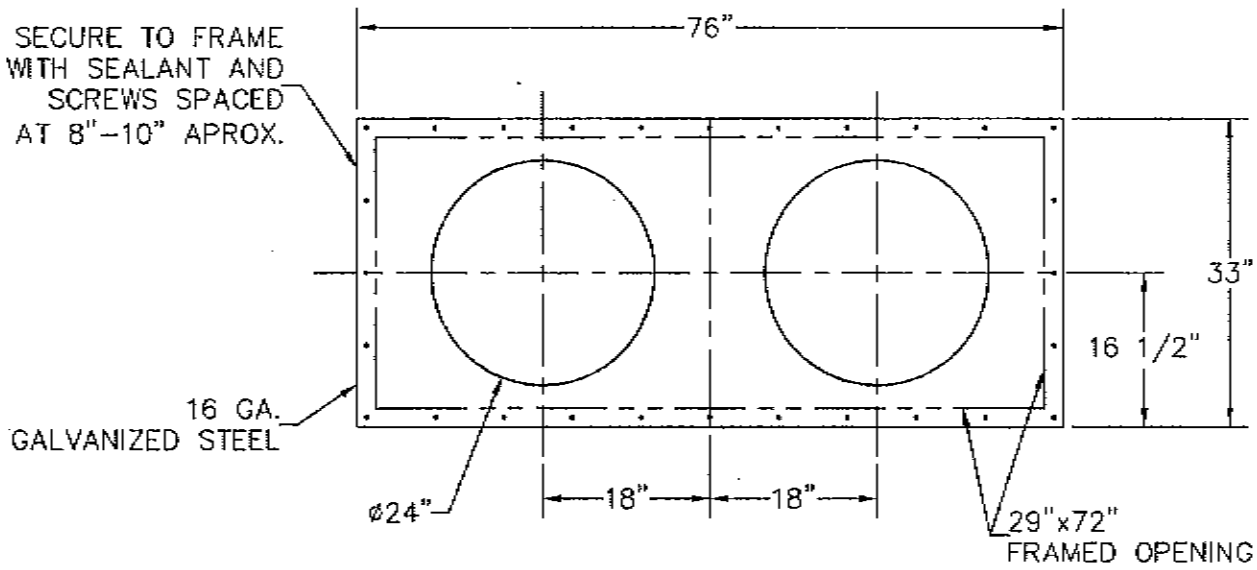
The NIXTOX® Air Handling Systems are designed for applications with high flow rates. The skid-mounted air handling system has a particulate filter (2 stage capability), inlet vane damper, fan, motor, and soft start combination motor starter. Pressure Level dB re 20 μPa at 5.00 feet< 85. Specifications and properties are subject to change without notice.



Air Handling System

TIGG® corporation

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(412) 257-9580 phone
(412) 257-8520 fax
www.tigg.com
info@tigg.com




| NO | REVISION | BY | DATE |
|---|---|---|---|

PROJECT

| | |
|---|---|
| PROJ. NO. | E-05-048 |
| P.O. NO. | |
| DRAWN BY | JB |
| DESIGN BY | BB |
| CHKD. BY | BB |
| DATE | 7/15/05 |
| SCALE | NTS |

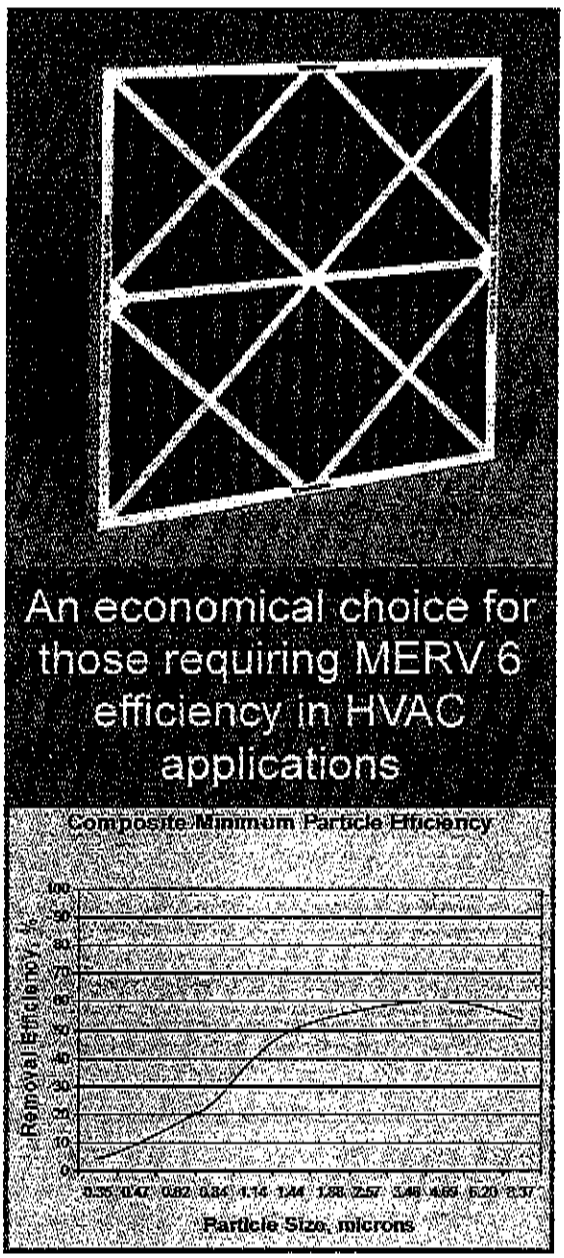
TIGG corporation

# OUTLET TRANSITION

DWG. NO. C05-1044 REV. 0

# aeropleat® III

**Standard-Capacity Pleated Panel Filter**




Values are MERVs when evaluated per ASHRAE Standard 52.2.

**Meeting Today's Standards**

The Camfil Farr Aeropleat® III pleated filter offers medium grade ASHRAE efficiency and sets the performance standard for those upgrading from lower efficiency throw-aways or pads. Using a mechanical particle capture principle, the Aeropleat III is a MERV 6 filter when evaluated per ASHRAE Standard 52.2-1999.

**For Today's Applications**

As a stand-alone filter, the Aeropleat III will remove many of the contaminants associated with today's indoor air quality concerns. Available in 1", 2" and 4" depths, its increased media area offers an extended service life when compared to lower efficiency throw-aways or pads. Applications include commercial buildings, educational facilities and specialty manufacturing. As a pre-filter, the Aeropleat III offers protection for the higher efficiency final filters required for today's high-technology applications.

**Built for Today's HVAC Systems**

- 10 pleats per linear foot (2" deep model) in a radial pleat design for full use of media area
- Optimum blend of cotton and synthetic fibers provides medium grade ASHRAE performance and increased dust-holding capacity
- Welded wire media grid is treated for corrosion resistance and prevents media oscillation or pull-away
- High wet-strength beverage board frame creates a rigid and durable filter pack. The pack will withstand 2.0" w.g. without failure.
- Available in 1", 2" and 4" depths

camfil FARR

| | |
|---|---|
| Camfil Farr | Product sheet |
| Aeropleat® III | 1008-0603 |
| Camfil Farr—clean air solutions | |

## PERFORMANCE DATA

**AEROPLEAT® III**

| Nominal Size W x H x D | Actual Size W x H | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4" Deep | 20 x 16 x 4 | 19.50 | 15.50 | 3.75 | 485 | 970 | 0.07 | 0.21 | 6.1 | 9 pleats per linear foot |
| | 20 x 20 x 4 | 19.50 | 19.50 | | 625 | 1250 | | | 7.8 | |
| | 24 x 12 x 4 | 23.38 | 11.38 | | 375 | 750 | | | 4.7 | |
| | 24 x 16 x 4 | 23.38 | 15.38 | | 500 | 1000 | | | 6.3 | |
| | 24 x 20 x 4 | 23.38 | 19.38 | | 625 | 1250 | | | 7.8 | |
| | 24 x 24 x 4 | 23.38 | 23.38 | | 780 | 1560 | | | 9.8 | |
| 2" | 20 x 16 x 2 | 19.50 | 15.50 | 1.75 | 485 | 970 | 0.08 | 0.23 | 6.1 | 10 pleats per linear foot |
| | 20 x 12 x 2 | 19.50 | 11.50 | | 415 | 830 | | | 5.1 | |
| | 20 x 16 x 2 | 19.50 | 15.50 | | 555 | 1110 | | | 6.5 | |
| | 20 x 18 x 2 | 19.50 | 17.50 | | 625 | 1250 | | | 7.5 | |
| | 20 x 20 x 2 | 19.50 | 19.50 | | 695 | 1390 | | | 8.6 | |
| | 24 x 12 x 2 | 23.38 | 11.38 | | 500 | 1000 | | | 6.3 | |
| | 24 x 16 x 2 | 23.50 | 15.50 | | 750 | 1300 | | | 9.1 | |
| | 24 x 20 x 2 | 23.50 | 19.50 | | 935 | 1870 | | | 10.3 | |
| | 24 x 24 x 2 | 23.38 | 23.38 | | 1060 | 2000 | | | 12.1 | |
| | 25 x 16 x 2 | 24.50 | 15.50 | | 695 | 1390 | | | 7.8 | |
| | 25 x 18 x 2 | 24.50 | 17.50 | | 780 | 1560 | | | 9.0 | |
| | 25 x 20 x 2 | 24.50 | 19.50 | | 870 | 1740 | | | 10.7 | |
| | 25 x 14 x 2 | 24.50 | 13.50 | | 610 | 1220 | | | 7.6 | |
| | 24 x 16 x 2 | 23.50 | 15.50 | | 650 | 1330 | | | 7.5 | |
| | 25 x 25 x 2 | 24.5 | 24.5 | | 1085 | 2170 | | | 13.3 | |
| | 20 x 10 x 2 | 19.50 | 9.50 | | 350 | 700 | | | 4.0 | |
| | 16 x 16 x 2 | 15.50 | 15.50 | | 445 | 890 | | | 5.2 | |
| | 20 x 18 x 2 | 19.50 | 17.50 | | 520 | 1040 | | | 6.1 | |
| | 25 x 15 x 2 | 24.50 | 14.50 | | 650 | 1300 | | | 7.5 | |
| 1" | 24 x 12 x 1 | 23.50 | 11.50 | 0.88 | 250 | 500 | 0.11 | 0.23 | 3.2 | 12 pleats per linear foot |
| | 25 x 14 x 1 | 24.50 | 13.50 | | 340 | 680 | | | 4.3 | |
| | 25 x 15 x 1 | 24.50 | 14.50 | | 365 | 730 | | | 4.6 | |
| | 20 x 16 x 1 | 19.50 | 15.50 | | 390 | 780 | | | 4.9 | |
| | 20 x 20 x 1 | 19.50 | 19.50 | | 490 | 970 | | | 6.1 | |
| | 24 x 20 x 1 | 23.50 | 19.50 | | 655 | 1310 | | | 8.3 | |
| | 24 x 24 x 1 | 23.50 | 23.50 | | 780 | 1560 | | | 9.8 | |
| | 25 x 16 x 1 | 24.50 | 15.50 | | 390 | 780 | | | 4.9 | |
| | 25 x 18 x 1 | 24.50 | 17.50 | | 440 | 880 | | | 5.5 | |
| | 25 x 20 x 1 | 24.50 | 19.50 | | 490 | 970 | | | 6.1 | |
| | 25 x 25 x 1 | 24.50 | 24.50 | | 610 | 1220 | | | 7.6 | |
| | 20 x 10 x 1 | 19.50 | 9.50 | | 195 | 390 | | | 2.5 | |
| | 16 x 16 x 1 | 15.50 | 15.50 | | 310 | 620 | | | 3.9 | |
| | 20 x 18 x 1 | 19.50 | 17.50 | | 345 | 690 | | | 4.3 | |
| | 25 x 15 x 1 | 24.50 | 14.50 | | 365 | 730 | | | 4.6 | |

*DATA NOTES:*
*1.0" w.g. recommended final resistance. System design may dictate a lower change-out point.*
The Aeropleat III filter is classified by Underwriters Laboratories as UL Class 2. *Maximum operating temperature 200° F (93° C).*
*2" & 4" filters rated at 250 fpm medium and 500 fpm high. 1" filters rated at 175 fpm medium and 350 fpm high.*

**Camfil Farr, Inc.**
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*For Aeropleat III specifications please consult your local Camfil Farr Distributor or Representative or www.camfilfarr.com.*

*Camfil Farr has a policy of continuous research, development, and product improvement. We reserve the right to change designs and specifications without notice.*

Represented by:

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# APPENDIX G
# AIR MONITORING PLAN

# Queens West Development
# Parcel 9

**QUEENS, NEW YORK**

## Air Monitoring Work Plan

**AKRF Project Number: 10516**

**Prepared for:**

AvalonBay Communities
535 Fifth Avenue
New York, New York 10017

**Prepared by:**

**AKRF, Inc.**
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New York, NY 10016
212-696-0670

**REVISED AUGUST 2005**

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**FIGURES**

Figure 1 – Air Monitoring Stations

# 1.0 INTRODUCTION

Site investigations performed at the project site indicated the presence of hydrocarbons and inorganics from urban fill, including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals. Based on the prevalence of VOCs, SVOCs, and metals at the project site, and the general toxicity of these classes of compounds, VOCs, SVOCs, and metals have been selected as the target compounds to be included in the perimeter ambient air quality-monitoring program.

Real-time perimeter air quality monitoring, in conjunction with confirmatory air sampling, will be performed at the site during remedial activities in which sub-surface soils affected by hydrocarbons are disturbed. The goal of real-time air monitoring and the aggressive response to exceedances of short-term levels (e.g., 15 minute averages) is to ensure that the longer-term exposures at the site boundary are below acceptable exposure levels. The collection of real-time data will allow an early warning system to be implanted to prevent elevated off-site exposures and to document conditions occurring at the site during excavation activities. The warning or action levels are based on the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) for the selected target compounds. If the warning levels are exceeded, immediate and aggressive actions will be taken to limit further exposures and prevent exceedances of action levels, such as dust and/or vapor suppression, alteration of certain work activities, or stopping work, if necessary. The air monitoring system is designed to provide real-time information along the site boundary for the target volatile organic compounds (VOCs) and dust levels.

# 2.0 PROJECT OBJECTIVES

The overall air monitoring objectives are to:

- Protect human health and the environment from exposure to unacceptable risk levels of contaminants resulting from petroleum and coal tar contaminated materials;
- Minimize risk of exposure to contaminants resulting from remediation work performed at the project site; and
- Develop and implement an overall air monitoring strategy.

## 2.1 PERIMETER AIR MONITORING OBJECTIVES

Perimeter air quality monitoring will be performed at four upwind and downwind locations around the perimeter of the site before and during remedial activities in which contaminated subsurface soils are disturbed. The perimeter air monitoring system is designed to accomplish the objectives presented in Section 2.0 and the following:

- Establish background levels of target compounds in ambient air prior to initiation of remedial activities;
- Monitor and document perimeter ambient air levels of target compounds during remedial activities;

- Provide an early warning system to prevent elevated off-site exposures by responding aggressively to exceedances of short-term action levels to ensure that longer-term exposures at the perimeter are below acceptable risk levels;
- Evaluate ongoing effectiveness of, and need for, additional vapor and/or dust suppression controls and/or alteration of work activities, to reduce airborne compounds to below acceptable risk levels; and
- Use real-time perimeter monitoring results in conjunction with confirmatory air sampling.

## 2.2 DATA QUALITY OBJECTIVES

Data Quality Objectives (DQOs) have been established to define the quality of the data gathered in relation to the methods used to collect the data and the data's anticipated end use.

Both real-time screening level and confirmatory data will be collected to evaluate contaminant levels in ambient air. The number of samples collected for field screening or laboratory analysis depends on the level of data quality that can be expected from the testing method employed. Below is a discussion regarding Data Quality Objectives and the relative quality of the samples needed for types of data to be collected, either real-time or confirmatory.

The following DQO levels will be utilized during the performance of remedial actions:

- Real-time screening data: This screening data applies to all field screening using portable equipment, such as a field gas chromatograph and ambient dust monitor. The data collected generally does not include QA/QC information with the exception of the field GC that includes standard analytical QA/QC information. The real-time data will be used to document conditions occurring on the site during excavation activities and determine the need for more aggressive dust and/or vapor suppression activities or alteration of work activities. In addition, the real-time data will be used to show compliance with the health-protective action levels.
- Confirmatory data: This level applies to analyses performed off-site at an analytical laboratory. The analyses will be conducted in accordance with the appropriate United States Environmental Protection Agency (USEPA) air sampling methods at a NYSDOH certified laboratory. The data will include the QA/QC elements specified by the appropriate USEPA method. In general, the confirmatory samples will be collected on a baseline and routine basis and analyzed using the methods specified in Section 7.0.

## 3.0 AIR MONITORING STRATEGY

The environmental monitoring required for the site will be conducted using a real-time perimeter air monitoring system and confirmatory air monitoring using USEPA-approved sampling and analytical methods. The perimeter air monitoring system is intended to be protective of public health in the vicinity of the site. The real-time perimeter air monitoring system is designed to provide an immediate means to evaluate appropriate control measures for VOCs, SVOCs, and metals to ensure that acceptable levels for acute and sub-chronic exposures are not exceeded. The data provided by the real-time perimeter air monitoring system may also be used to determine the appropriate control actions.

The AirLogics system will operate 24 hours per day, 7 days per week during the remediation construction period. Utilization of this system will provide data on a continuous basis for the duration of the project. Conventional air monitoring systems typically provide data for the periods of time that work is being conducted. In addition to providing data during work activities, this system will provide data continuously, including evenings, weekends and holidays, when no work is being conducted.

To supplement the real-time monitoring data, perimeter walk-around air monitoring will be completed to document potential nuisance odors and visible dust and to implement controls during the remediation construction activities, as necessary.

## 4.0 ACTION LEVELS

The following plan has been developed to provide a tiered system to alert and respond to potential scenarios during implementation of the air monitoring program. The contingency plan in Section 8.0 identifies measures that would be implemented in response to elevated levels of target compounds, visible dust, or odors. The tiered alert levels are as follows:

| Alert Level | Description |
|---|---|
| Green | Normal ambient air conditions where all target compound concentrations are less than two-thirds of the action level |
| Yellow | Concentration of one or more target compounds is equal to or greater than two-thirds of the action level, but less than the action level |
| Red | Concentration of one or more targets is greater than the action level |

The following target compounds and action levels have been developed in accordance with the NYSDOH Generic CAMP.

| Target Compound | Action Level |
|---|---|
| Total VOCs (15 minute average) | 5.0 ppm |
| Total VOCs (instantaneous) | 25 ppm |
| Respirable Particulate Matter (PM10) | 150 ug/m$^3$ or dust |
| Odor | observable odor (site perimeter) or odor complaint |

ppm = parts per million ug/m3 = micrograms per cubic meter

# 5.0 REAL-TIME PERIMETER AIR MONITORING

The perimeter air monitoring system is designed to be protective of public health in the vicinity of the site against off-site unacceptable acute and sub-chronic exposures. The real-time perimeter air monitoring system is automated and includes the instrumentation of four separate sampling locations as shown on Figure 1. Since multiple sampling locations will be used, the system has inherent equipment redundancy that should prevent interruption of excavation activities.

## 5.1 VOLATILE ORGANIC COMPOUND (VOC) PERIMETER AIR MONITORING

The automated, real-time perimeter air monitoring system will be installed at the site to monitor VOC concentrations associated with the remedial activities. During remedial activities, the system's portable field gas chromatographs provide continuous air quality measurements from four separate sampling locations around the site perimeter and compare the measurements to action levels established for target contaminants. The real-time VOC perimeter air monitoring system is set to protect against both short-term exposure to unacceptable levels of volatile organic compounds emitted during the site remedial activities, as well as longer-term exposure over the length of the remediation project. If a specific short-term action level is exceeded, a visual alarm is illuminated. In the event of an alarm condition, the site manager will identify the source and initiate the controls to mitigate the emissions within 15 and 60 minutes, respectively.

## 5.2 SEMIVOLATILE ORGANIC COMPOUND (SVOC) AND METAL PERIMETER AIR MONITORING

Real-time monitors for SVOCs and metals do not exist. Therefore, real-time monitoring for SVOCs and metals will involve the measurement of respirable dust as a surrogate for ambient SVOC and metal levels. Respirable dust levels will be measured on a real-time basis at upwind and downwind locations during excavation activities to evaluate site related particulate concentrations. The measured levels will then be compared to a conservative action level for respirable dust. The dust monitors will be housed in the same enclosures as the portable field GCs. The data from the dust monitors will be relayed to the central computer located in the on-site construction office.

## 5.3 AIR MONITORING SYSTEM DESIGN

The air monitoring system is designed to measure site-related contaminants, namely volatile organic compounds and respirable particulate matter as a surrogate for SVOCs and metals. The analytical components of the air monitoring system are field gas chromatographs for VOCs and continuous respirable particle monitors.

The automated perimeter air monitoring system consists of the following five basic components: (1) portable field gas chromatographs, (2) meteorological system, (3) computer control system, (4) alarm system, and (5) dust monitors. Each of these system components is described in the following sections.

### 5.3.1 Gas Chromatographs

Volatile organic compounds concentrations will be measured utilizing Photovac Voyager or equivalent portable field gas chromatographs (GCs). The GCs will be housed in weather tight enclosures located at pre-determined perimeter locations. The placement of the shelters will provide proper upwind/downwind locations relative to excavation

activities. Each GC unit collects and analyzes air continuously in a "total VOC" screening mode utilizing a photo-ionization detector (PID). If an action level is exceeded during the total VOC screening mode, a preliminary "yellow" alarm is issued and the computer control system automatically instructs the GCs to begin analyzing air samples for specific target VOCs. The analytical cycling time will be based on the target list of VOCs, but is anticipated to be within a 15-minute time frame. While the GCs are analyzing air samples for specific target VOCs, the instruments do not measure total VOCs. Given the approximate 15-minute cycling time, compound-specific VOC data will be produced every 15 minutes.

### 5.3.2 Meteorological System

An on-site meteorological tower will be utilized to differentiate between upwind and downwind sample locations. The meteorological system consists of wind speed and direction, temperature, and relative humidity sensors mounted on a portable meteorological tower set at a height of approximately 10 feet above grade. The wind meteorological data is continuously recorded on a PC data logging system.

Each sampling port location has a corresponding range of wind direction that identifies when winds are blowing from the site activities towards that sampling location.

### 5.3.3 Computer Control System

At the end of the GC analysis cycle, the resulting target substance concentrations are outputted to the central computer via a radio telemetry system. The central computer continuously polls each remote perimeter station to obtain the analytical data. When a new data value is reported, the data are stored in the PC database file along with the meteorological data and other operations status information.

When an action level is first exceeded in the "total VOC mode" the system is in a "yellow" alarm condition and the appropriate visual alarm is displayed. If the result of the compound-specific GC analysis indicates that exceedances of action levels are sustained, a "red" alarm condition is issued and the appropriate actions taken.

If the action level is exceeded, visual alarms are illuminated in the construction office and at an outside location visible to the site workers. The system will include a modem that will alert the technician of an exceedance of the action levels via cellular phone text messaging during both working and non-working hours.

In the event of an alarm condition, the site manager on duty or designated representative will identify the source within 15 minutes and initiate mitigation within 60 minutes, if the source is associated with on-site activities. When the downwind concentrations drop below the action level, the system will turn the visual alarms off automatically.

### 5.3.4 Dust Monitors

Direct reading, real-time MIE DataRam or equivalent meters will be used to monitor for dust in the upwind and downwind locations. The measurement of dust levels is accomplished using infrared electromagnetic radiation to sense airborne particles. The dust meter will be configured to respond to dust particles less than 10 microns in diameter (PM10). Readings from the upwind location and the downwind location will be compared to the action levels. The same computer control and alarm systems will be utilized for the interpretation of the real-time dust monitoring results.

### 5.3.5 Equipment Calibration

Equipment calibration will be performed in accordance with the manufacturers' instructions. Field checks using the appropriate reference standards will be made on-site at the minimum frequency of twice per shift (pre and post sampling). The DataRam will be zero checked and calibrated according to the operation manual. Manual precision and span checks will be conducted on the system bi-weekly and full multi-point calibrations performed a minimum of once per year. Meteorological system maintenance and calibrations are conducted annually. A daily log of all instrument readings and field reference checks and calibration information will be maintained.

Additional spare monitoring instrumentation and sampling equipment will be maintained on the site and available for use, as needed. If monitoring or sampling equipment is determined not to be in proper working order, it will be removed from service, replaced with other equipment and sent to the appropriate manufacturer or supplier for service and calibration.

### 5.3.6 Monitoring System Operation

A full-time technician will conduct routine inspection and testing of the system according to the system quality assurance program. The technician is responsible for inspection of the equipment, operation, replacement of expendable supplies, and testing the system performance.

Routine operation requires the following functions:

- Change-out of compressed gas cylinders utilized for the GC Unit operation and calibration.
- Inspection of the sampling systems for damage, loss of flow, dirt or moisture buildup and replacement of inlet filters.
- Inspection of the operational parameter set points on the GCs and review of the gas chromatograms for proper equipment operation.
- Inspection of the meteorological system for proper operation.
- Monthly testing of the alarm system.

## 6.0 WALK-AROUND PERIMETER AIR MONITORING

Walk-around air monitoring will be conducted along the perimeter of the site boundaries to monitor for elevated levels of VOCs, particulate, visible dust, and odor. The walk-around monitoring will be conducted during each workday, with the results being logged at least every two hours. More frequent monitoring will be implemented based upon visible dust, odor complaints, detection of VOCs or particulate at concentrations approaching or exceeding an alert level, or other conditions, as warranted.

VOC concentrations will be monitored with a Thermo 580B PID or equivalent. Respirable particulate matter will be monitored using a MIE 1000 Personal DataRam or equivalent. Field equipment will be calibrated at the start of each workday in accordance with the manufacturers' requirements. Instrument readings, observable odors, and visible dust will be documented in the field book. The walk-around perimeter air monitoring station are shown on Figure 1.

# 7.0 CONFIRMATORY AIR SAMPLING

Confirmatory air monitoring will be conducted at the perimeter fence-line at one selected downwind location to document ambient levels of target contaminants using USEPA-approved sampling and analytical methods. Analyses will be by a NYSDOH-certified analytical laboratory demonstrating proficiency for the specific methods stated in this section.

Confirmatory air sample analysis results will be received within two weeks of the laboratory's receipt of the sample, depending on the appropriate holding times specified in the analytical methods. Analysis of air samples collected during the pre-remedial and start-up phases of the work will be completed on an expedited schedule, with the goal to receive data in approximately one week following collection. In the event of potential releases (if high levels are detected using real-time analysis methods), the sample collection frequency and turnaround time for sample analysis may be expedited to assess the potential contribution of site-related contaminants to the local environment. Analysis of field blanks will be completed within three weeks of the laboratory's receipt of the samples.

Sample number, collection, holding times, calibration procedures and handling will be performed in accordance with "the Compendium of Methods for the Determination of Toxic Organic Compounds in the Ambient Air," USEPA Document No. EPA/600/4-89/017 and the requirements of the appropriate Method.

## 7.1 VOLATILE ORGANIC COMPOUNDS

At a minimum, one VOC sample will be collected over a 10-hour period on a weekly basis during the remediation construction activities. The sampling location will be chosen as one of the four downwind perimeter locations and will be based on actual and predicted wind conditions for the sampling day. Sample dates will be selected based on the projected construction activities with the intent of sampling during the period of greatest activity, and therefore, the greatest potential for volatilization, for the work week. A baseline sample will be collected prior to the start of remediation construction activities.

VOC samples will be collected using SUMMA stainless steel canisters in conjunction with USEPA Method TO-15. The VOC samples will be analyzed for the standard TO-15 analytes list, which consists of 61 volatile organic compounds, by an off-site certified laboratory. The SUMMA canister method consists of the collection of a whole air sample into an evacuated stainless steel canister. The sample is collected via sampling tubing from a height of approximately four (4) feet, that is designed to approximate the typical breathing zone. The canister is passively filled with sample air via a mass flow controller that allows for uniform filling of the canister over the desired sampling period.

While the VOC samples are being collected for laboratory analysis, the Air Logics monitoring system will be in full operation. Therefore, the system will be typically running in total VOC mode, unless an action level triggers monitoring of target compounds.

## 7.2 SEMIVOLATILE ORGANIC COMPOUNDS

At a minimum, one SVOC sample will be collected on a weekly basis during the remediation construction activities. A baseline sample will be collected prior to the start of remediation construction activities. The sample collection date, location, and duration will be the same as the confirmatory VOC sample. SVOC samples will be collected using high-volume polyurethane foam (PUF) samplers. The sample will be analyzed in accordance with USEPA Method TO-13 for semi-volatile organic compounds. The samples will be submitted to a NYSDOH-certified laboratory for the requested analytical list.

# 8.0 CONTINGENCY PLAN

## 8.1 Volatile Organic Compounds

VOC concentrations will be measured using real-time, fixed station monitors described in Section 5.0. Green site conditions will be in effect when the VOC concentrations at all stations are below two-thirds of the action limit of 5.0 ppm (or 3.3 ppm). The GC at each station will operate in total VOC mode under green conditions.

A yellow alert will be in effect when the total VOC concentration at any station is equal to or greater than 3.3 ppm, but less than 5.0 ppm, averaged over a 15-minute period. At that time, the GCs at each monitoring station will revert to monitoring individual VOCs. Total VOCs will be monitored at the downwind location using a handheld Thermo 580B PID or equivalent.

The upwind and downwind monitoring data will be compared to determine if the elevated VOC concentrations are a result of site activities. If the downwind concentrations are greater than the upwind concentrations, then it will be assumed that the elevated VOC concentrations are a result of site activities. Three successive 15-minute cycles of data will be evaluated to confirm the alert condition. A response meeting will be conducted within 60 minutes with representatives of the owner, contractor, environmental consultant, NYSDEC, and/or NYSDOH to determine potential actions, as described in Section 8.5.

A red alert will be in effect when the total VOC concentration at any station is equal to or greater than 5.0 ppm averaged over a 15-minute period. A red alert condition would be in effect if the instantaneous total VOC concentration at any site perimeter monitoring point is equal to or greater than 25 ppm. Three successive 15-minute cycles of data will be evaluated to confirm the alert condition. A response meeting will be conducted within 60 minutes with representatives of the owner, contractor, environmental consultant, NYSDEC, and/or NYSDOH to determine appropriate actions. Under a red alert condition, monitoring would continue and work may be temporarily halted until measures are implemented to reduce the VOC concentrations to acceptable levels. Potential conditions and actions are described in Section 8.5.

Once the red alert condition is abated, work would resume under a yellow alert until the total VOC concentrations, averaged over a 15-minute period, were less than 5.0 ppm. Green conditions would exist when the total VOC concentrations were less than 3.3 ppm.

## 8.2 Respirable Particulate Matter

Respirable particulate matter will be measured using real-time, fixed station monitors described in Section 5.0. Green site conditions will be in effect when the PM10 concentrations at all stations are below two-thirds of the action limit of 150 ug/$m^3$ (or 100 ug/$m^3$).

A yellow alert will be in effect when the PM10 concentration at any station is equal to or greater than 100 ug/$m^3$, but less than 150 ug/$m^3$, averaged over a 15-minute period. The upwind and downwind monitoring data will be compared to determine if the PM10 concentrations are a result of site activities. If the downwind concentrations are greater than the upwind concentrations, then it will be assumed that the elevated PM10 concentrations are a result of site activities. Three successive 15-minute cycles of data will be evaluated to confirm the alert condition. A response meeting will be conducted within 60 minutes with representatives of the owner, contractor, environmental consultant, NYSDEC, and/or NYSDOH to determine potential actions, as described in Section 8.5.

A red alert will be in effect when the PM10 concentration at any station is equal to or greater than 150 ug/m$^3$ averaged over a 15-minute period. Three successive 15-minute cycles of data will be evaluated to confirm the alert condition. A response meeting will be conducted within 60 minutes with representatives of the owner, contractor, environmental consultant, NYSDEC, and/or NYSDOH to determine appropriate actions. Under a red alert condition, monitoring would continue and work may be temporarily halted until measures are implemented to reduce the PM10 concentrations to acceptable levels. Potential conditions and actions are described in Section 8.5.

Once the red alert condition is abated, work would resume under a yellow alert until the total PM10 concentrations, averaged over a 15-minute period, were less than 150 ug/m$^3$. Green conditions would exist when the PM10 were less than 100 ug/m$^3$.

## 8.3 Visible Dust

The walk-around perimeter monitoring will include observations for visible airborne dust. If visible airborne dust is observed leaving the site perimeter, then dust suppression measures will be implemented. Work will continue provided that dust suppression measures are employed and the PM10 concentrations are below 150 ug/m$^3$. Potential conditions and actions are described in Section 8.5.

## 8.4 Odors

The walk-around perimeter monitoring will include observations for odors attributable to the remediation activities. If observable odors are noted along the site perimeter, then a comparison will be made between the upwind and downwind locations. If observable odors are present along the downwind side of the site, but not at the upwind side of the site, then it will be assumed that the observable odors are a result of site activities. If this condition occurs or an odor complaint is received, then a response meeting will be conducted within 60 minutes with representatives of the owner, contractor, environmental consultant, NYSDEC, and/or NYSDOH to determine potential actions, as described in Section 8.5.

## 8.5 Summary of Potential Response Actions

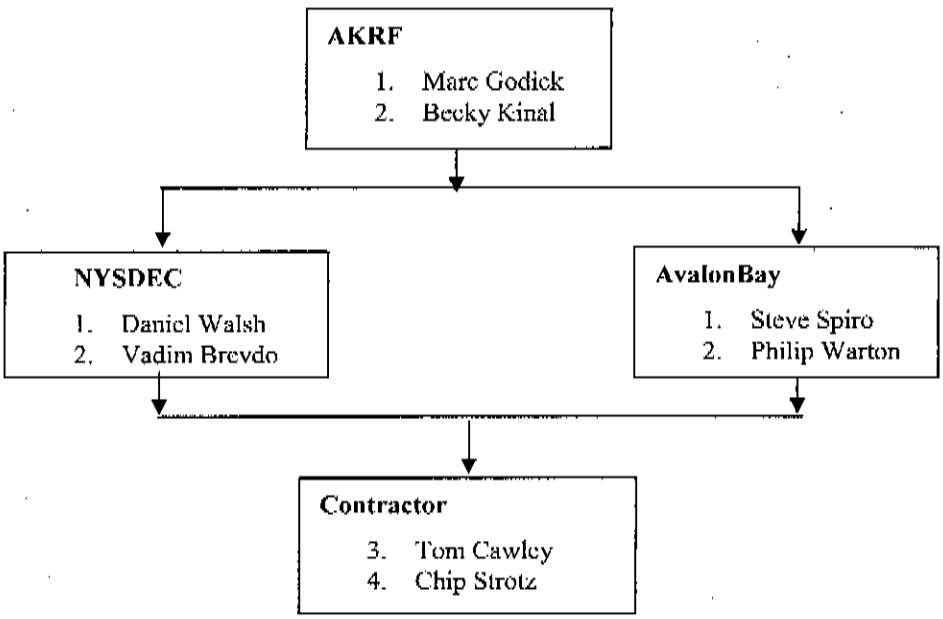
The following table presents the appropriate action levels and responses for the site-specific air-monitoring plan.

| Alert Level | Action Level | Response Action |
|---|---|---|
| Green | VOCs < 3.3 ppm<br>PM10 < 100 µg/m$^3$<br>No Visible Dust<br>No Odors Along Perimeter | **None – continue monitoring** |
| Yellow | VOCs ≥ 3.3 ppm | 1. Confirm VOC source is from site emissions – if not, continue total VOC monitoring (green alert)<br>2. If VOCs are from site emissions, notify contact list per Section 9.0 of this plan<br>3. Initiate compound-specific monitoring<br>4. Evaluate construction activities and determine if work zone indicates potential elevated emissions<br>5. Evaluate performance of air emission controls (temporary enclosure and air handling system); rectify any deficiencies in the air emission controls |

| | | |
|---|---|---|
| | | 6. Monitor exhaust from air emission controls<br>7. If compound specific action levels are not exceeded, continue monitoring<br>8. If total VOC levels drop below 3.3 ppm, return to total VOC monitoring mode (Green alert)<br>9. If VOC levels and compound specific levels do not decrease, then take the following actions, as appropriate:<br>▪ Temporarily relocate work to an excavation area with potentially lower emission levels<br>▪ Cover non-working areas of exposed affected soils or open stockpiles of affected soils with tarpaulins, vapor suppressing foam, or equivalent<br>▪ Slow the pace of the remediation activities<br>▪ Change the removal process or equipment to alternatives that minimize air emissions |
| Yellow | PM10 ≥ 100 µg/m$^3$<br>Visible Dust<br>Odors Along Perimeter or Odor Complaints | 1. Confirm particulate or odor exceedances are downwind of work area and is from site activities<br>2. If particulates are attributable to site activities take following actions as appropriate:<br>▪ Use water or other material to mist exposed soil surface and/or roadways to suppress airborne dust<br>▪ Cover non-working areas of exposed affected soils or open stockpiles of affected soils with tarpaulins, vapor suppressing foam, or equivalent<br>▪ Slow the pace of the remediation activities<br>▪ Change the removal process or equipment to alternatives that minimize air emissions |
| Red | VOCs ≥ 5.0 ppm<br>PM10 ≥ 150 µg/m$^3$<br>Visible Dust<br>Odors Along Perimeter or Odor Complaints | 1. Apply yellow alert controls<br>2. Cease remediation activities if action level exceedances not resolved<br>3. Re-evaluate air control systems & monitoring system<br>4. Re-initiate remediation activities after reaching concurrence between site personnel & NYSDEC |

# 9.0 COMMUNICATIONS

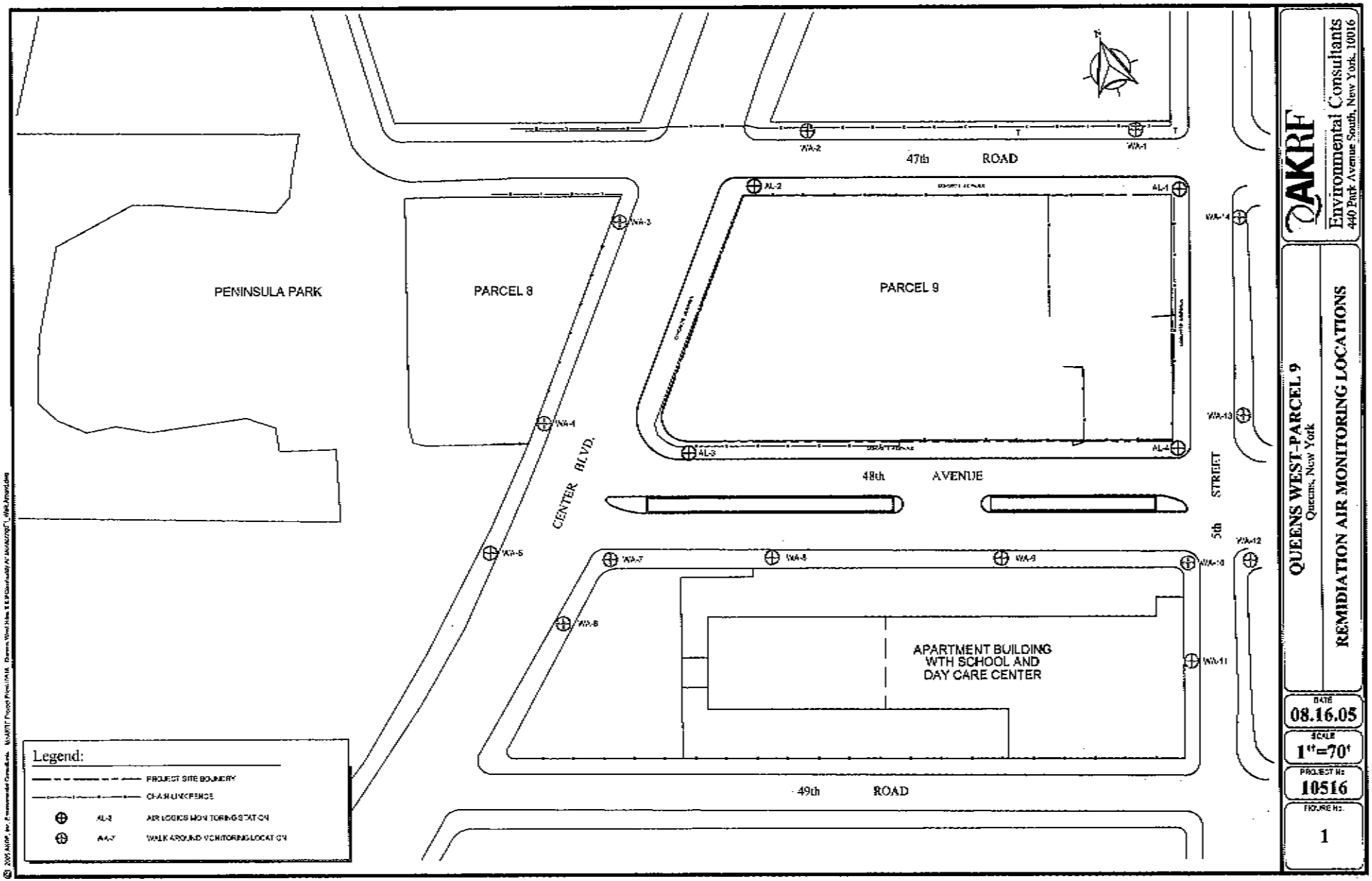
The following flow chart depicts the communications chain for responding to an actionable level.




| Contact List | | | | |
|---|---|---|---|---|
| **Name** | **Company** | **Field Office** | **Cellular No.** | **Company Office** |
| Marc Godick | AKRF | | 917-991-4030 | 914-949-7336 |
| Becky Kinal | AKRF | | 914-263-8730 | 914-922-2362 |
| Steve Spiro | AvalonBay | | | 212-309-1616 |
| Philip Wharton | AvalonBay | | | 212-309-1607 |
| Daniel Walsh | NYSDEC | | | 718-482-4996 |
| Vadim Brevdo | NYSDEC | | | 718-482-4891 |
| Tom Cawley | Creamer Env. | | | 201-968-3300 x1113 |
| Chip Strotz | Creamer Env. | | 201-481-8954 | 201-968-3300 x1116 |

If an action level is exceeded triggering a yellow or red alert, the monitoring personnel will notify the first individuals for each company/agency listed above. If the primary contact is not available, then monitoring personnel will contact the second contacts for each company/agency as appropriate. AKRF will direct the Contractor to implement appropriate corrective actions.

# FIGURES




AKRF
Environmental Consultants
440 Park Avenue South, New York, 10016

**QUEENS WEST-PARCEL 9**
Queens, New York

**REMEDIATION AIR MONITORING LOCATIONS**

DATE: 08.16.05
SCALE: 1"=70'
PROJECT No: 10516
FIGURE No: 1

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# APPENDIX H
# SOIL MANAGEMENT PLAN

# Queens West Development
# Parcel 9

**QUEENS, NEW YORK**

## Soil Management Plan

**AKRF Project Number: 10516**

**Prepared for:**

AvalonBay Communities
535 Fifth Avenue
New York, New York 10017

**Prepared by:**

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212-696-0670

**REVISED AUGUST 2005**

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# 1.0 INTRODUCTION

The Queens West Development is a project of the Queens West Development Corporation (QWDC), a subsidiary of New York State's Empire State Development Corp., under the collective sponsorship of The Port Authority of New York and New Jersey, The New York City Economic Development Corporation, and Empire State Development Corporation. The overall Queens West Development site comprises 74 acres along the East River in Hunters Point, Queens, extending from Anable Basin to the north to Newtown Creek to the south. Stage I of the development involves construction of residential buildings on the portion of the site between 47th Road and 50th Avenue.

In August 1998, a Voluntary Cleanup Agreement was entered into between New York State Department of Environmental Conservation (DEC) and QWDC. This agreement covered Parcels 8, 9, and 11 and the portion of Center Boulevard between Parcels 8 and 9. In July 2000, the Voluntary Cleanup Agreement was amended to allow it to be separated into separate agreements for each parcel, which would be executed by the designated developer for the parcel. Accordingly, after AvalonBay Communities was selected as the developer of Parcels 8, 9, and 11, AvalonBay executed separate agreements for each of the three parcels in September 2000. In March 2004, AvalonBay requested that DEC transition Parcels 8 and 9 into the Brownfields Cleanup Program. AKRF conducted a Supplemental Remedial Investigation (RI) and additional delineation sampling of Parcel 9 in early 2005, and Remedial Work Plan (RWP) was submitted to the NYSDEC in May 2005. Maps showing the site location and the Queens West Development parcels are provided as Figures 1 and 2, respectively, in the RWP.

This Soil Management Plan describes procedures and protocols for disturbance of soil and groundwater at Parcel 9 site during planned site remediation, site redevelopment, and long-term use. It will be applied in conjunction with a site-specific environmental Health and Safety Plan (HASP), Air Monitoring Work Plan, and Storm Water Pollution Prevention Plan (SWPPP) that are being submitted as part of the RWP.

# 2.0 SITE DESCRIPTION

## 2.1 SITE LOCATION

Parcel 9 is located in the Hunters Point section of Queens, New York. The parcel is bounded by 5th Street on the east, 48th Avenue on the south, Center Boulevard on the west, and 47th Road on the north. It has a total area of about 1.79 acres, and includes Lots 5 and 19 of Tax Block 19 of Queens County.

## 2.2 SITE AND VICINITY CHARACTERISTICS

Parcel 9 is vacant; all former structures were demolished in 2001. The entire parcel is surrounded by a chain-link fence. According to a survey performed by Montrose Surveying Company in 2003, Parcel 9 is generally at an elevation of 8 to 10 feet (Queens Borough Datum), with a mound in the middle of the parcel rising to an elevation of 15 feet.

Parcel 10, located across 48th Avenue south of the site, is occupied by a high-rise residential building which also includes a public elementary school, P.S. 78. Parcel 8, located across Center Boulevard west of the site, is vacant. The area between Parcel 8 and the East River is part of the Queens West waterfront park. The East River is located roughly 500 feet west of the site.

The area north of the site, across 47th Road, is currently undergoing remediation and is slated for future residential development. The area east of the site, across 5th Street, is not part of the

Queens West Development. This area is occupied by a mix of light industrial, commercial, and residential uses.

## 2.3 NEARBY PUBLIC AREAS OF CONCERN

There is a high-rise residential building and a public elementary school south of the site, across 48th Avenue. Peninsular Park, a portion of the Queens West waterfront park, is located immediately west of Parcel 8, about 200 feet from the site. The area east of the site contains a mix of light industrial, commercial, and residential uses.

## 2.4 DESCRIPTION OF CONTEMPLATED SITE USE

The proposed development on the site is high-rise and mid-rise residential buildings, which would be located on the western half of the site. A multi-level parking garage would occupy the eastern half of the site, with townhouses present to the south of the garage, along 48th Avenue. None of the on-site structures would have a basement or any subgrade levels.

## 2.5 SITE GEOLOGY, HYDROGEOLOGY, AND SUBSURFACE CHARACTERISTICS

The top 10 to 12 feet of soil on the parcel is miscellaneous fill. This is underlain at most locations by a layer of alluvial sand up to 17 feet thick. Organic deposits, consisting of soft gray organic silty clay generally less than 10 feet thick, and are present directly below the fill at some locations, and interlayered with the sand stratum at others. Below the sand and organic deposits is a layer of glacial till up to 30 feet thick. This consists of compact fine to coarse sand with some gravel, silt, clay, clay pockets, and boulders. The surface of the till is at an elevation of -10 to -12 feet (Queens Borough Datum) over most of the parcel, but dips sharply to a depth of -30 feet in the southwest corner of the parcel. Bedrock is present at elevation -20 to -30 feet over most of the parcel, but similarly dips in the southwest corner, to a minimum elevation of -55 feet. Groundwater at the site is approximately 5 to 9 feet below grade, and the general groundwater flow direction is from the northeast to the southwest, with some tidal influence possible.

## 2.6 NATURE AND EXTENT OF CONTAMINATION

There are two separate types of soil contamination on the site. The extent of each type of contamination is shown on Figure 12 in the RWP. Petroleum contamination, including the presence of light non aqueous phase liquid (LNAPL) is centered in the north-central portion of the site. Coal tar contamination, including the presence of dense non aqueous phase liquid (DNAPL), is found in the southwestern corner of the site, and along the western boundary of the site adjacent to Center Boulevard. Petroleum-contaminated soil and coal tar-contaminated soil are herein referred to collectively as "hydrocarbon-contaminated soil."

The surface soils on the site are historic fill material incorporating ash as well as brick, concrete, and other demolition debris. The fill contains higher concentrations of metals and polycyclic aromatic hydrocarbons (PAHs) than the underlying native soils that are not petroleum- or coal tar-contaminated. Metals were detected generally at concentrations typical of soil background levels.

Petroleum and coal tar-related volatile and semivolatile organic compounds were present at elevated levels in groundwater samples from wells in the northwest quadrant and the area of coal tar contamination at the southwestern corner and along the western edge of the site. Metals were generally either undetected or detected at concentrations well below the Class GA groundwater standards.

# 3.0 SUMMARY OF REMEDY

The selected remedy for the site involves excavating and disposing of all hydrocarbon-contaminated soil that contains contaminant concentrations exceeding the site specific soil action levels SSSALs, as defined in the RWP. The anticipated limits of the soil removal are shown on Figure 12 in the RWP. Based on the elevated levels of volatile organic compounds in the contaminated soil and nuisance odors encountered during excavation activities at nearby Queens West Development parcels, the excavation work will be conducted under a temporary containment structure to control potential contaminant vapors and odors. A HASP, Air Monitoring Work Plan, and SWPPP will be implemented to ensure protection of site workers, the surrounding community, and nearby surface water during the soil excavation activities. A permanent containment wall will be installed around the entire soil excavation area to facilitate removal of the contaminated soil and to prevent migration of off-site contamination on to the parcel during and after remediation activities. The residential buildings will be constructed with a sub-slab vapor mitigation system and institutional controls will be implemented to prevent exposure to residual contamination that is left in place following soil removal.

# 4.0 SOIL MANAGEMENT

It is anticipated that future site remediation, redevelopment and maintenance activities will require intrusive work, including disturbance and handling of on-site soils, as described below:

1) Site Remediation

- Excavation and stockpile for potential reuse of historic fill material overlying hydrocarbon-contaminated soil; and
- Excavation and disposal of hydrocarbon-contaminated soil.

2) Site Redevelopment and Future Maintenance

- Trenching for installation of new utilities and stormwater structures;
- Excavation for new building foundations;
- Trenching and excavation for utility maintenance, repair, and replacement; and
- Excavation for landscaping (likely limited to 2-foot cap soils).

Site remediation will involve disturbing large volumes of hydrocarbon-contaminated soil, with excavations extending below the water table into intervals where LNAPL and DNAPL are present. Therefore, more stringent soil management requirements will be specified during the site remediation. Site redevelopment and future maintenance activities will occur after all of the hydrocarbon contaminated soil has been removed from the site, and only historic fill materials and non-hydrocarbon-contaminated soil will remain. Therefore, less stringent soil management procedures will be required. The following sections describe the measures that will be taken to minimize impacts to human health and the environment during both small- and large-scale soil disturbance activities.

## 4.1 SITE PREPARATION

Prior to conducting any intrusive activities for site remediation and redevelopment activities, a site plan will be prepared that defines the work zone(s), designated entry points, soil stockpile staging areas, decontamination zones, and truck routes, as applicable. The site plan will be updated as necessary to reflect any changes in operations during the course of the intrusive work.

During remediation activities, an 8-foot chain-link fence or construction barrier will surround the entire parcel and temporary containment structures will be erected to enclose the work zone and contain fugitive vapors/odors and dust. During future maintenance activities conducted post-development, fencing or other barriers will be erected around the soil disturbance work zones. The barriers will include at a minimum high-visibility safety fencing, traffic cones and caution tape, or other similar measures. Any sediment and erosion control measures will be installed prior to any intrusive activities, as required by the Storm Water Pollution Prevention Plan (SWPPP) for the site, as described in Section 4.5.

## 4.2 SOIL EXCAVATION

The NYSDEC will be notified a minimum of one week prior to the initiation of any soil disturbance activities.

### 4.2.1 Excavation Requirements

Excavations for remediation, site development, and future maintenance will be considered open excavations and will be managed according to applicable local, state and federal regulations. All excavations will be backfilled as soon as the work allows. Excavations not secured with fencing will not be left open overnight. Backfilled excavations will be covered with asphalt or temporarily stabilized according to the requirements of the SWPPP (see Section 4.5).

### 4.2.2 Historic Fill

Material in the shallow site subsurface that is not hydrocarbon-contaminated, but contains elevated PAH concentrations will be considered historic fill. During site remediation, historic fill from the existing soil piles and excavated from above the hydrocarbon-contaminated soil interval will be staged in approximately 1,000-cubic yard ($yd^3$) stockpiles in the southeastern portion of the site and characterized for potential on-site reuse as backfill. All soil stockpiling and handling will be conducted as described in Section 4.2.6. Characterization for on-site reuse and off-site disposal will be conducted as described in Section 4.3.2.

### 4.2.3 Petroleum-Contaminated Soil

Petroleum-contaminated soil, as defined in the RWP, consists of soil containing LNAPL and/or high levels of BTEX, with relatively lower naphthalene and PAH concentrations. The lateral and vertical extents of petroleum-contaminated soil that exceeds the SSSALs are shown on Figure 12 in the RWP. During remediation activities, this material will be excavated, loaded directly on to trucks to the extent feasible, and disposed of off-site as non-hazardous petroleum-contaminated waste based on pre-characterization sampling conducted described in Section 4.3.1.

### 4.2.4 Coal Tar-Contaminated Soil

Coal tar-contaminated soil, as defined in the Supplemental RI, consists of soil containing DNAPL and/or high levels of naphthalene and 2-methylnaphthalene, with relatively lower BTEX and other PAH concentrations. The lateral and vertical extents of coal tar-contaminated soil that exceeds NYSDEC the SSSALs are shown on Figure 12 in the RWP. During remediation activities, this material will be excavated, loaded directly on to trucks to the extent feasible, and disposed of off-site as non-hazardous coal tar-contaminated waste based on pre-characterization sampling described in Section 4.3.1.

### 4.2.5 Soil Segregation

During remediation activities, spot elevations will be taken to determine the limits of the specified excavation areas and to segregate historic fill, petroleum-contaminated soil, and coal tar-contaminated soil. A qualified environmental professional, representing the property owner/developer, will be on-site to monitor all remediation activities and to direct the contractor in segregating soil in the transition zones at the top and bottom of the hydrocarbon contaminated soil intervals. Monitoring will include inspecting soil for staining, sheen, odors, or other evidence of contamination, and field screening for the presence of VOCs with a photoionization detector (PID). Soil in intervals containing both petroleum and coal tar contamination will be segregated and disposed of as coal tar-contaminated soil. Resumes for anticipated environmental monitoring personnel are provided in Attachment A. Since no hydrocarbon-contaminated soil will remain on-site following site remediation, environmental monitoring for soil segregation will not be required during redevelopment or future maintenance activities.

### 4.2.6 Stockpiling

All hydrocarbon-contaminated soil excavated during remediation activities will be loaded directly on to trucks for off-site disposal to the extent feasible; however, temporary stockpiling may be required in addition to in-situ dewatering to drain the soils before they will be accepted by the receiving facility. Historic fill material overlying hydrocarbon-contaminated soil will be stockpiled for potential future re-use during redevelopment activities. Small amounts of historic fill may be stockpiled for possible re-use or off-site disposal during future maintenance activities. Certified clean imported fill material to be used as backfill may also be temporarily stockpiled on-site during remediation, redevelopment, and future maintenance activities.

All soil stockpiles will have side slopes not to exceed 2:1 and will be placed on a base consisting of a double layer of minimum 8-mil plastic sheeting that is bermed with hay bales and silt fence at the edges. Stockpiles will be kept covered whenever loading operations are not occurring with appropriately anchored tarps that will be routinely inspected for damage, and replaced as needed. Petroleum-contaminated and coal tar-contaminated soil will be stockpiled only within the containment structure in maximum quantities of 500 $yd^3$. Screening and processing operations for soil or construction and demolition (C&D) debris will not be performed on-site without prior approval from NYSDEC.

## 4.3 SOIL CHARACTERIZATION

### 4.3.1 Hydrocarbon-Contaminated Soil

Hydrocarbon-contaminated soil will be pre-characterized prior to the start of remediation activities to allow for direct loading and disposal. Pre-characterization sampling will be conducted by advancing soil borings to the targeted soil removal intervals to collect composite and grab samples. The frequency of the sampling and the analytical parameters will be determined based on the requirements of the selected disposal facilities. It is anticipated that all hydrocarbon-contaminated soil will be disposed of as non-hazardous waste.

### 4.3.2 Historic Fill

Historic fill materials excavated during remediation activities will be stockpiled on-site to be characterized for potential re-use as backfill. One multi-point composite soil sample will be collected from discrete 1,000-$yd^3$ stockpiles and analyzed for VOCs by EPA method 8260, SVOCs by EPA method 8270, and TAL metals. If analytical results indicate that all contaminant concentrations in the composite sample are below the SSSALs, the corresponding stockpile will be used as backfill for the hydrocarbon-contaminated soil excavation or for general site grading within the confines of the permanent sheeting. If analytical results indicate that contaminant concentrations exceed the SSSALs, the corresponding stockpile will be disposed of off-site according to applicable regulations. Additional waste characterization will be conducted as required by the disposal facility. Fill materials that cannot be used for backfill due to their mechanical properties or composition, or because they are in excess of the volume required for backfilling, will be separately stockpiled for waste characterization analysis and off-site disposal. Organic matter derived from on-site will be prohibited from reuse on-site. These materials will be tested in accordance with the requirements of the receiving facility, and disposed of as municipal solid waste per 6 NYCRR Part 360-1.2. Depending on the requirements of the receiving facility, large debris may be segregated from other soils, and characterized and disposed of separately. Fresh chip samples will be collected from segregated construction and demolition debris for analysis of VOCs, SVOCs, and metals at a frequency of two samples for the first 1000 $yd^3$ and one sample for each additional 1,000 $yd^3$ to verify that the material is not grossly contaminated and meets the SSSALs. Copies of correspondence with disposal facilities concerning classification of materials, testing and permits/approvals will be included in the Final Remediation Report submitted to NYSDEC (see Section 7.0).

### 4.3.3 Imported Backfill

Any off-site material used as backfill must be either from a NYSDOT-approved source, or must qualify as "exempt fill" under NYCRR Part 360. The material will be clean and free of debris, cinders, combustibles, wood, roots, organic material, and any staining or odors.

Off-site soils will be documented as having originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products. If the contractor designates a source as "virgin" soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use. Documented virgin soils will not be sampled prior to use as backfill on the site.

Non-virgin, off-site soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. Samples will be analyzed for VOCs using EPA Method 8260, SVOCs using EPA Method 8270, target analyte list (TAL) metals using EPA Method 6000/7000 series, polychlorinated biphenyls (PCBs) using EPA method 8082, pesticides using EPA Method 8081, and herbicides using EPA method 8151. Soils will be considered appropriate for use as on-site backfill if contaminant concentrations are less than applicable Recommended Soil Clean-up Objectives (RSCOs) in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046.

If more than 1,000 cubic yards of soil are imported from a given off-site, non-virgin soil source area and both samples of the first 1,000 cubic yards meet the limits described above, the sample collection frequency will be reduced to one composite sample for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided that all earlier samples meet the prescribed limits.

## 4.4 COVER SYSTEM

At the conclusion of site remediation activities all excavated areas will be temporarily stabilized in accordance with the SWPPP until site grading and building foundations are completed. At the conclusion of site redevelopment activities, all disturbed areas will be either covered with on-site buildings, paved with asphalt or concrete sidewalks, or landscaped with a minimum of two feet of clean fill, and vegetation, capping all on-site soils.

## 4.5 EROSION CONTROL/STORMWATER MANAGEMENT

Operators of construction activities involving one acre or greater of land disturbance must obtain coverage under a New York SPDES General Stormwater Permit for Construction Activity (Permit Number GP-02-01), which requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). Since the proposed remediation and construction activities will disturb the entire 1.8-acre property; all work will be conducted under an SWPPP. The SWPPP will address issues such as erosion prevention, sedimentation control, hydraulic loading, pollutant loading, ecological protection, physical site characteristics that impact design, and site management planning. The SWPPP also will include a contingency plan to be implemented in the event that heavy rain events are determined to be impacting water quality in the East River during remediation and/or site development activities. The plan will include a description of all stormwater pollution prevention structures, including explanation of structure placement, supporting engineering data and calculations, construction scheduling, and references to established design criteria. The SWPPP will conform to all requirements as established by applicable regulatory agencies.

Proven soil conservation practices will be incorporated into construction and development plans to mitigate soil erosion, off-site sediment migration, and water pollution from erosion. Typical measures that may be applicable at various stages of the project include the use of hay bales, silt fences, sewer inlet protection, a stabilized construction entrance, dust control measures, and sediment basins.

Smaller-scale soil disturbances for future utility maintenance and landscaping conducted after the completion of site redevelopment are not anticipated to require coverage under the general SPDES permit or preparation of an associated SWPPP. However, best management practices, such as the placement of straw bales and silt fencing around soil stockpiles and/or the use of polyethylene liners and covers, will be implemented during small-scale soil disturbance.

## 4.6 AIR QUALITY MONITORING

All soil excavation during remediation activities will be conducted within a containment structure to control fugitive dust and vapors. Air monitoring will be performed within the structure, as required under the site-specific HASP, to ensure worker protection. Perimeter air quality monitoring will be performed upwind and downwind locations around the perimeter of the site, as specified in the Air Monitoring Plan, before and during remedial activities, to ensure that dust and vapors are being controlled by the containment structure and air handling system. Dust

suppression and vapor mitigation measures will be implemented as indicated by particulate monitoring and may include spraying foam and/or Biosolve on open excavations; applying water on haul roads; spraying water on equipment during excavation; restricting vehicle speeds to 10 miles per hour; covering excavated areas and stockpiles with plastic sheeting; and minimizing the excavation size and number of open excavations.

Subsequent to remediation, only small scale soil disturbance will be required for site development, including excavation for elevator pits and utility vaults. In addition, future maintenance and landscaping work is anticipated to require only small scale disturbance of the historic fill material or capped soils. Therefore, only work zone monitoring will be conducted during these redevelopment and future maintenance activities, as specified in the HASP.

### 4.7 CONSTRUCTION WATER MANAGEMENT

Remediation and construction dewatering will be performed in accordance with Federal, State and local regulations. Produced water will be treated and discharged to the sanitary sewer under a New York City Department of Environmental Protection (NYCDEP) sewer connection permit. Pumping of any water from excavations, if necessary, will be performed in such a manner as to prevent the migration of particulates.

### 4.8 ACCESS CONTROL

As described in Section 4.1, barriers will be erected around any areas of the site where soils are disturbed and obvious access points will be established. Unauthorized persons will not be allowed access to the work zones while excavation or handling of potentially contaminated soil is taking place.

## 5.0 HEALTH AND SAFETY

All work that involves soil disturbance will be performed in accordance with all applicable local, state and federal regulations to protect worker health and safety. The site-specific HASP, submitted simultaneously with this Soil Management Plan provides details of personnel protection, air monitoring and particulate response levels, vapor emission response programs for the site, and other health and safety protocols, procedures and requirements. The HASP will be implemented during all remediation, redevelopment, and future maintenance work.

## 6.0 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

### 6.1 ANALYTICAL DATA

All waste characterization collected during site remediation and redevelopment activities will be analyzed using the most recent NYSDEC Analytical Services Protocol (ASP). Analytical data will be submitted in complete ASP Category B data packages including documentation of laboratory QA/QC procedures that will provide legally defensible data in a court of law.

The laboratory proposed to perform the analyses will be certified through the NYSDOH Environmental Laboratory Approval Program (ELAP) to perform Contract Laboratory Program (CLP) analyses and Solid Waste and Hazardous Waste Analytical testing on all media to be sampled. The laboratory will maintain this certification for the duration of this project.

Sampling and decontamination will be conducted according to established Standard Operating Procedures (SOPs) provided in the RAWP. Procedures for chain of custody, laboratory

instrumentation calibrations, laboratory analyses, reporting of data, internal quality control, and corrective actions shall be followed as per NYSDEC ASP and as per the laboratory's Quality Assurance Plan. Where appropriate, trip blanks, field blanks, field duplicates, and matrix spike and matrix spike duplicate samples shall be collected at a rate of 5% (1 sample per up to 20 samples) and will be used to assess the quality of the data.

## 7.0 NOTIFICATION AND REPORTING

The following minimum notification and reporting requirements shall be followed by the property owner prior to and following site development, as appropriate:

- Prior to initiation of the remedial action, the developer will submit a Notice of Intent for Stormwater Discharge Associated with Construction Activity (General Permit #GP-02-01), accompanied by a Storm Water Pollution Prevention Plan (SWPPP) for NYSDEC approval.
- The NYSDEC will be notified that sub-grade activities are being initiated a minimum of one week in advance of construction.
- A Final Remediation Report, stamped by a New York State licensed Professional Engineer, will be prepared and submitted to the NYSDEC and NYSDOH no later than 90 days following completion of the soil remediation activities. A second report will be submitted no later than 90 days following completion of redevelopment activities to document soil management and installation of soil vapor barrier/collection systems.
- Prior to any discharge of construction water to the on-site sanitary sewer, an application for a discharge permit must be submitted to the appropriate parties.

Notification contacts are as follows:

| Name | Agency | Address | Telephone |
|---|---|---|---|
| Mr. Dan Walsh | NYSDEC | Solid & Haz Waste – Reg. 2<br>1 Hunter's Point Plaza<br>47-40 21st Street<br>Long Island City, NY 11101 | 718-482-4996 |
| Mr. Vadim Brevdo | NYSDEC | Solid & Haz Waste – Reg. 2<br>1 Hunter's Point Plaza<br>47-40 21st Street<br>Long Island City, NY 11101 | 718-482-4891 |
| Mr. Joe Maloughney | NYSDEC | Div. of Env. Remediation<br>625 Broadway<br>Albany, NY 12233 | 518-402-9564 |
| Ms. Dawn Hetrick | NYSDOH | Div. of Env. Health<br>River Street<br>Troy, NY 12180 | 518-402-7880 |

# ATTACHMENT A
# RESUMES OF ENVIRONMENTAL MONITORING PERSONNEL

# PABLO ARCE

**ENVIRONMENTAL ENGINEER**

Mr. Arce is an environmental engineer with more than four years of professional environmental and engineering consulting experience. His range of experience includes completing environmental site assessments, preparing sampling and testing protocols, and health and safety plans, and engineering design basis reports.

Mr. Arce's field work experience includes supervising the installation of soil borings and groundwater monitoring wells; sampling soil, groundwater, air and water; and overseeing construction of a secondary gas compressor building. His range of project experience includes preparation of proposals, sampling protocols, work plans, health and safety plans, site investigation reports, and closure requests, as well as project scheduling and budgeting. Mr. Arce has experience coordinating work and acting as a liaison between clients, property owners, subcontractors, and regulatory agencies.

Prior to joining AKRF, Mr. Arce worked for an environmental engineering consulting firm at their offices in Queens, New York as an environmental engineer.

## BACKGROUND

### Education

B.S. Civil (Environmental) Engineering, The University of Texas at Austin - 1998

M.S. Civil (Environmental) Engineering, The University of Texas at Austin - 2001

### Certifications

40-Hr Hazardous Waste Operations Site Worker

New York State Certified Asbestos Inspector

## RELEVANT EXPERIENCE

With AKRF, Mr. Arce has conducted a number of Phase I Environmental Site Assessments performed in conformance with the American Society for Testing and Materials (ASTM) Standard E1527-00. Mr. Arce has also participated in the completion of Phase II Environmental Site Assessments and contributed by conducting air monitoring and other field work.

**Tunnel 3 Stage 2, New York City, NY**

Mr. Arce assisted in multiple phases of work at one of the largest infrastructure projects in the US. Mr. Arce performed Design Services During Construction (DSDC) involving shop drawing review, coordination with contractors, Request For Information (RFI) processing and completion, schedule progress review, change order, and design. Mr. Arce was part of the team developing the activation protocols of the 1.5 Billion Gallons per Day tunnel.

**Secondary Gas Compressor Building, Wantagh, NY**

Mr. Arce acted as Deputy Project Manager in the DSDC work involving the construction of a secondary gas compressor building at Cedar Creek wastewater treatment plant in Wantagh, NY. Mr. Arce supervised all work by the contractors, attended update meetings, designed updates to the original design, created cost and schedule estimates for change orders, processed all submittals, and maintained contact with the various contractors and the client. Mr. Arce traveled to the compressor manufacturer facilities during factory tests of the four compressors to

be used in the building. When the building and mechanical systems were completed, Mr. Arce directed all field testing of equipment, which involved supervision (24 hours per day) of all building systems and connecting systems for a period of ten days.

# MARC S. GODICK, LEP

VICE PRESIDENT

**General Introduction**

Marc S. Godick, a vice president of the firm, has 15 years of experience in the environmental consulting industry. Mr. Godick's broad-based environmental experience includes expertise in remedial investigation, design and implementation of remedial measures, environmental/compliance assessment, litigation support, and storage tank management.

**Remedial Investigation, Remediation, and Risk Assessment**

Comprehensive experience with completed projects throughout the Mid-Atlantic and New England regions. Specific experience includes development and implementation of multi-site strategies related to regulatory compliance including release reporting, remedial investigations, remediation, and risk assessment at bulk fuel storage/distribution, utility, chemical distribution, industrial, and commercial facilities.

**Environmental/Compliance Assessment**

Completion and management of Phase I and Phase II environmental site assessment (ESA) and compliance audit projects throughout the United States and in Canada. Provided management support to multi-site environmental assessment programs, with responsibilities including environmental liability analysis, compliance review, and waste management practices. Projects have included assessments of semiconductor reclamation facilities, food processing plants, and numerous other types of industrial and commercial facilities. Several of the projects were multiple-facility audits on a fast track basis for venture capital firms, banks, and multinational corporations.

**Litigation Support**

Provided litigation support services for several remediation projects including insurance claims and other cost recovery actions. Provided expert testimony and developed detailed costing estimates and cost allocation models.

**Storage Tank Management**

Managed several single and multi facility underground and aboveground storage tank (UST/AST) replacement projects. Responsibilities included the management of design, preparation of specifications, contractor bidding, construction oversight, project budgets, and documentation. Compliance experience includes development and implementation of inspection, maintenance, record-keeping, and Spill Prevention Control Countermeasures (SPCC) programs.

## BACKGROUND

**Education**

B.S., Chemical Engineering, Carnegie Mellon University

M.E., Engineering Science/Environmental Engineering, Pennsylvania State University

Community Leadership Alliance, Pace University School of Law

40 Hour HAZWOPER and Annual Refresher Training

Supervisors of Hazardous Waste Operations (8 Hour)

**Certifications/Affiliations**

Licensed Environmental Professional (License # 396) – State of Connecticut

Chairman, Joint Village of Larchmont/Town of Mamaroneck Coastal Zone Management Commission

Board of Directors, Westchester County Soil and Water Conservation District

Member, NYSDEC Risk-Based Corrective Action (RBCA) Advisory Group for Petroleum-Impacted Sites

**Seminars, Lectures & Publications**

"Let Nature Do the Work – Onsite Stormwater Management," Westchester County Department of Parks, Recreation and Conservation, Fall 2003

"Water Pollution Control and Site Assessments and Audits," Environmental Health and Safety Issues Course, Building Owners and Managers Institute (BOMI), 1997 1999

"Hydrogeologic and Geological Aspects of Tank Closures and Remedial Action," Underground Storage Tanks Course, Government Institutes, Summer 1996, Fall 1997

"Soil and Groundwater Cleanup at What Cost? A Review of State-of-the-Art Technologies," Pennsylvania Chamber of Commerce, PennExpo, Fall 1995

Technical Review of "Soil Remediation Technologies" and "Ground Water Remediation Technologies" Chapters, Underground Storage Tank Manual, Thompson Publishing Group

## RELEVANT EXPERIENCE

**Shaws Supermarket Redevelopment Project, New Fairfield, CT**

Mr. Godick is the LEP of Record for the remediation of a shopping center site that was contaminated by on-site releases from former dry cleaning operations and off-site gasoline spills. A remediation plan was prepared and approved within one year to enable redevelopment work for a new supermarket and shopping center. The remediation was complicated by the use of groundwater as a potable source at the site and surrounding area. The remediation plan included the removal of contaminated soil and installation of a multi-well pump and treat system for the recovery of non-aqueous and dissolved phase contamination from two of the three aquifers. The soil removal activities and treatment system installation have been completed, and system operation, maintenance, and monitoring are ongoing.

**Site Investigation & Remediation–Former Manufactured Gas Plant (MGP), Confidential Client, Westchester County, NY**

The site is currently an active retail shopping center. Previously, the site had been utilized as a large former MGP. The project entailed the implementation of a large-scale remedial investigation that addressed the assessment and remediation of occupied buildings, as well as the potential of future redevelopment of the site. Future remediation will consist of hot spot removal, product recovery, and groundwater containment measures. Other engineering and institution controls will also be implemented.

**Underground Storage Tank Closure and Site Remediation–Program Management, Con Edison, New York, NY**

Mr. Godick provided technical assistance to Con Edison in developing technical submittals and budgets associated with tank closures at over 50 facilities. Technical summaries were prepared for submittal of contractor-prepared closure reports to the NYSDEC. The summaries included a review of historic pre-closure assessments, tank closure data, and provided recommendations for additional assessment, remediation or closure. Subsequently, a three-year program budget was developed for implementation of the UST investigation/remedial program, which Con Edison utilized for internal budgeting purposes.

**Site Investigation–Over 20 Facilities, Con Edison, New York, NY**

Mr. Godick managed site investigations associated with petroleum, dielectric fluid, and PCB releases at over 20 Con Edison facilities including service centers, substations, generating stations, and underground transmission and

distribution systems. Site investigations have included due diligence site reviews, soil boring installation, monitoring well installation, hydrogeologic testing, and water quality sampling. Risk-based closures have been proposed for several sites.

**Site Investigation–7 World Trade Center Substation, Con Edison, New York, NY**

Mr. Godick managed the site investigation at the former 7 World Trade Center Substation in an effort to delineate and recover approximately 140,000 gallons of transformer and feeder oil following the collapse of the building. The project involved coordination with several crews, Con Edison, and other site personnel.

**Site Investigation–Former Manufactured Gas Plant (MGP) Facilities, Con Edison, New York, NY**

Mr. Godick managed site investigations at four former MGP facilities. The investigations at three of the four sites were completed at a Con Edison substation, flush pit facility, and service center, respectively. The details associated with the fourth site are confidential. Site characterizations at the substation and flush pit facility were conducted in preparation of expansion at these locations. The findings from these characterizations were used by Con Edison to make appropriate changes to the design specifications and to plan for appropriate handling of impacted materials and health and safety protocols during future construction activities.

**Ground Water Monitoring–Over 20 Facilities, Con Edison, New York, NY**

Mr. Godick managed a multi-site contract for ground water monitoring at over 20 facilities throughout Con Edison's footprint at service centers, substations, generating stations, transmission/distribution, and major oil storage facilities (MOSF) sites.

**Verizon, Investigation & Remediation, Various Locations, NY, PA and DE**

Mr. Godick managed over 50 geologic/hydrogeologic assessments and site remediation projects related to petroleum releases at various facilities. Responsibilities included annual budgeting, day-to-day project management, development and implementation of soil and ground water investigation workplans, ground water modeling, risk evaluation, remedial action work plans, remedial design, system installation, waste disposal, well abandonment, and operation and maintenance. Many of the assessment and remedial projects followed a risk-based approach. Remedial technologies implemented included air sparging, soil vapor extraction, bioremediation, pump and treat, soil excavation, and natural attenuation.

**Site Investigation, Risk Assessment and Remediation, Thermadyne Holding Company, Danvers, MA**

Mr. Godick managed a remedial investigation and ground water remediation program for a former manufacturing facility in Massachusetts. The project included the design and installation of a ground water remedial system for chlorinated solvent impact within a complex fractured bedrock aquifer. Responsibilities included the review of historic data, collection of extensive new groundwater data, completion of pump testing, computer modeling of the bedrock aquifer, remedial system pilot testing, system design, O&M, waste disposal, and preparation of all necessary reports to the State. To facilitate the closure of the site, a Risk Characterization Report was prepared under the Massachusetts Contingency Plan.

**Groundwater and Soil Remediation, BP Oil Company, Various Locations, NJ and PA**

Mr. Godick provided support to environmental activities for BP Oil Company in Pennsylvania and New Jersey. Responsibilities included completion of remedial investigations, preparation of remedial action plans, quarterly ground water sampling, and reporting.

**Multimedia Compliance and Remediation, Greenburgh Central School District No. 7, Hartsdale, NY**

Mr. Godick implemented a multimedia program to address regulatory compliance and remediation at the transportation yard and other facilities. The compliance program included development of an environmental management system including periodic auditing, standard operating procedures, release reporting, and training. Designed and implemented engineering controls and monitoring to satisfy stormwater requirements. Remediation was conducted to address petroleum and solvent contamination from former underground storage tanks and dry wells, which included source removal and natural attenuation of groundwater. Provided support in connection with litigation from the adjoining property owner.

**Preliminary Impact Assessment, Proposed Wildlife Refuge and Ecology Center, BASF Corporation, Kearny, NJ**

Mr. Godick managed preliminary environmental impact assessment at the location of a former BASF facility. Adjacent to the property is an expanse of mudflats that contained heavy metals, PAHs, PCBs, dioxins and other contaminants originating from numerous point and non-point sources. BASF proposed to cap these mudflats with clean sediments, and to develop a salt marsh wildlife refuge having an area of approximately 180 acres on the remediated portion. A workplan was developed and implemented, which included fish testing to evaluate whether winter flounder used the mudflat as a spawning area, and to evaluate whether winter flounder or summer flounder may utilize the mudflat as a juvenile rearing area. In addition, a plan was implemented to sample the benthic invertebrate community, in order to determine the composition, diversity, and biomass present. Implementation of the workplan was completed during the winter and summer periods of 2001. The benthic invertebrate and fish sampling data indicated that significant winter and summer flounder were not present at the subject site.

**Environmental Assessment, Confidential Client, Flexible Packaging Division, Various Locations**

Conducted Phase I ESAs and compliance reviews for a major international chemical company, which was divesting their flexible polyethylene packaging division. This program was completed by the seller to provide accurate and appropriate assessment information to a number of potential purchasers. All assessments were completed on a confidential basis with a completed report provided to the client within three weeks from the date of the first site visit.

**Environmental Assessment, Polyurethane Foam Manufacturing Company, Various Locations**

Conducted Phase I ESAs and compliance reviews at a major polyurethane and polystyrene foam manufacturer with locations throughout the U.S. The program evaluated all environmental aspects of the operation with a summary of potential and material liabilities provided to the client prior to the acquisition. Issues addressed, with estimates as to operational and remedial costs provided, included air emissions, regulatory compliance with historic consent orders, projected plant upgrades required for future compliance, and potential liabilities associated with identified environmental contamination.

**Environmental Assessment, Copper Wire Manufacturer, Various Locations**

Conducted Phase I ESAs and compliance reviews at multiple wire manufacturing sites, which were evaluated as part of an acquisition by an international manufacturing company. A comprehensive evaluation of each plant was performed with plant sizes ranging from 100,000 to 800,000 square feet. Final reports were delivered to the client within 30 days following the initial site visit.

**Litigation Support and Remediation, Former Service Station, Brooklyn, New York**

Mr. Godick took over management of remediation of an inactive service station (formerly conducted by another firm). His approach outlined additional characterization and remediation efforts which resulted in successful closure of the spill by NYSDEC within two years. Mr. Godick testified as an expert witness at a hearing in the New York State Supreme Court of Kings County to determine the adequacy of the remediation efforts.

**Litigation Support, Cost Recovery Action, New York State Superfund Site, Upstate New York**

Provided technical support for the former owner of a New York State Superfund site in upstate New York. Current owner of the property brought a cost recovery action against client as a potential responsibility party. Completed technical review of draft Remedial Investigation/Feasibility Study prepared by opposing party's consultant to develop more cost effective remedial strategy and to better position the client for liability allocation as part of future settlement negotiations. Developed cost allocation paper and model for settlement negotiations. Participated in mediation process.

**Litigation Support, Cost Recovery Action, New York State Petroleum Spill Site, New York, NY**

Provided technical support for the former owner of a New York City multi-unit residential apartment building. The State of New York brought a cost recovery action against our client as a result of a previous spill from a former underground storage tank. Reviewed invoices and project documentation to dispute work performed by the NYSDEC, which provided the basis for settlement at a fraction of the initial claim.

**Cost Analysis, Environmental Insurance Claims, Various Locations**

Provided technical support for cost analyses completed for a large national insurance company related to several former MGP and other industrial sites. Responsibilities included evaluation and development of cost-effective remedial strategies, as well as compilation of detailed costs for remedial action implementation and closure.

**Litigation Support, Class Action Lawsuit, Confidential Client, NJ**

Provided technical support for a class action suit involving a petroleum-impacted community water supply in southern New Jersey. The technical assistance included analysis of expert testimony and coordination with legal counsel in preparing for cross-examination of the opposing party's lead expert witness.

**Storage Tank Management, Verizon, Various Locations, NY, PA, DE, and MA**

Managed the removal and replacement of underground and aboveground storage tank systems for Verizon in New York, Pennsylvania, Delaware, and Massachusetts. Responsibilities included the management of design, preparation of specifications, contractor bidding, construction oversight, project budget, and documentation. For selected AST sites, managed the development of Spill Control, Contingency and Countermeasures (SPCC) plans.

**Storage Tank Management, Citibank, N.A., New York, NY**

Managed a storage tank replacement project for a facility located on Wall Street in New York City. The existing underground storage tank was closed in place and replaced with a field-constructed AST system within the building. The project required zero tolerance for service interruptions, disruptions to building operations, or disturbance to occupants of the office space neighboring the new tank location. Responsibilities included the management of design, preparation of specifications, contractor bidding, construction inspections, site assessment for closed-in-place UST, SPCC plan preparation, and responsibility for project budget and documentation.

**Storage Tank Management, Barclays Bank, New York, NY**

Managed a storage tank upgrade project for a facility located on Wall Street in New York City. The existing USTs were upgraded. Special project issues included management of sidewalk and street closing concerns, as well as ensuring safe access to a day care center located adjacent to the work area. Responsibilities included the management of design, preparation of specifications, contractor bidding, construction oversight, project budget, and documentation.

# STEPHEN R. GRENS, JR.

**ENVIRONMENTAL SCIENTIST**

Stephen Grens, Jr. is an environmental technician specializing in Phase I and II site assessments and comprehensive asbestos surveys. He has completed assessments in New York, New Jersey, Connecticut, Pennsylvania, North Carolina, South Carolina, and Georgia. Mr. Grens is also actively involved in data interpretation and report preparation.

## BACKGROUND

### Education

B.S., Environmental Sciences, Expected Graduation Date: May 2006, State University of New York (SUNY), Purchase

### Certifications

New York State Certified Asbestos Inspector, Asbestos Project Monitor, and Air Sampling Technician

## RELEVANT EXPERIENCE

**Grand Street Site, Mamaroneck, NY**

Mr. Grens reviewed previous environmental reports, supervised and documented the removal of UST's, and delineated and supervised the removal of approximately 300 tons of contaminated soil from this former industrial property. This property was later converted into multi-unit residential apartment buildings.

**Parkway Road Site, Bronxville, NY**

Mr. Grens supervised and documented the removal of USTs, two hydraulic lifts, dry wells, and petroleum contaminated soil from a parcel that was formerly utilized as a gasoline service station. This site would eventually be redeveloped into multi-unit residential apartments.

**Hanover Hall, Stamford, CT**

Mr. Grens performed a remote camera observation of the sanitary sewer line to determine the presence of cracks associated with the contamination of surrounding soil. This procedure was implemented as a cost effective means to determine the precise location of possible soil and/or groundwater contamination.

**East 138th Street Site, Bronx, NY**

Mr. Grens supervised and documented the removal of approximately 8,000 tons of urban fill and metal-contaminated soil for the construction of a storage facility on the Harlem River. He was responsible for the delineation of contaminated areas, and subsequent confirmation soil sampling. Soil was delineated to the extent feasible in order to make way for the storage facility.

**Montagano Oil Blending Facility, Pleasantville, NY**

Mr. Grens supervised and documented the removal of numerous aboveground storage tanks (AST's) and oil mixing kettles. Approximately ten 550-gallon aboveground fuel oil storage tanks were rendered free of their contents, cleaned, cut, and removed off-site for disposal. All removal activities were performed in accordance with applicable state and federal regulations. Additional on-site activities included the removal of a 1,000-gallon underground gasoline storage tank, and the installation of site-wide groundwater monitoring wells.

**Bridgeport Municipal Stadium (Former Jenkins Valve Property), Bridgeport, CT**

As part of the City of Bridgeport's revitalization program for the construction of a minor league baseball facility, Mr. Grens supervised and documented the removal of approximately 14,000 tons of solvent, petroleum, and metal-contaminated soil. He was responsible for the delineation of contaminated areas as well as subsequent confirmation soil sampling for the local sponsoring municipality. Additional on-site activities included the installation of groundwater monitoring wells, removal of underground storage tanks, and management of the current groundwater monitoring program.

**Catskill/Delaware Water Treatment Facility, Mount Pleasant and Greenburgh, NY**

Mr. Grens was responsible for the contaminated materials analysis as part of the Environmental Impact Statement (EIS) for the New York City Department of Environmental Protection (DEP). The analysis included the Phase I site assessment, a description of the chemicals to be used in the direct filtration process, and their alternatives. Mr. Grens also worked on the Electromagnetic Fields (EMF) analysis for this EIS. It included the interpretation of electromagnetic data from existing on-site sources, including transformers, high-voltage lines, and electrical panels.

**Former Sterns Department Store, Queens, NY**

Mr. Grens conducted asbestos air monitoring and sampling at the former Sterns department store during asbestos abatement procedures conducted as part of demolition operations in preparation for a multiplex cinema and outlet store.

**Former Jay Street Welfare Building and Adams Street Family Courthouse Building, Brooklyn, NY**

Mr. Grens acted as the on-site asbestos project manager during asbestos abatement activities required prior to interior renovations. Tasks included project management and collecting asbestos air samples during abatement activities in accordance with applicable New York City and Sate regulations.

**East 75th/76th Street Development Site, New York, NY**

As the designated health and safety officer (HSO), Mr. Grens' responsibilities included the personal well-being of all on-site personnel during Phase II activities. He managed and supervised the excavation, removal, and off-site disposal of numerous hazardous materials and petroleum-containing underground storage tanks, associated hazardous and contaminated soil, and stained bedrock. This site was formerly utilized as a dry-cleaning facility, parking garage, and automobile repair facility. It was classified as a hazardous waste site because of leaking underground storage tanks. Additional tasks at this site included the continuous monitoring of work-zone and community air and dust particulate levels, implementing the health and safety plan (HASP), and collecting soil and tank product samples in accordance with applicable New York State regulations. Remedial activities at the site began in December 2000 (prior to the demolition of the on-site buildings) and were successfully completed in May 2001. The construction of a new school is anticipated on the site in the near future.

**Memorial Sloan Kettering Cancer Center, New York, NY**

Mr. Grens has performed numerous noise impact studies on the east side of midtown Manhattan to assist in the determination of the various project scenarios within each site's respective EIS. Noise produced by mobile sources (automobiles, trucks, and trains), stationary sources (machinery, ventilation systems, and manufacturing operations), and construction activities can cause stress-related illness, disrupt sleep, and break concentration. The noise impact study for the Memorial Sloan Kettering Cancer Center was conducted to determine real time noise levels prior to renovations and construction activities. This provided a background level reference point for when construction activities started. Mr. Grens' tasks included collecting relevant noise data at numerous locations during morning, afternoon, and evening rush hours to determine real time noise levels utilizing a Larsen Davis decibel level indicator.

# REBECCA KINAL, P.E.

## ENVIRONMENTAL ENGINEER

Rebecca Kinal has nine years of experience in the assessment and remediation of soil and groundwater contamination and other hazardous/non-hazardous waste problems. Her hydrogeologic experience includes in-situ permeability testing, drilling supervision, and computer modeling of groundwater flow. Her experience with soil and groundwater contamination includes underground storage tank leak investigations; hazardous soil removal and disposal; design and operation and maintenance (O&M) of groundwater remediation systems; soil and water sampling; soil gas surveys; fate and transport modeling; wastewater discharge permit preparation; and project coordination with federal, state, and local authorities.

Prior to her employment with AKRF, Ms. Kinal was a project engineer with General Physics Corporation in Columbia, Maryland, where her responsibilities included overseeing fieldwork, preparing and reviewing technical reports, computer modeling, designing remediation systems, and writing proposals.

## BACKGROUND

### Education

B.S., Civil Engineering, Lafayette College

M.S., Hydrogeology, Rensselaer Polytechnic Institute

## RELEVANT EXPERIENCE

**Pelham Plaza Site Investigation Report, Pelham Manor, NY**

Ms. Kinal managed a Site Investigation at Pelham Plaza, site of a shopping center that formerly contained a manufactured gas plant (MGP). The site is being investigated under a voluntary clean-up agreement entered into with the NYSDEC by the site owner. NYSDEC's MGP group is overseeing the project. The site investigation includes advancing over 100 soil borings with continuous soil sampling to bedrock, installing monitoring and recovery wells, and conducting test pitting both indoor and outdoor locations to collect soil and groundwater samples and determine the extent of Non-Aqueous Phase Liquid (NAPL). Soil gas sampling is also being conducted to determine contaminant concentrations in the vapors beneath the foundation of an on-site retail store. Sediment sampling will be conducted in an adjacent creek to identify off-site impacts, and a tidal survey will be performed to determine tidal influence on groundwater levels at the site.

**Shaws Supermarket Redevelopment Project, New Fairfield, CT**

Ms. Kinal managed the Remedial Investigation (RI) for a shopping center site that was contaminated by releases from former dry cleaning operations. The investigation included the installation of monitoring wells in the intermediate overburden aquifer and bedrock aquifer, sampling of existing and newly installed wells, geophysical logging in bedrock wells, and pump testing in intermediate and bedrock wells. Ms. Kinal prepared a Remedial Action Work Plan (RAWP) based on results from the RI, which included a conceptual design for a groundwater pump and treat system to contain a plume of perchlorethylene (PCE)-contaminated groundwater identified at the downgradient edge of the site. The RAWP was approved by the Connecticut Department of Environmental Protection. Following CTDEP approval Ms. Kinal prepared bid specifications for installation of the remediation system and a permit application for discharge of the treated groundwater to the on-site storm water system.

### Outlet City Site Investigation

Ms. Kinal prepared a work plan for remedial investigation of the Outlet City site, a property in Long Island City that was formerly occupied by a manufacturer of industrial cleaners and pharmaceuticals. The site is being investigated and remediated under the NYSDEC voluntary clean-up program. In preparing the work plan, Ms. Kinal evaluated results from several previous investigations and conducted a limited groundwater sampling program to determine future data needs for designing remediation of creosote-contaminated soil and groundwater. The work plan, currently under NYSDEC review, includes additional soil and groundwater sampling, a tidal survey to determine tidal influence on groundwater levels, and pilot free product recovery testing. Ms. Kinal also helped design a venting system for an on-site basement and performed exposure calculations for the vented vapors.

### Davids Island Environmental Audit, New Rochelle, NY

Ms. Kinal managed the hazardous materials portion of the audit of this undeveloped island site, including a Phase I Environmental Site Assessment (ESA) and a Phase II Subsurface Investigation. Several environmental conditions were identified during the Phase I ESA. Ms. Kinal developed a soil sampling plan to investigate these conditions that included collecting soil samples from more than 100 locations and analyzing them for targeted compounds, including volatile organic compounds, semi-volatile compounds, metals, pesticides, and polychlorinated biphenyls (PCBs). Ms. Kinal also oversaw an electromagnetic (EM) survey conducted to identify the location of suspected underground storage tanks on the island. Based on soil sample results, Ms. Kinal estimated the volume of contaminated soil requiring remediation and prepared cost estimates for soil excavation and for transportation and disposal of contaminated soil and hazardous materials.

### Yonkers Waterfront Redevelopment Project, Yonkers, NY

For this redevelopment along Yonkers' Hudson River waterfront, Ms. Kinal supervised the remediation of Parcels II and I that were contaminated with hazardous soil. During the remediation process, she reviewed the subcontractor health and safety plans, delineated the areas of excavation, and oversaw field activities to ensure compliance with the specifications and appropriate regulations. This property was remediated under the New York State Department of Environmental Conservation (NYSDEC) Brownfields program.

### Avalon on the Sound, New Rochelle, NY

Ms. Kinal oversaw the subsurface investigation and soil remediation during the construction of this luxury high-rise apartment building and associated parking garage. Investigation activities included an electromagnetic survey to search for possible underground storage tanks. Remediation activities included removing underground storage tanks, excavating and disposing of soil contaminated with volatile and semi-volatile organic compounds, and collecting end-of-excavation confirmation samples.

### U. S. Post Office Main Vehicle Maintenance Facility, Washington, D.C.

While with another firm, Ms. Kinal designed and supervised the installation of a remediation system to treat petroleum-contaminated groundwater. Ms. Kinal also established O&M and monitoring protocols to ensure efficient operation of the air sparging/soil vapor extraction system, and to monitor contaminant recovery/degradation rates.

### Aberdeen Proving Ground Building 4025 Site, Aberdeen, MD

While with another firm, Ms. Kinal provided services for this leaking underground storage tank site, Ms. Kinal planned and oversaw investigation and pilot testing activities to delineate contamination and determine feasible in-situ remediation options. Investigation activities included soil and groundwater sampling using a direct-push (Geoprobe) rig and mobile laboratory. Pilot testing included in-situ respirometry testing and field testing of "biosplurping" and other free-product recovery technologies.

# JESSICA E. LEBER

**ENVIRONMENTAL SCIENTIST**

Ms. Leber is an environmental scientist with about one year of professional environmental consulting experience. Her range of experience includes completing environmental site assessments, subsurface investigations, hazardous materials impact studies, and preparing sampling protocols and health and safety plans. Ms. Leber's fieldwork experience includes soil boring installation and sampling, groundwater monitoring, well installation and sampling, test pit oversight, and air monitoring.

Prior to joining AKRF, Ms. Leber graduated cum laude from Columbia University with a degree in Environmental Chemistry. She has past experience working in organic and environmental chemistry research laboratories at Columbia University and Stony Brook University. Prior to her graduation, she completed an internship at a small environmental consulting firm in Nassau County.

## BACKGROUND

**Education**

B.A., Environmental Chemistry, Columbia University

**Certifications**

40 Hour Hazardous Waste Operations Site Worker

New York State-Licensed Asbestos Inspector

## RELEVANT EXPERIENCE

### Atlantic Yards Arena, Brooklyn, NY

As part of the New York City CEQR process, Ms. Leber served on a team of Hazmat staff conducting Phase I Environmental Site Assessments in accordance with ASTM E-1527-00 related to the potential development of eight city blocks for the Atlantic Yards Arena. Ms. Leber coordinated with clients, property owners, and tenants to conduct the site inspections, historical research, regulatory records review, and preparation of the Phase I report.

### Flushing, Queens, NY

Ms. Leber is serving on a team conducting an investigation and remediation of a large PCB-contaminated former utility property in Flushing, Queens. She has completed field work for several hundred soil boring installations in the contaminant delineation phase of the project and has aided in preparing documents for the site's transfer from the State Voluntary Cleanup Program to the State Brownfield Cleanup Program.

### Queens West, Long Island City, NY

Ms. Leber conducted field work for a supplemental remedial investigation at this former industrial manufacturing facility on a portion of the Queens West Development site in Long Island City. The work is being conducted as part of a Voluntary Cleanup Agreement with the NYSDEC. Field work activities have included soil boring installation, test pit oversight, and monitoring well installation and sampling. Ms. Leber will analyze the laboratory analytical data and aid in preparing a report of the findings of the investigation.

**West - Chambers Street, New York, NY**

Ms. Leber completed a subsurface investigation for this property currently in the CEQR process to allow residential and commercial development at the site. Ms. Leber's work included the installation and sampling of soil borings and groundwater monitoring wells, analysis of analytical laboratory data, and preparation of an investigation report. Based on the findings of this study, Ms. Leber prepared a Remedial Action Plan and Construction Phase Health and Safety Plan currently pending approval by the New York City Department of Environmental Protection.

# APPENDIX 1
# VAPOR MITIGATION SYSTEM DESIGN

# Queens West Development

## Parcel 9

**QUEENS, NEW YORK**

## Vapor Barrier and Sub-Slab Depressurization System

**AKRF Project Number: 10516**

**Prepared for:**

AvalonBay Communities
535 Fifth Avenue
New York, New York 10017

**Prepared by:**

**AKRF Engineering, P.C.**
440 Park Avenue South
New York, NY 10016
212-696-0670

**AUGUST 2005**

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# FIGURES

Figure 1 — Sheet ENV-1
Figure 2 — Sheet ENV-2

# ATTACHMENTS

Attachment A — Liquid Boot® Specifications

Attachment B —Fan Blower System Specifications

# 1.0 GENERAL

## 1.1 DESCRIPTION OF WORK

Install a vapor barrier and sub-slab depressurization system to allow the lateral movement, collection and venting of gas vapor from below the building. System components include a non-woven drainage geotextile on the subbase and a 12-inch gas permeable aggregate layer with 4-inch Schedule 40 slotted polyvinyl chloride (PVC) piping network below a spray-applied gas vapor barrier. The PVC piping network transitions to 4-inch Schedule 40 steel pipe at the building penetrations, continuing as risers venting to the atmosphere via wall penetrations. A blower has been specified and will be installed in the riser penetration areas to induce a vacuum in the subsurface and pull vapors out to the atmosphere. Install all system components as indicated, specified and required in these contract documents and drawings ENV-1 and ENV-2.

## 1.2 RELATED SECTIONS

Attachment A - Liquid Boot® Brownfield Membrane/Liner, Section 2, Version 3.8.

Attachment B - Fan Blower System Specifications

## 1.3 STANDARDS AND REGULATIONS

Comply with applicable portions of the Building Code of the City of New York. Where requirements for products, materials, equipment, methods and other portion of the work specified herein exceed minimum requirements of New York City Building Code, Contractor shall comply with such requirements specified herein, unless specifically approved otherwise by the Owner or its authorized representative.

Standards listed below are referenced in this section.

1. American Society for Testing and Materials (ASTM)
2. American Standards Association (ASA)
3. American National Standards Institute (ANSI)
4. United States of America Standards Institute (USASI)

## 1.4 RESTRICTIONS AND QUALITY CONTROL

Preinstallation Meeting: Convene a preinstallation meeting prior to the start of system installation. Require attendance of parties directly affecting work of this section, including Owner, Contractor, Engineer, and Installer. Review installation, protection, and coordination with other work.

Quality Control Inspections shall be performed throughout the installation by the Owner or its authorized representative in accordance with the attached Milestones Schedule and as deemed necessary or appropriate by the Owner.

## 1.5 SUBMITTALS

Product Data: Submit manufacturer's product data, including installation instructions.

Samples: Submit representative samples of the following for approval:

1. Non-woven drainage geotextile

Material Test Reports: Indicate and interpret test results for compliance of materials with requirements indicated, as applicable.

Centrifugal Blowers: Submit cut sheets

Submittals for pipe materials:

1. Submit manufacturer's instructions for installation of fire stop materials for sleeves for pipes.
2. Submit shop drawings for all piping installations.
3. Pipe Schedule: Itemize pipe and fitting materials for each specified application.
4. Brazing Certifications: Submit as required for piping work.

Product Data

1. Clean-outs
2. Pipe & fittings

OR

Submit a compliance affidavit if pipe and fittings match contract documents. Manufacturer's technical product data submission will be required if a substitution is proposed.

Samples:

1. Polyvinyl chloride (PVC) pipe & fittings

## 1.6 DELIVERY, STORAGE, AND HANDLING

Deliver materials to site in manufacturers' original, unopened containers and packaging, with labels clearly identifying product and manufacturer.

Store materials in a clean, dry area in accordance with manufacturers' instructions.

Protect materials during handling and installation to prevent damage.

Delivery Storage and Handling of Pipe Materials:

1. Deliver pipe materials properly protected, and undamaged.
2. Properly protect all piping to prevent damage to the pipe or the introduction of foreign material into the pipe. For the purpose of protecting piping from pre-installation contamination, all piping shall be shipped to job site with suitable caps, sheet metal covers or plugs. Pipe caps shall not be removed until just before installation.
3. Examine all pipe and fittings before laying. Do not install any piece that is found to be defective.

# 2.0 PRODUCTS

## 2.1 MATERIALS AND ACCESSORIES

A. NON-WOVEN DRAINAGE GEOTEXTILE

Geotextile material to be placed below the gas permeable aggregate layer shall be of a non-woven polypropylene type, such as Mirafi N-Series product type 140NL or approved equal and having the following properties:

| **Property/Test Method** | **Units** | **Value** |
|---|---|---|
| **MECHANICAL PROPERTIES** | | |
| **Grab Tensile Strength** | | |
| ASTM D 4632 Strength @ Ultimate | kN (lbs) | 0.40 (90) |
| Elongation @ Ultimate | % | 50 |
| **Mullen Burst Strength** | | |
| ASTM D 3786 | kPa (psi) | 1205 (175) |
| **Trapezoidal Tear Strength** | | |
| ASTM D 4355 | kN (lbs) | 0.18 (40) |
| **Puncture Strength** | | |
| ASTM D 4833 | kN (lbs) | 0.24 (55) |
| **UV Resistance after 500 hrs.** | | |
| ASTM D 4355 | % strength | 70 |
| | | |
| **HYDRAULIC PROPERTIES** | | |
| **Apparent Opening Size (AOS)** | | |
| ASTM D 4751 | mm (US Sieve) | 0.25 (60) |
| **Permittivity** | | |
| ASTM D 4491 | $sec^{-1}$ | 2.0 |
| **Flow Rate** | | |
| ASTM D 4491 | $l/min/m^2$<br>$(gal/min/ft^2)$ | 5907<br>(145) |
| *NOTE: All Mechanical Properties and Hydraulic Properties shown are Minimum Average Roll Values (MARV).* | | |

B. GAS PERMEABLE AGGREGATE LAYER

1. Gas Permeable Aggregate, to be used under interior slabs for backfill material for sub-slab depressurization system, shall consist of rounded, hard, durable particles of stone or gravel; materials that break up when alternately frozen and thawed or wetted and dried shall not be used. Material shall be uniform in quality and free of fines, wood, loam, clay, dirt, roots, bark, and any other extraneous material. Material shall not contain salts or foreign materials of any kind.
2. Gas Permeable Aggregate shall meet the following gradation requirements:

| Sieve Size | Percent Passing by Weight |
|---|---|
| 1" | 100 |
| ¾" | 95-100 |
| 3/8" | 15-30 |
| No. 4 | 0-15 |
| No. 10 | 0 |

C. SUBSURFACE SOIL GAS COLLECTION PIPE NETWORK AND APPURTANCES

PVC pipe for gas vapor collection applications for underground installation shall be 4-inch diameter Schedule 40 pipe having 0.02-inch slots cut continuously with solid pipe maintained as per manufacturer's recommendations on 30-inch centers. Solid, unslotted pipe shall have a wall thickness of 0.237 inches, a maximum working pressure of 220 pounds per square inch-gauge (psig) at 73 degrees F, and weigh approximately 212 lbs/100 feet. Joints shall be solvent-welded.

1. All fittings shall be of the same manufacturer, material, class, and Schedule as the pipe. Any required threaded joints shall be provided with non-hardening Teflon pipe dope or flange joints with nitrile or urethane gaskets.
2. Solvent cement joints for the pipe and pipe installation shall be made in accordance with the manufacturer's recommendations and ASTM D2855.
3. Shear ring connections from PVC pipe to steel pipe shall be made with Ferneo Inc. Product or approved equal and shall be manufactured specifically for coupling plastic pipe to steel pipe. Gasket material shall be black plasticized PVC, 65 Shore 'A' Durometer Hardness conforming to ASTM D 5926. Clamps shall be 300 Series Stainless Steel with a minimum of 2 clamps per coupling (Ferneo or approved equal).

D. PIPE HANGERS

1. Pipe hangers shall be provided every five feet along the horizontal.

E. LIQUID BOOT® GAS VAPOR BARRIER (SPRAY-APPLIED)

Spray-Applied Gas Vapor Barrier System shall be as specified in attached Liquid Boot® Brownfield Membrane/Liner, Section 2, Version 3.8 specification (Attachment A).

F. COLLECTION NETWORK TRANSITION, BUILDING PENETRATION AND RISER PIPE

Connections from PVC pipe to steel pipe shall be made with Fernco Inc. Product or approved equal and shall be manufactured specifically for coupling plastic pipe to steel pipe. Gasket material shall be black plasticized PVC, 65 Shore 'A' Durometer Hardness conforming to ASTM D 5926. Clamps shall be 300 Series Stainless Steel with a minimum of 2 clamps per coupling (Fernco or approved equal).

Interior risers shall be 4-inch diameter Schedule 40 steel pipe and a cleanout shall be installed within 12 inches of building penetrations on the interior side. All building penetrations shall be in accordance with the design drawings and provided with sleeves and/or fire-stop material in accordance with all applicable building standards and codes. Steel pipe shall conform to the following:

1. Black steel pipe and galvanized steel pipe shall be Grade A, seamless, electric resistance welded pipe, or type F furnace butt-welded, and shall be made in accordance with the current Edition of the ASTM A53 Specification. Pipe shall be free from scale and rust, injurious sand marks, blisters, scale pits, laminations, imperfect welds, or other defects that might affect its strength, appearance or ability to resist corrosion. The maker's name shall be rolled or stamped in the metal at intervals of each length of pipe.
2. Unless otherwise specified or indicated on Drawings, black steel pipe shall be standard weight and galvanized steel pipe shall be Schedule 40 galvanized pipe.
3. Available Manufacturers:
    a. U.S. Steel Co.
    b. Sawhill Tubular Co.
    c. North Star Steel
    d. Sharon Tube Co.
4. Unions
    a. Unions shall be flanged.
    b. Flanged unions shall be cast iron for steel pipe, gasket type suitable for 150 pounds W.S.P.
    c. Flanged unions shall be provided with the necessary steel bolts, nuts and gaskets.
    d. All unions used on galvanized piping shall be galvanized.
    e. Unions shall be as manufactured by Stanley G. Flagg & Co., Inc., Stockham or Dart.
5. Cleanouts and Cleaning Screw Plugs
    a. Cleanouts shall conform to the features of the cleanouts contained in the schedule below. The manufacturer's numbers are for the purpose of type only. The Contractor shall submit manufacturer product technical data for each type required before installation for approval.
    b. Cleanout plugs shall be bronze and countersunk type with taper screw threads.
    c. Cleanouts for cast iron pipe and galvanized steel pipe in exposed horizontal runs and accessible hung ceilings shall be as follows:

Cleanouts for membrane waterproof floors shall be furnished with an integrally cast flashing flange with flashing clamp. Cleanouts in unfinished areas shall have cast iron tops and covers and in finished areas shall have nickel bronze tops and covers.

Cleanout Schedule:

| Location | Piping | Figure Number |
|---|---|---|
| Wall | Exposed Steel | Smith 4470 |
| | | Wade W-8590-D |
| | | MIFAB C1430 |
| Wall | Concealed | Smith 4472-U |
| | Steel | Wade W-8590-E |
| | | MIFAB C1430-RD-6 |
| Floor-Concrete | Steel or | Smith 4248-U |
| | Cast Iron | Wade W-6010-Z |
| | | MIFAB C1100-XR |
| | | Wade W-7040-U |
| | | MIFAB C1100 |

6. Sleeves for Pipes
   a. Sheet metal sleeves shall be 20 gauge.
   b. Pipe sleeves shall be service weight cast iron pipe or Schedule 40 galvanized steel pipe.
   c. Fire stop penetration materials for sealing sleeves shall be listed by Underwriters Laboratories and shall have Material and Equipment Acceptance (MEA) approval. The materials shall be as specified in Section 07270.
   d. Material for sealing spaces between pipe and sleeve through foundation walls below grade shall be Link-Seal Type "C" as manufactured by Thunderline Corp.; Belleville, Michigan. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and sleeve. Links shall be loosely assembled with bolts to form a continuous rubber bolt around the pipe with a pressure plate under each bolt head and nut. Link-Seal pressure plates shall be Type "C" (insulating type) to provide for electrical insulation and cathodic protection.
   e. Materials for sealing space between each pipe and sleeve through non-fire rated exterior walls above grade shall be Non-shrinking cement.
   f. Waterproof sleeves shall be Link-Seal Wall Sleeve as manufactured by Thunderline Corp, or MetraSeal wall sleeve by the Metraflex Co.

G. RISER TERMINATION

The four risers shall terminate through a wall penetration with a wall plate.

H. CENTRIFUGAL BLOWER

Centrifugal fan blower shall be American Fan Company℠ cast aluminum pressure blower with the following specifications:

| Fan Code | Volume | Pressure | Fan Speed | Motor Frame | Power | Enclosure |
|---|---|---|---|---|---|---|
| 1N-04-18.5N | 250 CFM | 15 in wg | 2916 RPM | 56 | 1.5 HP | TEFC |

A particulate filter, vacuum relief valve, dilution valve, and low vacuum switch shall be installed on the suction side of each blower. The inlet and outlet of sides of each particulate filter and blower shall be equipped with unions and liquid-filled pressure and vacuum gauges. A sample port, flow meter, and silencer shall be installed on the outlet side of each blower. The blower shall be mounted on a 6-inch concrete pedestal. A control panel housing the motor starter, Hand/Off/Auto switch, timer, and relays shall be mounted adjacent to the blower.

Each of the four risers shall be connected to a blower fan and control panel. Contractor is responsible for all connections, wiring, switches, gauges, timer, and accessories required to ensure proper operation of the fan blower and discharge to atmosphere. Contractor is responsible for complying with applicable NYC Building and Electrical codes. See attached specifications for blower system (Attachment B).

1. Electrical Installation
   a. All work shall meet the National Electric Code and the applicable area classification.
   b. All wiring inside the building above ceiling height may be thin wall EMT, compressor type fittings.
   c. The conduit shall not be used as the safety ground (green wire ground). A dedicated insulated copper ground wire shall be installed.
   d. All sensor and monitoring wiring shall be copper conductors.
   e. The Contractor is responsible for the installation of a 230v, single phase circuit from the designated power box(s). The Contractor shall provide a separate panel and/or circuit breaker, as warranted.
   f. All power wiring shall meet manufacturer's specifications.
   g. All wiring shall be colored coded.
   h. All splices shall be with solderless, crimp type connectors. Wire nuts will not be allowed. All splices will be made in junction boxes. All buried splices shall be encased in 3M epoxy kit or equivalent.
   i. Junction boxes used inside the building shall be NEMA 1 boxes.

j. Fittings shall be of material that is compatible with the related raceway or conduit.

k. EMT conduit connectors shall be compression type. Crimp or indented type connectors will not be allowed.

l. Conduit bushings shall be malleable iron with insulated throats.

m. Grounding bushings shall be malleable iron locking type with ground wire clamp.

n. Conduit fittings shall be NEMA 1 inside the building.

I. GENERAL

Provide additional installation accessories as necessary. Ensure accessories are from same manufacturer as product.

# 3.0 EXECUTION

## 3.1 EXAMINATION/INSPECTION

At a minimum, all components identified on the following Inspection Schedule for the installation of the system shall be inspected and approved by the Owner or its approved representative prior to commencing each phase of work. Additional inspections, examinations and quality control measures may be required as per manufacturers' recommendation and are the responsibility of the Contractor. The Owner reserves the right to perform additional inspections or quality control tests as deemed necessary by the Owner at any point during the construction process at no additional cost to the Owner.

A. INSPECTION SCHEDULE

| # | **Inspection Schedule – Milestone Description** |
|---|---|
| 1 | Sub-base preparation following foundation pile cap installation and application of non-woven drainage geotextile. |
| 2 | Installation of collection pipe network, Ferneo couplings and steel riser "stub-outs" prior to completion of gas permeable aggregate layer. |
| 3 | All spray-applied gas vapor barrier appurtances and seals following the specified curing time. |
| 4 | Application of spray-applied gas vapor barrier at all penetrations, geotextile overlaps and foundation contact points. |
| 5 | Coating thickness inspection as required by manufacturer (1/500 square feet minimum). |
| 6 | Final Inspection of all system subsurface components prior to concrete slab pours. |
| 7 | Inspection of blower system. |
| 8 | Completed installation of all portions of interior risers prior to enclosure within sheetrock/interior walls. |
| 9 | Observation of pressure test of completed interior riser pipes. See following information regarding test requirements (Section 3.1B). |
| 10 | Final inspection of completed system. |

B. INTERIOR RISER PRESSURE TESTING

Each of the interior risers shall undergo a pressure test to ensure all components of the system that pass through the facility interior can withstand 5 pounds per square inch-gauge (psig).

A cleanout shall be permanently installed on each riser pipe within 12 inches of the pipe entry into the facility and prior to any additional joints, couplings or pipe segments. A pressure-stop balloon shall be inflated between the foundation wall and the cleanout creating an airtight seal. A temporary airtight seal shall be placed at the riser termination that penetrates the building wall. A static pressure of at least 5 psig shall be applied to the pipe at the cleanout location and maintained for a minimum of 30 minutes. All materials, gauges and equipment for this test shall be provided by the Contractor. The Owner or its authorized representative shall observe the performance of this test as per the Milestones Schedule.

If the pipe riser does not successfully maintain pressure, it is the responsibility of the Contractor to identify and seal any leaks. The test shall be performed following all application of sealants as necessary until successful.

## 3.2 SURFACE PREPARATION

Preparation of all surfaces prior to the installation of the system shall be as specified in the contract documents and plans.

## 3.3 INSTALLATION

All components of the system shall be installed as specified in the Contract Documents and Plans.

A. INSTALLATION OF THE NON-WOVEN DRAINAGE GEOTEXTILE

Following the completion of the building pile caps, the subbase between each pile cap shall be excavated to a depth of 12 inches below the bottom of slab. The non-woven geotextile shall be placed on the subbase and secured in accordance with the manufacturer's recommendations.

B. INSTALLATION OF THE GAS PERMEABLE AGGREGATE AND COLLECTION PIPE NETWORK

A 2-inch layer of gas permeable aggregate shall be placed and compacted as necessary on the geotextile. The collection pipe shall be assembled and placed as identified on drawings ENV-1 and ENV-2. Total aggregate thickness below the slab is 12 inches with 2 inches of pipe bedding at terminations and 6 inches of pipe bedding at the transition to solid 4-inch PVC adjacent to risers. Pipe shall slope away from vent, as shown on ENV-1 and ENV-2, to encourage vapor flow to the riser and any condensed moisture flow away from the vent location. In no case can the underground piping have bows or traps that would cause any condensed water to block the flow of air through the piping. Ferneo couplings and transition steel pipe at interior riser penetration locations shall be assembled and placed with supports as necessary to maintain accurate locations for application of the gas vapor barrier and concrete slab. Pipe hangers shall be installed every 5 feet along the horizontal.

Following inspection, gas permeable aggregate shall be placed and backfilled to the bottom of slab elevation.

C. APPLICATION OF THE SPRAY-APPLIED GAS VAPOR BARRIER

The spray-applied gas vapor barrier shall be installed as specified in the attached Liquid Boot® Brownfield Membrane/Liner, Section 2, Version 3.8 (Attachment A).

The spray-applied gas vapor barrier consists of the placement of the sealing of all concrete joints, contact points and penetration piping with the product material or hardcast CRT 1602 Tape to remain for a specified curing time. All exposed metal pipe connecting to the interior risers shall be coated with the vapor barrier product.

Base Fabric T-60 non-woven geotextile is placed on all areas to receive the product, followed by a 60-mil application of the product. Following the recommended curing time, thickness inspections shall be performed, correction thickness applications of the product are applied as necessary and test locations sealed.

Following curing and testing of the product, the protective Liquid Boot® Ultrashield layer is placed on top (P-100 for vertical surfaces, G-1000 for horizontal surfaces).

The gas vapor barrier shall be applied horizontally to create a continuous vapor barrier beneath the entire footprint of the building, with durable seals to every pile cap and penetration to ensure a single membrane layer. All horizontal application of the vapor barrier shall be on top of placed gas permeable aggregate and immediately below the poured slab.

The gas vapor barrier shall be applied vertically to all subsurface building walls and extend a minimum of 12 inches, forming a lateral barrier on all sides of the gas permeable layer.

D. INSTALLATION OF THE VENT RISERS

Vent risers shall be as identified in the drawings. All transition from PVC to Steel Pipe shall be performed at exterior locations of the building. A total of four vent risers shall be installed, tested labeled and enclosed, as identified, in the interior wall cavities.

A minimum of one (1) sign per floor and one on each wall penetration location shall be permanently installed on each riser and shall read:

**CAUTION: DO NOT TAP OR PUNCTURE**

**SUBSURFACE VAPOR VENT PIPE**

**NOT FOR DOMESTIC USE**

1. Piping (General)

   a. The run and arrangements of all pipes shall be approximately as shown on drawings or specified and as directed by Owner and/or Engineer during installation, and shall be as straight and direct as possible, forming right angles or parallel lines with building walls and other pipes, and neatly spaced. No pipe shall be installed where the headroom will be interfered with unless the conditions are such that it is unavoidable and permission is obtained from the Owner. Offsets will be permitted where walls reduce in thickness or beams interfere with direct runs; offsets shall be made at an angle of 45 degrees to the vertical; in no case shall the space between the pipes, partitions, walls, etc., exceed 5 inches. All exposed risers shall be erected plumb, standing free, close to and parallel with walls and other pipes and be uniformly spaced. All horizontal runs of piping hung from structural floor, slab or floor beams shall be erected as closely as possible to bottom of floor slabs, ceilings,

## 3.6 LIST OF SUBMITTALS

| SUBMITTAL | DATE SUBMITTED | DATE APPROVED |
|---|---|---|
| Product Data: | | |
| 1. Non-woven Drainage Geotextile | | |
| 2. Blower Fan | | |
| Design Data: | | |
| 1. Non-woven Drainage Geotextile | | |
| 2. Blower Fan | | |
| Test Reports: | | |
| Durability | | |

**LIST OF SUBMITTALS FOR PIPING AND ASSOCIATED APPURTANCES**

| SUBMITTAL | DATE SUBMITTED | DATE APPROVED |
|---|---|---|
| Product Data: | | |
| 1. Mfr's product data for installation of fire stop materials | | |
| 2. Clean-outs | | |
| OR | | |
| Contractor's affidavit stating compliance with piping materials requirements | | |
| Shop Drawings: | | |
| Schedule: | | |
| 1. Pipe & fittings | | |
| Sample | | |
| 1. Polyvinyl Chloride pipe & fittings | | |

**END OF SECTION**

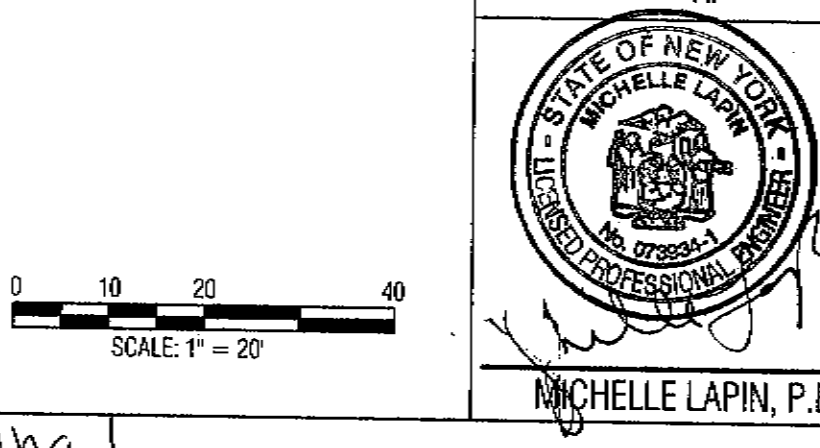
# FIGURES

535 FIFTH AVENUE
NEW YORK, NY 10017

SHEET TITLE

EXTENT OF VAPOR
BARRIER & PERFORATED PIPE

| DRAWN BY | ORIG. DATE |
|---|---|
| RC | 08/23/05 |
| CHECKED BY | PROJECT No. |
| KF | 10516 |



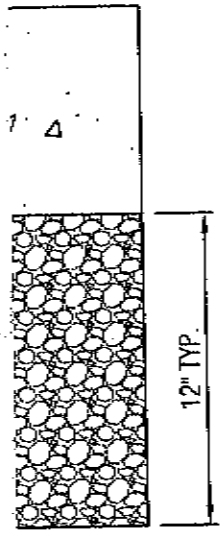

MICHELLE LAPIN, P.E.

SHEET No.

ENV-1




oversized original




NEW YORK, NY 10017

SHEET TITLE

DETAILS SHEET

| DRAWN BY | ORIG. DATE |
|---|---|
| RC | 08/23/05 |
| CHECKED BY | PROJECT No. |
| KF | 10516 |

SHEET No.

ENV-2

STATE OF NEW YORK
MICHELLE LAPIN
LICENSED PROFESSIONAL ENGINEER

MICHELLE LAPIN, P.E.

oversized original

# ATTACHMENT A

# LIQUID BOOT® SPECIFICATIONS

# *LIQUID BOOT*® Brownfield Membrane/Liner

## SECTION 2

Version 3.8

These Specifications may have changed. Go to www.liquidboot.com or call LBI Technologies, Inc. at 714.384.0111 for the most recent version.

**NOTE: If the membrane is to also perform as a waterproofing membrane, do not use this specification, use standard LIQUID BOOT® FLUID APPLIED WATERPROOFING specification.**

**PART 1 - GENERAL**

1.01 **DESCRIPTION**- General and Supplementary Conditions and Division 1 - General Requirements applies to this section. Provide gas vapor barrier as indicated, specified and required.

A. Work in this section - principal items include:
   1. Gas vapor barrier providing protection from the following gases: Methane, other Hydrocarbon vapors in concentrations up to 20,000ppm, Hydrogen Sulfide, Radon
   2. Gas vapor barrier under single family homes.

B. Related work not in this section:
   1. Excavation and backfilling.
   2. Parge coat on masonry to receive gas vapor barrier membrane.
   3. Mortar beds or concrete toppings over gas vapor barrier membranes.
   4. Latex waterproofing.
   5. Damp-proofing.
   6. Flashing and sheet metal.
   7. Joint sealers.
   8. Soil sterilant.
   9. Gas collection systems.
   10. Gas monitoring.
   11. Drainage

1.02 **QUALITY ASSURANCE-** Gas vapor barrier contractor/applicator shall be trained and approved by gas vapor barrier manufacturer, LBI Technologies, Inc. A pre-installation conference shall be held prior to application of gas vapor barrier to assure proper substrate and installation conditions, to include contractor, applicator, architect/engineer and special inspector.

1.03 **SUBMITTALS -** (Refer to section 01300 for procedures)

A. Project Data - Submit manufacturer's product data and installation instructions for specific application.

B. Samples - Submit representative samples of the following for approval:
   1. Gas vapor barrier membrane material.
   2. Protection Board and/or Protection Mat.
   3. Prefabricated Drainage Mat.
   4. Geotextiles.

1.04 **DELIVERY, STORAGE AND HANDLING-** Deliver materials to site in original unbroken packages bearing manufacturer's label showing brand, weight, volume, and batch number. Store materials at site in strict compliance with manufacturer's instructions. Do not allow materials to freeze in containers.

1.05 **JOB CONDITIONS**

A. Protect all adjacent areas not to receive gas vapor barrier. Where necessary, apply masking to prevent staining of surfaces to remain exposed wherever membrane abuts to other finish surfaces.

B. Perform work only when existing and forecasted weather conditions are within manufacturer's recommendations for the material and product used.

C. Minimum clearance of required for application of product: 90° spray wand- 2 feet, conventional spray wand- 4 feet.

D. Ambient temperature shall be within manufacturer's specifications. If winter conditions apply, we recommend the use space of heaters and necessary cover (i.e. visqueen) to bring the ambient temperature to at least +45°F until the protection course and structural slab rebar or a mudslab protection course has been placed.

E. All plumbing, electrical, mechanical and structural items to be under or passing through the gas vapor barrier shall be positively secured in their proper positions and appropriately protected prior to membrane application.



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F. Gas vapor barrier shall be installed before placement of reinforcing steel. When not possible, all exposed reinforcing steel shall be masked by General Contractor prior to membrane application.

G. Expansion joints must be filled with a conventional waterproof expansion joint material.

H. Surface preparation shall be per manufacturer's specification.

**1.06 PRODUCT WARRANTY** -LBI Technologies, Inc. (LBI) warrants its products to be free of defects. This warranty only applies when the LIQUID BOOT® is applied by LBI Approved Applicators and that the required respective LBI products (such as LIQUID BOOT® UltraDrain. LIQUID BOOT® UltraShield, LIQUID BOOT® BaseFabric and LIQUID BOOT® GeoVent) are used. As factors which affect the result obtained from this product -including weather, equipment utilized, construction, workmanship and other variables- are all beyond the manufacturer's control, LBI warrants only that the material conforms to its product specifications. Under this warranty LBI will replace at no charge any product not meeting these specifications within 12 months of manufacture, provided it has been applied in accordance with LBI written directions for use recommended as suitable for this product. Warranties are available for a longer period upon request and mutual written consent. This warranty is in lieu of any and all other warranties expressed or implied (including any implied warranty of merchantability or fitness for a particular use), and LBI shall have no further liability of any kind including liability for consequential or incidental damages resulting from any defects or delays caused by replacement or otherwise.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

A. Fluid applied gas vapor barrier system - LIQUID BOOT®; a single course, high build, polymer modified asphaltic emulsion. Water borne and spray applied at ambient temperatures. A minimum thickness of 60 dry mils, unless specified otherwise as some cities and engineers may require a thicker membrane. Non-toxic and odorless. LIQUID BOOT® Trowel Grade has similar properties with greater viscosity and is trowel applied. Manufactured by LBI Technologies, Inc., Santa Ana, CA (714) 384-0111.

B. Gas vapor barrier physical properties:

| **GAS VAPOR MEMBRANE** | **TEST METHOD** | **VALUE** |
|---|---|---|
| Hydrogen Sulfide Gas Permeability | ASTM D1343 | None Detected |
| Benzene, Toulene, Ethylene, Xylene, Gasoline, Hexane, Perchloroethylene | ASTM D543, D412, D1434 (tested at 20,000 ppm) | Passed in gas permeability and weight change |
| Acid Exposure (10% $H_2SO_4$ for 90 days) | ASTM D543 | Less than 1% weight change |
| Radon Permeability | Tested by US Dept. of Energy | Zero permeability to Radon (222Rn) |
| Bonded Seam Strength Tests | ASTM D6392 | Passed |
| Micro Organism Resistance (Soil Burial) average weight change, average tensile strength change, average tensile stress change, average elongation change, bonded seams, methane permeability | ASTM D4068-88 | Passed |
| Methane Permeability | ASTM 1434-82 | Passed |
| Oil Resistance Test average weight change, average tensile strength change, average tensile stress change, average elongation change, bonded seams, methane permeability | ASTM D543-87 | Passed |
| Heat Aging average tensile strength change, average tensile stress change, average elongation change, bonded seams | ASTM D4068-88 | Passed |
| Dead Load Seam Strength | City of Los Angeles | Passed |
| Environmental Stress-Cracking | ASTM D1693-78 | Passed |
| **WATERPROOFING** | **TEST METHOD** | **VALUE** |
| Soil Burial | ASTM E154-88 | Passed |
| Water Penetration Rate | ASTM D2434 | $<7.75 \times 10^{-9}$ cm/sec |
| Water Vapor Permeability | ASTM E96 | 0.24 perms |
| Water Vapor Transmission | ASTM E96 | 0.10 grains/h-ft$^2$ |
| **POTABLE WATER** | **TEST METHOD** | **VALUE** |
| Toxicity Test | 22 CCR 66696 | Passed, CCR Bioassay—Flathead Minnow |



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| Potable Water Containment | ANSI/NSF 61 | NSF Certified for tanks >300,000 gal |
|---|---|---|
| **GENERAL INFORMATION** | **TEST METHOD** | **VALUE** |
| Coefficient of Friction- geotextile both sides | ASTM D5321 | 0.72 |
| Cold Bend Test | ASTM D146 | Passed. No cracking at –25°F |
| Freeze-Thaw Resistance (100 Cycles) | ASTM A742 | Meets criteria. No spalling or disbondment |
| Accelerated Weathering & Ultraviolet Exposure | ASTM D822 | No adverse effect after 500 hours |
| Hydrostatic Head Resistance | ASTM D751 | Tested to 138 feet or 60 p.s.i |
| Elongation | ASTM D412 | 1,332% - Ø reinforcement, 90% recovery |
| Elongation- 8oz. non-woven geotextile both sides | ASTM D751 | 100% (same as geotextile tested separately) |
| Tensile Strength | ASTM D412 | 58 p.s.i. without reinforcement |
| Tensile Strength-8oz. non-woven geotextile both sides | ASTM D751 | 196 p.s.i. (same as geotextile tested separately) |
| Tensile Bond Strength to Concrete | ASTM D413 | 2,556 lbs/ft$^2$ uplift force |
| Puncture Resistance-8oz. non-woven geotextile both sides | ASTM D4833 | 286 lbs. (travel of probe = 0.756 inches) (same as geotextile tested separately) |
| Flame Spread | ASTM E108 | Class A with top coat (comparable to UL790) |
| Electric Volume Resistivity | ASTM D257 | 1.91 x 10$^{10}$ ohms-cm |

C. Agency Approvals
- City of Los Angeles Research Report-RR 24860-Approved for "LIQUID BOOT® Spray Applied Membrane for Below-Grade Waterproofing and Gas Barrier"
- United States Navy-Approved for "LIQUID BOOT® for Use World Wide to Waterproof Earth-Covered Steel Ammunition Storage"
- NSF International-NSF/61 approved for "Potable Water Tank Liner"
- Canadian Construction Materials Board-Approved for "Waterproofing and Damp proofing"
- County of Los Angeles Department of public works-Approved for "LIQUID BOOT® Application as a Methane Gas Barrier"

E. LIQUID BOOT® 500- LIQUID BOOT® 500 may be used in lieu of LIQUID BOOT® (described in section 2.01 B. above) where the membrane is not exposed to hydrostatic head pressure. The Agency Approvals in section 2.01 C above do not apply to LIQUID BOOT® 500. Note: LIQUID BOOT® 500 may tend to sag on vertical surfaces at higher ambient temperatures. When this condition occurs, use LIQUID BOOT® at these locations. The physical properties for LIQUID BOOT® 500 are as follows:

| **WATERPROOFING** | **TEST METHOD** | **VALUE** |
|---|---|---|
| Elongation | ASTM D412 | 800% |
| Bond Seam Strength Tests | ASTM D6392 | Passed |
| Methane Permeability | ASTM D1434 | None detected |
| Water Vapor Permeability | ASTM E96 | 0.18 perms |

E. Protection- On vertical surfaces, use: LIQUID BOOT® UltraShield P-100 or other protections as approved by the manufacturer, project architect or engineer. On horizontal surfaces, use: LIQUID BOOT® UltraShield P-150 or other protections as approved by the manufacturer, project architect or engineer. Due to the diverse jobsite conditions, all protection materials must be approved by the membrane manufacturer, including the use of the LIQUID BOOT® UltraShield products.

F. Prefabricated Drain Mat - Vertical surfaces, use LIQUID BOOT® UltraDrain 6200; Horizontal surfaces, use LIQUID BOOT® UltraDrain 9000

G. Adhesive system for LIQUID BOOT® UltraShield and LIQUID BOOT® UltraDrain : Use LIQUID BOOT® UltraGrip.

H. Gas vapor vent piping – LIQUID BOOT® GeoVent system

I. Base Geotextile- LIQUID BOOT® BaseFabric T-40 non-woven geotextile, unless otherwise specified and approved by membrane manufacturer. The heat-rolled side shall be used as the application surface. Some projects may require a heavier geotextile (LIQUID BOOT® BaseFarbic T-60.)

J. Cold Joints, Cracks, Form Tie Holes: Covered with Hardcast CRT 1602 Tape 3" wide.

## PART 3 - EXECUTION

**3.01 EXAMINATION-** All surfaces to receive gas vapor barrier shall be inspected and approved by the applicator at least one day prior to commencing work.



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3.02 **SURFACE PREPARATION-** Provide 24 inch minimum clearance out from surfaces to receive the gas vapor barrier. The application surface shall be prepared and provided to the applicator in accordance with manufacturer's specifications listed below:

A. **Concrete/Shotcrete/Masonry**
Concrete surfaces shall be light broom finish or smoother, free of any dirt, debris, loose material, release agents or curing compounds. Fill all voids more than 1/4 inch deep and 1/4 inch wide. Masonry joints, cold joints, and form joints shall be struck smooth. All penetrations shall be prepared in accordance with manufacturer's specifications. Provide a 3/4 inch minimum cant of LIQUID BOOT®, or other suitable material as approved by manufacturer, at all horizontal to vertical transitions and other inside corners of 120° or less. Allow to cure overnight before the application of LIQUID BOOT®. All cracks or cold joints greater than 1/16 inch must be completely grouted with non-shrink grout as approved by engineer. Install Hardcast reinforcing tape over all cold joints, cracks and form tie holes (after holes and cracks are grouted).

B. **Dirt & Gravel**
The sub-grade shall be moisture conditioned and compacted to a minimum relative compaction of 90 percent or as specified by civil/geotechnical engineer. The finished surface shall be smooth, uniform, free of debris and standing water. Remove all stones or dirt clods greater than 1/4 inch. (NOTE: Aggregate sub-bases shall be rolled flat). All penetrations shall be prepared in accordance with manufacturer's specifications. All form stakes that penetrate the membrane shall be of rebar which shall be bent over and left in the slab. Trenches shall be cut oversize to accommodate gas vapor barrier membrane and protection course with perpendicular to sloped sides and maximum obtainable compaction. Adjoining grade shall be finish graded and compacted. Excavated walls shall be vertical or sloped back, free of roots and protruding rocks. Specific sub-grade preparation shall be designed by a qualified civil or geotechnical engineer. If organic materials with potential for growth (ie: seeds or grasses) exist within the subbase, spray apply soil sterilant at the sterilant manufacturer's recommended rate.

**3.03 INSTALLATION –**

**3.03.10 INSTALLATION ON CONCRETE/SHOTCRETE/MASONRY- Follow the procedures below carefully.**

A. Refer to section 3.03.30, "Sealing Around Penetrations", for procedures to seal around penetrations.

B. Provide a ¾" minimum cant of LIQUID BOOT®, or other suitable material as approved by manufacturer, at all horizontal to vertical transitions and other inside corners of 120° or less. Allow to cure overnight before the application of LIQUID BOOT®.

C Delineate a test area on site with a minimum dimension of 10 feet by 10 feet (3m by 3m). Apply LIQUID BOOT® to a thickness of 60 mils and let it cure for 24 hours. Observe for blisters. If minor or no blistering occurs, proceed to the next step. (See note regarding blisters). If significant blistering does occur, apply a thin (10 mil) tack coat of LIQUID BOOT® "A" side without catalyst to the entire concrete surface and allow to cure before proceeding. (See also information regarding blister repair).

D. Spray apply LIQUID BOOT® to a 60 mil minimum dry thickness. Increase thickness to 100 dry mils if shotcrete is to be applied directly to membrane. If a second coat is required, remove any standing water from the membrane before proceeding with the second application.

E. Do not penetrate membrane. Keep membrane free of dirt and debris and traffic until a protective cover is in place. It is the responsibility of the General Contractor to insure that the membrane and the protection system are not penetrated.

F. After membrane has cured and checked for proper thickness and flaws, install protection material pursuant to manufacturer's instructions. NOTE: All testing or inspection to be performed prior to placing protection course. NON-HORIZONTAL SURFACES: Spray on non-horizontal surfaces should begin at the bottom and work towards the top. This method allows the product to adhere to the surface before hitting catalyst runoff. NOTE: Due to the nature of concrete as a substrate, it is normal for some blistering to occur. This is caused by either concrete's tendency to off-gas or water that is temporarily trapped between the concrete and the membrane. With time and the applied pressure of backfill or over-slab, blisters will absorb into the concrete without detriment to the membrane. A small number of blister heads should be sampled and checked for proper membrane thickness. If the samples have the minimum required membrane thickness, then the remaining blisters should not be punctured or cut. If the samples have less than the minimum required membrane thickness, then the area can either be resprayed to obtain the proper thickness, or the blisters can be cut out and the area resprayed or patched with LIQUID BOOT® Trowel Grade.

**3.03.20 INSTALLATION ON DIRT SURFACES AND MUDSLABS**

A. Roll out LIQUID BOOT® BaseFabric geotextile on sub-grade with the heat-rolled side facing up. Overlap seams a minimum of six inches (6"). Lay geotextile tight at all inside corners. Apply a thin (10 mil) tack coat of LIQUID BOOT® "A" side without catalyst within the seam overlap. Line trenches with geotextile extending at least six inches (6") onto adjoining sub-grade if slab and footings are to be sprayed separately. Overlap seams a minimum of six inches (6"). Lay geotextile tight at all inside corners. Apply a thin (10 mil) tack coat of LIQUID BOOT® "A" side without catalyst within the seam overlap.



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B. Minimize the use of nails to secure the geotextile to the dirt subgrade. Remove all nails before spraying membrane, if possible. Nails that cannot be removed from the dirt subgrade are to be patched with geotextile or Hardcast reinforcing tape overlapping the nail head by a minimum of two inches (2"). Apply a thin tack coat of LIQUID BOOT® under the geotextile patch, when patching with geotextile.

C. Refer to section 3.03.30, "Sealing Around Penetrations", for procedures to seal around penetrations.

D. Spray apply LIQUID BOOT® onto geotextile to an 60 mil minimum dry thickness. Increase thickness to 100 dry mils if shotcrete is to be applied directly to membrane. If a second coat is required, remove any standing water from the membrane before proceeding with the second application.

E. Do not penetrate membrane. Keep membrane free of dirt, debris and traffic until a protective cover is in place. It is the responsibility of the General Contractor to insure that the membrane and the protection system are not penetrated.

F. After membrane has cured and checked for proper thickness and flaws, install protection material pursuant to manufacturer's instructions. NOTE: All testing or inspection to be performed prior to placing protection course.

**3.03.30 SEALING AROUND PENETRATIONS**

**3.03.31 Option 1**

A. Clean all penetrations. All metal penetrations shall be sanded clean with emery cloth.

B. For applications requiring LIQUID BOOT® BaseFabric geotextile, roll out geotextile on sub-grade with the heat-rolled side facing up, overlapping seams a minimum of six inches (6"). Cut the geotextile around penetrations so that it lays flat on the sub-grade. Lay geotextile tight at all inside corners. Apply a thin (10 mil) tack coat of LIQUID BOOT® "A" side without catalyst within the seam overlap.

C. At the base of penetration Install a minimum ¾ inch thick membrane cant of LIQUID BOOT®, or other suitable material as approved by manufacturer. Extend the membrane at a 60 mil thickness three inches (3") around the base of penetration and up the penetration a minimum of three inches (3"). Allow to cure overnight before the application of LIQUID BOOT® membrane. (SEE ATTACHED MANUFACTURER'S STANDARD DETAIL)

D. Spray apply LIQUID BOOT® to an 60 mils minimum dry thickness around the penetration, completely encapsulating the collar assembly and to a height of one and one half inches (1 1/2") minimum above the membrane as described in 3.03.31 C above. Spray apply LIQUID BOOT® to surrounding areas as specified for the particular application. (SEE MANUFACTURER'S STANDARD DETAIL)

E. Allow LIQUID BOOT® to cure completely before proceeding to step "F".

F. Wrap penetration with polypropylene cable tie at a point two inches (2") above the base of the penetration. Tighten the cable tie firmly so as to squeeze, but not cut, the cured membrane collar.

**3.03.32 Option 2 (For Gas Vapor Membrane Only)**

A. Clean all penetrations. All metal penetrations shall be sanded clean with emery cloth.

B. For applications requiring LIQUID BOOT® BaseFabric geotextile, roll out geotextile on sub-grade with the heat-rolled side facing up, overlapping seams a minimum of six inches (6"). Cut the geotextile around penetrations so that it lays flat on the sub-grade. Lay geotextile tight at all inside corners. Apply a thin (10 mil) tack coat of LIQUID BOOT® "A" side without catalyst within the seam overlap.

C. Spray-apply LIQUID BOOT® to surrounding areas as specified for the particular application to an 60 mil minimum dry thickness. At the base of penetration Install a minimum 3/4 inch thick membrane cant of LIQUID BOOT®, or other suitable material as approved by manufacturer. Extend the membrane at 60 mil thickness up the penetration a minimum of three inches (3"). Allow to cure overnight before proceeding to D (SEE MANUFACTURER'S STANDARD DETAIL)

D. Spray apply LIQUID BOOT® the membrane at an 60 mil thickness three inches (3") around the base of penetration and up the penetration, completely encapsulating the collar assembly, to a height of one and one half inches (1 1/2") minimum above the membrane as described in 3.03.32 C above. (SEE ATTACHED MANUFACTURER'S STANDARD DETAIL)

E. Allow LIQUID BOOT® to cure completely before proceeding to step "F".

F. Wrap penetration with polypropylene cable tie at a point two inches (2") above the base of the penetration. Tighten the cable tie firmly so as to squeeze, but not cut, the cured membrane collar.



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**3.04 FIELD QUALITY CONTROL** - Field Quality Control is a very important part of all LIQUID BOOT® applications. Applicators should check their own work for coverage, thickness, and all around good workmanship before calling for inspections. The membrane must be cured at least overnight before inspecting for dry-thickness, holes, shadow shrinkage, and any other membrane damage. If water testing is to be performed, allow the membrane to cure at least 72 hours prior to the water test. When thickness or integrity is in question the membrane should be tested in the proper manner as described below. However, over-sampling defeats the intent of inspections. Inspectors should always use visual and tactile measurement to guide them. Areas suspected of being too thin to the touch should be measured with the gauges to determine the exact thickness. With practice and by comparing tactile measurements with those of the gauges, fingers become very accurate tools.

**3.04.10 ON CONCRETE/SHOTCRETE/MASONRY & OTHER HARD SURFACES**

A. Membrane may be checked for proper thickness with a blunt-nose depth gauge, taking one reading every 500 square feet. Record the readings. Mark the test area for repair, if necessary.

B. If necessary, test areas are to be patched over with LIQUID BOOT® to a 60 mils minimum dry thickness, extending a minimum of one inch (1") beyond the test perimeter.

**3.04.20 ON DIRT AND OTHER SOFT SUBSTRATES**

A. Samples may be cut from the membrane and geotextile sandwich to a maximum area of 2 square inches. Measure the thickness with a mil-reading caliper, per 500 square feet. Deduct the plain geotextile thickness to determine the thickness of LIQUID BOOT® membrane. Mark the test area for repair.

B. Voids left by sampling are to be patched with geotextile overlapping the void by a minimum of two inches (2"). Apply a thin tack coat of LIQUID BOOT® under the geotextile patch. Then spray or trowel apply LIQUID BOOT® to an 60 mils minimum dry thickness, extending at least three inches (3") beyond geotextile patch.

**3.04.30 SMOKE TESTING FOR HOLES (Optional) -**
Holes or other breaches in the membrane can be detected by conducting a smoke test. This involves pumping smoke under the membrane for a specified period of time, under a specified pressure, which varies from project to project. Contact LBI Technologies for information about this test.


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# ATTACHMENT B

## FAN BLOWER SYSTEM SPECIFICATIONS

American Fan Company

25 Woods Lake Road Suite 205

Greenville, SC 29607
Tel : 864-232-6556
Fax : 864-232-6511
Email : chixson@energycontrolandservices.com

Date : 8/10/2005
Customer :
Contact :
Customer Ref. :

**Proposal :**
Tag :
Project :
Location :

## Centrifugal Technical Information

### Conditions Specified

| | |
|---|---|
| Volume | 250 cfm (Actual) |
| Inlet Pressure | 0.00 inwg (Static) |
| Outlet Pressure | 15.00 inwg (Static) |
| Density | 0.075 lb/ft3 |
| Humidity | 50 % |
| Operating Temperature | 70 °F |
| Max Design Temperature | 250 °F |
| Elevation | 0 ft above sea level |

### Selection Details

| | |
|---|---|
| Product Code | 1N-04-18.5N |
| Class | 1 |
| Volume | 250 cfm |
| Pressure @ 0.075 Lb/ft3 | 15.00 inwg (Static) |
| Pressure @ 0.075 Lb/ft3 | 15.07 inwg (Static) |
| Power @ 0.075 Lb/ft3 | 1.23 HP |
| Power @ 0.075 Lb/ft3 | 1.24 HP |
| Fan Speed | 2916 rpm |
| Wheel Tip Speed | 14125 fpm |
| Max Safe Speed / % of | 3819 rpm / 76% |
| Outlet Velocity | 2865 fpm |
| Static Efficiency | 48 % |

### Motor Details

| | |
|---|---|
| Frame Size | 56 |
| Enclosure | TEFC |
| Type | STANDARD |
| Sync. Speed | 1800 rpm |
| Power | 1.50 hp |
| Supply | 1/60/230 |

### Sound Information

Sound Spectrum Levels at Inlet (LwLin)

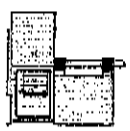
| 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k |
|---|---|---|---|---|---|---|---|
| 84 | 87 | 91 | 89 | 86 | 83 | 79 | 73 |

Overall Sound Power Level (LwLin) 95 dBW
Overall Sound Pressure Level (LpA) 80 dBA @ 5 ft (Inlet)

*Estimated* sound pressure based on free field, hemispherical radiation (Q = 2), at the stated distance

Sound Pressure levels of a fan are affected by the acoustic properties of the surrounding's in which it is installed and consequently dBA levels cannot be guaranteed. Refer to AMCA Publication 303 for further information.

### Fan Design





Arrangement 1 Discharge CCW_TH

### Included Accessories

None Specified

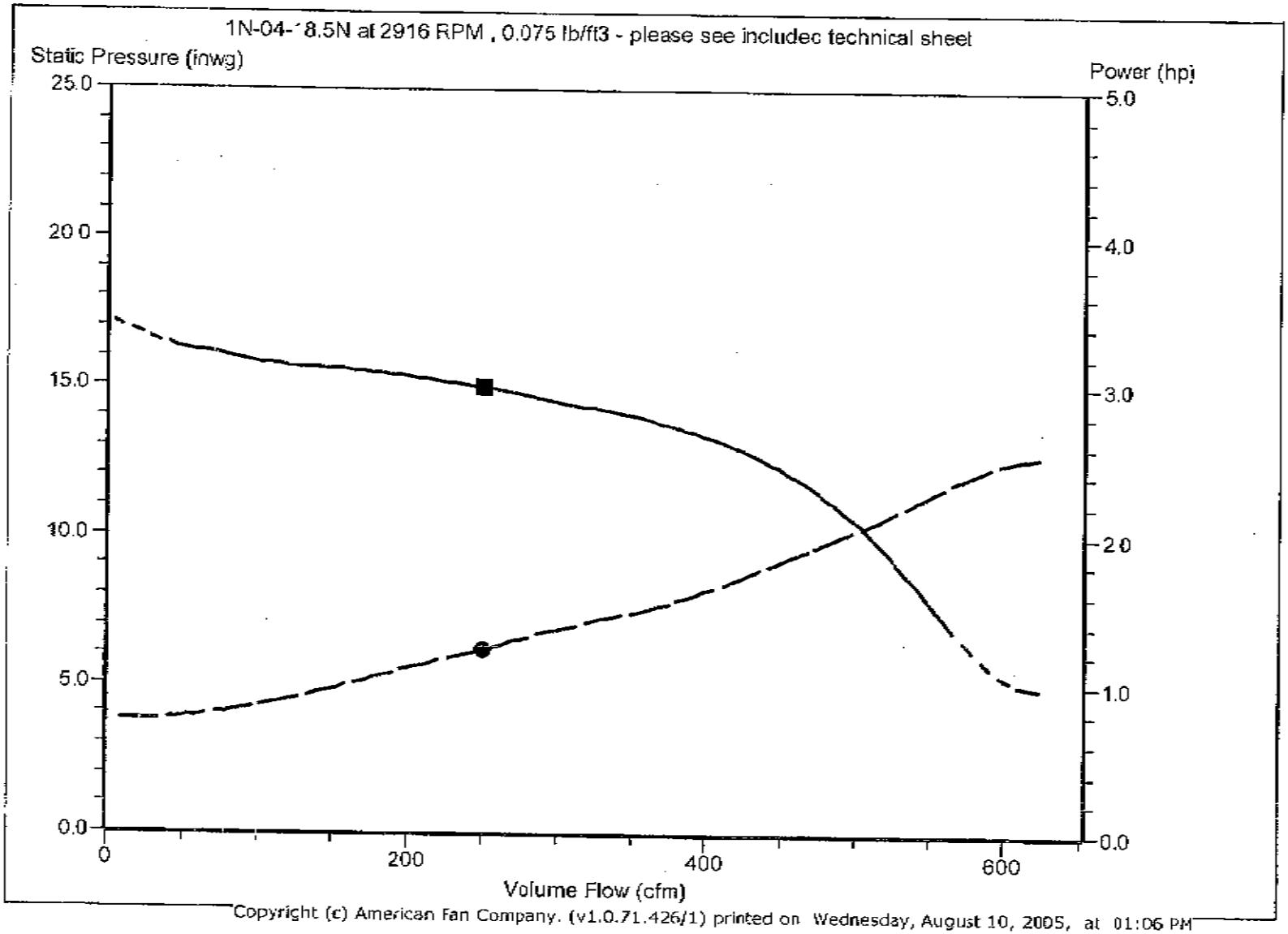
Copyright (c) American Fan Company. (v1.0.71.426/1)

American Fan Company

| | | | |
|---|---|---|---|
| Chart Key | Performance Curve | Date | 8/10/2005 |
| Duty Point | Power Curve | Customer | |
| | | Contact | |
| | | Customer Ref. | |

Proposal
Tag
Project
Location

(864)232-6511




250 CFM
1.5" SP

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# APPENDIX J
# PROJECT MAILING LIST

# Queens West Development

Queens West Parcel 9

Contact List

Queens West - Contact List (1/24/05)

| Category | Name | Title | Address Line 1 | Address Line 2 |
|---|---|---|---|---|
| United States Congress | Honorable Carolyn Maloney | | 1051 Third Avenue, Suite 311 | New York, NY 10128 |
| United States Senate | Honorable Hillary Rodham Clinton | | 780 Third Avenue, Suite 2601 | New York, NY 10017 |
| United States Senate | Honorable Charles E. Schumer | | 757 Third Avenue, Room 17-02 | New York, NY 10017 |
| NYS Assembly | Honorable Jeffrion L. Aubry | New York State Assembly | 102-13A Northern Blvd | Corona, New York 11368 |
| NYS Assembly | Honorable Michael Gianaris | | 21-77 31st Street, Suite 107 | Astoria, NY 11105 |
| NYS Assembly | Honorable Catherine Nolan | Assemblywoman, 37th Assembly District | 46-25 47th Street | Woodside, NY 11377 |
| NYS Assembly | Honorable Ivan Lafayette | | 33-46 92nd Street, Suite 1W | Jackson Heights, NY 11272 |
| NYS Assembly | Honorable Margaret Markey | | 55-19 69th Street | Maspeth, NY 11378 |
| NYS Attorney General | Honorable Eliot Spitzer | | The State Capitol | Albany, NY 12224 |
| NYS Parks, New York City Region | Mary Ellen Kris | Assistant Deputy Commissioner | State Office Building, 163 West 125th Street, 17th Floor | New York, NY 10027 |
| NYS Senate | Honorable Serphin R. Maltese | New York State Senate | 71-04 Myrtle Avenue | Glendale, New York 11385 |
| NYS Senate | Honorable George Onorato | Senator 12th District | 28-11 Astoria Blvd. | Astoria, New York 11102 |
| NYC Comptroller | Honorable William C. Thompson, Jr. | | One Centre Street, Room 530 | New York, NY 10007 |
| NYCDEP | Commissioner C.O. Ward | NYC Dept of Environmental Protection | 59-17 Junction Blvd | Corona NY 11368 |
| NYCDEP | John Zimmermann, Air Resources | NYC Dept of Environmental Protection | 59-17 Junction Blvd | Corona NY 11368 |
| NYCDEP | John Wuthenow | NYC Dept of Environmental Protection | 59-17 Junction Blvd | Corona NY 11368 |
| NYC Local Library | Long Island City Public Library - Court Square Branch | | 25-01 Jackson Avenue | Long Islanxl City NY, 11101 |
| NYC Mayor | Honorable Michael R. Bloomberg | Mayor | City Hall | New York, New York 10007 |
| NYC Public Advocate | Honorable Betsy Gotbaum | Public Advocate | One Centre Street, 15th Floor, North | New York, NY 10007-1602 |
| Queens Borough Office | Helen Marshall | Queens Borough President | 120-55 Queens Boulevard | Kew Gardens, New York 11424 |
| Queens Community Board 2 Office | Joseph Conley | Chairperson | 43-22 50th Street | Woodside, New York 11377 |
| Queens Council Office | Eric N. Gioia | City Council Member, District 26 | 47-01 Queens Boulevard (suite 205) | Queens, New York, 11104 |
| Schools with in 0.5 mile radius | Ms. Eleftheria Delis, Principal | PS 78 | 48-09 Center Boulevard | Long Island City, NY 11109 |
| Schools with in 0.5 mile radius | Jeffrey Levin, Principal | High School for Information Technology | 21-16 44th Road | Long Island City NY, 11101 |
| Schools with in 0.5 mile radius | Karen Briggs | Little Ones Nursery School | 4-74 48th Ave | Long Island City NY, 11101 |
| Media | | The Daily News | 450 West 33rd Street | New York, NY 10001 |
| Media | | News Day | 80-02 Kew Gardens Rd.4th Floor | Kew Gardens, NY 11415-1154 |
| Media | | Queens Chronicle | PO Box 74-7769 | Rego Park, NY 11374-7769 |
| Media | | Western Queens Gazette | 42-16 34th Avenue | L.I.C. N.Y. 11101 |
| Media | Michael Camindes | Times News Weekly | PO Box 299 | Ridgewood, NY 11386 |
| Local Residents and Businesses | John Montenero | | 10-19 47th Road | Long Island City, NY 11101 |
| Local Residents and Businesses | Lorence A. Long | | 1028 46th Road | Long Island City, NY 11101 |
| Local Residents and Businesses | S. Anzalone | | 104 47th Road | Long Island City, NY 11101 |
| Local Residents and Businesses | D & A LONDON & ABBY BRESSAK | | 17 BLYDENBURGH CT | NORTHPORT NY 11768 |
| Local Residents and Businesses | M.O. ASSOCIATES c/o The Trotwood Corporation | | 200 PARK AVE, LOWR 10 | NEW YORK NY 10166 |
| Local Residents and Businesses | HOWARD & NORMAN BAKER | | 2121 43RD AVE | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | VINCENT FESTA | | 23 HILL HOUSE LN | GLEN HEAD NY 11545 |
| Local Residents and Businesses | G. Napolitano | | 28-11 Astoria Blvd | Long Island City, NY 11102 |
| Local Residents and Businesses | JOHN A CORRIERI | | 2835 CORPORAL KENNEDY ST | FLUSHING NY 11360 |
| Local Residents and Businesses | CNY/MTA | | 347 MADISON AVE | NEW YORK NY 10017 |
| Local Residents and Businesses | Jimmy Van Bramer | | 39-03 46th Street | Sunnyside, NY 11104 |
| Local Residents and Businesses | Ernie Brocks | | 4-01 44th Drive | Long Island City, NY 11101 |

## Queens West Development
### Queens West Parcel 9
### Contact List

**Queens West - Contact List (1/24/05)**

| Category | Name | Title | Address Line 1 | Address Line 2 |
|---|---|---|---|---|
| Local Residents and Businesses | Resident | | 44-11 51st Street | Long Island City, NY 11101 |
| Local Residents and Businesses | PLAXALL INC | | 44-68 5th STREET | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | JULIAN FREIRICH FOOD PRODUCTS | | 46-01 5th St | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | KOUTSOURAS, VOULA | | 47-01 5TH STREET | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | El Richlin | | 47-01 Queens Blvd, Apt 205 | Sunnyside, NY 11104 |
| Local Residents and Businesses | CMH REALTY CORP | | 47-05 5TH STREET | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | Morris Met | | 47-09 5TH STREET | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | N BAKER | | 47-17 5TH STREET | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | MAGENTA FINE ARTS INC | | 47-17 5TH STREET | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | HERBERT SMOK | | 47-27 5TH STREET | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | EUGENE KRAL | | 47-33 5TH STREET | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | John Edebohls | | 4-74 48th Avenue, Apt 10N | Long Island City, NY 11109 |
| Local Residents and Businesses | Sarah Parvell | | 4-74 48th Avenue, Apt 14G | Long Island City, NY 11109 |
| Local Residents and Businesses | Rita J. Bradley | | 4-74 48th Avenue, Apt 14G | Long Island City, NY 11109 |
| Local Residents and Businesses | Donald R DePew | | 4-74 48th Avenue, Apt 15J | Long Island City, NY 11109-5613 |
| Local Residents and Businesses | Susan and Steve Koch | | 4-74 48th Avenue, Apt 18B | Long Island City, NY 11109 |
| Local Residents and Businesses | Jennifer English | | 4-74 48th Avenue, Apt 18G | Long Island City, NY 11109 |
| Local Residents and Businesses | Theresa Rohan | | 4-74 48th Avenue, Apt 19E | Long Island City, NY 11109 |
| Local Residents and Businesses | John Corcoran | | 4-74 48th Avenue, Apt 20F | Long Island City, NY 11109 |
| Local Residents and Businesses | Toula Polgalaktos | | 4-74 48th Avenue, Apt 22K | Long Island City, NY 11109 |
| Local Residents and Businesses | Mark Brandea | | 4-74 48th Avenue, Apt 34C | Long Island City, NY 11109 |
| Local Residents and Businesses | Ann Whipple | | 4-74 48th Avenue, Apt 6R | Long Island City, NY 11109 |
| Local Residents and Businesses | J. Holtzberg | | 4-74 48th Avenue, Apt 8G | Long Island City, NY 11109 |
| Local Residents and Businesses | Paul Camilleri | | 4-74 48th Avenue, Apt PH1B | Long Island City, NY 11109 |
| Local Residents and Businesses | Jennifer Kay | | 4-74 48th Avenue, Apt. 4X | Long Island City, NY 11109 |
| Local Residents and Businesses | 48TH AVENUE LLC | | 47-43 5TH Street | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | G. Donald | | 4845 38th Street | Long Island City, NY 11101 |
| Local Residents and Businesses | Brian Adams | | 49-10 Vernon Blvd | Long Island City, NY 11101 |
| Local Residents and Businesses | H.P.C.D.C. | | 49-10 Vernon Blvd | Long Island City, NY 11101 |
| Local Residents and Businesses | WATER'S EDGE RESTAURANT | | 4-99 44TH DR | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | DELEHANTY PARTNERS | | 5-01 46 ROAD | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | S S ATLAS ISLAND CORP | | 5-01 47TH Ave | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | Bill Lehwitz | | 50-50 Second Street | Long Island City, NY 11101 |
| Local Residents and Businesses | Morris Met | | 5-11 47TH Ave | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | SEPNER FAMILY LIMITED | | 5-14 47TH ROAD | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | JOSEPH NANCY CORP | | 5-16 47TH AVE | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | TE VANOVER JR | | 5-16 47TH ROAD | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | ANDREW LONDON | | 5-17 46 ROAD | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | Stephen Sloop | | 5-17 47th Road | Long Island City, NY 11101 |
| Local Residents and Businesses | VINCENT FESTA | | 5-18 47TH ROAD | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | 5-19 47TH ASSOCIATES | | 5-19 47TH Ave | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | JAMES CORTAZAR | | 5-19 47TH ROAD | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | Fran Cimino | | 52 Parkview Drive | Scaringtown, NY 11507 |
| Local Residents and Businesses | ISLAND TAPING INC | | 5-21 47TH ROAD | LONG ISLAND CITY NY 11101 |

**Queens West Development**
**Queens West Parcel 9**
**Contact List**

**Queens West - Contact List (1/24/05)**

| Category | Name | Title | Address Line 1 | Address Line 2 |
|---|---|---|---|---|
| Local Residents and Businesses | SWEHAR REALTY CORP | | 5-25 47th ROAD | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | 48TH AVENUE LLC | | 5-25 48TH AVE | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | PLASTIC CENTER INC | | 5-29 46th AVENUE | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | Rose and Charles Amodeo | | 5-30 47th Road | Long Island City, NY 11109 |
| Local Residents and Businesses | SYLVIN TRADING CORP | | 5-33 48TH AVE | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | BRAD BROCKMAN | QUEENS WEST DEVELOPMENT | 633 3RD AVE | NEW YORK NY 10017 |
| Local Residents and Businesses | Marcanoi Wu Louie | | 65-40 182nd Street | Flushing, NY 11365 |
| Local Residents and Businesses | ATTN M MUNICH | JOSEPH NANCY CORP | 69 ONTARIO RD | FLORAL PARK NY 11001 |
| Local Residents and Businesses | SEPNER FAMILY LIMITED | | 7828 GLEN GARRY LN | DELRAY BEACH FL 33446 |
| Local Residents and Businesses | Morris Met | | PO BOX 1243 | MIDDLEBURG VA 20118 |
| Local Residents and Businesses | JAMES CORTAZAR | | PO BOX 8485 | LONG ISLAND CITY NY 11101 |
| Local Residents and Businesses | Sarah G. | | Queens Corner | 38-15 Bell Blvd |
| Local Residents and Businesses | HERBERT SMOK | | STATION PLZ | WOODMERE NY 11598 |
| NYSDEC | Vadim Brevdo | | 1 Hunter's Point Plaza | Long Island City, NY 11101 |
| NYSDEC | Dan Walsh | | 1 Hunter's Point Plaza | Long Island City, NY 11101 |
| NYSDEC | Joe Moloughney | | 625 Broadway | Albany, NY 12233 |
| NYSDOH | Dawn Hettrick | | 547 River Street | Troy, NY 12180 |
| NYSDOH | Geoffrey Laccetti | | 547 River Street | Troy, NY 12180 |
| Local Residents and Businesses | David Parker | QUEENS WEST DEVELOPMENT | 633 3RD AVE | NEW YORK NY 10017 |
| Local Residents and Businesses | Arnold Fleming | Fleming-Lee Shue | 6 East 32nd Street | New York, NY 10016 |
| Local Residents and Businesses | George J. Rheault | Wachtell, Lipton, Rosen & Katz | 51 W. 52nd Street | New York, NY 10019-6150 |
| Local Residents and Businesses | Michael McLaughlin | | 474 48th Avenue # PHIF | Long Island City, NY 11109 |
| Local Residents and Businesses | Maureen Galligin | | 4-74 48th Avenue #25 F | Long Island City, NY 11109 |
| Local Residents and Businesses | Miriam Gonzalvrn | | 4-74 48th Avenue # 23C | Long Island City, NY 11109 |
| State Assembly | Ingrid Schlemis | c/o Assemblymen Cathy Nolan | 61-08 Linden Street | Ridgewood, NY 11386 |
| Local Residents and Businesses | Matt Quigly | | 5-46 46th Avenue | Long Island City, NY 11109 |
| Local Residents and Businesses | Peter Iorlano | | 4-74 48th Avenue | Long Island City, NY 11109 |
| Local Residents and Businesses | Joe Conley | | EB2 Queens | |
| Local Residents and Businesses | Jarfeen Fremt | | 116-25 Powers Cave | Waltersgrove, NY 11557 |
| Local Residents and Businesses | Marion Starr | | 4-74 48th Avenue #4C | Long Island City, NY 11109 |
| Local Residents and Businesses | George Napolitano | | 28-11 Astoria Boulevard | Long Island City, NY 11102 |
| NYS Assembly | Zoe Epstein | Councilman Eric Givia | 47-01 Queens Boulevard (suite 205) | Sunnyside, NY 11104 |
| NYSDEC | Amar Nagi | | 1 Hunter's Point Plaza | Long Island City, NY 11101 |
| Local Residents and Businesses | Jennifer Clements | | 1430 Broadway, 10th Fl | New York, NY 10018 |
| Local Residents and Businesses | Ed Malley | | 1430 Broadway, 10th Fl | New York, NY 10018 |
| Local Residents and Businesses | Regina Maltese | | 73-20 Austin Street | Forest Hills, NY 11375 |

# APPENDIX K
## ESTIMATED REMEDIATION COSTS

## Queens West- Parcel 9
## Remediation Costs

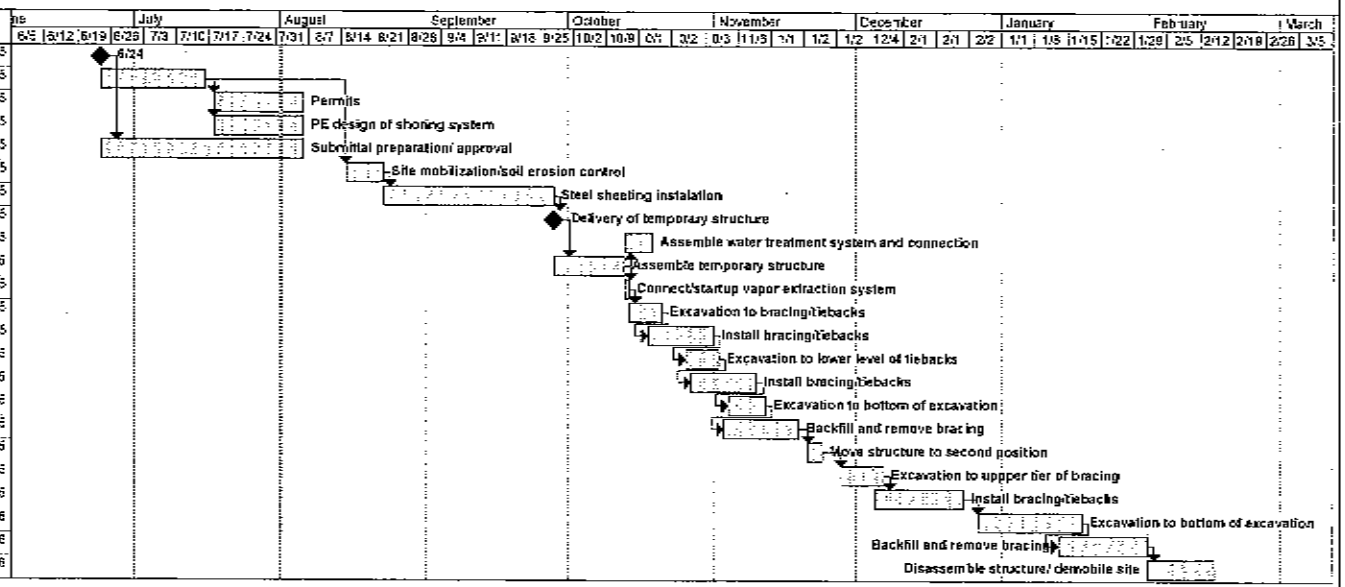
| | Quantity | Units | Unit Rate | Cost |
|---|---|---|---|---|
| **Engineering Costs** | | | | |
| Additional Delineation for Remediation | 1 | LS | $150,000 | $175,000 |
| Off-Site Investigation | 1 | LS | $120,000 | $120,000 |
| Pre-Characterization of Soil for Disposal | 1 | LS | $95,000 | $100,000 |
| RWP & Associated Plans | 1 | LS | $100,000 | $120,000 |
| Permitting | 1 | LS | $15,000 | $15,000 |
| Design | 1 | LS | $20,000 | $20,000 |
| Construction Specifications | 1 | LS | $20,000 | $20,000 |
| Bid Procurement | 1 | LS | $15,000 | $20,000 |
| Remediation Supervision | 100 | day | $2,750 | $275,000 |
| Air Monitoring | 100 | day | $2,750 | $275,000 |
| AirLogics Air Monitoring System | 4 | MO | $28,000 | $112,000 |
| Post-Remediation Soil Borings Along Perimeter | 1 | LS | $50,000 | $50,000 |
| Completion Report/Other Documents | 1 | LS | $32,000 | $32,000 |
| Post-Remediation Monitoring | 3 | YR | $40,000 | $120,000 |
| Project Management | 1 | LS | $170,000 | $170,000 |
| ***Subtotal*** | | | | ***$1,624,000*** |
| **Construction Costs** | | | | |
| Admin & Mob (including permits & shop drawings) | 1 | LS | $32,000 | $32,000 |
| Bonds | 1 | LS | $50,000 | $50,000 |
| Site Prep & Restoration | 1 | LS | $105,000 | $105,000 |
| Site Management & Security | 1 | LS | $601,000 | $601,000 |
| Permanent Sheeting (entire perimeter of excavation) | 1 | LS | $979,000 | $979,000 |
| Install Structural Supports for Sheeting | 1 | LS | $786,000 | $786,000 |
| Remove Structural Supports | 1 | LS | $263,000 | $263,000 |
| Rental of Enclosure | 1 | LS | $250,000 | $250,000 |
| Installation of Enclosure | 1 | LS | $148,000 | $148,000 |
| Relocate Enclosure | 1 | LS | $88,000 | $88,000 |
| Dewatering | 1 | LS | $39,000 | $39,000 |
| Wastewater Treatment | 1 | LS | $151,000 | $151,000 |
| Air Ventilation & Treatment | 1 | LS | $484,000 | $484,000 |
| Temporary Sewer Connection | 1 | LS | $11,000 | $11,000 |
| Excavation, Staging, Stabilization & Loading<br>- 5,100 CY (7,700 tons) coal tar contaminated soil<br>- 11,000 CY (16,500 tons) petroleum contaminated soil<br>- 11,700 CY overlying fill material to be reused as backfill | 1 | LS | $331,000 | $331,000 |
| Disposal-Coal Tar Contaminated Soil | 7,700 | TON | $97 | $747,000 |
| Disposal-Petroleum Contaminated Soil | 16,500 | TON | $92 | $1,518,000 |
| Disposal-Fill for Off-Site Disposal | 200 | TON | $46 | $9,000 |
| Disposal-Coal Tar Contaminated Liquid | 20,000 | GAL | $2 | $40,000 |
| Disposal-Petroleum Contaminated Liquid | 20,000 | GAL | $1 | $26,000 |
| Disposal-Construction & Demolition Debris | 200 | CU YD | $30 | $6,000 |
| Imported Certified Clean Fill (8,800 CY) | 1 | LS | $255,000 | $255,000 |
| Backfill & Compaction (20,500 CY) | 1 | LS | $61,000 | $61,000 |
| Kiln Dust | 100 | TON | $85 | $9,000 |
| Additional Soil Removal<br>- 600 CY (900 tons) coal tar contaminated soil<br>- 1,500 CY (2,250 tons) petroleum contaminated soil<br>- 2,000 CY (3,000 tons) fill material | | | | |
| Excavation (including staging, stabilization & loading) | 4,100 | CU YD | $13 | $53,000 |
| Backfill & Compaction | 4,100 | CU YD | $2 | $10,000 |
| Imported Fill | 4,100 | CU YD | $31 | $129,000 |
| Disposal-Coal Tar Contaminated Soil | 900 | TON | $90 | $81,000 |
| Disposal-Petroleum Contaminated Soil | 2,250 | TON | $82 | $185,000 |
| Disposal-Fill for Off-Site Disposal | 3,000 | TON | $46 | $137,000 |
| Operate Generator for 24/7 Equipment | 1 | LS | $190,000 | $190,000 |
| E&S, Odor, Dust & Decon Controls | 1 | LS | $80,000 | $80,000 |
| Health & Safety | 1 | LS | $53,000 | $53,000 |
| Vapor Barrier (spray-applied) | 23,000 | SF | $6 | $138,000 |
| Sub-Slab Depressurization System (active) | 23,000 | SF | $5 | $115,000 |
| Close-out & Demob | 1 | LS | $96,000 | $96,000 |
| ***Subtotal*** | | | | $8,256,000 |
| ***Total without Contingency*** | | | | $9,880,000 |
| Project Contingency (20%) | | | | $1,976,000 |
| ***Total with Contingency*** | | | | $11,856,000 |

Creamer Environmental, Inc.
215 Union St.
Hackensack, NJ 07601

AvalonBay Queens West Remediation
Baseline Schedule 40 Hours per week

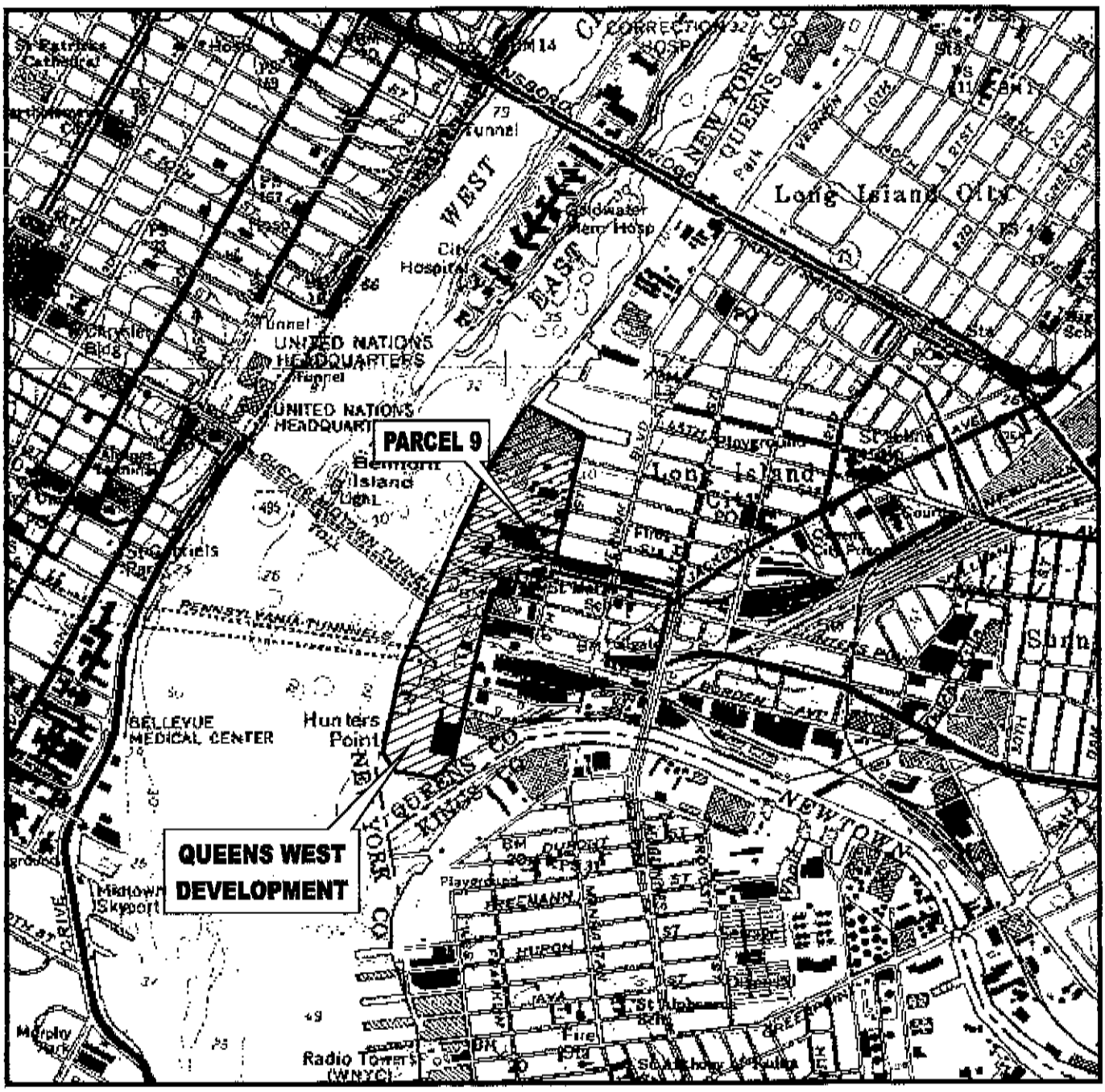
Mon 8/1/05

| ID | Task Name | Duration | Start | Finish |
|---|---|---|---|---|
| 1 | Letter of Intent | 0 days | Fri 6/24/05 | Fri 6/24/05 |
| 2 | Contract Award | 15 days | Fri 6/24/05 | Fri 7/15/05 |
| 3 | Permits | 15 days | Mon 7/18/05 | Fri 8/5/05 |
| 4 | PE design of shoring system | 15 days | Mon 7/18/05 | Fri 8/5/05 |
| 5 | Submittal preparation/ approval | 30 days | Fri 6/24/05 | Fri 8/5/05 |
| 6 | Site mobilization/soil erosion co | 6 days | Mon 8/15/05 | Mon 8/22/05 |
| 7 | Steel sheeting instalation | 25 days | Tue 8/23/05 | Tue 9/27/05 |
| 8 | Delivery of temporary structure | 0 days | Tue 9/27/05 | Tue 9/27/05 |
| 9 | Assemble water treatment syst | 4 days | Thu 10/13/05 | Tue 10/18/05 |
| 10 | Assemble temporary structure | 10 days | Wed 9/28/05 | Wed 10/12/05 |
| 11 | Connect/startup vapor extractio | 1 day | Thu 10/13/05 | Thu 10/13/05 |
| 12 | Excavation to bracing/tiebacks | 5 days | Fri 10/14/05 | Thu 10/20/05 |
| 13 | Install bracing/tiebacks | 10 days | Tue 10/18/05 | Mon 10/31/05 |
| 14 | Excavation to lower level of tieb | 5 days | Wed 10/26/05 | Tue 11/1/05 |
| 15 | Install bracing/tiebacks | 10 days | Thu 10/27/05 | Wed 11/9/05 |
| 16 | Excavation to bottom of excava | 6 days | Fri 11/4/05 | Fri 11/11/05 |
| 17 | Backfill and remove bracing | 12 days | Thu 11/3/05 | Fri 11/18/05 |
| 18 | Move structure to second positi | 3 days | Mon 11/21/05 | Wed 11/23/05 |
| 19 | Excavation to upper tier of bra | 7 days | Mon 11/28/05 | Tue 12/6/05 |
| 20 | Install bracing/tiebacks | 13 days | Mon 12/5/05 | Fri 12/23/05 |
| 21 | Excavation to bottom of excava | 15 days | Tue 12/27/05 | Tue 1/17/06 |
| 22 | Backfill and remove bracing | 13 days | Fri 1/13/06 | Tue 1/31/06 |
| 23 | Disassemble structure/ demobi | 10 days | Wed 2/1/06 | Tue 2/14/06 |




Project: Proposed progress schedule

Task
Split
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Split
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
External Milestone
Deadline




SCALE IN FEET

0' 1000' 2000' 4000'

SCALE: 1"=2000'

N

NEW YORK

QUADRANGLE

SOURCE:
USGS TOPOGRAPHIC MAP - BROOKLYN, N.Y.
QUADRANGLE - DATED 1967, PHOTOREVISED 1979

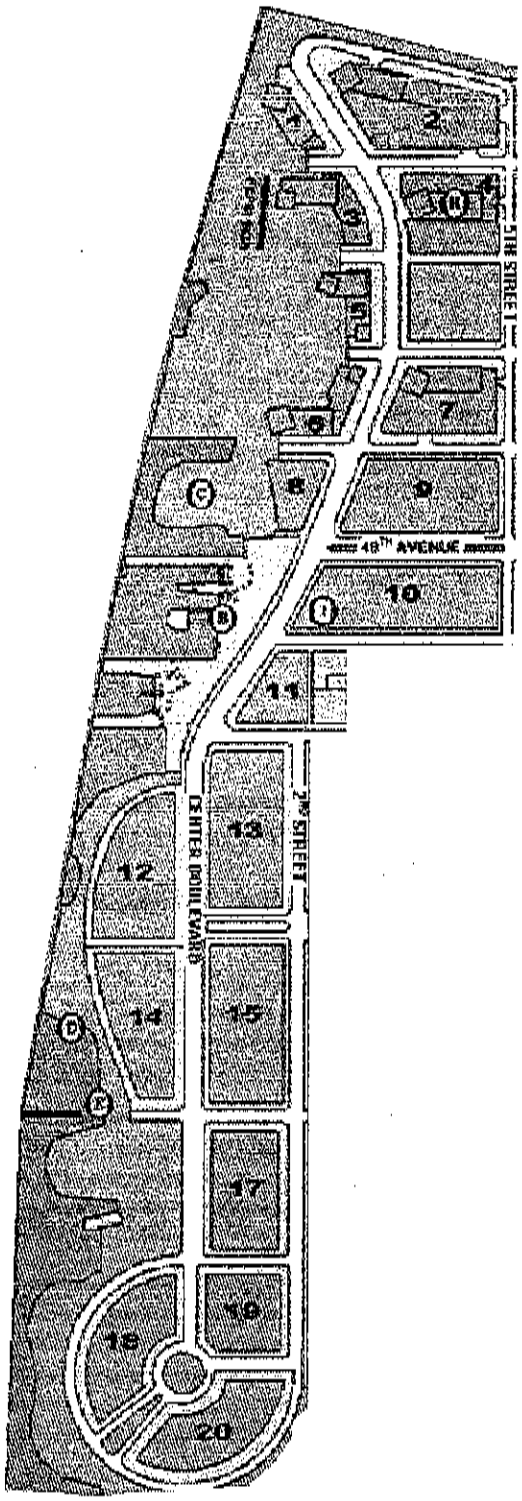
# QUEENS WEST PARCEL 9
Queens, New York

## SITE LOCATION MAP

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE 08.16.05
PROJECT No. 10516
FIGURE No. 1

2004 AKRF, Inc. Environmental Consultants S:\10516 - Queens West Sites B & W\Drawings\Figures for SRI




Legend:

PARCEL NUMBER

**QUEENS WEST PARCEL 9**
**Queens, New York**

**QUEENS WEST DEVELOPMENT PARCELS**

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE 05.24.05
PROJECT No. 10516
FIGURE No. 2

2004 AKRF, Inc. Environmental Consultants S:\10516 - Queens West Sites 8 & 9\Drawings\Figures for SRI

# SECTION 5: PLANS