2018 Periodic Review Report
Bartlett Tree Company Site
NYSDEC Site #0130074

Prepared for

F.A. Bartlett Tree Expert Company,
Charlotte, North Carolina

February 15, 2019

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Project Number: 152225.130

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BC	Brown and Caldwell Associates
bgs	below ground surface
COC	Certificate of Completion
DO	dissolved oxygen
DUSR	Data Usability Summary Report
EE	environmental easement
ELAP	Environmental Laboratory Approval Program
EPA	United States Environmental Protection Agency
IC	Institutional Control
IRM	Interim Remedial Measure
LCS	laboratory control spike
LCSD	laboratory control spike duplicate
m	meter
MDL	method detection limits
mg	milligram
ml	milliliter
MS	matrix spike
MSD	matrix spike duplicate
NCDH	Nassau County Department of Health
NTU	Nephelometric Turbidity Unit
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OC	organochlorine
OP	organophosphorus
ORP	Oxidation Reduction Potential
OSWER	Office of Solid Waste and Emergency Response
PCE	Perchloroethylene or Tetrachloroethylene
PFAS	polyfluoroalkyl substances
PID	photoionization detector
PPE	Personal Protective Equipment
ppb	parts per billion
ppm	parts per million
ppt	parts per trillion
PRR	Periodic Review Report
PVC	polyvinyl chloride

QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QEP	Qualified Environmental Professional
RI	Remedial Investigation
ROD	Record of Decision
SCO	Soil Cleanup Objective (6 NYCRR Part 375-6.8)
SIM	selective ion monitoring
SMP	Site Management Plan
SVI	soil vapor intrusion
SVOC	semi-volatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TCE	Trichloroethylene
THQ	target hazard quotient
TR	targeted cancer risk
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

Section 1

Introduction

This 2018 Periodic Review Report (PRR) is required as an element of the post-remediation monitoring program at the Bartlett Tree Company Site, Site #0130074 (hereinafter referred to as the "Site").

1.1 Site Location and Description

The Site is located at 345 Union Avenue in the Village of Westbury, Town of North Hempstead, County of Nassau, New York and is identified in the Nassau County Tax Rolls as Section 10, Block 228, Lot 786 and Section 10, Block 228, Lot 206. The Site is in an urban, mixed-use neighborhood of commercial and industrial facilities and residences. The Nassau County Assessors' Office has listed the Site land category as commercial. The Site consists of a parcel of land measuring approximately 340 feet in length by 60 feet wide, totaling approximately 0.4 acre. It is bordered on the north by a municipal parking lot; on the east by a construction materials warehouse; on the south by Union Avenue, thence by the Long Island Railroad, a parking lot and a cemetery; and on the west by a taxi fleet maintenance facility and construction contractor's storage yard (Figure 1). The Site is utilized by F. A. Bartlett Tree Expert Company (Bartlett) as a base of operations for its tree care service business on Long Island.

1.2 Regulatory Background

The Site was remediated under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by the New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with the Order on Consent and Administrative Settlement, Index No. W1-1091-06-08, Site #1-30-074, which was executed in April 2007.

On December 1, 2015 the NYSDEC issued a Certificate of Completion and Registry Reclassification From 2 To 4 (COC). Notice of Certificate of Completion was filed with the Nassau County Clerk on December 28, 2015. A copy of the COC and recorded Notice of Certificate of Completion is provided in Appendix A.

The Site was remediated to a cleanup level that is consistent with the Institutional Controls (ICs) contained in an environmental easement (EE) granted to the NYSDEC and recorded by the Nassau County Clerk. These ICs are summarized as follows:

- Site use is restricted to Commercial Use as defined in 6 New York Codes, Rules and Regulations (NYCRR) 375-1.8(g)(2)iii and Industrial Use as defined in 6 NYCRR 375-1.8(g)(2)iv.
- Groundwater use is prohibited unless treated in accordance with requirements provided by the New York State Department of Health (NYSDOH) or Nassau County Department of Health (NCHD).
- Site monitoring shall be conducted in accordance with the NYSDEC-approved Site Management Plan (SMP), dated April 20, 2015 and on file with the NYSDEC (BC, 2015).

The requirements for the monitoring activities reported in this PRR are specified in detail in the above-referenced SMP. The SMP was modified via an addendum effective April 13, 2017 (BC, August 14, 2017). The addendum was formally approved by the NYSDEC by letter dated January 10, 2018. Copies of the addendum and the approval letter are provided in Appendix I. The SMP addendum specifies the following modifications:

- Groundwater samples will no longer be collected from the deep upgradient monitoring well (MW-1D).
- MW-1D will be abandoned in accordance with the SMP.
- Groundwater samples will be collected from the remaining six monitoring wells (MW-1S, MW-2S, MW-2D, MW-3, MW-4, MW-5).
- Groundwater samples will be analyzed only for Target Compound List (TCL) Pesticides by United States Environmental Protection Agency (USEPA) SW846 Method 8081A.

An overview of the activities and reporting requirements is provided in the following subsection.

1.3 Scope of Monitoring and Reporting

The reporting and certification period of this PRR is calendar year 2018. The scope of the review/reporting and the organization of this PRR are prescribed in the SMP and the above-referenced addendum thereto.

Environmental monitoring targeted groundwater quality and soil vapor intrusion. The groundwater monitoring program consisted of two rounds of sampling, during seasonally high (spring) and low (fall) water table conditions. By letter dated April 17, 2018 the NYSDEC requested that Bartlett collect and analyze groundwater samples for the "emerging contaminants" 1,4-Dioxane and per- and polyfluoroalkyl substances (PFAS). A work plan for the emerging contaminant sampling, dated May 11, 2018, was submitted to the NYSDEC. The NYSDEC approved the emerging contaminant work plan by letter dated May 17, 2018. Copies of the emerging contaminant work plan and the approval letter are provided in Appendix J. The emerging contaminant sampling was conducted in conjunction with the previously planned Spring groundwater sampling. Soil Vapor Intrusion (SVI) monitoring was conducted during the 2018/2019 heating season. Section 2 presents the results of the groundwater and SVI monitoring.

In addition to media monitoring, the Site was inspected and evaluated to assess compliance with the required ICs. Section 3 presents this evaluation. Included are the results of periodic and annual site inspections, an assessment of compliance with the required ICs, new conclusions or observations (if any) regarding Site contamination, and an assessment of the overall performance and effectiveness of the remedy.

Section 4 presents the annual certification of ICs.

1.4 Installation of Aggregate and Monitoring Well Protection

In May-June 2018 Bartlett placed a layer of aggregate over the northern portion of the yard in order to raise and level the surface. As described in a June 5, 2018 e-mail to NYSDEC project manager Jahan Reza (and in the September 13, 2018 interim groundwater sampling report), monitoring well MW-2S was discovered to have been extensively damaged during the placement and grading of the aggregate. The steel/cast iron well vault was missing, and the compression plug was not in the PVC riser. Sounding of the well indicated the presence of solid material in the well. Any samples taken from MW-2S would not be representative of groundwater quality because the well was open to entry of soil and storm water runoff. Therefore, MW-2S was not sampled.

Bartlett initially installed the aggregate without installing a demarcation layer over the areas of remaining contamination denoted as SB-6 and SB-7 (Figure 7). Before final placement and grading of the aggregate, Bartlett removed the initially-installed aggregate from the areas of SB-6 and SB-7 and placed orange polyethylene demarcation netting over the areas. In preparing the area of SB-6 to receive the demarcation netting, the pre-existing asphalt pavement was partially removed. Bartlett provided photographs and measured locations of the installed demarcation layers (Appendix K).

To prevent future damage to on-Site monitoring wells (MW-2S, MW-2D, MW-3, MW-4, MW-5), Bartlett removed the initially-installed aggregate from around each well vault/apron, placed concrete blocks around the well vault/apron, then placed a pre-cast concrete cover over the blocks and the well. Appendix K contains a photograph of a typical protective installation.

After installing the demarcation netting and the concrete well protection, Bartlett completed placement and grading of the aggregate. Bartlett repaved the asphalt driveway along the west side of the office building and the parking area extending approximately 120 feet north of the office building.

Section 2

Media Monitoring

This section describes the post-remedial monitoring of groundwater quality and soil vapor intrusion conducted during 2018.

2.1 Groundwater Quality

Two rounds of groundwater sampling were conducted on the following dates:

- May 30-31, 2018
- September 24-25, 2018

The results of the May sampling round were previously provided to the NYSDEC in an interim letter report (BC, September 13, 2018).

2.1.1 Groundwater Levels and Flow Direction

Prior to sample collection, a synoptic round of water level measurements was conducted for all six monitoring wells (MW-1S, MW-2S, MW-2D, MW-3, MW-4, MW-5). The previously noted damage sustained by well MW-2S may have rendered unreliable the water levels in the well and/or the elevation of the PVC riser. Groundwater elevations are summarized in Table 1. Water level data from the shallow wells were contoured for evaluating generalized groundwater flow directions. Water table contours for the two rounds of measurements are depicted in Figures 3 and 4. The contours indicate that generalized groundwater flow continues to be in a west-southwesterly direction. The variations seen in Figures 3 and 4 are consistent with the range of variation previously documented during the Remedial Investigation (RI).

2.1.2 Sample Collection

Groundwater monitoring was conducted in accordance with the procedures specified in the SMP, utilizing the five available monitoring wells (MW-1S, MW-2D, MW-3, MW-4, MW-5). The locations of the wells are shown on Figure 2. The groundwater sampling employed USEPA low flow sampling methods in accordance with the SMP. Turbidity readings were collected immediately prior to sample collection using a calibrated Lamotte 2020 turbidity meter to confirm that samples had turbidity levels below 50 NTUs (Nephelometric Turbidity Units).

To evaluate the effects of sample turbidity on analytical results, the SMP (Section 3.3.1.1) provides for field filtering of duplicate samples as a contingency and for informational purposes in the event the low flow sampling procedure does not produce samples with sufficiently low turbidity (under 50 NTUs).

During the May 2018 round of sampling, all wells exhibited turbidity below 50 NTUs (0.67 to 19.2 NTUs) and no filtered duplicate samples were collected. Similarly, during the September 2018 round, all wells exhibited turbidity below 50 NTUs (1.18 to 11.96 NTUs) and no filtered duplicate samples were collected.

In addition to turbidity, the samples were screened in the field for pH, specific conductivity, temperature, and dissolved oxygen (DO) (see Appendix B for field data sheets).

Field Quality Assurance/Quality Control (QA/QC) samples were collected in accordance with the Quality Assurance Project Plan (QAPP) included in the SMP, as follows:

- Field duplicates (one per 20 samples filtered, one per 20 samples unfiltered)
- Equipment blanks (one per 20 samples filtered, one per 20 samples unfiltered)
- Matrix spike/matrix spike duplicate (MS/MSD) (one per 20 samples filtered, one per 20 samples unfiltered)

All samples were submitted to Eurofins Lancaster Laboratories for analysis of TCL Organochlorine (OC) Pesticides by USEPA SW-846 Method 8081B. The May 2018 samples were also submitted for analysis of 1,4-dioxane by USEPA SW-846 Method 8260 Selective Ion Monitoring (SIM), and PFAS compounds by USEPA SW-846 Method 537.

The analytical laboratory is certified under the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) for this analytical method.

2.1.3 Analytical Data Validation

The groundwater analytical data packages were validated by Jaclyn Lauer of Brown and Caldwell. Data Usability Summary Reports (DUSRs) were prepared for the groundwater data packages (Appendix C). Overall, the analytical data for the two monitoring rounds were determined to be acceptable for the intended purposes and none of the data was rejected. Some data were qualified as follows:

May 2018

- A high relative percent difference value greater than the control limit of 30% between MW-1S and its duplicate sample (DUP-20180531) resulted in a J-qualified (estimated) result for beta chlordane, dieldrin, and heptachlor epoxide in the MW-1S and duplicate samples.
- The MS/MSD samples exhibited acceptable %REC except for NEtFOSAA, NMeFOSAA and Perfluoro-octanesulfonate, which were above control limits. Detections of these three compounds were qualified as estimated (J).

September 2018

- The laboratory qualifier P indicates the concentration difference between the primary and confirmation column is greater than 40%. The lower result is reported. The laboratory qualification stands and was changed to a J, with a reason code P.
- The laboratory qualifier V indicates the concentration difference between the primary and confirmation column is greater than 100%. The reporting limit is raised due to this disparity and evident interference. The laboratory qualification stands and was changed to a UJ, with a reason code V.

2.1.4 Analytical Results

2.1.4.1 Pesticides

Table 2 summarizes the validated organochlorine pesticide results for all post-remediation rounds of groundwater monitoring. The table lists the 6 NYCRR (New York Codes, Rules and Regulations) Part 703 Class GA Water Quality Standards, which are applicable to the groundwater at the Site, and highlights concentrations that exceed the corresponding standard with a solid border and bold font.

A discussion of the analytical results for the current monitoring period follows:

Shallow Monitoring Wells. Dieldrin, was detected at concentrations greater than its Part 703 standard. The standard for this pesticide is relatively low: 0.004 µg/L or 4 parts per trillion (ppt). A single detection of Endrin was reported, in the May sample from well MW-4, at an estimated concentration of 0.0079 µg/L (7.9 ppt). The Part 703 standard for Endrin is ND (not detected).

Deep Monitoring Well. Dieldrin and 4,4'-DDD were detected in deep monitoring well MW-2D at concentrations greater than their corresponding Part 703 groundwater standards. As noted previously in the RI report, the presence of these compounds in MW-2D probably reflects contamination by past entry of surface water into the well.

Trend Plots. Figures 5a through 5e show post-remedial groundwater concentration trends for the six pesticide compounds that have been detected at concentrations above the corresponding Part 703 groundwater standards: alpha Chlordane, Dieldrin, Endrin, 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD[1]. The plotted concentrations are for the total matrix (i.e., from the unfiltered samples), with filtered results noted where available. Non-detect concentrations are plotted as 0.

The figures demonstrate that pesticide concentrations have generally been declining since post-remedial monitoring began in April 2015. This can be attributed to the 2012 excavation and removal of the source material that was associated with former Drywell 1. Comparison of corresponding analytical results for filtered and unfiltered groundwater samples indicates the residual pesticide compounds are largely bound to suspended particulate matter and not dissolved in groundwater, a condition attributable to the fate and transport characteristics of these compounds: low aqueous solubility, high chemical affinity for soil, and relative chemical stability.

2.1.4.2 Emerging Contaminants

Table 3 summarizes the 1,4-dioxane and PFAS results. In New York there are no groundwater quality standards for 1,4-dioxane. 1,4-dioxane was detected in only one well, MW-3, at an estimated concentration of 0.2J µg/L (ppb). The upgradient location of MW-3 relative to general groundwater flow indicates the 1,4-dioxane is not originating on the Bartlett site. This is consistent with the previously established existence of an unidentified off-Site source of chlorinated VOCs in groundwater and the widespread use of 1,4-dioxane as a stabilizer for chlorinated solvents.

Seventeen of the 21 targeted PFAS analytes were detected at ng/L (ppt) concentrations in multiple monitoring wells. In New York there are no groundwater quality standards for PFAS. The pattern of detections appears randomly distributed, with the maximum detected concentrations of six PFAS analytes occurring in the upgradient wells (MW-1S and MW-3). This pattern is consistent with the ubiquitous nature of PFAS, which were used in many applications (e.g., non-stick cookware, water-resistant fabrics, grease-resistant food packaging, firefighting materials) and are extremely persistent in the environment and resistant to typical environmental degradation processes[2].

[1] Aldrin has been detected only once, in an unfiltered sample collected September 27, 2016 from MW-4, at an estimated concentration of 0.0021(J) ug/L. The Part 703 standard for Aldrin is ND.

[2] National Center for Environmental Health, Agency for Toxic Substances and Disease Registry; An Overview of Perfluoroalkyl and Polyfluoroalkyl Substances and Interim Guidance for Clinicians Responding to Patient Exposure Concerns; Interim Guidance, May 7, 2018

2.2 Soil Vapor Intrusion Monitoring

As noted in the SMP, on-Site soil vapor has been found to contain chlorinated volatile organic compounds (VOCs) off-gassing from contaminated groundwater that originates at one or more unidentified, off-Site sources. Accordingly, the SMP specifies that SVI monitoring will be performed on a periodic basis to assess potential intrusion of VOC vapors. The SVI monitoring was conducted on December 4-5, 2018.

2.2.1 Inventory of Potential Indoor VOC Sources

On December 4, 2018 a pre-sampling inspection was conducted to identify and minimize conditions that could interfere with the SVI testing. The inspection evaluated the physical condition of the office building and the presence of potential interference from products and activities releasing VOCs. The field notes from the pre-sampling inspection are contained in Appendix E. During the inspection, containers were screened with a photo-ionization detector (PID) to determine if VOC vapors were leaking from the container.

Table 4 lists materials and conditions that were observed in the ground floor of the office building. The table provides PID readings and indicates if the material or condition might be a source of VOCs. No containers were observed with labels indicating the presence of chlorinated VOCs. It was not practical to remove the numerous articles of gasoline-powered equipment that might be sources of volatile constituents of gasoline (e.g., benzene, toluene, ethyl benzene, xylenes, trimethylbenzenes) in vapor samples.

2.2.2 Sample Collection

The monitoring consisted of collection of a sub-slab soil vapor sample and contemporaneous indoor and ambient (outdoor) air samples at the locations shown on Figure 6. A temporary sub-slab monitoring point was installed at the location of the previous sampling. The monitoring point was installed in accordance with the NYSDOH guidance document *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH, 2006). The temporary point was constructed of food-grade polyethylene tubing installed approximately 1-2 inches into the gravel subbase after drilling through the concrete floor slab with a rotary hammer. The annulus between the tubing and the surrounding floor slab was sealed with non-VOC containing modeling clay. The sub-slab sampling location and equipment are shown in photograph no. 4 of the Photographic Log (Appendix F).

Sample collection was completed in accordance with the detailed specifications in Section 3.3.2 of the SMP. A new, dedicated polyethylene sampling tube was used for sampling. Prior to sampling, the probe/tubing was purged to remove air that could dilute or otherwise bias the sample. A helium tracer gas test was performed to verify that no infiltration of atmospheric air would occur during sampling. The tracer gas test consisted of applying a 5-gallon bucket shroud over the sampling probe. The sample tubing was then connected to a portable helium detector. Helium gas was introduced inside the shroud to enrich the atmosphere surrounding the probe with helium. A vapor sample was then drawn from the tubing and analyzed with a helium detector for the presence of the tracer gas. No short circuiting was indicated by the helium tracer gas test.

Sample collection was performed on December 5, 2018. After purging and tracer testing, the sub-slab soil vapor tubing was attached to a 6-liter SUMMA canister provided by the analytical laboratory (SV-1). Contemporaneous indoor air (IA-1) and ambient (outdoor) air (AA-1) samples were also collected. The sub-slab soil vapor and indoor air canisters were allowed to fill for approximately 8 hours. The ambient (outdoor) air canister was allowed to fill for approximately 4 hours because the cannister vacuum decreased relatively quickly. Details of the sample collection are provided on the Vapor Sample

Collection Field Forms contained in Appendix E. The samples were submitted to Eurofins Lancaster Laboratories of Lancaster, Pennsylvania for analysis of VOCs by USEPA Method TO-15.

2.2.3 Analytical Data Validation

A DUSR was prepared for the soil vapor data package (Appendix C). The data validator determined that the data were acceptable for the intended purposes; no data were qualified or rejected.

2.2.4 Analytical Results

Table 5 summarizes the analytical results for the soil vapor, indoor air and ambient (outdoor) air samples and compares them to available screening values. Because NYSDOH Air Guideline values have been issued for only a limited number of analytes, the United States Environmental Protection Agency (EPA) Office of Solid Waste and Emergency Response (OSWER) screening levels[3] are also used for comparison (EPA, 2018). New York State currently has no compound-specific guidance values for soil vapor. Accordingly, sub-slab concentrations are compared to the OSWER shallow soil gas screening levels, which are based on the indoor air screening levels and assume a 10-fold attenuation factor between shallow soil gas and indoor air.

The chlorinated VOC Perchloroethylene (PCE) was detected in the sub-slab vapor sample at a concentration 450 µg/m^3, which exceeds the OSWER shallow soil gas screening level of 180 µg/m^3. PCE was reported in the indoor air sample at an estimated concentration of 2.7J µg/m^3, indicating the floor slab is an effective barrier to PCE vapor intrusion. NYSDOH's updated Soil Vapor/Indoor Air Matrix B (May 2017) recommends no further action for sub-slab PCE vapor concentrations ranging from 100 to <1,000 µg/m^3 when the indoor air concentration is less than 3 µg/m^3. Matrix B recommends monitoring if the indoor air concentration is 3 µg/m^3 to <10 µg/m^3. PCE has been previously detected in groundwater upgradient of and beneath the Site.

The only other compounds detected above applicable screening levels were benzene and ethylbenzene, both volatile constituents of gasoline. The sub-slab vapor concentrations of benzene (1.6J µg/m^3) and ethylbenzene (not detected) indicate that the presence of these compounds in the indoor air is likely due to the gasoline-powered equipment stored on the ground floor of the building.

[3] The screening levels used are for Composite Worker, target cancer risk (TR) of 10-6 and non-carcinogenic target hazard quotient (THQ) of 0.1. When OSWER provides both TR and THQ screening values for a particular chemical, the lower of the two values is used for comparison with the analytical result.

Section 3

Site Inspection and Evaluation

The SMP specifies that Site-wide inspections will be performed on a regular schedule at a minimum of once a year. BC conducted the annual Site inspection on December 4, 2018. The objectives of the inspection were to:

- Evaluate compliance with all ICs, including Site usage
- Evaluate general Site conditions at the time of the inspection
- Evaluate Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection
- Confirm that Site records are up to date

BC's inspector, Frank Williams, P.G., observed the exterior grounds of the Bartlett facility and both floors of the office building. Mr. Williams met with and interviewed Bartlett's on-Site facility manager, Peter Lyon, who assumed responsibilities from the previous facility manager, Justin Walker. Mr. Williams also discussed via telephone the site and monitoring activities with Bartlett's Vice President of Safety and Regulatory Affairs, David Marren. The findings are described below. A photographic log is provided in Appendix F.

Site Use. Bartlett continues to utilize the Site solely as a base of operations for its Long Island tree care service business. The only building on the premises is the two-story office/garage building located at the south end of the Site. The ground floor of the building continues to be utilized as a garage, maintenance and storage area for tree care equipment, including trucks and gasoline-powered tools such as chain saws, line trimmers and leaf blowers. Two 55-gallon drums staged in the southwest corner of the garage are used for temporary storage of used motor oil pending pick-up by a permitted waste-oil recycler. The northern portion of the ground floor continues to be utilized as a change room and locker area for field personnel. The second floor of the building consists of offices, a meeting room, and a reception area and continues to be used for Bartlett's business administration purposes. The exterior areas of the Site are accessed via a driveway extending along the west side of the office/garage building. The exterior areas continue to be used for storage of tree-care equipment and parking of tree service trucks and employee vehicles. The secure storage locker for pesticides remains located adjacent to the north end of the office/garage building.

As discussed in Section 1.4, aggregate was placed over the northern portion of the yard in order to raise and level the surface, and the asphalt driveway along the west side of the office building and the parking area north of the office building were repaved. After placing and grading the initial lift of aggregate, the on-Site monitoring wells (MW-2S, MW-2D, MW-3, MW-4, MW-5) were protected by surrounding each vault with concrete blocks and placing a pre-cast concrete cover on the surrounding blocks before placing the final lift of aggregate. A locked, steel shipping container has been added to the northeast corner of the yard. The interior of the shipping container was not inspected. Mr. Lyon stated that the shipping container is used for storing older business records, hand tools and agricultural gypsum.

Groundwater Use. On-Site groundwater is not used and there are no production wells located on the Site. Water is supplied by the Westbury Water District, 160 Drexel Avenue, Westbury, New York 11590.

Areas of Remaining Soil Contamination. Three areas of remaining soil contamination were designated in the SMP, as follows (refer to Figure 7 for locations):

- Boring SB-7. DDT was detected at this location at 2.9 ppm (above the 6NYCRR Part 375-6 Residential Soil Cleanup Objective [SCO] but below the Commercial SCO) in the sample interval from 0-2 feet bgs.
- Boring SB-6. Mercury was detected at this location at 1.05 ppm (above the Residential SCO but below the Commercial SCO) in the sample interval from 0-2 feet bgs.
- Test Pit TP-2. Mercury was detected at this location at 3.62 ppm (above the Commercial SCO) in the sample interval from 1-2 feet bgs.

There was no disturbance of the areas of remaining contamination that resulted in unacceptable exposure to the underlying soils, as follows:

- At the time of the annual inspection the area of boring SB-7 was observed to be covered by the aggregate described in Section 1.4. Bartlett's on-Site Facility Manager, Peter Lyon, confirmed that no disturbance of the SB-7 area has occurred since the aggregate was installed. The area of SB-7 is shown in Photograph #11 of the Photographic Log (Appendix F).
- At the time of the annual inspection the area of boring SB-6 was observed to be covered by the aggregate described in Section 1.4. As discussed in Section 1.4, the pre-existing asphalt pavement in the area of SB-6 was partially removed while preparing the area for installation of the demarcation netting. The concentration of mercury in the underlying soil (1.05 mg/kg) is below the 6 NYCRR Part 375 Soil Cleanup Objective (SCO) for Protection of Public Health – Commercial Use. Mr. Lyon confirmed that no disturbance of the SB-6 area has occurred since the aggregate was installed. The area of SB-6 is shown in Photograph #12 of the Photographic Log (Appendix F).
- The area of test pit TP-2 remained covered by fill and a cast iron/concrete sewer cleanout structure that was installed when the office/garage building was connected to the municipal sanitary sewer in 2009. Asphalt paving was placed over the fill in June 2018. The area of TP-2 is shown in Photograph #13 of the Photographic Log (Appendix F).

Mr. Lyon conducted inspections of the Site, including these areas to verify that they remained undisturbed. Records of his inspections are provided in Appendix G.

3.1 Conclusions and Recommendations

Based on the inspection and monitoring reported herein, it is concluded the Site remedy is being implemented in accordance with the requirements of the SMP and remains effective.

Groundwater monitoring indicates pesticide concentrations have declined since post-remedial monitoring began in April 2015. This can be attributed to the 2012 excavation and removal of the source material that was associated with former Drywell 1. Dieldrin continues to be detected at concentrations slightly above the relatively low Part 703 groundwater standard of 0.004 ug/L (4 ppt). 4,4'-DDE was present in an unfiltered sample from MW-2D, consistent with the history of that well.

SVI monitoring demonstrates the office building slab continues to be an effective barrier against intrusion of sub-slab PCE vapors originating from an unidentified off-Site source.

As discussed above, the three areas of remaining soil contamination have been covered by aggregate (SB-6, SB-7) or paving (TP-2).

The Site continues to be utilized solely for commercial purposes and no usage of on-Site groundwater has occurred.

Recommendations

1. Monitoring wells MW-1S, MW-2S and MW-2D should be removed from the groundwater monitoring program and properly decommissioned in accordance with CP-43, Groundwater Monitoring Well Decommissioning Policy (NYSDEC, 2009). This is supported by the following:

- MW-1S is an upgradient (and off-Site) well that serves no purpose in monitoring groundwater quality downgradient from remediated former Drywell 1. Measurement of upgradient groundwater elevations and definition of groundwater gradients can be accomplished with well MW-3.
- MW-2S, now significantly damaged, is redundant. There are two additional downgradient wells, each within 30 feet of MW-2S. Pesticide concentrations in MW-2S have declined since post-remedial monitoring began in April 2015.
- MW-2D is screened from 62'-72' bgs, a zone that is below the Magothy clayey silt aquitard and thus isolated from the groundwater and soils associated with remediated former Drywell 1. The pesticide 4,4'-DDT and its related compounds 4,4'-DDE and 4,4'-DDD have been detected in MW-2D but are attributed to entry of surface water into the well prior to the May 2012 groundwater sampling event (BC, August 2013). Trend plots (Figures 5d, 5e, 5d) demonstrate that concentrations of all three compounds continue to decline, with only sporadic, slight exceedances of the Part 703 standard for 4,4'-DDD.

2. The frequency of groundwater sampling should be reduced to an annual basis. This is supported by the following:
   - The decade-long groundwater monitoring program that began with the RI demonstrates that pesticide concentrations have declined since post-remedial monitoring began in April 2015. This is attributed to the 2012 excavation and removal of the source material that was associated with former Drywell 1.
   - The remaining exceedances of the Part 703 groundwater standards are attributable to adsorption of pesticide compounds on suspended soil particles. This is demonstrated by comparison of analytical results for filtered and unfiltered samples. Dissolved pesticides are not the cause of the exceedances.
   - The subject pesticide compounds have strong chemical affinities for soil particles and low aqueous solubilities, rendering them effectively immobile at the concentrations found in the Bartlett monitoring wells.

Section 4

Certification of Institutional Controls

In accordance with the SMP, at the conclusion of the 2018 reporting period, a Qualified Environmental Professional (QEP) makes the following certification:

For each institutional control identified for the Site, I certify that all of the following statements are true:

- The institutional control employed at this Site is unchanged from the date the control was put in place, or last approved by the NYSDEC.
- Nothing has occurred that would impair the ability of the institutional control to protect the public health and environment.
- Nothing has occurred that would constitute a violation or failure to comply with the SMP for this institutional control.
- Access to the Site will continue to be provided to the NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this institutional control.
- Use of the Site is compliant with the Environmental Easement.
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I, Frank J. Williams, of Brown and Caldwell, 3 Marcus Boulevard, Albany, New York 12205, am certifying as Owner's Designated Site Representative for the Site.

Frank J. Williams, P.G.
N.Y.P.G License Number 001000

Section 5

Limitations

This document was prepared solely for F. A. Bartlett Tree Expert Company and its affiliate Bartlett Realty Company AND The West Firm PLLC (collectively, Client) in accordance with professional standards at the time the services were performed and in accordance with the contract between Client and Brown and Caldwell dated October 17, 2006. This document is governed by the specific scope of work authorized by Client; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Client and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

Section 6

References

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https://www.health.ny.gov/environmental/indoors/vapor_intrusion/docs/svi_decision_matrices_abc.pdf

Tables

TABLE 1
WATER LEVEL MEASUREMENTS
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE #0130074

			4/14/2015		4/11/2016		9/26/2016		5/16/2017		10/16/2017		5/30/2018		9/24/2018	
Location ID	Top of Casing Elevation (ft., NGVD)	Screened Interval (ft., BGS)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NGVD)
Shallow Overburden Wells																
MW-1S	104.74	32-47	32.78	71.96	35.03	69.71	36.88	67.86	36.2	68.54	37.58	67.16	35.43	69.31	36.19	68.55
MW-2S**	103.96	32-47	32.39	71.57	34.5	69.46	36.45	67.51	36.42	67.54	37.34	66.62	34.4	69.56	36.18	67.78
MW-3*	104.24	32-47	32.62	71.62	34.79	69.45	36.83	67.41	36.35	67.89	37.61	66.63	35.35	68.89	36.1	68.14
MW-4	104.29	29-44	32.71	71.58	34.88	69.41	36.98	67.31	36.7	67.59	37.82	66.47	35.71	68.58	36.5	67.79
MW-5	104.06	29-44	32.59	71.47	34.77	69.29	36.83	67.23	36.59	67.47	37.65	66.41	35.55	68.51	36.33	67.73
Deep Overburden Wells																
MW-1D	104.93	62-72	33.50	71.43	35.19	69.74	38.95	65.98	NA	NA	NA	NA	NA	NA	NA	NA
MW-2D	103.90	62-72	33.23	70.67	35.11	68.79	38.25	65.65	38.02	65.88	39.36	64.54	37.48	66.42	38.5	65.40

Notes:
NGVD - National Geodetic Vertical Datum
BGS - Below Ground Surface
BTOC - Below Top of Casing
* All wells re-surveyed April 1, 2010; elevation revised due to PVC settling.
** MW-2S was damaged prior to the May 30, 2018 water level measurement. Depths to water and/or elevations beginning with May 30, 2018 may be unreliable.
1) Data obtained during continuous water level monitoring
2) Water level not measured due to standing water around well vault

TABLE 2
PESTICIDES IN GROUNDWATER
ANALYTICAL RESULTS
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Constituent	Part 703 Standard [1]	Units	MW-1S Unfiltered 4/14/2015	MW-1S/DUP-20160411 Unfiltered 4/11/2016	MW-1S/DUP-20160411 Unfiltered 4/11/2016	MW-1S Unfiltered 9/26/2016	MW-1S Unfiltered 5/17/2017	MW-1S Unfiltered 10/16/2017	MW-1S/DUP-20180531 Unfiltered 5/31/2018	MW-1S/DUP-20180531 Unfiltered 5/31/2018	MW-1S Unfiltered 9/24/2018
Organochlorine Pesticides - Method 8081B											
4,4'-DDD	0.3	µg/L	0.004 U	0.0041 U	0.0042 U	0.0041 U	0.004 U	0.004 U	0.004 U	0.0041 U	0.004 U
4,4'-DDE	0.2	µg/L	0.004 U	0.0041 U	0.0042 U	0.0041 U	0.004 U	0.004 U	0.004 U	0.0056 J	0.004 U
4,4'-DDT	0.2	µg/L	0.0058 J	0.0043 U	0.0044 U	0.0043 U	0.0042 UJ	0.0042 U	0.0042 U	0.0043 U	0.0042 U
Aldrin	0	µg/L	0.0016 U	0.0017 U	0.0017 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
alpha Endosulfan	NE	µg/L	0.0035 U	0.0036 U	0.0036 U	0.0036 U	0.0035 U	0.0035 U	0.0034 U	0.0035 U	0.0053 J
beta Endosulfan	NE	µg/L	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
BHC, alpha	0.01	µg/L	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0024 U	0.0024 U	0.0024 U	0.0025 U	0.0024 U
BHC, beta	0.04	µg/L	0.0027 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0087	0.0027 U	0.0028 U	0.0027 U
BHC, delta	0.04	µg/L	0.0027 U	0.0028 U	0.0029 U	0.0028 U	0.0028 U	0.0027 U	0.0036 J	0.0028 U	0.0027 U
BHC, gamma (Lindane)	0.05	µg/L	0.0016 U	0.0017 U	0.0017 U	0.0026 J	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Chlordane, alpha	0.05	µg/L	0.0036 U	0.014	0.016	0.027	0.0055 JP	0.0024 U	0.031 U	0.022 U	0.0024 U
Chlordane, beta	0.05	µg/L	0.0056 U	0.0077 J	0.0059 U	0.016 J	0.0082 JP	0.0056 U	0.022 J	0.01 J	0.013 J
Dieldrin	0.004	µg/L	0.0043 U	**0.027**	**0.032**	**0.11**	0.0043 U	**0.006 J**	**0.067 J**	**0.046 J**	**0.025**
Endosulfan sulfate	NE	µg/L	0.0047 U	0.0048 U	0.0049 U	0.0048 U	0.0047 U	0.0047 U	0.0046 U	0.0048 U	0.0047 U
Endrin	0	µg/L	0.0065 U	0.0067 U	0.0068 U	0.0067 U	0.0066 UJ	0.0065 U	0.0065 U	0.0067 U	0.0065 U
Endrin aldehyde	5	µg/L	0.016 U	0.017 U	0.017 U	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U
Endrin ketone	5	µg/L	0.004 U	0.0041 U	0.0042 U	0.0041 U	0.004 U	0.004 U	0.004 U	0.0041 U	0.004 U
Heptachlor	0.04	µg/L	0.0016 U	0.0017 U	0.0017 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U
Heptachlor epoxide	0.03	µg/L	0.0019 U	0.0034 J	0.0037 J	0.0034 J	0.0019 J	0.0019 U	0.022 J	0.016 J	0.0018 U
Methoxychlor	35	µg/L	0.024 U	0.025 U	0.025 U	0.025 U	0.024 U	0.024 U	0.024 U	0.025 U	0.024 U
Toxaphene	0.06	µg/L	0.24 U	0.25 U	0.25 U	0.25 U	0.24 U	0.24 U	0.24 U	0.25 U	0.24 U

Notes:
U - Constituent was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
J - Estimated concentration. The result is below the quantitation limit but above the MDL.
UJ - Constituent was analyzed, but was not detected above the sample reporting limit; and the reporting limit is approximate.
NE - Standard not established
Concentrations presented in bold font with solid border exceed the NYS Part 703 Standard
(1) Value of 0 indicates NYS Part 703 standard for this constituent is non-detect.

TABLE 2
PESTICIDES IN GROUNDWATER
ANALYTICAL RESULTS
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Constituent	Part 703 Standard [1]	Units	MW-2S Unfiltered 4/14/2015	MW-2S Unfiltered 4/12/2016	MW-2S Unfiltered 9/26/2016	MW-2S Unfiltered 5/16/2017	MW-2S Unfiltered 10/17/2017
Organochlorine Pesticides - Method 8081B							
4,4'-DDD	0.3	µg/L	0.053	0.0083 J	0.0042 U	0.005 UV	0.004 U
4,4'-DDE	0.2	µg/L	0.0084 J	0.0041 U	0.0042 U	0.004 U	0.004 U
4,4'-DDT	0.2	µg/L	0.051	0.0086 J	0.0054 J	0.0042 UJ	0.0073 J
Aldrin	0	µg/L	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0016 U
alpha Endosulfan	NE	µg/L	0.0035 U	0.0035 U	0.0036 U	0.0035 U	0.0036 J
beta Endosulfan	NE	µg/L	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U
BHC, alpha	0.01	µg/L	0.0024 U	0.0025 U	0.0025 U	0.0024 U	0.0024 U
BHC, beta	0.04	µg/L	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0027 U
BHC, delta	0.04	µg/L	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.0027 U
BHC, gamma (Lindane)	0.05	µg/L	0.005 J	0.0045 J	0.0017 U	0.0016 U	0.0016 U
Chlordane, alpha	0.05	µg/L	**0.07**	**0.051**	0.03	0.021 J	0.01
Chlordane, beta	0.05	µg/L	0.0057 U	0.039	0.029	0.015 J	0.017
Dieldrin	0.004	µg/L	**0.16**	**0.043**	**0.02**	**0.016 J**	**0.03**
Endosulfan sulfate	NE	µg/L	0.0047 U	0.0048 U	0.0048 U	0.0047 U	0.0047 U
Endrin	0	µg/L	0.0066 U	0.0066 U	0.0068 U	0.0066 U	0.0065 U
Endrin aldehyde	5	µg/L	0.016 U	0.016 U	0.017 U	0.016 U	0.016 U
Endrin ketone	5	µg/L	0.004 U	0.0041 U	0.0042 U	0.004 U	0.004 U
Heptachlor	0.04	µg/L	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0016 U
Heptachlor epoxide	0.03	µg/L	0.0019 U	0.0045 J	0.0019 U	0.0033 JP	0.0032 J
Methoxychlor	35	µg/L	0.024 U	0.025 U	0.025 U	0.024 U	0.024 U
Toxaphene	0.06	µg/L	0.24 U	0.25 U	0.25 U	0.24 U	0.24 U

TABLE 2
PESTICIDES IN GROUNDWATER
ANALYTICAL RESULTS
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Constituent	Part 703 Standard [1]	Units	MW-3 Unfiltered 4/15/2015	MW-3 Unfiltered 4/11/2016	MW-3 Unfiltered 9/27/2016	MW-3/DUP20170516 Unfiltered 5/16/2017	MW-3/DUP20170516 Unfiltered 5/16/2017	MW-3/DUP-20171016 Unfiltered 10/16/2017	MW-3/DUP-20171016 Unfiltered 10/16/2017	MW-3 Unfiltered 5/31/2018	MW-3/DUP-20180924 Unfiltered 9/24/2018	MW-3/DUP-20180924 Unfiltered 9/24/2018
Organochlorine Pesticides - Method 8081B												
4,4'-DDD	0.3	µg/L	0.0041 UJ	0.0043 U	0.0041 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0041 U
4,4'-DDE	0.2	µg/L	0.011 J	0.0043 U	0.0041 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0041 U
4,4'-DDT	0.2	µg/L	0.028 J	0.0045 U	0.0042 U	0.0046 UV	0.0045 UV	0.0064 J	0.0042 U	0.0042 U	0.0042 U	0.0043 U
Aldrin	0	µg/L	0.0016 UJ	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U
alpha Endosulfan	NE	µg/L	0.0035 UJ	0.0037 U	0.0083 UJ	0.0035 U	0.0035 U	0.0046 J	0.0054 J	0.0045 J	0.022	0.017
beta Endosulfan	NE	µg/L	0.012 UJ	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
BHC, alpha	0.01	µg/L	0.0024 UJ	0.0026 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0025 U
BHC, beta	0.04	µg/L	0.0028 UJ	0.003 U	0.0028 U	0.0028 U	0.0027 U	0.0031 J	0.0027 U	0.0027 U	0.0027 U	0.0028 U
BHC, delta	0.04	µg/L	0.0028 UJ	0.003 U	0.0028 U	0.0028 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0027 U	0.0028 U
BHC, gamma (Lindane)	0.05	µg/L	0.0016 UJ	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U
Chlordane, alpha	0.05	µg/L	0.049	0.03	0.021	0.017 J	0.017 J	0.015	0.018	0.012 U	0.019 P	0.015 P
Chlordane, beta	0.05	µg/L	0.036 J	0.021	0.013 J	0.014 J	0.012 J	0.0091 J	0.013 J	0.0071 J	0.0056 U	0.0058 U
Dieldrin	0.004	µg/L	**0.11**	**0.018**	**0.028**	**0.024**	**0.024**	**0.026**	**0.032**	**0.0078 J**	**0.0081 J**	**0.0065 J**
Endosulfan sulfate	NE	µg/L	0.0047 UJ	0.005 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0046 U	0.0046 U	0.0046 U	0.0048 U
Endrin	0	µg/L	**0.012 J**	0.007 U	0.0066 U	0.0066 UJ	0.0065 UJ	0.0065 U	0.0065 U	0.0065 U	0.0065 U	0.0067 U
Endrin aldehyde	5	µg/L	0.016 UJ	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.017 U
Endrin ketone	5	µg/L	0.0041 UJ	0.0043 U	0.0041 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.0041 U
Heptachlor	0.04	µg/L	0.0016 UJ	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U
Heptachlor epoxide	0.03	µg/L	0.0019 UJ	0.002 U	0.0089	0.0044 J	0.0044 JP	0.0047 J	0.0069 J	0.0083	0.011	0.009
Methoxychlor	35	µg/L	0.024 UJ	0.026 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.025 U
Toxaphene	0.06	µg/L	0.24 UJ	0.26 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.25 U

Notes:
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Concentrations presented in bold font with solid border exceed the NYS Part 703 Standard
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TABLE 2
PESTICIDES IN GROUNDWATER
ANALYTICAL RESULTS
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Constituent	Part 703 Standard [1]	Units	MW-4/DUP-041415 Unfiltered 4/14/2015	MW-4/DUP-041415 Unfiltered 4/14/2015	MW-4 Filtered 4/14/2015	MW-4 Unfiltered 4/12/2016	MW-4 Unfiltered 9/27/2016	MW-4 Unfiltered 5/16/2017	MW-4 Unfiltered 10/16/2017	MW-4 Filtered 10/16/2017	MW-4 Unfiltered 5/31/2018	MW-4 Unfiltered 9/25/2018
Organochlorine Pesticides - Method 8081B												
4,4'-DDD	0.3	µg/L	0.041 J	0.004 U	0.0047 U	0.0078 U	0.0041 U	0.016 UV	0.013 J	0.004 U	0.008 U	0.040 U
4,4'-DDE	0.2	µg/L	0.0062 J	0.0074 J	0.0047 U	0.0041 U	0.0041 U	0.004 U	0.004 U	0.004 U	0.0041 U	0.04 U
4,4'-DDT	0.2	µg/L	0.076	0.12	0.0048 U	0.036	0.028	0.046 J	0.031	0.0073 J	0.037	0.042 U
Aldrin	0	µg/L	0.0017 U	0.0016 U	0.0019 U	0.0017 U	**0.0021 J**	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.016 U
alpha Endosulfan	NE	µg/L	0.0057 J	0.0054 U	0.004 U	0.0036 U	0.0045 J	0.0035 U	0.0035 U	0.0034 U	0.0036 U	0.034 U
beta Endosulfan	NE	µg/L	0.013 U	0.012 U	0.014 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.12 U
BHC, alpha	0.01	µg/L	0.0026 U	0.0024 U	0.0028 U	0.0025 U	0.0024 U	0.0024 U	0.0024 U	0.0024 U	0.0025 U	0.024 U
BHC, beta	0.04	µg/L	0.003 U	0.0028 U	0.0032 U	0.0028 U	0.0028 U	0.0027 U	0.0067 J	0.0056 U	0.0028 U	0.027 U
BHC, delta	0.04	µg/L	0.003 U	0.0028 U	0.0032 U	0.0028 U	0.0029 J	0.0027 U	0.0027 U	0.0027 U	0.0028 U	0.027 U
BHC, gamma (Lindane)	0.05	µg/L	0.0027 J	0.0027 J	0.0019 U	0.0041 J	0.015	0.0081	0.0017 J	0.0016 U	0.0017 U	0.016 U
Chlordane, alpha	0.05	µg/L	**0.054 J**	**0.091 J**	0.0028 U	**0.06**	**0.059**	0.031	0.02	0.0024 U	0.021	0.024 U
Chlordane, beta	0.05	µg/L	0.039 J	0.044 J	0.0065 U	0.034	0.0057 U	0.019 J	0.015 J	0.0056 U	0.016 J	0.056 U
Dieldrin	0.004	µg/L	**0.14**	**0.14**	0.0049 U	**0.32**	**0.067**	**0.069**	**0.072**	0.0042 U	**0.26**	**0.017**
Endosulfan sulfate	NE	µg/L	0.005 U	0.0047 U	0.0054 U	0.0048 U	0.0047 U	0.0047 U	0.0047 U	0.0046 U	0.0048 U	0.046 U
Endrin	0	µg/L	0.007 UJ	**0.041 J**	0.0075 U	0.0067 U	0.0066 U	0.0065 UJ	0.0065 U	0.0065 U	**0.0079 J**	0.065 U
Endrin aldehyde	5	µg/L	0.017 U	0.016 U	0.019 U	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.017 U	0.16 U
Endrin ketone	5	µg/L	0.0043 U	0.004 U	0.0047 U	0.0041 U	0.0041 U	0.004 U	0.004 U	0.004 U	0.0041 U	0.04 U
Heptachlor	0.04	µg/L	0.0017 U	0.0016 U	0.0019 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.016 U
Heptachlor epoxide	0.03	µg/L	0.002 U	0.0019 U	0.0021 U	0.0089	0.0019 U	0.0045 J	0.003 U	0.0018 U	0.0055 J	0.018 U
Methoxychlor	35	µg/L	0.026 U	0.024 U	0.028 U	0.025 U	0.024 U	0.024 U	0.024 U	0.024 U	0.025 U	0.24 U
Toxaphene	0.06	µg/L	0.26 U	0.24 U	0.28 U	0.25 U	0.24 U	0.24 U	0.24 U	0.24 U	0.25 U	2.4 U

Notes:
U - Constituent was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
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Concentrations presented in bold font with solid border exceed the NYS Part 703 Standard
(1) Value of 0 indicates NYS Part 703 standard for this constituent is non-detect.

TABLE 2
PESTICIDES IN GROUNDWATER
ANALYTICAL RESULTS
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Constituent	Part 703 Standard [1]	Units	MW-5 Unfiltered 4/14/2015	MW-5 Unfiltered 4/11/2016	MW-5/DUP-20160927 Unfiltered 9/27/2016	MW-5/DUP-20160927 Unfiltered 9/27/2016	MW-5 Unfiltered 5/16/2017	MW-5 Unfiltered 10/16/2017	MW-5 Unfiltered 5/31/2018	MW-5 Unfiltered 9/24/2018	MW-1D Unfiltered 4/15/2015	MW-1D Unfiltered 4/11/2016	MW-1D Unfiltered 9/26/2016
Organochlorine Pesticides - Method 8081B													
4,4'-DDD	0.3	µg/L	0.0041 U	0.0042 U	0.0041 U	0.0042 U	0.0042 U	0.004 U	0.0041 U	0.004 U	0.0041 U	0.0041 U	0.0041 U
4,4'-DDE	0.2	µg/L	0.013 J	0.0042 U	0.0041 U	0.0042 U	0.0042 U	0.004 U	0.0041 U	0.004 U	0.0041 U	0.0041 U	0.0041 U
4,4'-DDT	0.2	µg/L	0.11	0.0044 U	0.0043 U	0.0044 U	0.0043 UJ	0.0068 J	0.0043 U	0.0042 U	0.0042 U	0.0043 U	0.0042 U
Aldrin	0	µg/L	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.0016 U
alpha Endosulfan	NE	µg/L	0.0035 U	0.0036 U	0.0035 U	0.0036 U	0.0036 U	0.0077 J	0.0044 J	0.0086	0.0035 U	0.0036 U	0.0035 U
beta Endosulfan	NE	µg/L	0.012 U	0.013 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U
BHC, alpha	0.01	µg/L	0.0024 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0024 U	0.0025 U	0.0024 U	0.0024 U	0.0025 U	0.0024 U
BHC, beta	0.04	µg/L	0.0028 U	0.0029 U	0.0028 U	0.0029 U	0.0028 U	0.0082	0.0028 U	0.005 UV	0.0028 U	0.0028 U	0.0028 U
BHC, delta	0.04	µg/L	0.0028 U	0.0043 J	0.0028 U	0.0029 U	0.0028 U	0.0027 U	0.0028 U	0.0027 U	0.0028 U	0.0028 U	0.0028 U
BHC, gamma (Lindane)	0.05	µg/L	0.0049 J	0.0024 J	0.0016 U	0.0017 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.0016 U
Chlordane, alpha	0.05	µg/L	0.033	0.025	0.02	0.019	0.016	0.011	0.022 U	0.0024 U	0.0024 U	0.0025 U	0.0024 U
Chlordane, beta	0.05	µg/L	0.0057 U	0.0059 U	0.012 J	0.011 J	0.0092 J	0.0083 U	0.012 J	0.0056 U	0.0057 U	0.0058 U	0.0057 U
Dieldrin	0.004	µg/L	**0.066**	**0.034**	**0.024**	**0.025**	**0.015 J**	**0.0096 J**	**0.015 J**	**0.01 J**	0.0043 U	0.0044 U	0.0043 U
Endosulfan sulfate	NE	µg/L	0.0047 U	0.0049 U	0.0048 U	0.0049 U	0.0048 U	0.0047 U	0.0048 U	0.0047 U	0.0047 U	0.0048 U	0.0047 U
Endrin	0	µg/L	**0.051 J**	0.0068 U	0.0067 U	0.0069 U	0.0068 UJ	0.0065 U	0.0066 U	0.0065 U	0.0066 U	0.0067 U	0.0066 U
Endrin aldehyde	5	µg/L	0.016 U	0.017 U	0.016 U	0.017 U	0.017 U	0.016 U	0.016 U	0.016 U	0.016 U	0.017 U	0.016 U
Endrin ketone	5	µg/L	0.0041 U	0.0042 U	0.0041 U	0.0042 U	0.0042 U	0.004 U	0.0041 U	0.004 U	0.0041 U	0.0041 U	0.0041 U
Heptachlor	0.04	µg/L	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0017 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.0016 U
Heptachlor epoxide	0.03	µg/L	0.0019 U	0.0019 U	0.0022 J	0.0019 U	0.0048 J	0.008 J	0.019	0.011	0.0019 U	0.0019 U	0.0019 U
Methoxychlor	35	µg/L	0.024 U	0.025 U	0.025 U	0.025 U	0.025 U	0.024 U	0.025 U	0.024 U	0.024 U	0.025 U	0.024 U
Toxaphene	0.06	µg/L	0.24 U	0.25 U	0.25 U	0.25 U	0.25 U	0.24 U	0.25 U	0.24 U	0.24 U	0.25 U	0.24 U

Notes:
U - Constituent was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
J - Estimated concentration. The result is below the quantitation limit but above the MDL.
UJ - Constituent was analyzed, but was not detected above the sample reporting limit; and the reporting limit is approximate.
NE - Standard not established
Concentrations presented in bold font with solid border exceed the NYS Part 703 Standard
(1) Value of 0 indicates NYS Part 703 standard for this constituent is non-detect.

TABLE 2
PESTICIDES IN GROUNDWATER
ANALYTICAL RESULTS
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Constituent	Part 703 Standard [1]	Units	MW-2D Unfiltered 4/14/2015	MW-2D/DUP-041415-F Filtered 4/14/2015	MW-2D/DUP-041415-F Filtered 4/14/2015	MW-2D Unfiltered 4/12/2016	MW-2D Filtered 4/12/2016	MW-2D Unfiltered 9/27/2016	MW-2D Unfiltered 5/17/2017	MW-2D Unfiltered 10/16/2017	MW-2D Unfiltered 5/31/2018	MW-2D Unfiltered 9/24/2018
Organochlorine Pesticides - Method 8081B												
4,4'-DDD	0.3	µg/L	0.0044 U	0.0041 U	0.0041 U	**0.81**	0.07	**0.31**	**0.5**	0.074	**0.47**	0.15
4,4'-DDE	0.2	µg/L	**0.47**	0.0041 U	0.0041 U	**0.26**	0.025	0.17	0.2	0.027	0.16	0.057 J
4,4'-DDT	0.2	µg/L	**0.73**	0.0042 U	0.0042 U	0.075	0.0083 J	0.11	0.17 J	0.011 J	0.07	0.021 U
Aldrin	0	µg/L	0.0018 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	0.008 U
alpha Endosulfan	NE	µg/L	0.019	0.0035 J	0.0094 J	0.008 J	0.0035 U	0.0073 J	0.0035 U	0.0036 U	0.0059 J	0.017 U
beta Endosulfan	NE	µg/L	0.013 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.012 U	0.06 U
BHC, alpha	0.01	µg/L	0.0026 U	0.0024 U	0.0024 U	0.0025 U	0.0024 U	0.0025 U	0.0024 U	0.0025 U	0.0024 U	0.012 U
BHC, beta	0.04	µg/L	0.003 U	0.0028 U	0.0028 U	0.0028 U	0.0027 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.014 U
BHC, delta	0.04	µg/L	0.003 U	0.0028 U	0.0028 U	0.0028 U	0.0027 U	0.0028 U	0.0028 U	0.0028 U	0.0028 U	0.014 U
BHC, gamma (Lindane)	0.05	µg/L	0.0018 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.002 J	0.0016 U	0.008 U
Chlordane, alpha	0.05	µg/L	0.011 J	0.0024 U	0.0024 U	0.0086 J	0.0024 U	0.0025 U	0.0096 J	0.0029 J	0.01	0.012 U
Chlordane, beta	0.05	µg/L	0.026 J	0.0057 U	0.0057 U	0.02 U	0.0056 U	0.009 UJ	0.012 UV	0.0058 U	0.011 U	0.028 U
Dieldrin	0.004	µg/L	0.036 UJ	0.0043 U	0.0043 U	**0.027**	0.0043 U	0.018 UJ	**0.019**	**0.0089 J**	**0.019**	0.021 U
Endosulfan sulfate	NE	µg/L	0.0051 U	0.0047 U	0.0047 U	0.082	0.0087 U	0.039 J	0.034	0.0049 J	0.021	0.023 U
Endrin	0	µg/L	0.15 U	0.0066 U	0.0066 U	0.0066 U	0.0065 U	0.0067 U	0.0066 UJ	0.0067 U	0.0066 U	0.033 U
Endrin aldehyde	5	µg/L	0.018 UJ	0.016 U	0.016 U	0.016 U	0.016 U	0.017 U	0.016 U	0.017 U	0.016 U	0.08 U
Endrin ketone	5	µg/L	0.0044 U	0.0041 U	0.0041 U	0.0041 U	0.004 U	0.0041 U	0.0041 U	0.0041 U	0.004 U	0.02 U
Heptachlor	0.04	µg/L	0.0018 U	0.0016 U	0.0016 U	0.0016 U	0.0016 U	0.0017 U	0.0016 U	0.0017 U	0.0016 U	0.008 U
Heptachlor epoxide	0.03	µg/L	0.002 U	0.0019 UJ	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0019 U	0.0092 U
Methoxychlor	35	µg/L	0.026 U	0.024 U	0.024 U	0.025 U	0.024 U	0.025 U	0.024 U	0.025 U	0.024 U	0.12 U
Toxaphene	0.06	µg/L	0.26 U	0.24 U	0.24 U	0.25 U	0.24 U	0.25 U	0.24 U	0.25 U	0.24 U	1.2 U

Notes:
U - Constituent was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
J - Estimated concentration. The result is below the quantitation limit but above the MDL.
UJ - Constituent was analyzed, but was not detected above the sample reporting limit; and the reporting limit is approximate.
NE - Standard not established

TABLE 3
EMERGING CONTAMINANTS
GROUNDWATER ANALYTICAL RESULTS
PERIODIC REVIEW REPORT
BARTLETT TREE EXPERTS COMPANY
WESTBURY, NEW YORK

Analytical Method	Constituent	NYSDOH Recommendation Maximum Contaminant Level	Location iltered Samp Units	MW-1S Unfiltered 5/31/2018	DUP-20180531 Unfiltered 5/31/2018	MW-2D Unfiltered 5/31/2018	MW-3 Unfiltered 5/31/2018	MW-4 Unfiltered 5/31/2018
Pesticides								
SW8260SIM	1,4-Dioxane	1	µg/L	0.2000 U	0.2 U	0.20 U	0.2000 J	0.2 U
PFAS in Water								
USEPA537	6:2 Fluorotelomersulfonate	10	ng/L	2.2	2.1	1 U	0.91 U	0.91 U
USEPA537	8:2 Fluorotelomersulfonate	10	ng/L	1.8 U	1.8 U	2 U	1.8 U	1.8 U
USEPA537	NETFOSAA	10	ng/L	0.91 U	0.9 U	1 U	0.91 U	0.91 U
USEPA537	NMEFOSAA	10	ng/L	0.91 U	0.9 U	1 U	0.91 U	0.91 U
USEPA537	Perfluorobutanesulfonate	10	ng/L	6.5	6.5	5	2.3	2.5
USEPA537	Perfluorobutanoic Acid	10	ng/L	2.4 J	2.5 J	**17**	5.3 J	**11**
USEPA537	Perfluorodecanesulfonate	10	ng/L	0.74 J	0.68 J	0.6 U	0.54 U	0.55 U
USEPA537	Perfluorodecanoic Acid	10	ng/L	1.8	1.8	1.9 J	5.1	1.1 J
USEPA537	Perfluorododecanoic Acid	10	ng/L	0.31 J	0.34 J	0.3 U	0.42 J	0.27 U
USEPA537	Perfluoroheptanesulfonate	10	ng/L	0.36 U	0.42 J	0.77 J	0.36 U	0.36 U
USEPA537	Perfluoroheptanoic Acid	10	ng/L	1.2	1.3	**12**	4.8	**18**
USEPA537	Perfluorohexanesulfonate	10	ng/L	0.62 J	0.63 J	5.9	0.7 J	0.5 J
USEPA537	Perfluorohexanoic Acid	10	ng/L	3.1	3.3	**19**	**12**	**19**
USEPA537	Perfluorononanoic Acid	10	ng/L	4.5	4.6	7.8	3.2	**15**
USEPA537	Perfluorooctanesulfonamide	10	ng/L	0.91 U	0.9 U	1.0 J	0.91 U	0.91 U
USEPA537	Perfluoro-Octanesulfonate	10	ng/L	**74 J**	**70 J**	**38 J**	**32 J**	**16 J**
USEPA537	Perfluorooctanoic Acid	10	ng/L	5.1	5	**30**	2.4	3.5
USEPA537	Perfluoropentanoic Acid	10	ng/L	6.4	6.1	**25**	**24**	**55**
USEPA537	Perfluorotetradecanoic Acid	10	ng/L	0.27 U	0.27 U	0.3 U	0.27 U	0.27 U
USEPA537	Perfluorotridecanoic Acid	10	ng/L	0.27 U	0.27 U	0.3 U	0.27 U	0.27 U
USEPA537	Perfluoroundecanoic Acid	10	ng/L	1.5 J	1.5 J	0.4 U	1 J	0.36 U

Notes:
U - Constituent was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
J - Estimated concentration. The result is below the quantitation limit but above the MDL.
DUP-20180531 is a duplicate sample of MW-1S

TABLE 4
POTENTIAL INDOOR AIR VOC SOURCES
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Table 4. Potential Indoor VOC Sources			
Item No.	Description	PID Reading (ppm)	Potential VOC Source (Y/N)
1	Various gasoline-powered equipment located throughout ground floor, including chainsaws, line trimmers, truck, gasoline cans, kerosene can.	max 1.2	Y
2	Valvoline Crimson heavy duty grease, contains lithium-12-hydroxy stearate	0	N
3	GoJo® hand cleaner (typically contains petroleum distillates)	0	Y
4	Diesel motor oil	0	N
5	Growth Products Nitro 30 (30% nitrogen fertilizer)	0	N
6	Agricultural sulfur	0	N
7	Pelleted gypsum	0	N
8	Plant food (5% iron,5% maganese)	0	N
9	Glyphosate herbicide (inactive ingredients not identified)	0	?
10	Spray indicator coloring (ingredients not identified)	0	?
11	Chainsaw bar oil, motor oils, hydraulic fluids	0	N

TABLE 5
SVI MONITORING RESULTS
2018-2019 HEATING SEASON
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Table 5. Soil Vapor Intrusion Monitoring Results

Constituent	NYSDOH Air Guideline (1)	OSWER Target Soil Gas Concentration (3)	OSWER Target Indoor Air Concentration (2)	Sample ID	AA-01	IA-01	SV-01
				Sample Date	12/5/2018	12/5/2018	12/5/2018
				Units			
1,1,1,2-Tetrachloroethane	--	17	1.7	µg/m^3	1 U	1.4 U	1 U
1,1,1-Trichloroethane	--	22000	2200	µg/m^3	0.65 U	0.9 U	5.7
1,1,2,2-Tetrachloroethane	--	2.1	0.21	µg/m^3	1 U	1.4 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	--	22000	2200	µg/m^3	0.84 U	1.2 U	0.84 U
1,1,2-Trichloroethane	--	0.88	0.088	µg/m^3	0.65 U	0.9 U	0.65 U
1,1-Dichloroethane	--	77	7.7	µg/m^3	0.36 U	0.5 U	0.36 U
1,1-Dichloroethene	--	880	88	µg/m^3	0.56 U	0.76 U	0.56 U
1,2,3-Trichloropropane	--	1.3	0.13	µg/m^3	0.84 U	1.2 U	0.84 U
1,2,4-Trimethylbenzene	--	260	26	µg/m^3	3.4 J	9.8 J	1.5 J
1,2-Dibromoethane (EDB)	--	0.2	0.02	µg/m^3	1 U	1.4 U	1 U
1,2-Dichlorobenzene	--	880	88	µg/m^3	1.2 U	1.7 U	1.2 U
1,2-Dichloroethane	--	4.7	0.47	µg/m^3	0.32 U	0.45 U	0.32 U
1,2-Dichloropropane	--	18	1.8	µg/m^3	0.6 U	0.83 U	0.6 U
1,2-Dichlorotetrafluoroethane (Freon 114)	--	--	--	µg/m^3	0.84 U	1.2 U	0.84 U
1,2-Dimethylbenzene (o-Xylene)	--	440	44	µg/m^3	2.7 J	7.5	0.84 J
1,3,5-Trimethylbenzene (mesitylene)	--	260	26	µg/m^3	1.6 U	2.3 J	1.6 U
1,3-Butadiene	--	4.1	0.41	µg/m^3	0.38 U	0.52 U	1.2 J
1,3-Dichlorobenzene	--	--	--	µg/m^3	1.1 U	1.6 U	1.1 U
1,4-Dichlorobenzene	--	11	1.1	µg/m^3	1 U	1.4 U	1 U
2,2,4-Trimethylpentane	--	--	--	µg/m^3	4.5 J	12	0.74 J
2-Butanone (MEK)	--	22000	2200	µg/m^3	1.7 J	4.9	9.5
2-Hexanone	--	130	13	µg/m^3	0.74 U	1 U	0.74 U
3-Chloropropene (allyl chloride)	--	4.4	0.44	µg/m^3	0.47 U	0.65 U	0.47 U
4-Ethyltoluene	--	--	--	µg/m^3	1.1 J	4.2 J	0.88 U
4-Methyl-2-pentanone (MIBK)	--	13000	1300	µg/m^3	0.61 U	0.84 U	0.61 U
Acetone	--	140000	14000	µg/m^3	5.4 J	15 J	46
Benzene	--	16	1.6	µg/m^3	**2.2 J**	**6.3**	1.6 J

TABLE 5
SVI MONITORING RESULTS
2018-2019 HEATING SEASON
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Table 5. Soil Vapor Intrusion Monitoring Results

Constituent	NYSDOH Air Guideline (1)	OSWER Target Soil Gas Concentration (3)	OSWER Target Indoor Air Concentration (2)	Sample ID	AA-01	IA-01	SV-01
				Sample Date	12/5/2018	12/5/2018	12/5/2018
				Units			
Bromobenzene	--	260	26	µg/m^3	0.64 U	0.88 U	0.64 U
Bromodichloromethane	--	3.3	0.33	µg/m^3	0.8 U	1.1 U	0.8 U
Bromoform	--	110	11	µg/m^3	1.8 U	2.4 U	1.8 U
Bromomethane	--	22	2.2	µg/m^3	0.7 U	0.96 U	0.7 U
Carbon disulfide	--	3100	310	µg/m^3	0.4 U	0.56 U	0.81 J
Carbon tetrachloride	--	20	2	µg/m^3	0.88 U	1.2 U	1.4 J
Chlorobenzene	--	220	22	µg/m^3	0.6 U	0.82 U	0.6 U
Chlorodifluoromethane	--	220000	22000	µg/m^3	0.53 U	0.73 U	0.53 U
Chloroethane	--	--	--	µg/m^3	0.5 U	0.69 U	0.5 U
Chloroform	--	5.3	0.53	µg/m^3	0.45 U	0.62 U	4.5 J
Chloromethane	--	390	39	µg/m^3	0.5 U	0.68 U	0.5 U
cis-1,2-Dichloroethene	--	--	--	µg/m^3	0.48 U	0.65 U	0.48 U
cis-1,3-Dichloropropene	--	--	--	µg/m^3	0.45 U	0.62 U	0.45 U
Dibromochloromethane	--	--	--	µg/m^3	1.1 U	1.5 U	1.1 U
Dibromomethane	--	18	1.8	µg/m^3	1 U	1.4 U	1 U
Dichlorodifluoromethane (Freon 12)	--	440	44	µg/m^3	0.95 J	2.9 J	6.3
Dichlorofluoromethane	--	--	--	µg/m^3	0.46 U	0.64 U	0.46 U
Ethylbenzene	--	49	4.9	µg/m^3	2 J	**5.6 J**	0.83 U
Hexachloroethane	--	11	1.1	µg/m^3	2.6 U	3.6 U	2.6 U
Isopropylbenzene (Cumene)	--	1800	180	µg/m^3	1.2 U	1.6 U	1.2 U
Methylene chloride	60	2600	260	µg/m^3	0.87 U	1.2 U	0.87 U
n-Heptane	--	1800	180	µg/m^3	2 J	5.5 J	0.94 U
n-Hexane	--	3100	310	µg/m^3	4.5	13	2.1 J
n-Pentane (C5)	--	4400	440	µg/m^3	11	33	2.6 J
Octane	--	--	--	µg/m^3	1.9 U	3.2 J	1.9 U
Styrene	--	4400	440	µg/m^3	0.85 U	1.2 U	0.85 U
tert-Butyl methyl ether (MTBE)	--	470	47	µg/m^3	0.54 U	0.74 U	0.54 U

TABLE 5
SVI MONITORING RESULTS
2018-2019 HEATING SEASON
PERIODIC REVIEW REPORT
BARTLETT TREE COMPANY SITE NO. 0130074

Table 5. Soil Vapor Intrusion Monitoring Results

Constituent	NYSDOH Air Guideline (1)	OSWER Target Soil Gas Concentration (3)	OSWER Target Indoor Air Concentration (2)	Sample ID	AA-01	IA-01	SV-01
				Sample Date	12/5/2018	12/5/2018	12/5/2018
				Units			
Tetrachloroethene (PCE)	30 (4)	180	18	µg/m^3	1.7 U	2.7 J	**450**
Toluene	--	22000	2200	µg/m^3	8.4	23	2.2 J
trans-1,2-Dichloroethene	--	--	--	µg/m^3	0.34 U	0.47 U	0.34 U
trans-1,3-Dichloropropene	--	--	--	µg/m^3	0.54 U	0.75 U	0.54 U
Trichloroethene (TCE)	5	8.8	0.88	µg/m^3	0.97 U	1.3 U	2.3 J
Trichlorofluoromethane (Freon 11)	--	--	--	µg/m^3	0.84 U	1.4 J	2 J
Vinyl chloride	--	28	2.8	µg/m^3	0.31 U	0.42 U	0.31 U
Xylenes, m & p	--	440	44	µg/m^3	7.5 J	22	1.4 J

NOTES
1) Updated values as of May 2017 obtained from http://health.ny.gov/environmental/indoors/vapor_intrusion/update.htm
2) OSWER Target Target Indoor Air Concentration (November 2018) is the lower of the EPA Region 2 Composite Worker Air Screening values for Carcinogenic and Non-Carcinogenic risks.
3) OSWER Target Shallow Gas Concentration is 10 times the OSWER Target Target Indoor Air Concentration (November 2018)
4) In September 2013 NYSDOH lowered its guideline for tetrachloroethene in ambient air from 100 mcg/m^3 to 30 mcg/m^3 and its recommended immediate action level from 1000 mcg/m^3 to 300 mcg/m^3.
Concentrations in bold font and solid border exceed the applicable screening level.
U - Constituent was not detected above the associated detection limit.
J - Result is considered an estimate.
-- - No value established

Figures

N

Grate=104.28
Storm MH
Concrete Curb
Wood Fence
Edge of Pavement
0.2'
0.4'
FORMER OPEN SHED
FORMER DRYWELL 1
MASONRY WAREHOUSE
Chain link Fence
FORMER PESTICIDE STORAGE LOCKER
FORMER GARAGE
Remains of Foundation
LOT 786
LOT 207
LOT 787
LOT 792
LOT 206
Paved Parking Lot
DRYWELL 3
TEST PIT 2
MACADAM PATCH
Enclosed Pesticide Storage Area
Gate
Drain & Lower Entrance (Under Landing)
2 Story Frame Building
CASTLE INDUSTRIES, INC.
Paved Driveway
No. 345
No. 349
4.9'
WV
SCO
Gas Box
ALL SEASONS TAXI
Concrete Curb
Drop Curb
Concrete Sidewalk
UNION AVENUE
Sanitary MH
Rim=98.22
Concrete Curb

0 15 30
Feet

PAVEMENT EDGE
103 GROUND SURFACE ELEVATION (FT., NGVD)
PROPERTY LINE
FORMER STUCTURE LOCATION (APPROXIMATE, DEMOLISHED JULY 2008)

FIGURE 1

SITE PLAN

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE
February 2019

PROJECT NUMBER
152225

Brown AND Caldwell

P:\GIS\Bartlett_Tree\Dry_Well_1_IRM\Fig_1-2_Site_Plan_113010.mxd

N

VILLAGE OF WESTBURY
PARKING LOT

Building

Chain link Fence

Grate=104.28

Storm MH

FORMER MW-1D*

MW-1S

105

5.3'

106

Concrete Curb

Wood Fence

0.4'

0.2'

Regional Groundwater Flow

Range of Local Shallow Groundwater Flow

FORMER DRYWELL 1

MASONRY WAREHOUSE

MW-4

in link Fence

MW-2D

MW-2S**

MW-3

0.4'

MW-5

LOT 786

LOT 207

LOT 787

LOT 206

Legend

MONITORING WELL

PROPERTY LINE

0 10 20 Feet

* Monitoring well MW-1D decommissioned in 2017.

** Monitoring well MW-2S was damaged in May 2018 and rendered unreliable.

P:\GIS\Bartlett_Tree\2010_Data-Summary_Report\Figure_-GW_4_26_10.mxd

FIGURE 2

GROUNDWATER MONITORING WELL NETWORK

DATE
February 2019

PROJECT NUMBER
152225

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

Brown AND Caldwell

N

VILLAGE OF WESTBURY
PARKING LOT

Building

Chain link Fence

Grate=104.28
Storm MH

MW-1S
(69.31)

69.2
69.0
68.8
68.6

105
106

Concrete Curb

Wood Fence

0.4'
0.2'
0.4'

69.2

Regional
Groundwater
Flow

Range of
Local Shallow
Groundwater
Flow

FORMER
DRYWELL 1

MASONRY
WAREHOUSE

69.0

MW-4
(68.58)

in link Fence

MW-2D

MW-2S
(69.56)(1)

MW-3
(68.89)

MW-5
(68.51)

68.8

68.6

LOT 786

LOT 207

LOT 787

LOT 206

0 10 20
Feet

Legend

- MONITORING WELL
- PAVEMENT EDGE
- GROUND SURFACE ELEVATION CONTOUR (FT., NGVD)
- PROPERTY LINE
- WATER ELEVATION CONTOUR (FT., NGVD) DASHED WHERE INFERRED
- GENERALIZED DIRECTION OF GROUNDWATER FLOW
- 68.5 WATER TABLE ELEVATION (FT., NGVD)
- (1) DEPTH TO WATER IN MW-2S DEEMED NOT REPRESENTATIVE OF WATER TABLE ELEVATION DUE TO WELL DAMAGE AND SEDIMENT ACCUMULATION IN WELL. SEE REPORT TEXT FOR MORE INFORMATION.

FIGURE 3

WATER TABLE CONTOUR MAP
MAY 30, 2018

	DATE	PROJECT NUMBER
BARTLETT TREE COMPANY SITE WESTBURY, NEW YORK	August 2018	152225

Brown AND Caldwell

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N

VILLAGE OF WESTBURY
PARKING LOT

Building

Chain link Fence

Grate=104.28
Storm MH

MW-1S
(68.55)

68.5
68.4
68.3
68.2
68.1
68.0
67.9
67.8

Concrete Curb

Wood Fence

0.4'

0.2'

68.5

68.4

Regional
Groundwater
Flow

Range of
Local Shallow
Groundwater
Flow

FORMER
DRYWELL 1

MASONRY
WAREHOUSE

68.3

68.2

MW-4
(67.79)

Chain link Fence

MW-2D

MW-2S
(67.28)(1)

MW-3
(68.14)

68.1

0.4'

68.0

MW-5
(67.73)

67.9

67.8

LOT 786

LOT 207

LOT 787

LOT 206

0 10 20
Feet

Legend

- MONITORING WELL
- PAVEMENT EDGE
- GROUND SURFACE ELEVATION CONTOUR (FT., NGVD)
- PROPERTY LINE
- WATER ELEVATION CONTOUR (FT., NGVD) DASHED WHERE INFERRED
- GENERALIZED DIRECTION OF GROUNDWATER FLOW
- 68.5 WATER TABLE ELEVATION (FT., NGVD)
- (1) DEPTH TO WATER IN MW-2S DEEMED NOT REPRESENTATIVE OF WATER TABLE ELEVATION DUE TO WELL DAMAGE AND SEDIMENT ACCUMULATION IN WELL. SEE REPORT TEXT FOR MORE INFORMATION.

FIGURE 4

WATER TABLE CONTOUR MAP
SEPTEMBER 24, 2018

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE
January 2019

PROJECT NUMBER
152225

Brown AND Caldwell

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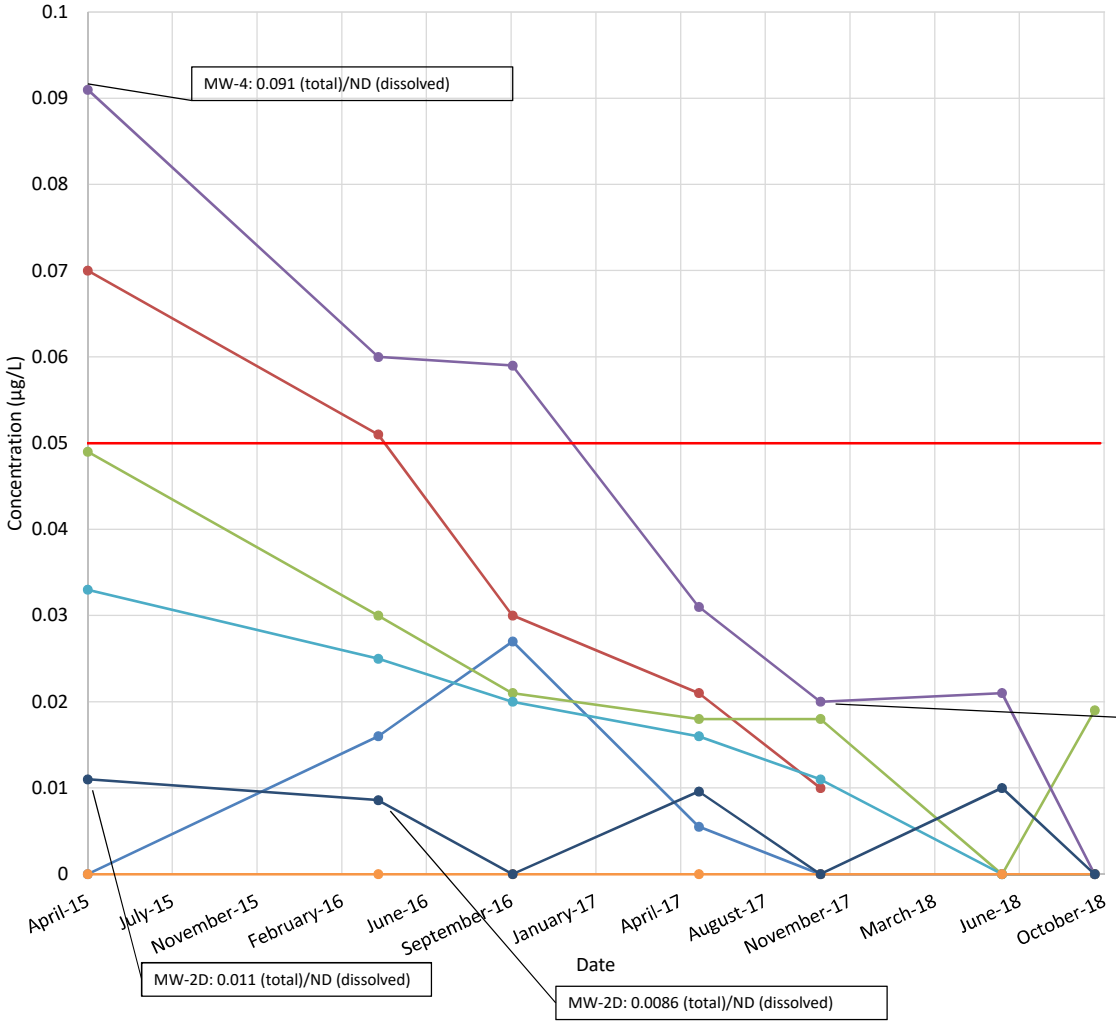
152225

Total Chlordane, alpha



Notes:
Concentrations of non-detect(below method detection limit) are plotted as 0 µg/L.

ND – non-detect

FIGURE 5a

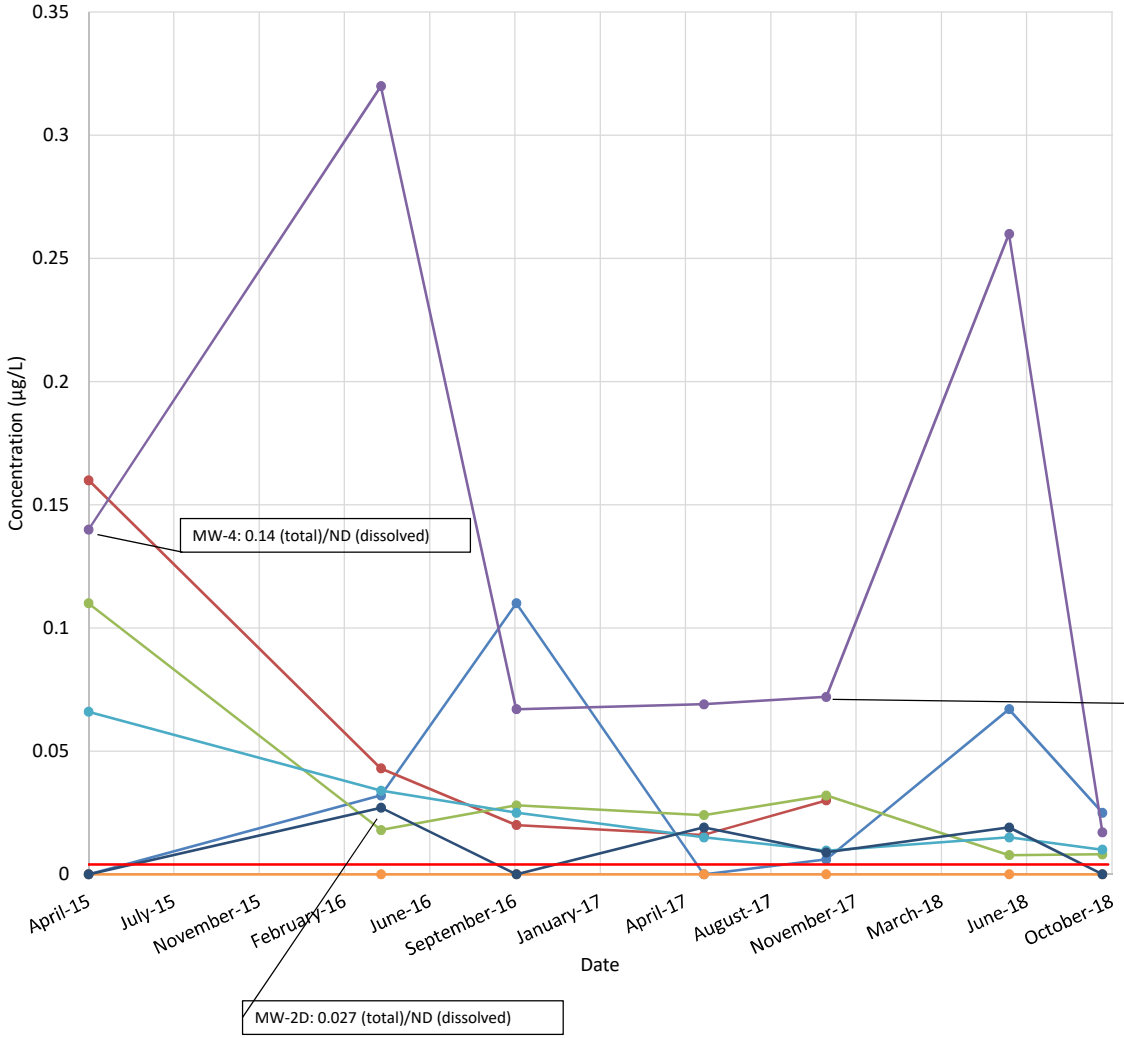
Chlordane, alpha Trend Plot
All Site Monitoring Wells
(April 2015 – September 2018)

BARTLETT TREE EXPERTS
345 UNION AVENUE
WESTBURY, NY

Brown AND Caldwell

152225

Total Dieldrin



Legend

- MW-1S
- MW-2S
- MW-3
- MW-4
- MW-5
- MW-1D
- MW-2D
- Part 703 Standard

Notes:
Concentrations of non-detect(below method detection limit) are plotted as 0 µg/L.

ND – non-detect

FIGURE 5b

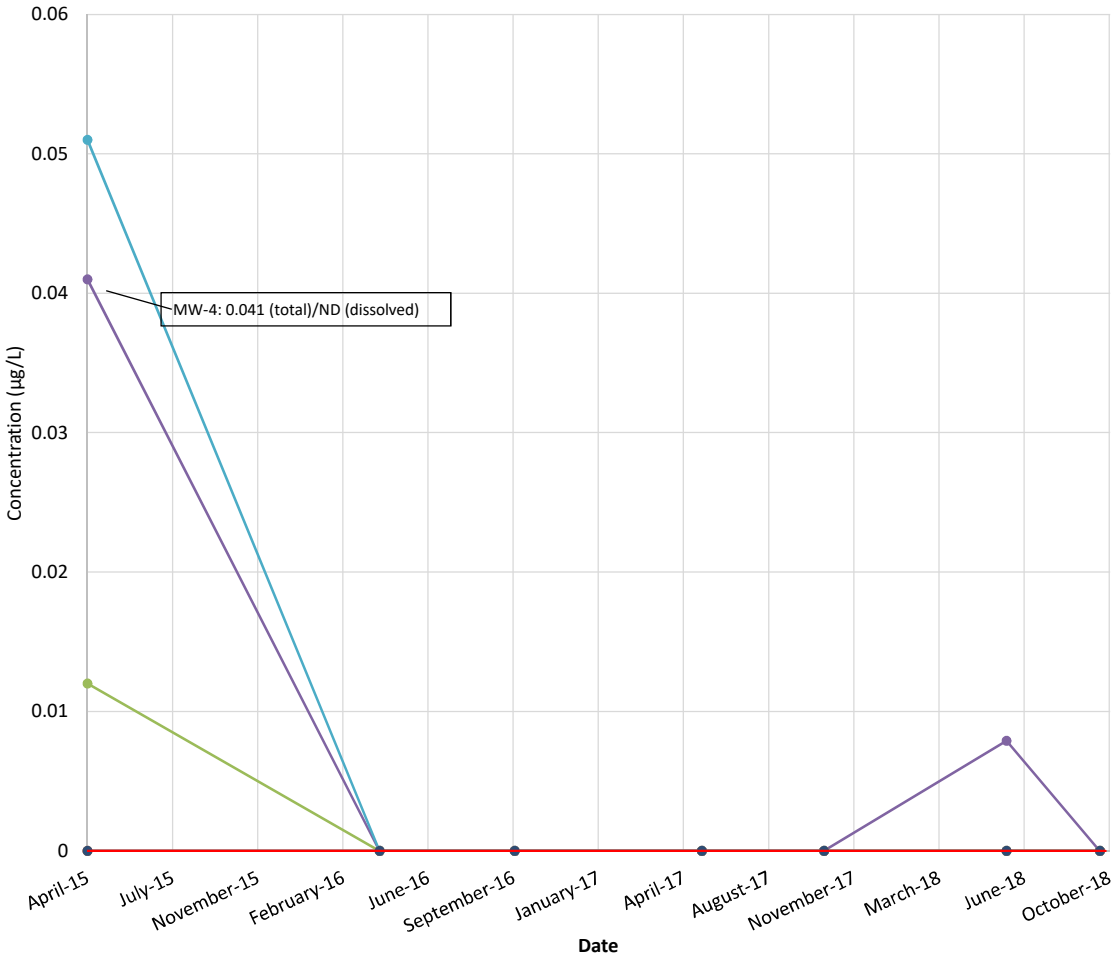
Dieldrin Trend Plot
All Site Monitoring Wells
(April 2015 – September 2018)

BARTLETT TREE EXPERTS
345 UNION AVENUE
WESTBURY, NY

Brown AND Caldwell

152225

Total Endrin



Legend

- MW-1S
- MW-2S
- MW-3
- MW-4
- MW-5
- MW-1D
- MW-2D
- Part 703 Standard

Notes:
Concentrations of non-detect(below method detection limit) are plotted as 0 µg/L.

ND – non-detect

Value of 0 for NYS Part 703 standard indicates the standard for this constituent is non-detect.

FIGURE 5c

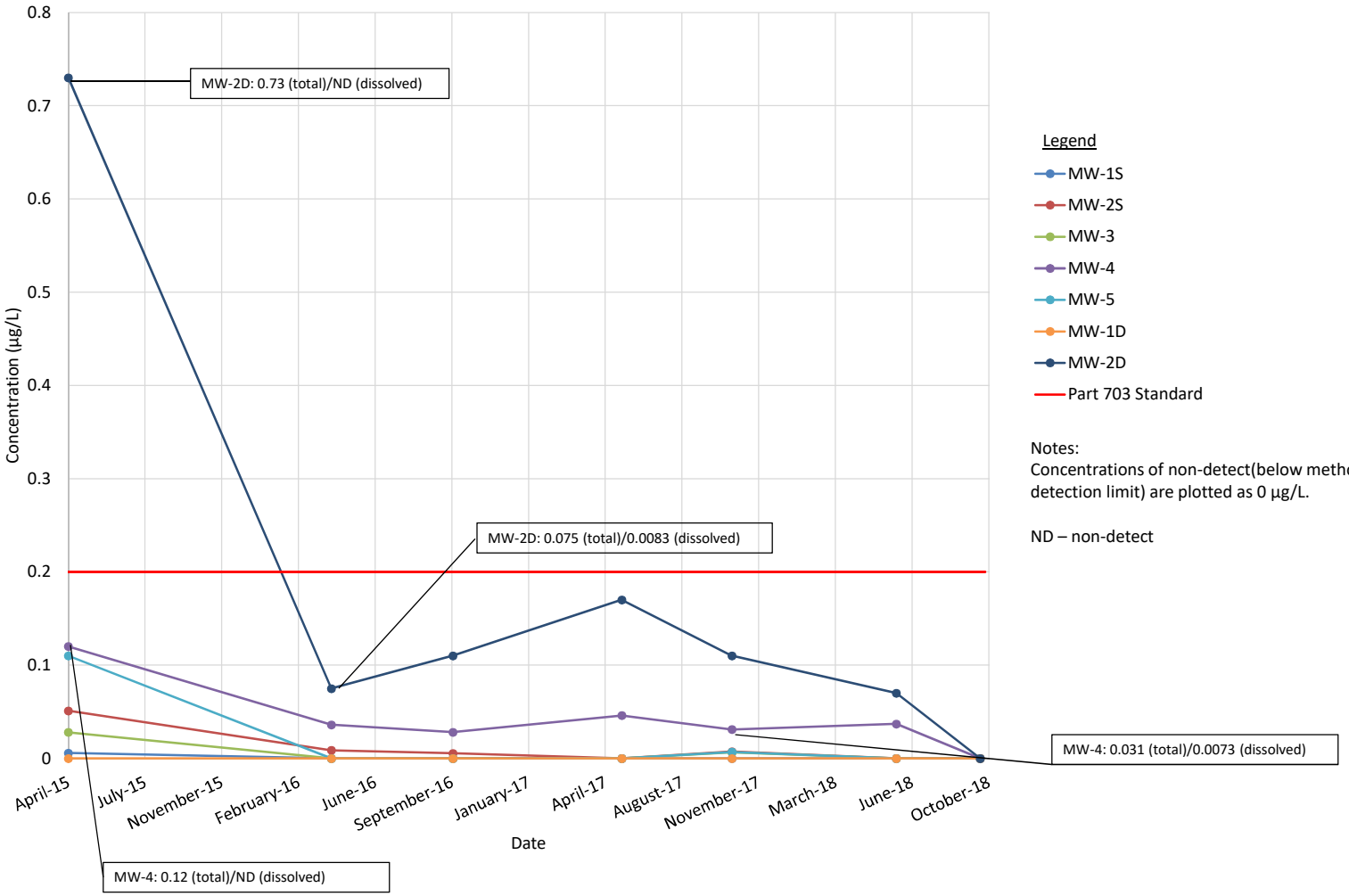
Endrin Trend Plot
All Site Monitoring Wells
(April 2015 – September 2018)

BARTLETT TREE EXPERTS
345 UNION AVENUE
WESTBURY, NY

Brown AND Caldwell

152225

Total 4,4'-DDT



Notes:
Concentrations of non-detect(below method detection limit) are plotted as 0 µg/L.

ND – non-detect

FIGURE 5d

4,4'-DDT Trend Plot
All Site Monitoring Wells
(April 2015 –September 2018)

BARTLETT TREE EXPERTS
345 UNION AVENUE
WESTBURY, NY

Brown AND Caldwell

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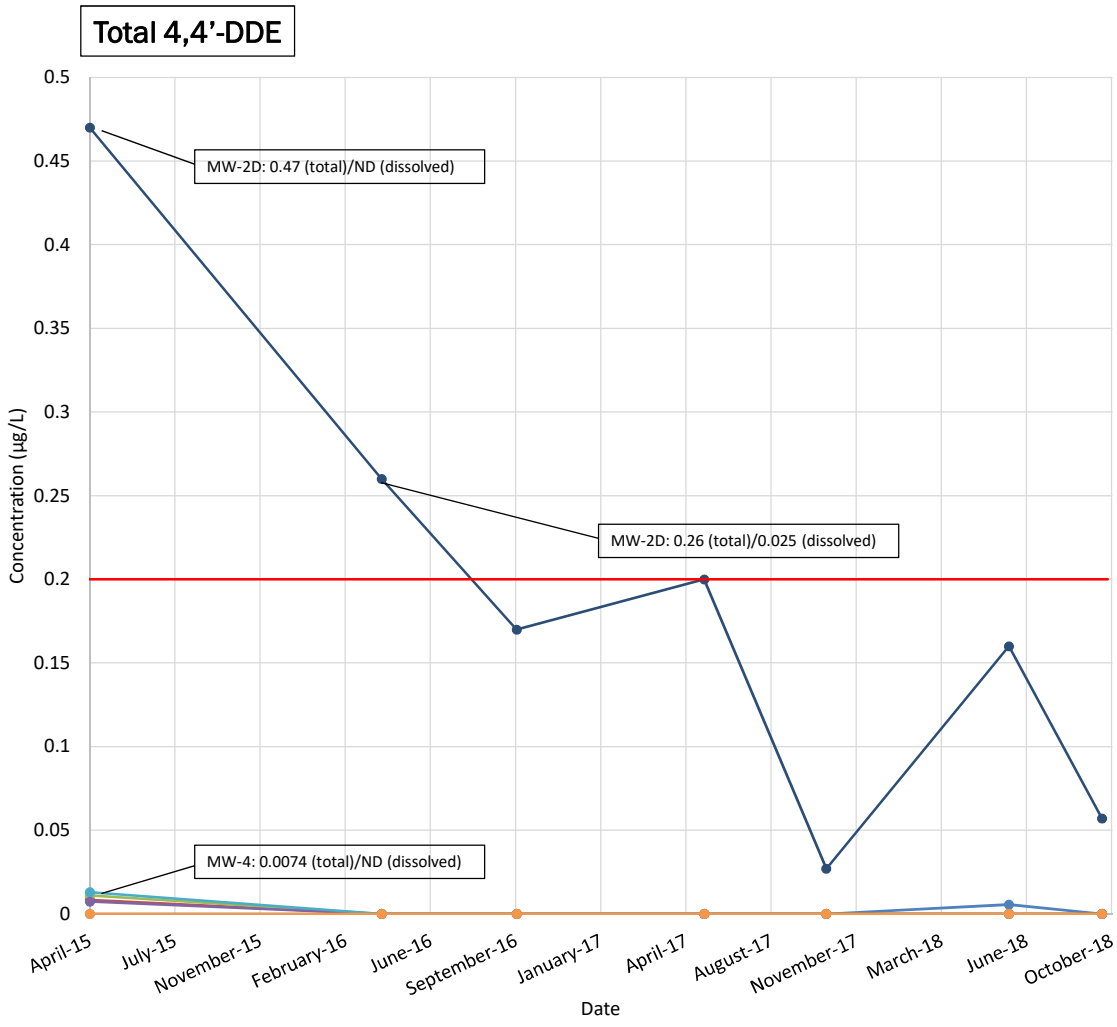
152225



Legend
- MW-1S
- MW-2S
- MW-3
- MW-4
- MW-5
- MW-1D
- MW-2D
- Part 703 Standard

Notes:
Concentrations of non-detect(below method detection limit) are plotted as 0 µg/L.

ND – non-detect

FIGURE 5e

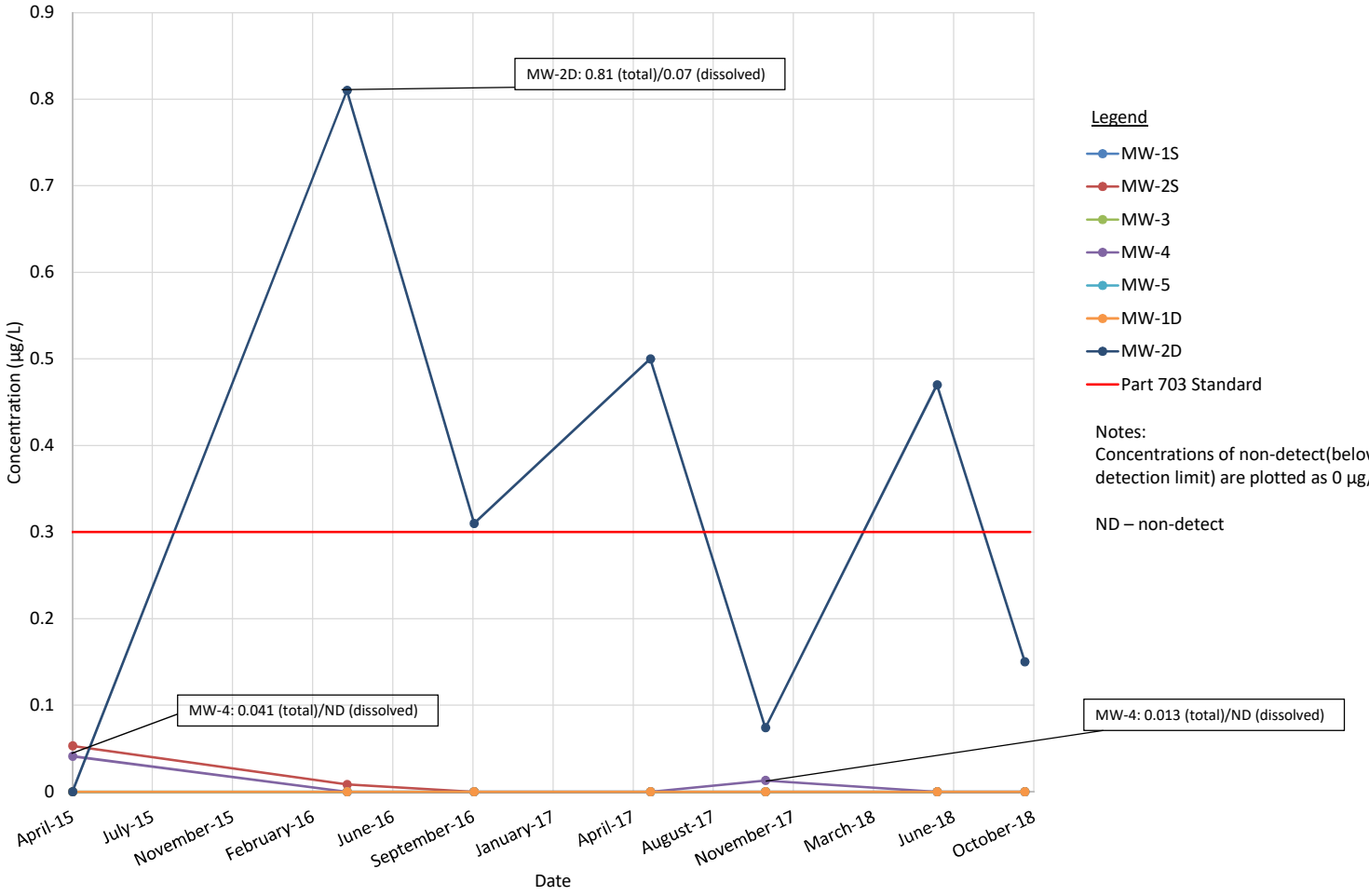
4,4'-DDE Trend Plot
All Site Monitoring Wells
(April 2015 – September 2018)

BARTLETT TREE EXPERTS
345 UNION AVENUE
WESTBURY, NY

Brown AND Caldwell

152225

Total 4,4'-DDD



Legend

- MW-1S
- MW-2S
- MW-3
- MW-4
- MW-5
- MW-1D
- MW-2D
- Part 703 Standard

Notes:
Concentrations of non-detect(below method detection limit) are plotted as 0 µg/L.

ND – non-detect

FIGURE 5f

4,4'-DDD Trend Plot
All Site Monitoring Wells
(April 2015 – September 2018)

BARTLETT TREE EXPERTS
345 UNION AVENUE
WESTBURY, NY

Brown AND Caldwell

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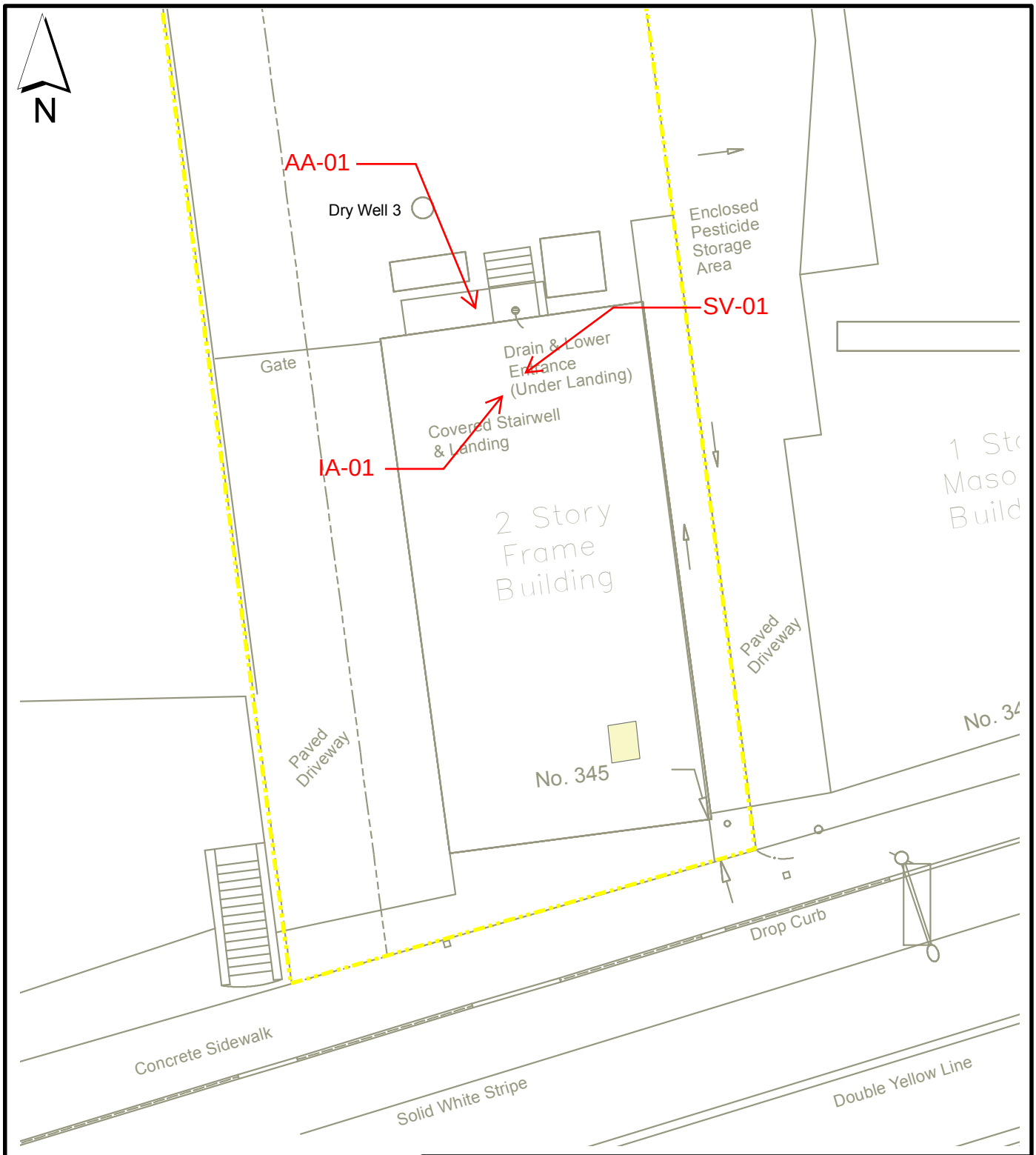

Legend

- Approximate Location of Mechanics Pit
- Site_Boundary

0 15 30 Feet

FIGURE 6
LOCATIONS OF SVI SAMPLES
DECEMBER 5, 2018

BARTLETT TREE
COMPANY SITE
WESTBURY, NASSAU COUNTY
NEW YORK, 11590

DATE
February 2019

PROJECT NUMBER
152225

Brown AND Caldwell

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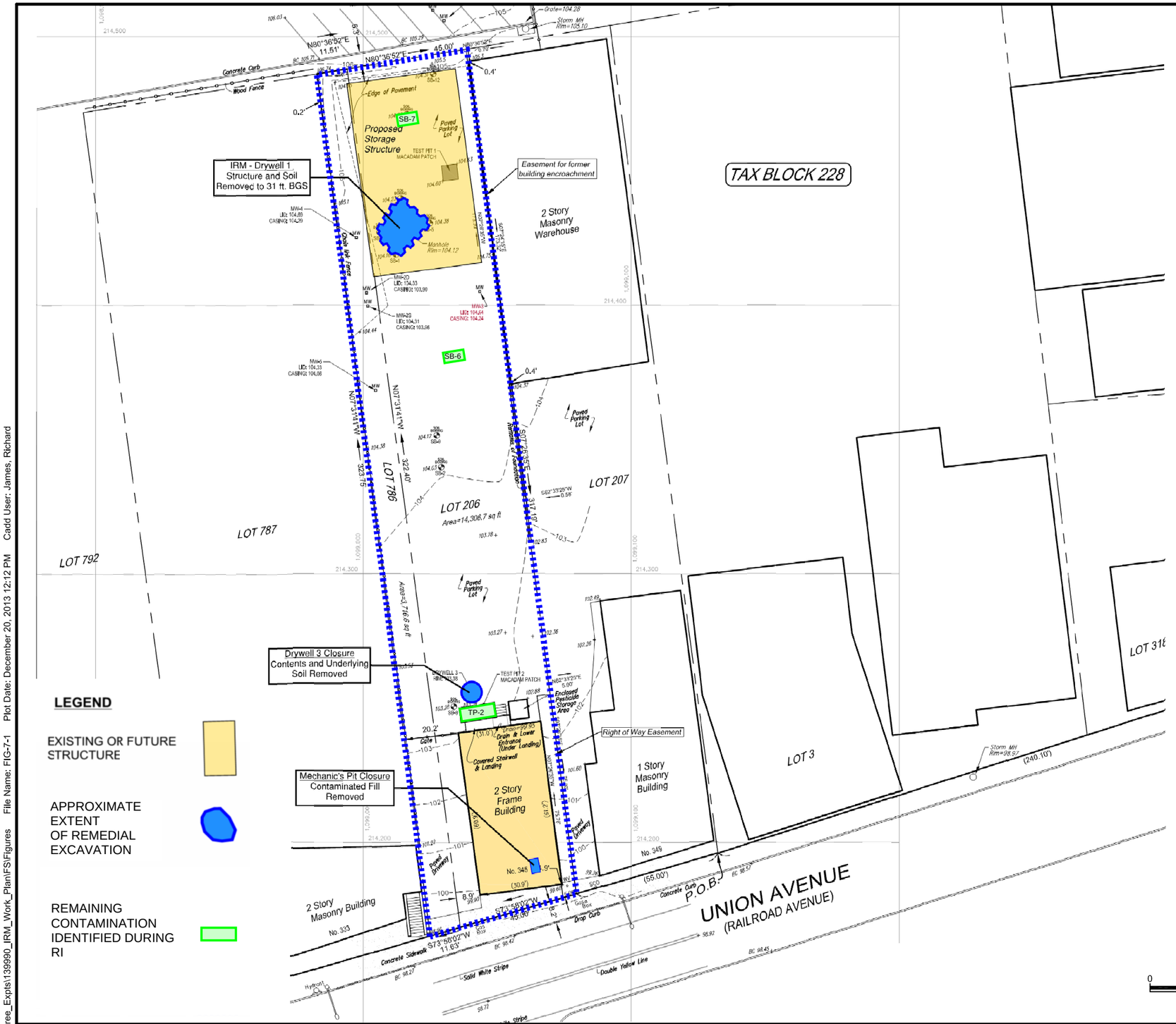
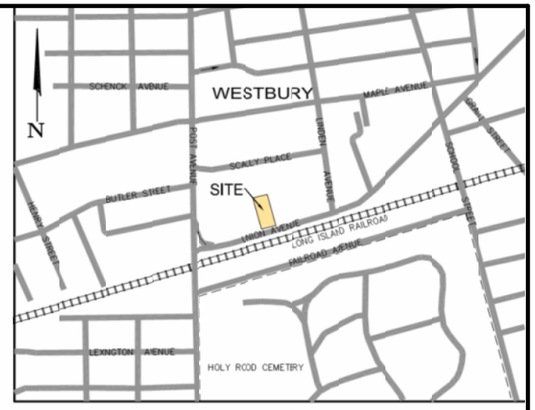




KEY MAP
N.T.S.

LEGEND

EXISTING OR FUTURE STRUCTURE

APPROXIMATE EXTENT OF REMEDIAL EXCAVATION

REMAINING CONTAMINATION IDENTIFIED DURING RI

0 20 40
SCALE IN FEET

NOTES, certificaton continued

1. BOUNDARIES SHOWN ARE THE RESULT OF AN ACTUAL FIELD SURVEY BASED ON AVAILABLE MAPS, DEEDS OF RECORD AND PHYSICAL EVIDENCE, BUT ARE SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS AND AGREEMENTS OF RECORD THAT AN ACCURATE AND THOROUGH TITLE SEARCH MAY DISCLOSE.
2. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR. ALL INFORMATION REGARDING RECORD EASEMENTS, ADJOINERS AND OTHER DOCUMENTS WHICH MIGHT AFFECT THE QUALITY OF TITLE TO LOT 206 AND LOT 786 SHOWN HEREON WAS GAINED FROM TITLE COMMITMENT NUMBER 142-N-2159-A AND B PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY OF NEW YORK, DATED OCT. 17, 1994.
3. HORIZONTAL DATUM BASED ON THE NEW YORK (LONG ISLAND ZONE 3104) STATE PLANE COORDINATE SYSTEM, NAD 83 US FT, VIA GLOBAL POSITIONING SYSTEMS (GPS). THE GEOGRAPHIC AND STATE PLANE COORDINATES CONTAINED HEREON WERE THE RESULT OF A SURVEY USING SINGLE FREQUENCY G.P.S. RECEIVERS AND HAVING A POSITIONAL TOLERANCE LESS THAN 7 CM AT THE 95% CONFIDENCE LEVEL. REFERENCE MONUMENTS WERE NYCI AND NY0N ON NOVEMBER 5TH, 2008..
4. VERTICAL DATUM BASED ON NGVD 29 ESTABLISHED VIA G.P.S. ON NOVEMBER 5TH, 2008 AND CONVERTED TO NGVD 29 HEIGHT USING VERTCON. TO CONVERT TO NAVD88 APPLY A CONVERSION FACTOR OF -1.12 FEET.
5. UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.
6. LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON OBVIOUS ABOVE GROUND PHYSICAL UTILITY APPURTENANCES AND ACCESSIBLE MANHOLES. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHOULD BE VERFIED BY DIGGING TEST HOLES PRIOR TO ANY DESIGN OR CONSTRUCTION. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST.

MONITORING WELL TABLE:

DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGTUDE	RIM	CASE
MW 1-S	214505.9	1099030.1	40°45'16.92"	73°35'18.55"	105.28'	104.74'
MW 1-D	214509.7	1099026.0	40°45'16.96"	73°35'18.61"	105.39'	104.93'
MW 2-S	214399.7	1099001.8	40°45'15.87"	73°35'18.93"	104.31'	103.96'
MW 2-D	214404.5	1099001.2	40°45'15.92"	73°35'18.94"	104.33'	103.90'
MW 3	214404.9	1099043.5	40°45'15.92"	73°35'18.39"	104.64'	104.24'
MW 4	214425.1	1098997.5	40°45'16.12"	73°35'19.98"	104.69'	104.29'
MW-5	214368.2	1099004.6	40°45'15.56"	73°35'18.89"	104.33'	104.06'

REFERENCES:

1. MAP ENTITLED "MAP OF PROPERTY AT WESTBURY, N.Y." PREPARED BY NELSON B BALDWIN, LIC. LAND SURVEYORS, WESTBURY, N.Y. AND DATED FEB. 5, 1963 AND LAST REVISED JUNE 17, 1964.
2. MAP ENTITLED "MAP OF LOT LINE CHANGE, SITUATE WESTBURY NASSAU COUNTY, N.Y." PREPARED BY EIS ASSOCIATES, ENGINNERING-LAND SURVEYING, AND DATED 12-17-94 AND 12-22-94.
3. LAND AND TAX MAP OF SECTION 10-BLOCK 228, SHEET 1 OF 1, LAST REVISED OCTOBER 19,2005.

Brown AND Caldwell	BROWN AND CALDWELL ASSOCIATES ALBANY, NEW YORK DATE: December 20, 2013		BARTLETT TREE COMPANY SITE #1-30-074 345 UNION AVENUE WESTBURY, NASSAU COUNTY, NEW YORK	EXTENT OF REMEDIAL EXCAVATIONS AND REMAINING SOIL CONTAMINATION FIGURE 7

Path: P:\Bartlett_Tree_Expts\139990_IRM_Work_Plan\FS\Figures File Name: FIG-7-1 Plot Date: December 20, 2013 12:12 PM Cadd User: James, Richard

Appendix A: Certificate of Completion and Site Reclassification From 2 to 4

CERTIFICATE OF COMPLETION

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Office of the Director
625 Broadway, 12th Floor, Albany, New York 12233-7011
P: (518) 402-9706 | F: (518) 402-9020
www.dec.ny.gov

DEC 01 2015

FA Bartlett Tree Expert Company
Attn: Mr. David Marren, Esq.
13768 Hamilton Road
Charlotte, NC 28278

Re: Certificate of Completion and Registry Reclassification from 2 to 4
Site Name: Bartlett Tree Company
Site No.130074
Village of Westbury, Town of N. Hempstead
Nassau County

Dear Mr. Bartlett:

Congratulations on having satisfactorily completed the remedial program at the Bartlett Tree Company Site. Enclosed please find an original, signed Certificate of Completion. This also results in the New York State Department of Environmental Conservation's (DEC) reclassification of the above-referenced site on the Registry of Inactive Hazardous Waste Disposal Sites ("Registry") from Class 2 to Class 4. The effective date of the classification change shall be 20 days from the date of this letter.

Please note that you are required to perform the following tasks:

- If you are the site owner, you must record a notice of the COC in the recording office for the County where any portion of the site is located within 30 days of issuance of the COC; or if you are a prospective purchaser of the site, you must record a notice of the COC within 30 days of the date that you acquire the site. If you are a non-owner, you must work with the owner to assure the notice of COC is recorded within the time frame specified. In all cases, proof of filing must be provided to the Department within 30 days of receipt. A standard notice form is attached to this letter.

- Place the notice of the COC in the document repository for the site within 10 days of issuance of the COC; and

- Implement the DEC-approved Site Management Plan (SMP) which details the activities necessary to assure the performance, effectiveness, and protectiveness of the remedial program. You must report the results of these activities to DEC in a Periodic Review Report (PRR) which also includes any required IC/EC certifications. The site IC/ECs are identified on the attached Site Management Form. The first PRR including the certification of the IC/ECs is due to DEC in March 2017.

DEC will prepare and distribute to the Site Contact List a fact sheet describing the institutional and engineering controls that are required at the site, and notifications relating to the reclassification or delisting of the site on the Registry.

If you have any questions regarding the reclassification or any of the above tasks, please contact the project manager for this site, Jamie Ascher, at (631) 444-0246 or by email at jamie.ascher@dec.ny.gov .

Sincerely,

Robert W. Schick, P.E.
Director
Division of Environmental Remediation

Enclosures

ec: Robert Bartlett, Jr. – The Bartlett Realty Company, Inc.
Krista Anders, DOH
Anthony Perretta, DOH
Jim Harrington, DEC
Walter Parish, DEC
Jamie Ascher, DEC
Rosalie K. Rusinko, DEC

NYSDEC STATE SUPERFUND PROGRAM (SSF)

CERTIFICATE OF COMPLETION

CERTIFICATE HOLDER(S):

Name	**Address**
FA Bartlett Tree Expert Company	13768 Hamilton Rd., Charlotte, NC 28278

SITE INFORMATION

Site No.: 130074 **Site Name:** Bartlett Tree Company
Order on Consent: Index No. W1-1091-06-08 **Order Execution Date:** April 20, 2007
Site Owner: The Bartlett Realty Company, Inc.
Street Address: 345 Union Avenue
Municipality: Westbury **County:** Nassau **DEC Region:** 1
Site Size: 0.414 Acres
Tax Map Identification Numbers: 10-228-206, 10-228-786

A description of the property subject to this Certificate is attached as Exhibit A and a site survey is attached as Exhibit B.

CERTIFICATE ISSUANCE

This Certificate of Completion, hereinafter referred to as the "Certificate," is issued pursuant to 6 NYCRR §375-1.9.

This Certificate has been issued upon satisfaction of the Commissioner, following review by the Department of the final engineering report and data submitted pursuant to the Order on Consent as well as any other relevant information regarding the Site, that the applicable remediation requirements set forth in the Environmental Conservation Law (ECL) and 6NYCRR Part 375 have been or will be achieved in accordance with the time frames, if any, established in the remedial work plan.

The remedial program for the Site has achieved a cleanup level that would be consistent with the following categories of uses:

Allowable Uses under the SSF: Commercial and Industrial

The Remedial Program includes use restrictions or reliance on the long term employment of institutional or engineering controls which are contained in the approved Site Management Plan and an Environmental Easement granted pursuant to ECL Article 71, Title 36 which has been duly recorded in the Recording Office for Nassau County as Liber Book D, Pages 39-48.

LIABILITY LIMITATION

Upon issuance of this Certificate of Completion, and subject to the terms and conditions set forth herein, the Certificate holder(s) shall be entitled to the liability limitation provided in 6NYCRR §375-2.9. The liability limitation shall run with the land, extending to the Certificate holder's successors or assigns through acquisition of title to the Site and to a person who develops or otherwise occupies the Site, subject to certain limitations as set forth in 6NYCRR §375-2.9(d). The liability limitation shall be subject to all rights reserved to the State by ECL §27-1321 and any other applicable provision of law.

CERTIFICATE TRANSFERABILITY

This Certificate may be transferred to the Certificate holder's successors or assigns upon transfer or sale of the Site as provided by 6NYCRR §375-1.9(f)-(g).

CERTIFICATE MODIFICATION/REVOCATION

This Certificate of Completion may be modified or revoked by the Commissioner following notice and an opportunity for a hearing in accordance with 6NYCRR §375-1.9(e)(2) upon a finding that:

(1) the remedial party has failed to manage the controls or monitoring in full compliance with the terms of the approved remedial program;

(2) there has been a failure to comply with the terms and conditions of the order;

(3) there was a misrepresentation of a material fact tending to demonstrate that the cleanup levels were reached;

(4) the terms and conditions of any environmental easement have been intentionally violated or found to be not protective or enforceable;

(5) for good cause;

(6) environmental contamination at, on, under, or emanating from the site if, in light of such conditions, the site is no longer protective of public health or the environment, and the remedial party is not in good faith negotiating, and/or following its approval by the Department, implementing a work plan to achieve conditions at the site which are protective of public health and the environment;

(7) non-compliance with the terms of the order, the remedial work plan, site management plan, or the certificate of completion after notice of the failure and reasonable opportunity to cure has been afforded to the remedial party by the Department as provided for at paragraph 375-1.9(e)(2);

(8) fraud related to the remedial program for the site committed by the certificate holder;

(9) a finding by the Department that a change in an environmental standard, factor, or criterion upon which the remedial work plan was based renders the remedial program implemented at the site no longer protective of public health or the environment, and the remedial party is not in good faith negotiating, and/or following its approval by the Department, implementing a work plan to achieve conditions at the site which are protective of public health and the environment; or

(10) a change in the site's use subsequent to the Department's issuance of the certificate of completion, unless additional remediation is undertaken which shall meet the standard for protection of the public health and environment that applies to this site.

The Certificate holder(s) (including its successors or assigns) shall have thirty (30) days within which to cure any deficiency or to seek a hearing. If the deficiency is not cured or a request for a hearing received within such 30-day period, the Certificate shall be deemed modified or vacated on the 31st day after the Department's notice.

Basil Seggos
Acting Commissioner
New York State Department of Environmental Conservation

By: _____ Date: December 1, 2015
Robert W. Schick, P.E., Director
Division of Environmental Remediation

NOTICE OF CERTIFICATE OF COMPLETION
Inactive Hazardous Waste Disposal Site Program
Pursuant to 6 NYCRR Part 375-1.9(d)

Bartlett Tree Company, Site ID No. 1-30-074
345 Union Ave., Village of Westbury, NY, 11590
Town of North Hempstead, Nassau County, Section 10, Block 228, Lots 206 & 786

PLEASE TAKE NOTICE, the New York State Department of Environmental Conservation (Department) has issued a Certificate of Completion (Certificate) pursuant to 6 NYCRR Part 375 to FA Bartlett Tree Expert Company for a parcel approximately 0.414 acres located at the 345 Union Avenue in the Village of Westbury, Nassau County.

PLEASE TAKE NOTICE, the Certificate was issued upon satisfaction of the Commissioner, following review by the Department of the construction completion report and data submitted pursuant to the Order on Consent, as well as any other relevant information regarding the Site, that the remediation requirements set forth in ECL Article 27, Title 13 have been or will be achieved in accordance with the time frames, if any, established in the remedial work plan.

PLEASE TAKE NOTICE, the remedial program for the Site has achieved a cleanup level that would be consistent with the following categories of uses (actual site use is subject to local zoning requirements):

Commercial Use, as set forth in 6 NYCRR 375-1.8(g)(2)iii.
Industrial Use, as set forth in 6 NYCRR 375-1.8(g)(2)iv.

Further, the use of groundwater is restricted and may not be used, unless treated in accordance with the requirements provided by the New York State Department of Health, or a local County Health Department with jurisdiction in such matters and such is approved by the Department as not inconsistent with the remedy.

PLEASE TAKE NOTICE, since the remedial program relies upon use restrictions or the long term employment of institutional or engineering controls; such institutional or engineering controls are contained in an Environmental Easement granted pursuant to ECL Article 71, Title 36 which has been duly recorded in the Recording Office for Nassau County as Liber Book D, Pages 39-48.

PLEASE TAKE NOTICE, the Environmental Easement requires that the approved site management plan (SMP) for this property be adhered to. The SMP, which may be amended from time to time, may include sampling, monitoring, and/or operating a treatment system on the property, providing certified reports to the NYSDEC, and generally provides for the management of any and all plans and limitations on the property. A copy of the SMP is available upon request by writing to the Department's Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, New York 12233.

PLEASE TAKE NOTICE, provided that the Environmental Easement, SMP and Certificate are complied with, the Certificate holder shall be entitled to the liability limitation provided in 6 NYCRR Part 375-2.9. The liability limitation shall run with the land, extending to the Certificate holders successors or assigns through acquisition of title to the Site and to a person who develops or otherwise occupies the Site, subject to certain limitations as set forth in 6 NYCRR Part 375-2.9. The liability limitation shall be subject to all rights reserved to the State by 6 NYCRR Part 375-2.9 and any other applicable provision of law.

PLEASE TAKE NOTICE, any change of use of the site, as defined in 6 NYCRR 375, must be preceded by notice to the Department in accordance with 6 NYCRR 375-1.11(d). A transfer of any or all of the property constitutes a change of use.

PLEASE TAKE NOTICE, the Certificate may be only be transferred to the Certificate holders successors or assigns upon transfer or sale of the Site as provided by 6 NYCRR Part 375-1.9. Failure to comply with the regulatory requirements for transfer **WILL** bar the successors and assigns from the benefits of the Certificate.

PLEASE TAKE NOTICE, the Certificate may be modified or revoked by the Commissioner as set forth in the applicable regulations.

PLEASE TAKE NOTICE, the Certificate may be revoked if the Environmental Easement as implemented, if applicable, is not protective or enforceable.

PLEASE TAKE NOTICE, a copy of the Certificate can be reviewed at the DEC's Region One office located at SUNY at Stony Brook, 50 Circle Road, Stony Brook, NY 11790 by contacting the Regional Environmental Remediation Engineer.

WHEREFORE, the undersigned has signed this Notice of Certificate

FA Bartlett Tree Expert Company

By: _____

Title: _____

Date: _____

STATE OF NEW YORK) SS:
COUNTY OF)

On the _____ day of _____, in the year 20__, before me, the undersigned, personally appeared_____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Signature and Office of individual taking acknowledgment

Please record and return to:
FA Bartlett Tree Expert Company
13768 Hamilton Road
Charlotte, NC 28278

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Form
11/4/2015

SITE DESCRIPTION

SITE NO. **130074**

SITE NAME **Bartlett Tree Company**

SITE ADDRESS: 345 Union Avenue ZIP CODE: 11590

CITY/TOWN: Westbury

COUNTY: Nassau

ALLOWABLE USE: Commercial and Industrial

SITE MANAGEMENT DESCRIPTION

SITE MANAGEMENT PLAN INCLUDES:

IC/EC Certification Plan	YES
Monitoring Plan	YES
Operation and Maintenance (O&M) Plan	NO

Periodic Review Frequency: 1 year

Periodic Review Report Submittal Date: 03/01/2017

Description of Institutional Control

Robert A Bartlett, Jr.
345 Union Avenue
Environmental Easement
Block: 228
Lot: 786
Sublot:
Section: 10
Subsection:
S_B_L Image: 10-228-786
Ground Water Use Restriction
IC/EC Plan
Landuse Restriction
Monitoring Plan
Site Management Plan

Robert A. Bartlett, Jr.
345 Union Avenue
Environmental Easement
Block: 228
Lot: 206

Sublot:
Section: 10
Subsection:
S_B_L Image: 10-228-206

Ground Water Use Restriction

IC/EC Plan

Landuse Restriction

Monitoring Plan

Site Management Plan

Description of Engineering Control

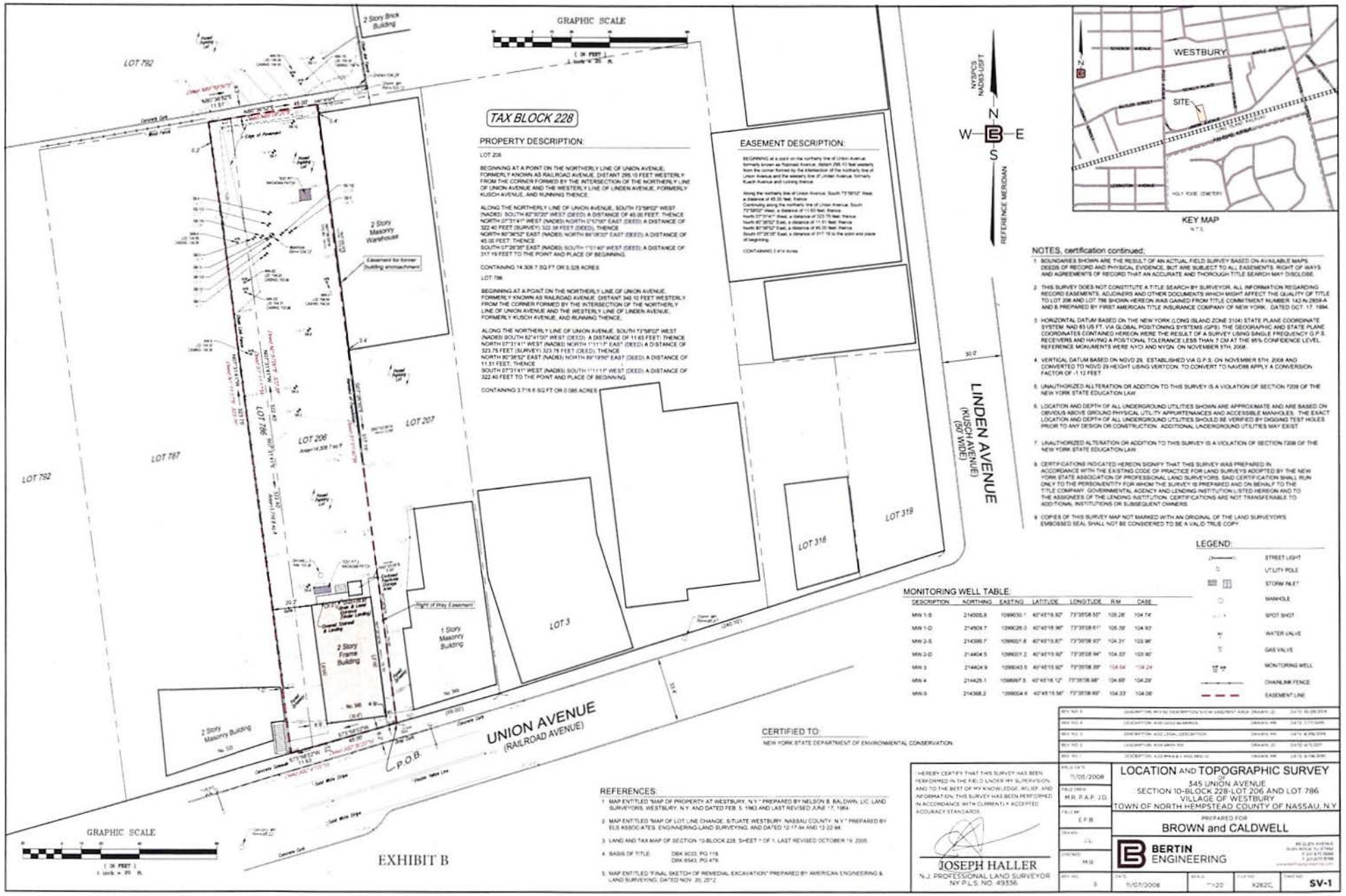
Not Applicable/No EC's

SCHEDULE "A" PROPERTY DESCRIPTION

BEGINNING AT A POINT ON THE NORTHERLY LINE OF UNION AVENUE, FORMERLY KNOWN AS RAILROAD AVENUE, DISTANT 295.10 FEET WESTERLY FROM THE CORNER FORMED BY THE INTERSECTION OF THE NORTHERLY LINE OF UNION AVENUE AND THE WESTERLY LINE OF LINDEN AVENUE, FORMERLY KUSCH AVENUE AND RUNNING THENCE;

ALONG THE NORTHERLY LINE OF UNION AVENUE, SOUTH 73°58'02" WEST A DISTANCE OF 45.00 FEET; THENCE
ALONG THE NORTHERLY LINE OF UNION AVENUE, SOUTH 73°58'02" WEST A DISTANCE OF 11.63 FEET; THENCE
NORTH 07°31'41" WEST, A DISTANCE OF 323.75 FEET; THENCE
NORTH 80°36'52" EAST, A DISTANCE OF 11.51 FEET; THENCE
NORTH 80°36'52" EAST, A DISTANCE OF 45.00 FEET; THENCE
SOUTH 07°26'35" EAST, A DISTANCE OF 317.19 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 0.414 ACRES



NOTES, certification continued:

1. BOUNDARIES SHOWN ARE THE RESULT OF AN ACTUAL FIELD SURVEY BASED ON AVAILABLE MAPS, DEEDS OF RECORD AND PHYSICAL EVIDENCE, BUT ARE SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS AND AGREEMENTS OF RECORD THAT AN ACCURATE AND THOROUGH TITLE SEARCH MAY DISCLOSE.
2. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR. ALL INFORMATION REGARDING RECORD EASEMENTS, ADJOINERS AND OTHER DOCUMENTS WHICH MIGHT AFFECT THE QUALITY OF TITLE TO LOT 206 AND LOT 786 SHOWN HEREON WAS GAINED FROM TITLE COMMITMENT NUMBER 142-N-2859-A AND B PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY OF NEW YORK, DATED OCT. 17, 1994.
3. HORIZONTAL DATUM BASED ON THE NEW YORK (LONG ISLAND ZONE 3104) STATE PLANE COORDINATE SYSTEM, NAD 83 US FT, VIA GLOBAL POSITIONING SYSTEMS (GPS). THE GEOGRAPHIC AND STATE PLANE COORDINATES CONTAINED HEREON WERE THE RESULT OF A SURVEY USING SINGLE FREQUENCY G.P.S. RECEIVERS AND HAVING A POSITIONAL TOLERANCE LESS THAN 7 CM AT THE 95% CONFIDENCE LEVEL. REFERENCE MONUMENTS WERE NYCI AND NYGN. ON NOVEMBER 5TH, 2008.
4. VERTICAL DATUM BASED ON NGVD 29. ESTABLISHED VIA G.P.S. ON NOVEMBER 5TH, 2008 AND CONVERTED TO NGVD 29 HEIGHT USING VERTCON. TO CONVERT TO NAVD88 APPLY A CONVERSION FACTOR OF -1.12 FEET.
5. UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.
6. LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON OBVIOUS ABOVE GROUND PHYSICAL UTILITY APPURTENANCES AND ACCESSIBLE MANHOLES. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED BY DIGGING TEST HOLES PRIOR TO ANY DESIGN OR CONSTRUCTION. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST.
7. UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.
8. CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. SAID CERTIFICATION SHALL RUN ONLY TO THE PERSON/ENTITY FOR WHOM THE SURVEY IS PREPARED AND ON BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
9. COPIES OF THIS SURVEY MAP NOT MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY.

LEGEND:

	STREET LIGHT
	UTILITY POLE
	STORM INLET
	MANHOLE
	SPOT SHOT
	WATER VALVE
	GAS VALVE
	MONITORING WELL
	CHAINLINK FENCE
	EASEMENT LINE

MONITORING WELL TABLE:

DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGITUDE	R.M.	CASE
MW 1-S	214505.8	1099030.7	40°40'16.92"	73°35'08.55"	105.28'	104.74'
MW 1-D	214509.7	1099026.0	40°40'16.96"	73°35'08.61"	105.29'	104.93'
MW 2-S	214399.7	1099001.8	40°40'15.87"	73°35'08.93"	104.31'	103.96'
MW 2-D	214404.5	1099001.2	40°40'15.92"	73°35'08.94"	104.33'	103.90'
MW 3	214404.9	1099043.5	40°40'15.92"	73°35'08.39"	104.64'	104.24'
MW 4	214425.1	1098997.5	40°40'16.12"	73°35'08.98"	104.69'	104.29'
MW 5	214368.2	1099004.6	40°40'15.56"	73°35'08.89"	104.33'	104.06'

CERTIFIED TO:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

REFERENCES:

1. MAP ENTITLED "MAP OF PROPERTY AT WESTBURY, N.Y." PREPARED BY NELSON B. BALDWIN, LIC. LAND SURVEYORS, WESTBURY, N.Y. AND DATED FEB. 5, 1963 AND LAST REVISED JUNE 17, 1964.
2. MAP ENTITLED "MAP OF LOT LINE CHANGE, SITUATE WESTBURY, NASSAU COUNTY, N.Y." PREPARED BY ELS ASSOCIATES, ENGINEERING-LAND SURVEYING, AND DATED 12-17-84 AND 12-22-84.
3. LAND AND TAX MAP OF SECTION 10-BLOCK 228, SHEET 1 OF 1, LAST REVISED OCTOBER 19, 2005.
4. BASIS OF TITLE: DBK 9033, PG 115
DBK 6543, PG 475
5. MAP ENTITLED "FINAL SKETCH OF REMEDIAL EXCAVATION" PREPARED BY AMERICAN ENGINEERING & LAND SURVEYING, DATED NOV. 20, 25"2

I HEREBY CERTIFY THAT THIS SURVEY HAS BEEN PERFORMED IN THE FIELD UNDER MY SUPERVISION, AND TO THE BEST OF MY KNOWLEDGE, BELIEF, AND INFORMATION, THIS SURVEY HAS BEEN PERFORMED IN ACCORDANCE WITH CURRENTLY ACCEPTED ACCURACY STANDARDS.

JOSEPH HALLER
N.J. PROFESSIONAL LAND SURVEYOR
NY P.L.S. NO. 49336

REV. NO.	DESCRIPTION	DRAWN BY	DATE
REV. NO. 4	DESCRIPTION: ADD LEGAL BEARINGS	DRAWN BY: RM	DATE: 1/7/2009
REV. NO. 3	DESCRIPTION: ADD LEGAL DESCRIPTION	DRAWN BY: RM	DATE: 12/22/2008
REV. NO. 2	DESCRIPTION: ADD MAP NOTE	DRAWN BY: JD	DATE: 12/5/2008
REV. NO. 1	DESCRIPTION: ADD PHASE II AND MISC.	DRAWN BY: RM	DATE: 11/26/2008

FIELD DATE:	11/05/2008
FIELD CREW:	MR, P.A.P, J.D.
FIELD BY:	E.F.B.
DRAWN:	J.D.
CHECKED:	M.S.
REV. NO.:	3
DATE:	11/07/2008
SCALE:	1"=20'
FILE NO.:	K2612C
SHEET NO.:	SV-1

LOCATION AND TOPOGRAPHIC SURVEY
OF
345 UNION AVENUE
SECTION 10-BLOCK 228-LOT 206 AND LOT 786
VILLAGE OF WESTBURY
TOWN OF NORTH HEMPSTEAD COUNTY OF NASSAU, N.Y.
PREPARED FOR
BROWN and CALDWELL

BERTIN ENGINEERING
69 GLEN AVENUE
GLEN COVE, N.Y. 11542
T 516 676 0666
F 516 676 0668
www.bertinengineering.com

NOTICE OF COC

THE WEST FIRM
A PROFESSIONAL LIMITED LIABILITY COMPANY

Mark J. Wagner, Jr.
Direct Dial: (518) 641-0507
Direct Facsimile: (518) 615-1507
E-Mail: mwagner@westfirmlaw.com

January 4, 2016

BY USPS PRIORITY MAIL

Robert W. Schick, P.E., Director
Division of Environmental Remediation
New York State Department of
Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12233-7011

Re: Certificate of Completion
Site Name: Bartlett Tree Company
Site No.: 130074
Village of Westbury, Town of N. Hempstead
Nassau County

Dear Mr. Schick:

In accordance with the directive in your letter of December 1, 2015, enclosed please find a certified copy of the Notice of Certificate of Completion ("Notice") in regard to the Bartlett Tree Company's site in the Village of Westbury as proof the Notice was filed with the Nassau County Clerk. The Notice was filed on December 28, 2015.

Should you have any questions please do not hesitate to contact us.

Very truly yours,

Mark J. Wagner, Jr.

MJW/tmk
Enclosure
cc: Rosalie K. Rusinko, DEC

Nassau County
Maureen OConnell
County Clerk
Mineola, NY 11501

56 2015 00017868

Instrument Number: 2015- 00017868
As
E09 - MISCELLANEOUS FILINGS

Recorded On: December 28, 2015
Parties: NYS DEPT OF ENVIRONMENTAL CONSERVATION
TO FA BARTLETT TREE EXPERT CO
Num Of Pages:
Recorded By: WEST FIRM
Comment:

**** Examined and Charged as Follows: ****

E09 - MISCELLANEOUS FILINGS	0.00
Recording Charge:	**0.00**

**** THIS PAGE IS PART OF THE INSTRUMENT ****

I hereby certify that the within and foregoing was recorded in the Clerk's Office For: Nassau County, NY

File Information:
Document Number: 2015- 00017868
Receipt Number: 91132
Recorded Date/Time: December 28, 2015 03:58:00P
Book-Vol/Pg:
Cashier / Station: 0 ALS / NCCL-HBRKDP1

Record and Return To:

NASSAU COUNTY · STATE OF NEW YORK ·

Maureen O'Connell

County Clerk Maureen O'Connell

NOTICE OF CERTIFICATE OF COMPLETION
Inactive Hazardous Waste Disposal Site Program
Pursuant to 6 NYCRR Part 375-1.9(d)

Bartlett Tree Company, Site ID No. 1-30-074
345 Union Ave., Village of Westbury, NY, 11590
Town of North Hempstead, Nassau County, Section 10, Block 228, Lots 206 & 786

PLEASE TAKE NOTICE, the New York State Department of Environmental Conservation (Department) has issued a Certificate of Completion (Certificate) pursuant to 6 NYCRR Part 375 to FA Bartlett Tree Expert Company for a parcel approximately 0.414 acres located at the 345 Union Avenue in the Village of Westbury, Nassau County.

PLEASE TAKE NOTICE, the Certificate was issued upon satisfaction of the Commissioner, following review by the Department of the construction completion report and data submitted pursuant to the Order on Consent, as well as any other relevant information regarding the Site, that the remediation requirements set forth in ECL Article 27, Title 13 have been or will be achieved in accordance with the time frames, if any, established in the remedial work plan.

PLEASE TAKE NOTICE, the remedial program for the Site has achieved a cleanup level that would be consistent with the following categories of uses (actual site use is subject to local zoning requirements):

Commercial Use, as set forth in 6 NYCRR 375-1.8(g)(2)iii.
Industrial Use, as set forth in 6 NYCRR 375-1.8(g)(2)iv.

Further, the use of groundwater is restricted and may not be used, unless treated in accordance with the requirements provided by the New York State Department of Health, or a local County Health Department with jurisdiction in such matters and such is approved by the Department as not inconsistent with the remedy.

PLEASE TAKE NOTICE, since the remedial program relies upon use restrictions or the long term employment of institutional or engineering controls; such institutional or engineering controls are contained in an Environmental Easement granted pursuant to ECL Article 71, Title 36 which has been duly recorded in the Recording Office for Nassau County as Liber Book D, Pages 39-48.

PLEASE TAKE NOTICE, the Environmental Easement requires that the approved site management plan (SMP) for this property be adhered to. The SMP, which may be amended from time to time, may include sampling, monitoring, and/or operating a treatment system on the property, providing certified reports to the NYSDEC, and generally provides for the management of any and all plans and limitations on the property. A copy of the SMP is available upon request by writing to the Department's Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, New York 12233.

PLEASE TAKE NOTICE, provided that the Environmental Easement, SMP and Certificate are complied with, the Certificate holder shall be entitled to the liability limitation provided in 6 NYCRR Part 375-2.9. The liability limitation shall run with the land, extending to the Certificate holders successors or assigns through acquisition of title to the Site and to a person who develops or otherwise occupies the Site, subject to certain limitations as set forth in 6 NYCRR Part 375-2.9. The liability limitation shall be subject to all rights reserved to the State by 6 NYCRR Part 375-2.9 and any other applicable provision of law.

PLEASE TAKE NOTICE, any change of use of the site, as defined in 6 NYCRR 375, must be preceded by notice to the Department in accordance with 6 NYCRR 375-1.11(d). A transfer of any or all of the property constitutes a change of use.

PLEASE TAKE NOTICE, the Certificate may be only be transferred to the Certificate holders successors or assigns upon transfer or sale of the Site as provided by 6 NYCRR Part 375-1.9. Failure to comply with the regulatory requirements for transfer **WILL** bar the successors and assigns from the benefits of the Certificate.

PLEASE TAKE NOTICE, the Certificate may be modified or revoked by the Commissioner as set forth in the applicable regulations.

PLEASE TAKE NOTICE, the Certificate may be revoked if the Environmental Easement as implemented, if applicable, is not protective or enforceable.

PLEASE TAKE NOTICE, a copy of the Certificate can be reviewed at the DEC's Region One office located at SUNY at Stony Brook, 50 Circle Road, Stony Brook, NY 11790 by contacting the Regional Environmental Remediation Engineer.

WHEREFORE, the undersigned has signed this Notice of Certificate

FA Bartlett Tree Expert Company

By: David G. Morren, Esq.

Title: Vice President

Date: Dec 14, 2015

STATE OF NEW YORK) SS:
COUNTY OF ALBANY)

On the 14th day of December, in the year 2015, before me, the undersigned, personally appeared David G. Morren, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Signature and Office of individual taking acknowledgment

THOMAS S. WEST
Notary Public, State of New York
No. 4953814
Qualified in Albany County
Commission Expires September 27, 2017

Please record and return to:
FA Bartlett Tree Expert Company
13768 Hamilton Road
Charlotte, NC 28278

STATE OF NEW YORK
COUNTY OF NASSAU } SS:
COUNTY CLERK'S OFFICE

I, MAUREEN O'CONNELL, County Clerk of the County of Nassau and the Supreme and County Courts, Courts of Record thereof,

DO HEREBY CERTIFY, that I have compared the annexed with the original

MISCELLANEOUS FILING

FILED AND RECORDED in my office 12/28/15 and the same is a true transcript thereof and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of said County at Mineola, N.Y. this 28 day of DECEMBER 2015.

Maureen O'Connell
County Clerk

Appendix B: Field Data Sheets – Groundwater Sampling

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-15
Sample I.D.: MW-15-20180531 (if different from well no.)

Project: Barthelt Tract
Personnel: BPT AJT

Date: 5/31/18 Time: 0752
Weather: cloudy Air Temp.: 65°

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 55.45 ft Bottom of Well: 97.8 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☑ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☐ Yes ☑ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: (Pump)/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
(Tubing)/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 300 ml/min Elapsed Time: 30 min Volume Pumped: ~3 gallons
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: (Pump)/Bailer: ☐ Teflon® ☑ Stainless Steel
(Tubing)/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☐ No Method: _____
APPEARANCE: ☐ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☐ No ☑ Yes Name: DUP-20180531
MS/MSD : ☑ No ☐ Yes Name: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: _____ Date: 5/31/18

Brown AND Caldwell
2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett Tree
Client: Bartlett Tree
Personnel: BFT AJT
Purge/Sample Depth: 40' BTOC

Project Number: 152225
Date: 5/31/18
Well ID: MW-15
Sample ID: MW-15-20180531

Actual Time	Certified Parameters: pH	Temp (°C)	Cond ( )	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
0752	7.05	14.43	0.603	10.09	22.1	114	35.45	~300 mL/min	
0755	6.49	14.66	0.579	9.05	11.6	127			
0759	6.31	15.59	0.539	8.88	3.2	147	35.51		
0801	6.30	15.87	0.536	8.67	3.4	150			
0804	6.29	16.08	0.526	8.58	2.4	155	35.62		
0807	6.30	16.66	0.523	8.41	2.3	158			
0810	6.32	16.79	0.520	8.36	1.9	159			
0815	6.33	16.94	0.516	8.30	1.5	161	35.64		
0816	6.33	16.88	0.514	8.26	1.3	162			
0819	6.33	17.01	0.511	8.18	0.9	164	35.65		
0822	6.33	17.01	0.510	8.17	0.9	163			
0825	Sample Collected								
		Turbidity w/ Lamotte 2020				= 0.67			

5/31/18

Certified Sample Information:
Time of Sample: 0825
Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit:
Serial No. Handheld:
Calibration Date/Time:

Are low-flow parameters subject to field lab certification? ☐ Yes ☑ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-2D
Sample I.D.: MW-2D-20180531 (if different from well no.)

Project: Bartlett Tree
Personnel: BFT AJT

Date: 5/31/18 Time: 1132
Weather: Cloudy Air Temp.: 76°

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 5' ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 37.48 ft Bottom of Well: 71.35 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☑ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 250 ml/min Elapsed Time: 45 min. Volume Pumped: ~ 3 gallons
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene
SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: _____
MS/MSD : ☑ No ☐ Yes Name: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: _____ Date: 5/31/18

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett Tree
Client: Bartlett Tree
Personnel: BFT AXT
Purge/Sample Depth: 65'

Project Number: 152225
Date: 5/31/18
Well ID: MW-2D
Sample ID: MW-2D - 20180531

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond ( )	DO (mg/L)	Turbidity (NTU)				
1132	6.72	18.39	0.570	0.0	171	-81	39.15	250	
1135	7.00	17.66	0.567	0.0	170	-129			
1139	7.08	17.74	0.574	0.0	163	-141			
1141	7.16	17.88	0.583	0.0	140	-153	39.15		
1144	7.15	18.12	0.581	0.0	137	-149			
1147	7.10	18.18	0.579	0.0	130	-140			
1150	7.01	18.21	0.577	0.0	146	-126	39.15		
1153	6.94	18.37	0.574	0.0	132	-114			
1156	6.89	18.41	0.573	0.0	109	-105			
1157	6.85	18.39	0.574	0.0	88.2	-95			
1202	6.82	18.50	0.572	0.0	78.4	-88	39.10		
1205	6.78	18.56	0.571	0.0	72.0	-79			
1208	6.77	18.67	0.569	0.0	64.6	-77			
1211	6.76	18.71	0.568	0.0	55.3	-75			
1214	6.75	18.63	0.567	0.0	49.2	-72			
1217	6.75	18.65	0.566	0.0	48.4	-71			
1220	Sample Collected								
			Lowest Turbidity -			19.2			

5/31/18

Certified Sample Information:
Time of Sample: 1220
Analyst Signature:

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld:
Calibration Date/Time:

Are low-flow parameters subject to field lab certification? ☐ Yes ☐ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-3
Sample I.D.: MW-3-20180581 (If different from well no.)

Project: Bartlett Tree
Personnel: BCT + AST

Date: 5/31/18 Time: 0858
Weather: Cloudy Air Temp.: 70°

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 25.36 ft Bottom of Well: 46.82 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☑ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 300 ml/min Elapsed Time: 30 min Volume Pumped: ~3 gallons
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☐ No Method: _____
APPEARANCE: ☐ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: _____
MS/MSD : ☑ No ☐ Yes Name: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: _____ Date: 5/31/18

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett Tree
Client: Bartlett Tree
Personnel: BFT AJT
Purge/Sample Depth: 40'

Project Number: 152225
Date: 5/31/18
Well ID: MW-3
Sample ID: MW-3-20180531

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond ( )	DO (mg/L)	Turbidity (NTU)				
0858	6.27	16.77	0.771	10.58	701	164	35.51	300	
0902	6.24	16.94	0.770	8.42	"1000"	131			
0905	6.25	18.43	0.757	7.45	980	117			
0907	6.26	17.09	0.749	7.35	510	124			
0910	6.27	18.74	0.742	7.61	143	139	35.53		
0913	6.27	18.54	0.736	7.63	72.5	146			
0916	6.27	18.51	0.734	7.64	43.3	151			
0919	6.27	18.62	0.731	7.61	22.5	154			
0922	6.27	18.66	0.728	7.61	15.7	157			
0925	6.27	18.66	0.728	7.63	12.0	158	35.54		
0928	6.27	18.68	0.724	7.65	8.9	160			
0930	Sample Collected								
			Turbidity w/ Lamotte 2020 = 4.57						

5/31/18

Certified Sample Information:
Time of Sample: 0930

Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit:
Calibration Date/Time:
Serial No. Handheld:

Are low-flow parameters subject to field lab certification? ☐ Yes ☐ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-4
Sample I.D.: MW4-20180531 (if different from well no.)

Project: Bartlette Tree
Personnel: AJ+/BFT

Date: 5/31/18 Time: 1020
Weather: cloudy Air Temp.: 70

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☒ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☒ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 35.71 ft Bottom of Well: 42.82 ft
DATUM: ☐ Top of Protective Casing ☒ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☒ No Is well clean to bottom? ☒ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☒ Yes ☐ No
Does Weep Hole adequately drain well head? ☒ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☒ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☒ NA Is Inner Casing Intact? ☒ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☒ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: (Pump)/Bailer: ☐ Teflon® ☒ Stainless Steel ☐ PVC ☐ Other: _____
(Tubing)/Rope: ☐ Teflon® ☒ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 300 ml/min Elapsed Time: ~30 min Volume Pumped: ~3 gallons
Was well Evacuated? ☐ Yes ☒ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☒ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: (Pump)/Bailer: ☐ Teflon® ☒ Stainless Steel
(Tubing)/Rope: ☐ Teflon® ☒ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned
Metals samples field filtered? ☐ Yes ☐ No Method: _____
APPEARANCE: ☐ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☒ No ☐ Yes Name: _____
MS/MSD : ☐ No ☒ Yes Name: MW-4-20180531-MS/MSD

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: Andrew Tompkins Date: 5/31/18

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlette Tree
Client: Bartlette Tree
Personnel: AJT/BFT
Purge/Sample Depth: ~40'

Project Number: 152225
Date: 5/31/18
Well ID: MW-4
Sample ID: MW-4-20180531

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1020	5.18	17.51	3.45	6.15	240	458	35.87	300	
1023	5.35	18.20	3.22	5.85	150	271			
1026	5.86	18.89	3.14	5.77	111	210			
1029	6.01	19.12	3.12	5.90	74.0	179	35.90		
1032	6.03	19.19	3.12	5.96	56.6	169			
1035	6.04	19.31	3.13	5.97	46.7	166	35.90		
1038	6.04	19.32	3.15	6.04	28.5	167			
1041	6.04	19.26	3.17	6.09	23.7	167			
1044	6.04	19.44	3.19	6.08	18.0	167	35.90		
1047	6.04	19.50	3.20	6.14	11.4	168			
1050	6.04	19.55	3.21	6.15	9.0	169	35.90		
1053	Collect sample			Turbidity	=4.19				

AJT 5/31/18

Certified Sample Information:
Time of Sample: 1053
Analyst Signature: Andrew Temple

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld:
Calibration Date/Time:

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-5
Sample I.D.: MW-5-20180531 (If different from well no.)

Project: Bartlett Tree
Personnel: BPT AST

Date: 5/31/18 Time: 1246
Weather: Cloudy Air Temp.: 70°

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 35.55 ft Bottom of Well: 72.45 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☑ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 258 ml/min Elapsed Time: 30 min Volume Pumped: ~2.5 gallon
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☐ Bladder Pump ☑ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene
SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method: _____
APPEARANCE: ☐ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: _____
MS/MSD : ☑ No ☐ Yes Name: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: _____ Date: 5/31/18

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett Tree
Client: Bartlett Tree
Personnel: BFT AJT
Purge/Sample Depth: 40'

Project Number: 152275
Date: 5/31/18
Well ID: MW-5
Sample ID: MW-5-20180531

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond ( )	DO (mg/L)	Turbidity (NTU)				
1246	6.15	17.12	0.822	5.68	"0.0"	141	35.78	250 ml/min	
1249	6.12	17.37	0.808	5.68	"1000"	143			
1252	6.16	18.19	0.827	6.17	393	141			
1255	6.22	18.50	0.838	6.47	203	145	35.75		
1258	6.23	18.70	0.833	6.59	149	145			
1301	6.26	18.96	0.827	6.73	86.6	147			
1304	6.27	18.95	0.829	6.76	77.7	147			
1307	6.28	19.08	0.825	6.75	60.8	147			
1310	6.29	19.15	0.822	6.79	48.4	148	35.70		
1313	6.29	19.25	0.822	6.82	39.1	148			
1316	6.30	19.27	0.821	6.79	33.3	148			
1319	Sample Collected								
				Turbidity w/ Hanna 202					

5/31/18

Certified Sample Information:
Time of Sample: 1319

Analyst Signature:

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Calibration Date/Time:
Serial No. Handheld:

Are low-flow parameters subject to field lab certification? ☐ Yes ☐ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-1S
Sample I.D.: MW-1S-20180924

Project: Bartlett
Personnel: TMB AST

Date: 9/24/18 Time: 1117
Weather: Cloudy Air Temp.: 65°

WELL DATA:

Casing Diameter: 8" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 36.19 ft Bottom of Well: 47 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☑ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ___ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: Tubing/Rope: ☑ Teflon® ☐ Polyethylene ☐ Polypropylene ☐ Other:

Pumping Rate: 200 ml/min Elapsed Time: 30 min Volume Pumped 2.00 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size. ___ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel Tubing/Rope: ☑ Teflon® ☐ Polyethylene
SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method:
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data

DUP : ☑ No ☐ Yes Name:
MS/MSD : ☐ No ☑ Yes Name: MW-1S-20180924+MS/MSD

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols

Signature: [signature] Date: 9/24/18

Brown AND Caldwell
2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1657

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett
Client: Bartlett
Personnel: TMB AST
Purge/Sample Depth: ~41'

Project Number: 152275
Date: 9/24/18
Well ID: MW-1S
Sample ID: MW-1S-20180924

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1117	6.79	19.85	0.254	9.17	15.2	160	36.20	200	PID = 0.0
1120	6.46	19.06	0.236	8.53	14.7	194	36.25		
1123	6.41	18.86	0.230	8.00	14.0	209			
1126	6.41	18.45	0.234	7.75	14.8	216			
1129	6.42	18.28	0.241	7.57	14.5	222	36.27		
1132	6.43	18.20	0.246	7.43	12.0	224			
1135	6.43	18.16	0.249	7.33	10.8	226	36.25		
1138	6.44	18.10	0.253	7.30	10.0	229			
1141	6.44	18.08	0.255	7.20	8.8	232			
1144	6.45	18.01	0.257	7.08	7.6	235			
1147	6.41	18.05	0.258	7.07	7.4	237	36.27		
1150	Sample + MS/MSD				Turbidity -	1.18	NTU		

Certified Sample Information:
Time of Sample: 1150
Analyst Signature: Andrew Tengg

Instrument Data:
Manufacturer/Model
Serial No. Unit
Serial No. Handheld
Calibration Date/Time

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-2D
Sample I.D.: MW-20-20180925

Project: Bartlett
Personnel: MMB AJT

Date: 9/25/18 Time: 1028
Weather: Rain Air Temp.: 65°

WELL DATA:

Casing Diameter: 4" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 38.50 ft Bottom of Well: 71.25 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☑ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No

VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ___ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other:

Pumping Rate: 250 ml/min Elapsed Time: 35 min Volume Pumped 2.5 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ___ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method:
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data

DUP : ☑ No ☐ Yes Name:
MS/MSD : ☑ No ☐ Yes Name:

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: [signature] Date: 9/25/18

Brown AND Caldwell
2 Park Way, Upper Saddle River, NJ 07458
Phone (201) 574-4720 Fax (201) 236-1627

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett Tree
Client: Bartlett Tree
Personnel: THB AJT
Purge/Sample Depth: ~65'

Project Number: 152225
Date: 9/25/18
Well ID: MW-2D
Sample ID: MW-2D-20180925

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1028	7.21	16.89	0.630	1.66	105	125	38.90	250	PID=0.0
1031	7.26	16.64	0.685	0.52	98.5	67	39.00		
1034	7.25	16.41	0.706	0.00	107	28	39.15		
1037	7.25	16.41	0.713	0.00	126	16	39.30		
1040	7.25	16.38	0.714	0.00	113	9	39.35		
1043	7.22	16.19	0.711	0.00	106	-16			
1046	7.16	16.12	0.702	0.00	84.7	-33			
1049	7.11	16.07	0.700	0.00	64.6	-40			
1052	7.06	16.06	0.682	0.00	54.2	-44			
1055	6.94	15.98	0.655	0.00	40.4	-48			
1058	6.92	15.99	0.651	0.00	37.7	-49	39.6		
1101	6.91	16.00	0.650	0.00	37.2	-50			
1104	Sample								

Turbidity = 11.96 NTU

AJT 9/24/18

Certified Sample Information:
Time of Sample: 1104
Analyst Signature: Andrea Taylor

Instrument Data:
Manufacturer/Model
Serial No. Unit
Serial No. Handheld
Calibration Date/Time

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-3
Sample I.D.: MW-3-20180924

Project: Bartlett
Personnel: JMB AJT

Date: 9/24/18 Time: 1301
Weather: Cloudy Air Temp.: 65°

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO: Static Water Level: 36.10 ft Bottom of Well: 46.8 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No

VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other:
Tubing/Rope: ☑ Teflon® ☐ Polyethylene ☐ Polypropylene ☐ Other:

Pumping Rate: 200 ml/min Elapsed Time: 30 min Volume Pumped: 2 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method:
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP: ☐ No ☑ Yes Name: Dup-20180924
MS/MSD: ☑ No ☐ Yes Name:

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.

Signature: Date: 9/24/18

Brown AND Caldwell
2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1507

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett Tree
Client: Bartlett Tree
Personnel: TMB, AJT
Purge/Sample Depth: ~40'

Project Number: 152225
Date: 9/24/18
Well ID: MW-3
Sample ID: MW-3-20180924

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (ml/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1301	6.23	18.37	0.466	9.20	254	219	36.13	200	PID=0.0
1304	6.21	17.75	0.468	7.55	278	222			
1307	6.20	17.07	0.473	6.65	160	229			
1310	6.20	16.82	0.476	6.52	79.5	235	36.15		
1313	6.20	16.80	0.476	6.44	66.8	237			
1316	6.20	16.75	0.478	6.40	39.2	240			
1319	6.20	16.85	0.478	6.38	31.6	242			
1322	6.20	16.74	0.478	6.37	22.8	245	36.13		
1325	6.20	16.66	0.478	6.29	20.3	247			
1328	6.20	16.68	0.478	6.20	19.5	248			
1331	6.20	16.69	0.478	6.26	17.0	249			
1334	Sample + Dup			Turbidity 3.93 NTU					

AJT
9/24/18

Certified Sample Information:
Time of Sample: 1334
Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit:
Serial No. Handheld:
Calibration Date/Time:

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-4
Sample I.D.: MW-4-20180925

Project: Bartlett
Personnel: DJT/TMD

Date: 9/25/18 Time: 0926
Weather: Rain Air Temp.: 65°

WELL DATA:

Casing Diameter: 4" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO: Static Water Level: 36.48 ft Bottom of Well: 42.83 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☑ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot Casing/Surface Mount in Good Cond.? (not bent or corroded) ☐ Yes ☑ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other:
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other:

Pumping Rate: 300ml/min Elapsed Time: 30min Volume Pumped: 3gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method:
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP: ☑ No ☐ Yes Name:
MS/MSD: ☑ No ☐ Yes Name:

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols

Signature: [signature] Date: 9/25/18

Brown AND Caldwell
2 Park Way, Upper Saddle River, NJ 07458
Phone (201) 574-4720 Fax (201) 236-1627

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett Tree
Client: Bartlett Tree
Personnel: TMB AJT
Purge/Sample Depth: ~40 ft
Project Number: 152225
Date: 9/25/18
Well ID: MW-4
Sample ID: MW-4-20180925

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
0924	6.72	16.23	0.762	9.89	158	195	36.60	300	
0929	6.44	15.90	0.535	5.34	176	200			
0932	6.33	15.86	0.467	5.43	150	205	36.60		
0935	6.18	15.78	0.361	5.66	60.8	223			
0938	6.17	15.77	0.358	5.62	56.5	224	36.60		
0941	6.17	15.78	0.354	5.56	52.0	225			
0944	6.15	15.78	0.340	5.48	32.1	233	36.60		
0947	6.15	15.78	0.339	5.43	28.9	234			
0950	6.16	15.77	0.338	5.48	25.1	237	36.60		
0953	6.15	15.80	0.337	5.45	20.1	241			
0956	6.14	15.85	0.337	5.42	18.0	242	36.60		
0959	Collect Sample			MW-4-20180925					
				Turbidity = 2.61 NTU					

AJT
9/25/18

Certified Sample Information:
Time of Sample: 0959
Analyst Signature: Andrew Temple

Instrument Data:
Manufacturer/Model:
Serial No. Unit:
Serial No. Handheld:
Calibration Date/Time:

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-5
Sample I.D.: MW-5-20180924

Project: Bartlett
Personnel: TMB AJT

Date: 9/24/18 Time: 1440
Weather: Sun Air Temp.: 70°

WELL DATA:

Casing Diameter: 8" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 36.33 ft Bottom of Well: 42.55 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☐ Yes ☑ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other:
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other:

Pumping Rate: 250 ml/min Elapsed Time: 30 min Volume Pumped: 2.5 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other:

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene
SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method:
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name:
MS/MSD : ☑ No ☐ Yes Name:

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols

Signature: Date: 9/24/18

Brown AND Caldwell
2 Park Way Upper Saddle River, NJ 07458
Phone (201) 574-4700 Fax (201) 236-1627

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Bartlett Tree
Client: Bartlett Tree
Personnel: THR AJT
Purge/Sample Depth: ~40
Project Number: 152225
Date: 9/24/18
Well ID: MW-5
Sample ID: MW-5-20180924

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1410	6.21	18.62	0.637	8.60	486	208	36.40	250	
1413	6.21	17.46	0.558	8.30	188	216			
1416	6.22	17.19	0.537	8.11	124	222	36.40		
1419	6.25	16.88	0.535	7.98	76.9	228			
1422	6.27	16.69	0.540	7.86	49.6	230			
1425	6.28	16.63	0.542	7.78	39.4	233	36.40		
1428	6.30	16.61	0.543	7.76	25.6	235			
1431	6.30	16.64	0.544	7.70	23.0	236			
1434	6.30	16.51	0.545	7.71	~~16.7~~	239			
1437	6.29	16.48	0.546	7.62	15.3	241			
1440	6.30	16.47	0.546	7.63	14.1	242			
1443	Sample								

Turbidity = 3.92 NTU

Certified Sample Information:
Time of Sample: 1443
Analyst Signature: Andrew Temple

Instrument Data:
Manufacturer/Model
Serial No. Unit
Calibration Date/Time
Serial No. Handheld

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Appendix C: Data Usability Summary Reports (DUSRs)

DATA USABILITY SUMMARY REPORT
BARTLETT TREE SITE

Client: Brown and Caldwell, Albany, New York
SDGs: BTR27
Laboratory: Eurofins Lancaster Laboratories, Lancaster, Pennsylvania
Site: Bartlett Tree
Date: August 28, 2018

Client Sample ID	Laboratory Sample ID	Matrix
MW-1S-20180531	9638666	Groundwater
DUP-20180531	9638667	Groundwater
MW-3-20180531	9638668	Groundwater
FB-20180531	9638669	Water
MW-4-20180531	9638670	Groundwater
MW-2D-20180531	9638673	Groundwater
MW-5-20180531	9638674	Groundwater
TRIP BLANK-20180531	9638675	Water

Data validation was performed on the analytical data for eight samples collected on May 31, 2018 by Brown and Caldwell Associates at the Bartlett Tree site in New York. The samples were analyzed under the Environmental Protection Agency (USEPA) "Test Methods for Evaluating Solid Waste, SW-846 Method 8081B", February 2007, "Test Methods for Evaluating Solid Waste, SW-846 Method 8260D", June 2018, and "Test Methods for Evaluating Solid Waste, SW-846 Method 8081B", February 2007, and "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)", September 2009.

Specific method references are as follows:

Analysis	*Method References*
Pesticides/PCBs	USEPA SW-846 8081B
Volatiles/VOCs	USEPA SW-846 8260SIM
PFAS in Water	USEPA Method 537

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-36a, Revision 0, June 2015, Pesticide Data Validation;
- SOP Number HW-33, Revision 3, March 2013, Pesticide Data Validation;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

- Data Completeness
- Holding times and sample preservation
- Field Blank Accuracy
- Internal Standard Area and RT
- Surrogates
- Laboratory Control Sample (LCS) recoveries
- Matric Spike and Matrix Spike Duplicate Samples
- Method and field blank contamination
- Initial and continuing calibration summaries
- Compound Quantitation
- Sample comments and Quality Control Summaries

Pesticide Compounds

Overall Usability Issues:

Overall, the data is acceptable for the intended purposes. No analytical or quality issues were noted.

Holding Times

- All samples were analyzed within 30 days.

Field Blank/Duplicate Accuracy

- One duplicate was collected for the data set: DUP-20180531 is the duplicate for MW-1S-20180531. Beta chlordane, dieldrin, and heptachlor epoxide had RPDs above the control limit of 30%. Duplicate and parent sample are qualified as estimated, J, reason code 8 for beta chlordane, dieldrin, and heptachlor epoxide. All other RPDs were within control limits.

Internal Standard Areas

- All samples exhibited acceptable internal standard values.

Surrogates

- All samples exhibited acceptable surrogate quality control ranges.

Laboratory Control Samples

- The LCS samples exhibited acceptable %REC.

Matric Spike and Matrix Spike Duplicate (MS/MSD) Samples

- The MS/MSD samples exhibited acceptable %REC.

Method Blank

- The method blanks were free of contamination.

Initial Calibration

- All %RSD and/or correlation coefficient criteria were met.

Continuing Calibration

- All %Drift criteria were met.

Compound Quantitation

- All criteria were met.

Volatile Organic Compounds

Overall Usability Issues:

Overall, the data is acceptable for the intended purposes. No analytical or quality issues were noted.

Holding Times

- All samples were analyzed within 30 days.

Field Blank/Duplicate Accuracy

- One duplicate was collected for the data set: DUP-20180531 is the duplicate for MW-1S-20180531. All RPDs were within control limits.

Internal Standard Areas

- All samples exhibited acceptable internal standard values.

Surrogates

- All samples exhibited acceptable surrogate quality control ranges.

Laboratory Control Samples

- The LCS samples exhibited acceptable %REC.

Matric Spike and Matrix Spike Duplicate (MS/MSD) Samples

- The MS/MSD samples exhibited acceptable %REC.

Method Blank

- The method blanks were free of contamination.

Initial Calibration

- All %RSD and/or correlation coefficient criteria were met.

Continuing Calibration

- All %Drift criteria were met.

Compound Quantitation

- All criteria were met.

PFAS Compounds

Overall Usability Issues:

Overall, the data is acceptable for the intended purposes. No analytical or quality issues were noted.

Holding Times

- All samples were analyzed within 30 days.

Field Blank/Duplicate Accuracy

- One duplicate was collected for the data set: DUP-20180531 is the duplicate for MW-1S-20180531. All RPDs were within control limits.

Internal Standard Areas

- All samples exhibited acceptable internal standard values.

Surrogates

- All samples exhibited acceptable surrogate quality control ranges with the exception of 13C2-6:2-FTS, 13C5-PFPeA, 13C3-PFBS, and/or 13C2-8:2-FTS for multiple samples. Since more than half the surrogates are within range for each case, no qualification is required.

Laboratory Control Samples

- The LCS samples exhibited acceptable %REC.

Matric Spike and Matrix Spike Duplicate (MS/MSD) Samples

- The MS/MSD samples exhibited acceptable %REC except for NEtFOSAA, NMeFOSAA, Perfluoro-octanesulfonate, which were above control limits. Detections of these three compounds are qualified as estimated, J, and non-detections are not qualified, reason code 4.

Method Blank

- The method blanks were free of contamination.

Initial Calibration

- All %RSD and/or correlation coefficient criteria were met.

Continuing Calibration

- All %Drift criteria were met.

Compound Quantitation

- All criteria were met.

Please contact the undersigned if you have any questions or need further information.

Signed:  Dated: August 28, 2018

Jaclyn Lauer, P.E.
Senior Engineer
Brown and Caldwell

Data Qualifiers

J	=	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	=	The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
U	=	The analyte was analyzed for, but was not detected above the sample reporting limit.
R	=	The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

Reason Codes

1	Holding time violation
2	Method blank contamination
3	Surrogate recovery
4	MS/MSD recovery
5	MS/MSD precision outside limits
6	LCS recovery
7	Field blank contamination
8	Field duplicate precision outside limits
9	Other deficiencies (including cooler temperature)
A	Absence of supporting QC
S	ICV, CCV or column performance check problem
Y	Initial and continuing calibration blank problem
M	Interference check samples problem
O	Post digestion spike outside of 85-115%
F	MSA correlation coefficient <0.995, or MSA not done
G	Serial dilution problem
K	DFTPP or BFB tuning problem
Q	Initial calibration problem
X	Internal standard recovery problem
V	Second source standard calibration verification problem
L	Low bias
Z	Retention time problem
N	Counting time error (radionuclide chemistry)
W	Detector instability (radionuclide chemistry)
C	Co-elution of compounds
E	Value exceeds linear calibration range
I	Interferences present during analysis
T	Trace level compound, poor quantitation
P	1C/2C precision outside limits
B	LCS/LCSD precision outside limits
D	Lab Dup/Rep precision outside limits
H	High bias

DATA USABILITY SUMMARY REPORT
BARTLETT TREE SITE

Client: Brown and Caldwell, Albany, New York
SDGs: BTR28
Laboratory: Eurofins Lancaster Laboratories, Lancaster, Pennsylvania
Site: Bartlett Tree
Date: October 30, 2018

Client Sample ID	Laboratory Sample ID	Matrix
MW-1S-20180924	9821982	Groundwater
MW-3-20180924	9821985	Groundwater
DUP-20180924	9821986	Groundwater
MW-5-20180924	9821987	Groundwater
FB-20180924	9821988	Water
MW-4-20180925	9821989	Groundwater
MW-2D-20180925	9821990	Groundwater

Data validation was performed on the analytical data for seven samples collected on September 24 and 25, 2018 by Brown and Caldwell Associates at the Bartlett Tree site in New York. The samples were analyzed under the Environmental Protection Agency (USEPA) "Test Methods for Evaluating Solid Waste, SW-846 Method 8081B", February 2007, and "Test Methods for Evaluating Solid Wastes, SW-846 Method 3510C, Rev 3", December 1996.

Specific method references are as follows:

Analysis	*Method References*
Pesticides/PCBs	USEPA SW-846 8081B

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-36a, Revision 0, June 2015, Pesticide Data Validation;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

- Data Completeness
- Holding times and sample preservation
- Field Blank Accuracy
- Internal Standard Area and RT
- Surrogates
- Laboratory Control Sample (LCS) recoveries

- Matric Spike and Matrix Spike Duplicate Samples
- Method and field blank contamination
- Initial and continuing calibration summaries
- Compound Quantitation
- Primary and Confirmation Columns
- Reporting Limits
- Sample comments and Quality Control Summaries

Pesticide Compounds

Overall Usability Issues:

Overall, the data is acceptable for the intended purposes. No analytical or quality issues were noted.

Holding Times

- All samples were analyzed within 30 days.

Field Blank Accuracy

- One field blank was collected for the data set: DUP-20180924 is the duplicate for MW-3-20180924. All RPDs were within control limits of 30%.

Internal Standard Areas

- All samples exhibited acceptable internal standard values.

Surrogates

- All samples exhibited acceptable surrogate quality control ranges.

Laboratory Control Samples

- The LCS samples exhibited acceptable %REC.

Matric Spike and Matrix Spike Duplicate (MS/MSD) Samples

- The MS/MSD samples exhibited acceptable %REC.

Method Blank

- The method blanks were free of contamination.

Initial Calibration

- All %RSD and/or correlation coefficient criteria were met.

Continuing Calibration

- All %Drift criteria were met.

Compound Quantitation

- All criteria were met.

Primary and Confirmation Columns

- The laboratory qualifier, P, indicates the concentration difference between the primary and confirmation column >40%. The lower result is reported. Laboratory qualification stands and is changed to a J, with a reason code P.
- The laboratory qualifier, V, indicates the concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference. Laboratory qualification stands and is changed to a UJ, with a reason code V.

Reporting Limits

- The laboratory qualifier, Z, indicates an elevated reporting limit due to matrix interference. No qualification is required.

Please contact the undersigned if you have any questions or need further information.

Signed:  Dated: October 30, 2018

Jaclyn Lauer, P.E.
Senior Engineer
Brown and Caldwell

Data Qualifiers

J	=	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	=	The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
U	=	The analyte was analyzed for but was not detected above the sample reporting limit.
R	=	The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

Reason Codes

1	Holding time violation
2	Method blank contamination
3	Surrogate recovery
4	MS/MSD recovery
5	MS/MSD precision outside limits
6	LCS recovery
7	Field blank contamination
8	Field duplicate precision outside limits
9	Other deficiencies (including cooler temperature)
A	Absence of supporting QC
S	ICV, CCV or column performance check problem
Y	Initial and continuing calibration blank problem
M	Interference check samples problem
O	Post digestion spike outside of 85-115%
F	MSA correlation coefficient <0.995, or MSA not done
G	Serial dilution problem
K	DFTPP or BFB tuning problem
Q	Initial calibration problem
X	Internal standard recovery problem
V	Second source standard calibration verification problem
L	Low bias
Z	Retention time problem
N	Counting time error (radionuclide chemistry)
W	Detector instability (radionuclide chemistry)
C	Co-elution of compounds
E	Value exceeds linear calibration range
I	Interferences present during analysis
T	Trace level compound, poor quantitation
P	1C/2C precision outside limits
B	LCS/LCSD precision outside limits
D	Lab Dup/Rep precision outside limits
H	High bias

DATA USABILITY SUMMARY REPORT
BARTLETT TREE SITE

Client: Brown and Caldwell, Albany, New York
SDGs: BTR29
Laboratory: Eurofins Lancaster Laboratories, Lancaster, Pennsylvania
Site: Bartlett Tree
Date: January 25, 2019

Client Sample ID	Laboratory Sample ID	Matrix
AA-1	9929275	Air
IA-1	9929276	Air
SV-1	9929277	Air

Data validation was performed on the analytical data for three air samples collected on December 5, 2018 by Brown and Caldwell Associates at the Bartlett Tree site in New York. The samples were analyzed under the Environmental Protection Agency (USEPA) "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, January 1999".

Specific method references are as follows:

Analysis	*Method References*
Volatiles	USEPA Method TO-15

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-31, Revision 6, June 2014, Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15;
- and the reviewer's professional judgment.

The following items/criteria were reviewed for this report:

- Data Completeness
- Holding times and sample preservation
- Internal Standard Area and RT
- Laboratory Control Sample (LCS) recoveries
- Method and field blank contamination
- Initial and continuing calibration summaries
- Compound Quantitation
- Sample comments and Quality Control Summaries

Overall Usability Issues:

Overall, the data are acceptable for the intended purposes. No analytical or quality issues were noted.

Holding Times

- All samples were analyzed within 30 days.

Internal Standard Areas

- All samples exhibited acceptable internal standard values.

Laboratory Control Samples

- The LCS samples exhibited acceptable %REC.

Method Blank

- The method blanks were free of contamination.

Initial Calibration

- All %RSD and/or correlation coefficient criteria were met.

Continuing Calibration

- All %Drift criteria were met.

Compound Quantitation

- Laboratory qualifier, J, indicates an estimated value greater than or equal to the Method Detection Limit (MDL) and less than the Limit of Quantitation (LOQ).

Please contact the undersigned if you have any questions or need further information.

Please contact the undersigned if you have any questions or need further information.

Signed: Dated: January 25, 2019

Jaclyn Lauer, P.E.
Senior Engineer
Brown and Caldwell

Data Qualifiers

J	=	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	=	The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
U	=	The analyte was analyzed for but was not detected above the sample reporting limit.
R	=	The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

Reason Codes

1	Holding time violation
2	Method blank contamination
3	Surrogate recovery
4	MS/MSD recovery
5	MS/MSD precision outside limits
6	LCS recovery
7	Field blank contamination
8	Field duplicate precision outside limits
9	Other deficiencies (including cooler temperature)
A	Absence of supporting QC
S	ICV, CCV or column performance check problem
Y	Initial and continuing calibration blank problem
M	Interference check samples problem
O	Post digestion spike outside of 85-115%
F	MSA correlation coefficient <0.995, or MSA not done
G	Serial dilution problem
K	DFTPP or BFB tuning problem
Q	Initial calibration problem
X	Internal standard recovery problem
V	Second source standard calibration verification problem
L	Low bias
Z	Retention time problem
N	Counting time error (radionuclide chemistry)
W	Detector instability (radionuclide chemistry)
C	Co-elution of compounds
E	Value exceeds linear calibration range
I	Interferences present during analysis
T	Trace level compound, poor quantitation
P	1C/2C precision outside limits
B	LCS/LCSD precision outside limits
D	Lab Dup/Rep precision outside limits
H	High bias

Appendix D: Pre-Remediation Groundwater Quality Data

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Water Results:

Analyte Group: 1-BTEX/Volatiles	Class GA Groundwater Criteria			Location:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	MW-1D	MW-1D	MW-1D
				SampleName:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	DUP-040909	MW-1D	MW-1D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/27/08	04/09/09	03/23/10	05/22/12	10/27/08	04/09/09	04/09/09	03/23/10	05/21/12
Toluene	NE	5	UG/L		0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U

Analyte Group: 1-Volatiles	Class GA Groundwater Criteria			Location:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	MW-1D	MW-1D	MW-1D
				SampleName:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	DUP-040909	MW-1D	MW-1D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/27/08	04/09/09	03/23/10	05/22/12	10/27/08	04/09/09	04/09/09	03/23/10	05/21/12
1,1-Dichloroethane	NE	5	UG/L		1 U	1 U	1 U	1 U	1 U	**1 J**	**1 J**	**1 J**	1 U
1,1-Dichloroethene	NE	5	UG/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	**1 J**	**1 J**	**1 J**	0.8 U
Bromodichloromethane	50	NE	UG/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NE	60	UG/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	NE	7	UG/L		0.8 U	0.8 U	**3 J**	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
cis-1,2-Dichloroethene	NE	5	UG/L		0.8 U	0.8 U	0.8 U	0.8 U	***38**	***48**	***47**	***46**	***19**
Dibromochloromethane	50	NE	UG/L		1 U	**2 J**	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	NE	5	UG/L		0.8 U	**2 J**	**4 J**	**0.9 J**	**2 J**	**2 J**	**2 J**	**2 J**	0.8 U
Trichloroethene (TCE)	NE	5	UG/L		1 U	1 U	1 U	1 U	***86**	***120**	***110**	***120**	***31**

Analyte Group: 2-SVOCs	Class GA Groundwater Criteria			Location:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	MW-1D	MW-1D	MW-1D
				SampleName:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	DUP-040909	MW-1D	MW-1D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/27/08	04/09/09	03/23/10	05/22/12	10/27/08	04/09/09	04/09/09	03/23/10	05/21/12
bis(2-Ethylhexyl)phthalate	NE	5	UG/L		2 U	2 U	NA	NA	2 U	2 U	2 U	NA	NA

Analyte Group: 4-Pesticides/Herbicides	Class GA Groundwater Criteria			Location:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	MW-1D	MW-1D	MW-1D
				SampleName:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	DUP-040909	MW-1D	MW-1D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/27/08	04/09/09	03/23/10	05/22/12	10/27/08	04/09/09	04/09/09	03/23/10	05/21/12
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	UG/L		48 U	47 U	49 U	48 UJ	48 U	47 U	47 U	49 U	48 UJ
2,4-DB	NE	5	UG/L		0.29 U	0.28 U	0.29 U	0.29 U	0.29 U	0.28 U	0.28 U	0.29 U	0.29 U
4,4'-DDD	NE	0.3	UG/L		0.0038 U	0.0039 U	0.011 U	0.0047 U	0.0038 U	0.0038 U	0.0038 U	0.012 U	0.0047 U
4,4'-DDE	NE	0.2	UG/L		0.0038 U	0.0039 U	0.0047 U	0.0047 U	0.0038 U	0.0038 U	0.0038 U	0.0049 U	0.0047 U
4,4'-DDT	NE	0.2	UG/L		0.0057 U	0.0059 U	0.011 U	0.0047 U	0.0058 U	0.0057 U	0.0057 U	0.012 U	0.0047 U

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Class GA Groundwater Criteria			*Location:*	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	MW-1D	MW-1D	MW-1D
				SampleName:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	DUP-040909	MW-1D	MW-1D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	*Units*	*SampleDate:*	10/27/08	04/09/09	03/23/10	05/22/12	10/27/08	04/09/09	04/09/09	03/23/10	05/21/12
alpha Endosulfan (Endosulfan I)	NE	5	UG/L		0.007 U	**0.0033 J**	0.0028 U	0.0041 U	0.0029 U	0.0028 U	0.0028 U	0.0029 U	0.0041 U
beta Endosulfan (Endosulfan II)	NE	5	UG/L		0.0038 U	0.0039 U	0.0038 U	0.014 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.014 U
BHC, alpha	NE	0.01	UG/L		0.0026 U	0.0027 U	0.0025 U	0.0028 U	0.0026 U	0.0026 U	0.0026 U	0.0026 U	0.0028 U
BHC, beta	NE	0.04	UG/L		**0.025**	**0.0044 J**	0.0036 U	0.0032 U	0.0036 U	0.0036 U	0.0036 U	0.0037 U	0.0032 U
BHC, delta	NE	0.04	UG/L		0.005 U	0.003 U	0.0028 U	0.0032 U	0.0029 U	0.0028 U	0.0028 U	0.0029 U	0.0032 U
BHC, gamma (Lindane)	NE	0.05	UG/L		0.0044 U	0.0045 U	0.0043 U	0.0019 U	0.0044 U	0.0044 U	0.0044 U	0.0045 U	0.0019 U
Chlordane, alpha	NE	0.05	UG/L		***0.11**	***0.1**	**0.031**	***0.052 JP**	0.0045 U	0.0045 U	0.0045 U	0.0046 U	0.0019 U
Chlordane, gamma	NE	0.05	UG/L		NA	NA	**0.024**	0.006 U	NA	NA	NA	0.0041 U	0.0041 U
Chlordane, gamma	NE	NE	UG/L		**0.048**	*0.058	NA	NA	0.0029 U	0.0028 U	0.0028 U	NA	NA
Dalapon	50	50	UG/L		0.32 U	0.24 U	0.25 U	0.24 U	0.32 U	0.24 U	0.24 U	0.24 U	0.24 U
Dieldrin	NE	0.004	UG/L		***0.18**	***0.12 J**	***0.012 J**	0.005 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.005 U
Endosulfan sulfate	NE	5	UG/L		0.0038 U	0.0039 U	0.0053 U	0.0055 U	0.0038 U	0.0038 U	0.0038 U	0.0055 U	0.0055 U
Endrin	NE	0	UG/L		0.0038 U	0.0039 U	0.0038 U	0.0077 U	0.0038 U	0.0038 U	0.0038 U	0.0039 U	0.0077 U
Endrin ketone	NE	5	UG/L		0.0038 U	0.0039 U	0.016 U	0.0047 U	0.0038 U	0.0038 U	0.0038 U	0.017 U	0.0047 U
Heptachlor epoxide	NE	0.03	UG/L		**0.014**	0.0036 U	0.0035 U	0.0022 U	0.0035 U	0.0035 U	0.0035 U	0.0036 U	0.0022 U
Trichlorophenoxyacetic acid (2,4,5-T)	NE	35	UG/L		0.014 U	0.014 U	0.015 U	0.014 U	0.015 U	0.014 U	0.014 U	0.015 U	0.014 U

Analyte Group: 5-Metals	Class GA Groundwater Criteria			*Location:*	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	MW-1D	MW-1D	MW-1D
				SampleName:	MW-1S	MW-1S	MW-1S	MW-1S	MW-1D	MW-1D	DUP-040909	MW-1D	MW-1D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	*Units*	*SampleDate:*	10/27/08	04/09/09	03/23/10	05/22/12	10/27/08	04/09/09	04/09/09	03/23/10	05/21/12
Aluminum	NE	NE	UG/L		80.2 U	80.2 U	NA	NA	**469**	**131 J**	**122 J**	NA	NA
Arsenic	NE	25	UG/L		10 U	10 U	NA	NA	10 U	10 U	10 U	NA	NA
Barium	NE	1000	UG/L		**108**	**93.1**	NA	NA	**143**	**211**	**214**	NA	NA
Calcium	NE	NE	UG/L		**36800**	**32000**	NA	NA	**13100**	**11800**	**11900**	NA	NA
Chromium	NE	50	UG/L		3 U	3 U	NA	NA	3 U	**3 J**	3 U	NA	NA
Cobalt	NE	5	UG/L		2.1 U	2.1 U	NA	NA	***30.5**	***80.8**	***83**	NA	NA
Copper	NE	200	UG/L		2.7 U	2.7 U	NA	NA	2.7 U	2.7 U	2.7 U	NA	NA
Iron	NE	300	UG/L		52.2 U	***615**	NA	NA	***1430**	***335**	***321**	NA	NA
Lead	NE	25	UG/L		6.9 U	6.9 U	NA	NA	6.9 U	6.9 U	6.9 U	NA	NA
Magnesium	35000	NE	UG/L		**5630**	**4660 J**	NA	NA	**5110**	**6370 J**	**6470 J**	NA	NA
Manganese	NE	300	UG/L		**95.1**	**28.3**	NA	NA	***1640**	***2480**	***2560**	NA	NA
Nickel	NE	100	UG/L		5.6 U	5.6 U	NA	NA	**6.2 J**	**13**	**12.9**	NA	NA

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 5-Metals *Analyte Name*	Class GA Groundwater Criteria TOGS 1.1.1 Guidance	 NYS Part 703(1) Standard	 *Units*	*Location:* *SampleName:* *SampleDate:*	*MW-1S* *MW-1S* *10/27/08*	*MW-1S* *MW-1S* *04/09/09*	*MW-1S* *MW-1S* *03/23/10*	*MW-1S* *MW-1S* *05/22/12*	*MW-1D* *MW-1D* *10/27/08*	*MW-1D* *MW-1D* *04/09/09*	*MW-1D* *DUP-040909* *04/09/09*	*MW-1D* *MW-1D* *03/23/10*	*MW-1D* *MW-1D* *05/21/12*
Potassium	NE	NE	UG/L		**8480**	**7810**	NA	NA	**3640**	**2620**	**2560**	NA	NA
Sodium	NE	20000	UG/L		***43900**	***46100**	NA	NA	***43000**	***28900**	***29200**	NA	NA
Vanadium	NE	14	UG/L		2.5 U	2.5 U	NA	NA	2.5 U	2.5 U	2.5 U	NA	NA
Zinc	2000	NE	UG/L		8.1 U	8.1 U	NA	NA	8.1 U	**20.4**	**20.1**	NA	NA

Notes:
U – The analyte was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
J – Estimated concentration. The result is below the quantitation limit but above the method detection limit.
UJ – The analyte was not detected above the reported sample quantitation limit. However, based on data validation, the reported method detection limit is approximate and may or may not represent the actual limit of the quantitation necessary to accurately and precisely measure the analyte in the sample.
NE – Standard and/or guidance value not established.
NA – Not analyzed.
ND – Not detected.
* (Red) concentrations are above New York State Class GA Groundwater Standards or Guidance values.

(1) – Notes applicable to NYS Part 703 Standards:
- (a) – Any detected concentration for Benzo(a)pyrene is considered above the Part 703 Standard.
- (b) – The standard for the sum of phenolic compounds is 1 ug/L.

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Water Results:

Analyte Group: 1-BTEX/Volatiles	Class GA Groundwater Criteria			Location:	MW-2S	MW-2S	MW-2S	MW-2S	MW-2D	MW-2D	MW-2D	MW-2D
				SampleName:	MW-2S	MW-2S	MW-2S	MW-2S	MW-2D	MW-2D	MW-2D	MW-2D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/30/08	04/10/09	03/23/10	05/21/12	10/30/08	04/10/09	03/23/10	05/22/12
Toluene	NE	5	UG/L		0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U

Analyte Group: 1-Volatiles	Class GA Groundwater Criteria			Location:	MW-2S	MW-2S	MW-2S	MW-2S	MW-2D	MW-2D	MW-2D	MW-2D
				SampleName:	MW-2S	MW-2S	MW-2S	MW-2S	MW-2D	MW-2D	MW-2D	MW-2D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/30/08	04/10/09	03/23/10	05/21/12	10/30/08	04/10/09	03/23/10	05/22/12
1,1-Dichloroethane	NE	5	UG/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	NE	5	UG/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Bromodichloromethane	50	NE	UG/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	NE	60	UG/L		1 U	1 U	1 U	1 U	1 U	**2 J**	1 U	1 U
Chloroform	NE	7	UG/L		0.8 U	**3 J**	**3 J**	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
cis-1,2-Dichloroethene	NE	5	UG/L		0.8 U	**1 J**	**0.8 J**	**4 J**	**1 J**	**3 J**	0.8 U	0.8 U
Dibromochloromethane	50	NE	UG/L		1 U	**1 J**	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	NE	5	UG/L		0.8 U	0.8 U	0.8 U	**1 J**	0.8 U	0.8 U	0.8 U	0.8 U
Trichloroethene (TCE)	NE	5	UG/L		**1 J**	**2 J**	**1 J**	*8	**2 J**	1 U	1 U	1 U

Analyte Group: 2-SVOCs	Class GA Groundwater Criteria			Location:	MW-2S	MW-2S	MW-2S	MW-2S	MW-2D	MW-2D	MW-2D	MW-2D
				SampleName:	MW-2S	MW-2S	MW-2S	MW-2S	MW-2D	MW-2D	MW-2D	MW-2D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/30/08	04/10/09	03/23/10	05/21/12	10/30/08	04/10/09	03/23/10	05/22/12
bis(2-Ethylhexyl)phthalate	NE	5	UG/L		2 U	2 U	NA	NA	**3 J**	**2 J**	NA	NA

Analyte Group: 4-Pesticides/Herbicides	Class GA Groundwater Criteria			Location:	MW-2S	MW-2S	MW-2S	MW-2S	MW-2D	MW-2D	MW-2D	MW-2D
				SampleName:	MW-2S	MW-2S	MW-2S	MW-2S	MW-2D	MW-2D	MW-2D	MW-2D
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/30/08	04/10/09	03/23/10	05/21/12	10/30/08	04/10/09	03/23/10	05/22/12
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	UG/L		47 U	49 U	50 U	48 UJ	**70 J**	48 U	47 U	**48 R**
2,4-DB	NE	5	UG/L		0.28 U	0.3 U	0.3 U	0.29 U	0.29 U	0.29 U	**0.6 J**	0.29 U
4,4'-DDD	NE	0.3	UG/L		**0.11**	**0.015 J**	**0.022 J**	**0.041**	**0.0096 J**	**0.15**	**0.093 J**	**0.24**
4,4'-DDE	NE	0.2	UG/L		**0.032**	0.0039 U	**0.0073 J**	**0.013 J**	0.0039 U	**0.077**	**0.049 J**	**0.16**
4,4'-DDT	NE	0.2	UG/L		**0.075**	0.0058 U	**0.015 J**	**0.052**	0.0058 U	**0.046**	**0.022 J**	*0.2

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Class GA Groundwater Criteria			*Location:*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2D*	*MW-2D*	*MW-2D*	*MW-2D*
				SampleName:	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2D*	*MW-2D*	*MW-2D*	*MW-2D*
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	*Units*	*SampleDate:*	*10/30/08*	*04/10/09*	*03/23/10*	*05/21/12*	*10/30/08*	*04/10/09*	*03/23/10*	*05/22/12*
alpha Endosulfan (Endosulfan I)	NE	5	UG/L		**0.0051 J**	0.0029 U	0.0029 U	0.0041 U	0.0029 U	0.0028 U	0.003 U	0.0041 U
beta Endosulfan (Endosulfan II)	NE	5	UG/L		0.0039 U	0.0039 U	0.0039 U	0.014 U	0.0039 U	0.0038 U	0.0039 U	0.014 U
BHC, alpha	NE	0.01	UG/L		0.0026 U	0.0026 U	0.0027 U	0.0029 U	0.0026 U	0.0025 U	0.0027 U	0.0028 U
BHC, beta	NE	0.04	UG/L		0.0037 U	0.0037 U	0.0037 U	0.0032 U	0.0037 U	0.0036 U	0.0037 U	0.0032 U
BHC, delta	NE	0.04	UG/L		0.0029 U	0.0029 U	0.0029 U	0.0032 U	0.0029 U	0.0028 U	0.003 U	0.0032 U
BHC, gamma (Lindane)	NE	0.05	UG/L		0.0044 U	0.0045 U	0.0045 U	0.0019 U	0.0044 U	0.0043 U	0.0045 U	0.0019 U
Chlordane, alpha	NE	0.05	UG/L		**0.0052 J**	0.0046 U	**0.0095 J**	0.002 U	0.0045 U	0.0044 U	0.0046 U	**0.0057 J**
Chlordane, gamma	NE	0.05	UG/L		NA	NA	0.0041 U	**0.0059 J**	NA	NA	0.0041 U	**0.021**
Chlordane, gamma	NE	NE	UG/L		0.0029 U	0.0029 U	NA	NA	0.0029 U	0.0028 U	NA	NA
Dalapon	50	50	UG/L		0.31 U	0.25 U	0.25 U	0.24 U	**1.1 J**	0.24 U	0.24 U	0.24 U
Dieldrin	NE	0.004	UG/L		***0.014 J**	0.0039 U	0.0039 U	***0.035 J**	0.0039 U	***0.013 J**	***0.017 J**	0.02 U
Endosulfan sulfate	NE	5	UG/L		0.0039 U	0.0039 U	0.0055 U	0.0055 U	0.0039 U	0.0038 U	0.0055 U	0.0055 U
Endrin	NE	0	UG/L		0.0039 U	0.0039 U	0.0039 U	0.0077 U	0.0039 U	0.0038 U	0.0039 U	0.0077 U
Endrin ketone	NE	5	UG/L		0.0039 U	0.0039 U	0.017 U	0.0048 U	0.0039 U	0.0038 U	0.017 U	0.0047 U
Heptachlor epoxide	NE	0.03	UG/L		0.0036 U	0.0036 U	0.0036 U	**0.006 J**	0.0036 U	0.0035 U	0.0036 U	**0.0049 J**
Trichlorophenoxyacetic acid (2,4,5-T)	NE	35	UG/L		0.014 U	0.015 U	0.015 U	0.014 U	**0.016 J**	0.014 U	0.014 U	0.014 U

Analyte Group: 5-Metals	Class GA Groundwater Criteria			*Location:*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2D*	*MW-2D*	*MW-2D*	*MW-2D*
				SampleName:	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2D*	*MW-2D*	*MW-2D*	*MW-2D*
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	*Units*	*SampleDate:*	*10/30/08*	*04/10/09*	*03/23/10*	*05/21/12*	*10/30/08*	*04/10/09*	*03/23/10*	*05/22/12*
Aluminum	NE	NE	UG/L		**205**	80.2 U	NA	NA	**7800**	**6010**	NA	NA
Arsenic	NE	25	UG/L		10 U	10 U	NA	NA	**12.8 J**	10 U	NA	NA
Barium	NE	1000	UG/L		**56**	**207**	NA	NA	**227**	**236**	NA	NA
Calcium	NE	NE	UG/L		**12100**	**13700**	NA	NA	**25200**	**36000**	NA	NA
Chromium	NE	50	UG/L		3 U	3 U	NA	NA	**22.2**	**16.8**	NA	NA
Cobalt	NE	5	UG/L		2.1 U	2.1 U	NA	NA	***9.1**	**2.2 J**	NA	NA
Copper	NE	200	UG/L		2.7 U	2.7 U	NA	NA	**5.1 J**	**16.4**	NA	NA
Iron	NE	300	UG/L		***783**	***341**	NA	NA	***14500**	***7320**	NA	NA
Lead	NE	25	UG/L		6.9 U	6.9 U	NA	NA	**8.1 J**	**9.6 J**	NA	NA
Magnesium	35000	NE	UG/L		**2420**	**2220 J**	NA	NA	**8590**	**6690**	NA	NA
Manganese	NE	300	UG/L		***472**	**231**	NA	NA	***855**	***496**	NA	NA
Nickel	NE	100	UG/L		5.6 U	5.6 U	NA	NA	**6.4 J**	5.6 U	NA	NA

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 5-Metals	Class GA Groundwater Criteria			*Location:*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2D*	*MW-2D*	*MW-2D*	*MW-2D*
				SampleName:	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2S*	*MW-2D*	*MW-2D*	*MW-2D*	*MW-2D*
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	*Units*	*SampleDate:*	*10/30/08*	*04/10/09*	*03/23/10*	*05/21/12*	*10/30/08*	*04/10/09*	*03/23/10*	*05/22/12*
Potassium	NE	NE	UG/L		**11600**	**3170**	NA	NA	**9730**	**32500**	NA	NA
Sodium	NE	20000	UG/L		**13900**	***25500**	NA	NA	***89400**	***63400**	NA	NA
Vanadium	NE	14	UG/L		2.5 U	2.5 U	NA	NA	**7.9**	**8.2**	NA	NA
Zinc	2000	NE	UG/L		**59**	**12.4 J**	NA	NA	**14.1 J**	**268**	NA	NA

Notes:
U – The analyte was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
J – Estimated concentration. The result is below the quantitation limit but above the method detection limit.
UJ – The analyte was not detected above the reported sample quantitation limit. However, based on data validation, the reported method detection limit is approximate and may or may not represent the actual limit of the quantitation necessary to accurately and precisely measure the analyte in the sample.
NE – Standard and/or guidance value not established.
NA – Not analyzed.
ND – Not detected.
* (Red) concentrations are above New York State Class GA Groundwater Standards or Guidance values.

(1) – Notes applicable to NYS Part 703 Standards:
- (a) – Any detected concentration for Benzo(a)pyrene is considered above the Part 703 Standard.
- (b) – The standard for the sum of phenolic compounds is 1 ug/L.

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Water Results:

Analyte Group: 1-BTEX/Volatiles	Class GA Groundwater Criteria			Location:	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
				SampleName:	MW-3	DUP-102708	MW-3	MW-3	MW-3	MW-4	DUP032210	MW-4	MW-5	MW-5	DUP052112
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/27/08	10/27/08	04/09/09	03/22/10	05/21/12	03/22/10	03/22/10	05/22/12	03/22/10	05/21/12	05/21/12
Toluene	NE	5	UG/L		0.7 U	0.7 U	0.7 U	0.7 U	**1 J**	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U

Analyte Group: 1-Volatiles	Class GA Groundwater Criteria			Location:	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
				SampleName:	MW-3	DUP-102708	MW-3	MW-3	MW-3	MW-4	DUP032210	MW-4	MW-5	MW-5	DUP052112
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/27/08	10/27/08	04/09/09	03/22/10	05/21/12	03/22/10	03/22/10	05/22/12	03/22/10	05/21/12	05/21/12
1,1-Dichloroethane	NE	5	UG/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	NE	5	UG/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Bromodichloromethane	50	NE	UG/L		1 U	1 U	1 U	1 U	1 U	**1 J**	**1 J**	1 U	1 U	1 U	1 U
Carbon disulfide	NE	60	UG/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	NE	7	UG/L		0.8 U	0.8 U	**3 J**	**4 J**	0.8 U	**4 J**	**4 J**	**5**	**3 J**	0.8 U	0.8 U
cis-1,2-Dichloroethene	NE	5	UG/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
Dibromochloromethane	50	NE	UG/L		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	NE	5	UG/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	**1 J**	**1 J**	**4 J**	**2 J**	**3 J**	**3 J**
Trichloroethene (TCE)	NE	5	UG/L		1 U	1 U	**1 J**	1 U	**1 J**	1 U	1 U	**1 J**	1 U	**1 J**	**1 J**

Analyte Group: 2-SVOCs	Class GA Groundwater Criteria			Location:	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
				SampleName:	MW-3	DUP-102708	MW-3	MW-3	MW-3	MW-4	DUP032210	MW-4	MW-5	MW-5	DUP052112
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/27/08	10/27/08	04/09/09	03/22/10	05/21/12	03/22/10	03/22/10	05/22/12	03/22/10	05/21/12	05/21/12
bis(2-Ethylhexyl)phthalate	NE	5	UG/L		2 U	2 U	2 U	NA	NA	NA	NA	NA	NA	NA	NA

Analyte Group: 4-Pesticides/Herbicides	Class GA Groundwater Criteria			Location:	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
				SampleName:	MW-3	DUP-102708	MW-3	MW-3	MW-3	MW-4	DUP032210	MW-4	MW-5	MW-5	DUP052112
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	Units	SampleDate:	10/27/08	10/27/08	04/09/09	03/22/10	05/21/12	03/22/10	03/22/10	05/22/12	03/22/10	05/21/12	05/21/12
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	UG/L		48 U	48 U	50 U	47 U	48 UJ	240 U	250 U	48 UJ	51 U	48 UJ	48 UJ
2,4-DB	NE	5	UG/L		0.29 U	0.29 U	0.3 U	0.28 U	0.29 U	1.4 U	1.5 U	0.29 U	0.31 U	0.29 U	0.29 U
4,4'-DDD	NE	0.3	UG/L		0.0039 U	0.0038 U	0.0038 U	0.011 U	0.0047 U	**0.28 J**	**0.25 J**	**0.014 J**	**0.14 J**	0.0048 U	0.0048 U
4,4'-DDE	NE	0.2	UG/L		0.0039 U	0.0038 U	0.0038 U	0.0047 U	0.0047 U	**0.018 J**	**0.016 J**	0.0048 U	0.024 U	0.0048 U	**0.0053 J**
4,4'-DDT	NE	0.2	UG/L		0.0059 U	0.0057 U	0.0058 U	0.011 U	**0.021**	***0.39 J**	**0.13 J**	**0.04**	**0.095 J**	**0.011 J**	**0.014 J**

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Class GA Groundwater Criteria			*Location:*	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
				SampleName:	MW-3	DUP-102708	MW-3	MW-3	MW-3	MW-4	DUP032210	MW-4	MW-5	MW-5	DUP052112
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	*Units*	*SampleDate:*	10/27/08	10/27/08	04/09/09	03/22/10	05/21/12	03/22/10	03/22/10	05/22/12	03/22/10	05/21/12	05/21/12
alpha Endosulfan (Endosulfan I)	NE	5	UG/L		**0.009 J**	**0.011**	0.0029 U	0.0028 U	0.0041 U	**0.019**	**0.019**	0.0041 U	0.015 U	**0.018 J**	**0.018 J**
beta Endosulfan (Endosulfan II)	NE	5	UG/L		0.0039 U	0.0038 U	0.0038 U	0.0038 U	0.014 U	0.004 U	**0.013 J**	0.014 U	0.019 U	0.014 U	0.014 U
BHC, alpha	NE	0.01	UG/L		0.0026 U	0.0026 U	0.0026 U	0.0025 U	0.0028 U	0.0027 UJ	*0.013 J	*0.12	0.013 U	**0.0065 J**	**0.0067 J**
BHC, beta	NE	0.04	UG/L		0.0037 U	0.0036 U	0.0037 U	0.0036 U	0.0032 U	**0.0079 J**	**0.0081 J**	0.0032 U	0.018 U	0.0033 U	0.0033 U
BHC, delta	NE	0.04	UG/L		**0.0032 J**	**0.0054 J**	0.0029 U	0.0028 U	0.0032 U	0.003 U	0.003 U	0.0032 U	0.015 U	0.0033 U	0.0033 U
BHC, gamma (Lindane)	NE	0.05	UG/L		0.0045 U	0.0044 U	0.0044 U	0.0043 U	0.0019 U	*0.071	*0.066	**0.011**	0.022 U	**0.0023 J**	**0.0027 J**
Chlordane, alpha	NE	0.05	UG/L		**0.015**	**0.018**	**0.021**	**0.01**	**0.007 J**	**0.01 J**	**0.011**	**0.0066 J**	0.023 U	**0.0028 J**	0.0019 U
Chlordane, gamma	NE	0.05	UG/L		NA	NA	NA	0.013 U	0.0041 U	**0.035**	**0.036**	0.0041 U	0.02 U	**0.01 J**	0.0041 U
Chlordane, gamma	NE	NE	UG/L		0.0084 U	0.0098 U	0.006 U	NA	NA	NA	NA	NA	NA	NA	NA
Dalapon	50	50	UG/L		0.31 U	0.32 U	0.25 U	0.24 U	0.24 U	1.2 U	1.3 U	0.24 U	0.26 U	0.24 U	0.24 U
Dieldrin	NE	0.004	UG/L		0.0039 U	*0.0043 J	0.0038 U	0.0038 U	*0.079	*3.3	*3.2	*0.74 J	*0.15	*0.086 J	*0.089 J
Endosulfan sulfate	NE	5	UG/L		0.0039 U	0.0038 U	0.0038 U	0.0053 U	0.0055 U	**0.035**	**0.035**	0.0055 U	0.027 U	0.0056 U	0.0056 U
Endrin	NE	0	UG/L		0.0039 U	0.0038 U	0.0038 U	0.0038 U	0.0077 U	*0.11	*0.12	0.0077 U	0.019 U	0.0078 U	0.0078 U
Endrin ketone	NE	5	UG/L		0.0039 U	0.0038 U	0.0038 U	0.016 U	0.0047 U	**0.12**	**0.13**	**0.0065 J**	0.083 U	0.0048 U	0.0048 U
Heptachlor epoxide	NE	0.03	UG/L		**0.013**	**0.016**	0.0036 U	0.0035 U	**0.014**	0.0037 U	0.0037 U	0.004 U	0.018 U	**0.011**	**0.011 J**
Trichlorophenoxyacetic acid (2,4,5-T)	NE	35	UG/L		0.014 U	0.015 U	0.015 U	0.014 U	0.014 U	**0.65**	**0.44**	**0.15 J**	0.015 U	**0.19 J**	**0.19 J**

Analyte Group: 5-Metals	Class GA Groundwater Criteria			*Location:*	MW-3	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5
				SampleName:	MW-3	DUP-102708	MW-3	MW-3	MW-3	MW-4	DUP032210	MW-4	MW-5	MW-5	DUP052112
Analyte Name	TOGS 1.1.1 Guidance	NYS Part 703(1) Standard	*Units*	*SampleDate:*	10/27/08	10/27/08	04/09/09	03/22/10	05/21/12	03/22/10	03/22/10	05/22/12	03/22/10	05/21/12	05/21/12
Aluminum	NE	NE	UG/L		80.2 U	80.2 U	80.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NE	25	UG/L		10 U	10 U	10 U	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NE	1000	UG/L		**117**	**121**	**110**	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NE	NE	UG/L		**10800**	**11100**	**7830**	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NE	50	UG/L		3 U	3 U	3 U	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NE	5	UG/L		2.1 U	2.1 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NE	200	UG/L		2.7 U	2.7 U	2.7 U	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NE	300	UG/L		*303	**284**	**109 J**	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NE	25	UG/L		6.9 U	6.9 U	6.9 U	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	35000	NE	UG/L		**2050**	**2120**	**1300 J**	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NE	300	UG/L		**65.9**	**64.7**	**4.1 J**	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	NE	100	UG/L		5.6 U	5.6 U	5.6 U	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 10
Groundwater Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 5-Metals *Analyte Name*	Class GA Groundwater Criteria TOGS 1.1.1 Guidance	 NYS Part 703(1) Standard	 *Units*	*Location:* *SampleName:* *SampleDate:*	*MW-3* *MW-3* *10/27/08*	*MW-3* *DUP-102708* *10/27/08*	*MW-3* *MW-3* *04/09/09*	*MW-3* *MW-3* *03/22/10*	*MW-3* *MW-3* *05/21/12*	*MW-4* *MW-4* *03/22/10*	*MW-4* *DUP032210* *03/22/10*	*MW-4* *MW-4* *05/22/12*	*MW-5* *MW-5* *03/22/10*	*MW-5* *MW-5* *05/21/12*	*MW-5* *DUP052112* *05/21/12*
Potassium	NE	NE	UG/L		**2780**	**2810**	**2310**	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NE	20000	UG/L		**15100**	**15300**	**18100**	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NE	14	UG/L		2.5 U	2.5 U	2.5 U	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2000	NE	UG/L		8.1 U	8.1 U	8.1 U	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
U – The analyte was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
J – Estimated concentration. The result is below the quantitation limit but above the method detection limit.
UJ – The analyte was not detected above the reported sample quantitation limit. However, based on data validation, the reported method detection limit is approximate and may or may not represent the actual limit of the quantitation necessary to accurately and precisely measure the analyte in the sample.
NE – Standard and/or guidance value not established.
NA – Not analyzed.
ND – Not detected.
* (Red) concentrations are above New York State Class GA Groundwater Standards or Guidance values.

(1) – Notes applicable to NYS Part 703 Standards:
- (a) – Any detected concentration for Benzo(a)pyrene is considered above the Part 703 Standard.
- (b) – The standard for the sum of phenolic compounds is 1 ug/L.

Appendix E: Field Data Sheets – Soil Vapor Intrusion Monitoring

Brown AND Caldwell

Soil Vapor Sample Collection Field Form

Project: Bartlett Tree Project #: 152225

Date: 12/5/18 Personnel: Brian Taylor

Sample ID: SV-1

Carbon Filter ID #: N/A

Sample location: SV-1 Depth of sample point below grade: 18"

Rainfall: N/A Wind speed (mph) and direction: N/A

Start:	**End:**
Time: 0630	Time: 1345
indoor Temperature (°C): 17	Temperature (°C): 19
outdoor Barometric Pressure (~~mmHg~~ in): 30.1	Barometric Pressure (~~mmHg~~ in): 30.04
outdoor Relative Humidity (%): 68	Relative Humidity (%): 51
Flow rate: 10.5 mL/min	Flow rate:
Canister -30	-1

Helium tracer test:

Tubing type used: Poly Length of tubing (cm): 76.2 Tubing volume (cc): 3.43

1 to 3 volumes purged @ < 200cc/min? (YES) NO

Chamber tracer gas conc.: 50 % Tracer gas conc. during purging: 0 %

Weather conditions during probe installation: Indoor location

Temperature (°C): 65° Rainfall: N/A Barometric Pressure (~~mmHG~~ in): 29.97

Wind direction: N/A Wind speed (mph): N/A

Comments:

Brown AND Caldwell

Soil Vapor Sample Collection Field Form

Project: Bartlett Tree Project #: 152225

Date: 12/5/18 Personnel: Brian Taylor

Sample ID: IA-1

Carbon Filter ID #: N/A

Sample location: IA-1 Depth of sample point below grade: N/A

Rainfall: N/A Wind speed (mph) and direction: N/A

Start:	**End:**
Time: 0630	Time: 1346
Temperature (°C): 17 (indoor)	Temperature (°C): 19
Barometric Pressure (~~mm~~ in Hg): 30.1 (outdoor)	Barometric Pressure (mmHg): 30.04
Relative Humidity (%): 68 (outdoor)	Relative Humidity (%): 51
Flow rate: 10.5 ml/min	Flow rate:
Can Pressure -30	-24

Helium tracer test: N/A

Tubing type used: _____ Length of tubing (cm): _____ Tubing volume (cc): _____

1 to 3 volumes purged @ < 200cc/min? YES NO

Chamber tracer gas conc.: _____ Tracer gas conc. during purging: _____

Weather conditions during probe installation: N/A

Temperature (°C): _____ Rainfall: _____ Barometric Pressure (mmHG): _____

Wind direction: _____ Wind speed (mph): _____

Comments:

Can vacuum only dropped 6 in Hg

Brown AND Caldwell

Soil Vapor Sample Collection Field Form

Project: Bartlett Tree Project #: 152225

Date: 12/5/18 Personnel: Brian Taylor

Sample ID: AA-1

Carbon Filter ID #: N/A

Sample location: AA-1 Depth of sample point below grade: N/A

Rainfall: N/A Wind speed (mph) and direction: _____

Start:

Time: 0630

Temperature (°C): -3

Barometric Pressure (~~mm~~ in Hg): 30.1

Relative Humidity (%): 68%

Flow rate: 10.5 ml/min

Canister - 30

End:

Time: 1033

Temperature (°C): 2

Barometric Pressure (~~mm~~ in Hg): 30.09

Relative Humidity (%): 51

Flow rate: _____

Canister - 1

outdoor ↓

Helium tracer test: N/A

Tubing type used: _____ Length of tubing (cm): _____ Tubing volume (cc): _____

1 to 3 volumes purged @ < 200cc/min? YES NO

Chamber tracer gas conc.: _____ Tracer gas conc. during purging: _____

Weather conditions during probe installation: N/A

Temperature (°C): _____ Rainfall: _____ Barometric Pressure (mmHG): _____

Wind direction: _____ Wind speed (mph): _____

Comments:

Canister dropped quickly - 4 hours

Sunny 35°

12/4/18 BARTLETT VI

1015 BFT on-site
Meet w/ office staff

1030 Drill SVI Sample Point

1100 Meet w/ Peter Lupon

1115 Helium Leak Test
50% Helium in
0% Helium out
TOT Passed
0.0 ppm VOC on exhaust.

1140 Clean up / Prep for 12/5

1145 Inspection of Product Stored

1230 OFF-site + Hand dyed

1300 BFT on site - FSV on-site

Bartlett VI 12/4/18

Product	PPM
Royal Purple Diesel Motor Oil	0.0
Empty Kerosene Can	0.3 ppm
Gas Powered Equip (CAN)	1.2 ppm in AREA
Mega Flow AW HVI Hydraulic Oil 32	0.0
Black Bear HD 10W-40 SN	0.0
Plant Foods	
60% SAN 30% Nitrogen	0.0
5% Magnesia	0.0
5% Iron	0.0
Valvoline Heavy Duty Grease	0.0
PT w ASP Frazer III	0.1
Gypsum Pellets	0.0
Agricultural Sulfur	0.0
Spray Indicator Colorings	0.0
Accuark x ATF Glyphosate	0.0
40:1 High Performance Style Fuel	0.0
Fluid Fertilizer 20-05 w/ Humates	0.0

12/4/18

12/5/18 Bartlett VI Clear 26°

0600 BFT on-site

0628 Bartlett on-site

Sample ID	START TIME	CANISTER
SV-1	0630	-30
IA-1	0630	-30
AA-1	0630	-30

STARTING WEATHER

Indoor 68°

outdoor 26°

NNE @ 4 mph

30.1 in Hg

68% RH

1033 stopper AA-1 Canister -1

1345 stopper SV-1 Canister -1

1346 stopper IA-1 Canister -24

WEATHER

Indoor 65°

outdoor 36°

NNE @ 11 mph

30.04 in Hg

56% RH

Bartlett VI 12/5/18

Appendix F: Photographic Log

Photograph #1 – Bartlett Tree Experts office/garage building, viewed looking north from Union Avenue.

Photograph #2 – View looking north along west side of the office/garage building.

Photograph #3 – View looking south along east side of the office/garage building. Secure storage locker for pesticides located at north end of the building.

Photograph #4 – Ground floor interior of the office/garage building. Sub-slab soil vapor sampling canister in foreground.

Photograph #5 – Ground floor interior of office/garage building. Employee lockers and break area.

Photograph #6 – Ground floor interior of office/garage building. Storage of gasoline-powered line trimmers.

Photograph #7 – Ground floor interior of office/garage building. Flammable storage locker for lubricants, 2-cycle gasoline mix, diesel fuel.

Photograph #8 – Ground floor interior of office/garage building, southwest corner. 5-gallon containers of motor oil and hydraulic fluid. Two 55-gallon drums for used oil, collected by permitted recycler.

Photograph #9 – Ground floor interior of office/garage building. Containers of liquid plant fertilizer, sacks of mason's sand.

Photograph #8 – View of yard and parking area, looking north from office/garage building.

Photograph #9 – View of yard looking north along west property line. Protective concrete disc covering well vault for monitoring well MW-5.

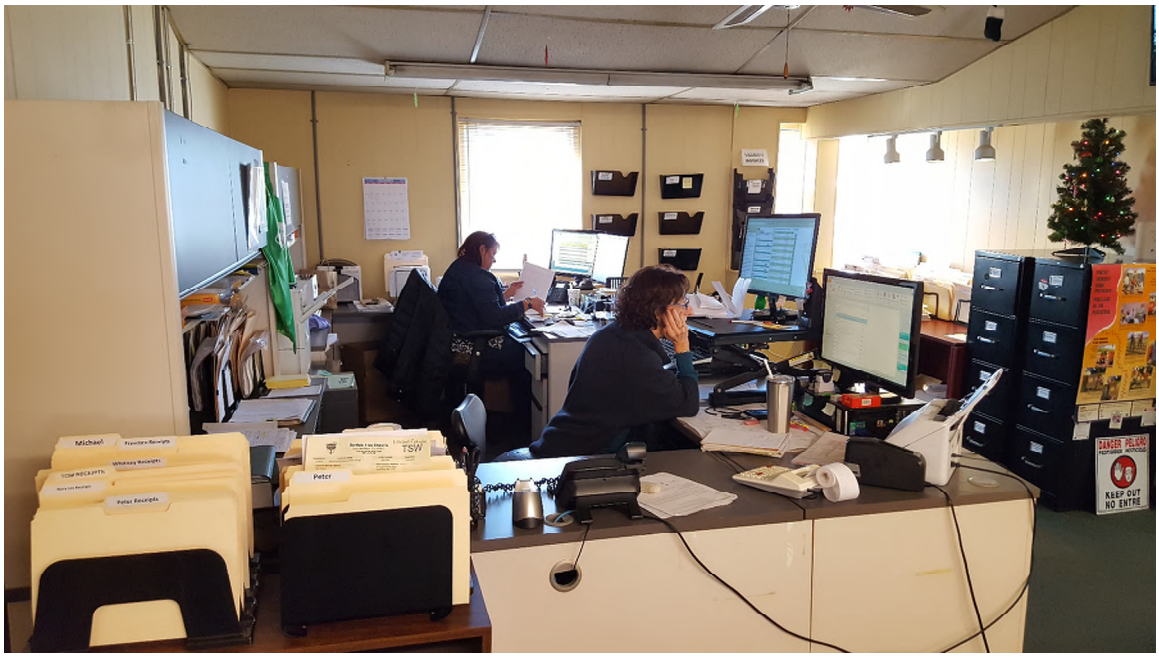
Photograph #10 – Protective concrete discs covering well vaults for monitoring wells MW-2D (left) and MW-2S (right).

Photograph #11 – Area of remaining subsurface soil contamination in vicinity of boring SB-7 (at metal notebook and yellow tape measure). Original ground surface covered by aggregate.

Photograph #12 – Area of remaining subsurface soil contamination in vicinity of boring SB-6 (at metal notebook and yellow tape measure). Original ground surface covered by aggregate.

Photograph #13 – Area of remaining subsurface soil contamination, vicinity of former test pit TP-2, under wheeled trash receptacle. Area is covered by asphalt paving.

Photograph #14 – Second floor interior of the office/garage building. Conference room.



Photograph #15 – Second floor interior of the office/garage building. Office area.

Photograph #16 – Second floor interior of the office/garage building. Office area.

Appendix G: Pavement Inspection

The F.A. Bartlett Tree Expert Company

PERIODIC PAVEMENT AND SLAB INSPECTION

FACILITY	**345 Union Ave, Westbury, NY 11590**
LOCAL MANAGER	**Peter Lyon**
DATE	**October 8th 2018**

On October 8, 2018, I inspected the existing pavement and concrete slabs for SB-6, SB-7, and TP-2 at 345 Union Ave, Westbury NY. There were no indications of any breaches of integrity. Photos have been attached.






Submitted by;

Peter J. Lyon
Local Manager / Arborist Representative
Bartlett Tree Experts
345 Union Avenue, Westbury, NY 11590
(516) 334-0648 ext. 431 | (516) 334-8357 fax | www.bartlett.com

The F.A. Bartlett Tree Expert Company

PERIODIC PAVEMENT AND SLAB INSPECTION

FACILITY	**345 Union Ave, Westbury, NY 11590**
LOCAL MANAGER	**Peter Lyon**
DATE	**December 04, 2018**

On December 04, 2018, I inspected the existing pavement and aggregate covered areas for TP-2, SB-6, and SB-7, at 345 Union Ave, Westbury NY. There were no indications of any breaches of integrity. Since the last inspection the area under TP-2 has been blacked topped. Photos have been attached.

TP-2 looking east

SB-6 looking north east

SB-7 looking north east

Submitted by;

Peter J. Lyon
Local Manager / Arborist Representative
Bartlett Tree Experts
345 Union Avenue, Westbury, NY 11590
(516) 334-0648 ext. 431 | (516) 334-8357 fax | www.bartlett.com

Appendix H: Analytical Data Packages (CD-ROM)

Appendix I: Addendum to Site Management Plan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Region 1 Main Office
SUNY @ Stony Brook, 50 Circle Road, Stony Brook, NY 11790
P: (631) 444-0200
www.dec.ny.gov

SENT VIA EMAIL ONLY

January 10, 2018

Mr. David Marren, Esq.
FA Bartlett Tree Company
13768 Hamilton Road
Charlotte, NC 28278
Email: dmarren@bartlett.com

Re:
Addendum to Site Management Plan (SMP) effective April 13, 2017, letter dated April 14, 2017.
Bartlett Tree Company Site, No. 130074
345 Union Avenue, Westbury, NY

Dear Mr. Marren:

The New York State Department of Environmental Conservation (NYSDEC) & NYS Department of Health (NYSDOH) have reviewed the Addendum to Site Management Plan Effective April 13, 2017, letter dated April 14, 2017 submitted by the Brown and Caldwell on your behalf for the site referenced above.

The proposed addendum to the SMP is approved by NYSDEC in concurrence with NYSDOH. A copy of the approved addendum should be attached to the SMP.

If you should have any questions, please feel free to contact me at (631) 444-0242 or jahan.reza@dec.ny.gov.

Sincerely,

Jahan Reza
Project Manager

ec: Eric Obrecht (NYSDEC)
Walter Parish, (NYSDEC)
Charlotte Bethoney (NYSDOH)
Anthony Perretta (NYSDOH)
Frank Williams (B&C)

August 14, 2017

Mr. Jahan Reza
New York State Department of Environmental Conservation
Region 1 – Division of Environmental Remediation
Building 40, SUNY
Stony Brook, New York 11790-2356

149161

Subject: Addendum to Site Management Plan Effective April 13, 2017
Bartlett Tree Company Site, No. 0130074
345 Union Avenue, Westbury, NY

Dear Mr. Reza:

On behalf of F. A. Bartlett Tree Expert Company (Bartlett), Brown and Caldwell Associates (BC) provides this letter to serve as an addendum to the document titled "Site Management Plan, Bartlett Tree Company Site, NYSDEC Site #0130074", dated April 20, 2015 and approved by the New York State Department of Environmental Conservation (NYSDEC) on April 30, 2015. The purpose of this addendum is to incorporate in the SMP the recommendations made in the Periodic Review Report (PRR) dated March 1, 2017, which the NYSDEC approved by letter to Bartlett dated April 13, 2017 (copy attached). The NYSDEC concurred with the recommendations to discontinue collection of groundwater samples from monitoring well MW-1D and to cease analysis of all groundwater samples for organophosphorus (OP) pesticides. Effective April 13, 2017, the SMP is hereby modified as follows:

SMP Section 3.3.1 - Groundwater Monitoring

Groundwater samples will no longer be collected from the deep upgradient monitoring well (MW-1D). MW-1D will be abandoned in accordance with Section 3.3.1.2 of the SMP and the NYSDEC guidance document, CP-43: Groundwater Monitoring Well Decommissioning Policy; November 3, 2009. Because MW-1D is an uncontaminated overburden monitoring well that penetrates a clayey silt layer observed locally to be a relatively impermeable aquitard, the casing pulling method will be attempted, followed by grouting in-place if unsuccessful. Groundwater samples collected from the remaining six monitoring wells (MW-1S, MW-2S, MW-2D, MW-3, MW-4, MW-5) as part of the twice-yearly groundwater monitoring events will be analyzed only for Target Compound List (TCL) Pesticides by USEPA SW846 Method 8081A. The remainder of the sampling protocols outlined in section 3.3.1 of the SMP remain unchanged.

Monitoring well decommissioning activities will be documented in the next PRR, to be submitted in February 2018.

Upon approval by the NYSDEC this addendum will be attached to and incorporated in the SMP.

Very truly yours,

Brown and Caldwell Associates

Frank Williams
Supervising Geologist

attachment

cc: David Marren, Esq. – Bartlett
Thomas West, Esq. – The West Firm

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 1
SUNY @ Stony Brook, 50 Circle Road, Stony Brook, NY 11790
P: (631) 444-0240 I F: (631) 444-0248
www.dec.ny.gov

April 13, 2017

FA Bartlett Tree Expert Company
Mr. David Marren, Esq.
13768 Hamilton Rd.
Charlotte, NC 28278

Re: Site Management (SM) Periodic Review Report (PRR) Response Letter
Bartlett Tree Company Site No.: 1-30-074
Westbury, Nassau County

Dear Mr. Marren,

The New York State Department of Environmental Conservation (DEC) has reviewed your Periodic Review Report (PRR) and IC/EC Certification for the following period: December 1, 2015 to March 1, 2017.

The Department hereby accepts the PRR and associated certification. Based on the current and previous groundwater monitoring results, the Department concurs with the recommendation to discontinue sampling monitoring well MW-1D and to remove organophosphorous (OP) pesticides from the suite of analytes for the remaining monitoring wells. Monitoring well MW-1D should be abandoned in accordance with Section 3.3.1.2 of the DEC approved Site Management Plan (SMP). In order to memorialize these modifications, please submit a letter addendum to the SMP for DEC approval.

The frequency of periodic reviews for this site is annually and your next PRR is due on March 1, 2018. You will receive a reminder letter and updated certification forms 45 days prior to the due date. Regardless of receipt of the reminder notice, the next PRR including the signed certification form, is due on the date specified above.

If you have any questions, or need additional forms, please feel free to contact me at 631-444-0246 or e-mail: jamie.ascher@dec.ny.gov.

Sincerely,

Jamie Ascher, P.G.
Engineering Geologist 2

cc: R. Bartlett, Jr., Bartlett Realty Company, Inc.

ec: J. Harrington, P.E., DEC
W. Parish, P.E., DEC
A. Perretta, NYSDOH
F. Williams, Brown and Caldwell Associates

Appendix J: Emerging Contaminant Work Plan

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Region 1 Main Office
SUNY @ Stony Brook, 50 Circle Road, Stony Brook, NY 11790
P: (631) 444-0200
www.dec.ny.gov

Date: May 17, 2018

Mr. David Marren, Esq.
FA Bartlett Tree Expert Company
13768 Hamilton Rd.
Charlotte, NC 28278
Email: dmarren@Bartlett.com

RE: Emerging Contaminants Sampling Work Plan (ECSWP), date 5/11/2018, Bartlett Tree Company, Westbury, Nassau County Site No. 130074

Dear Mr. Marren:

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the Emerging Contaminants Sampling Work Plan, date 5/11/2018, submitted by Brown and Caldwell on your behalf for the site referenced above.

The Emerging Contaminants Sampling Work Plan (ECSWP) is acceptable by the Department. Please start the sampling activities as scheduled on 5/30/2018.

If you have any questions please feel free to contact me, at 631-444-0242 or jahan.reza@dec.ny.gov.

Sincerely,

Jahan Reza
Project Manager
Remedial Bureau A
Division of Environmental Remediation

Cc: Eric Obrecht (DEC)
Walter Parish (DEC)
Frank Williams (Brown and Caldwell)

Brown and Caldwell Associates
3 Marcus Boulevard
Albany, NY 12205

T: 518.560.5912
F: 518.560.5920

May 11, 2018

Jahan Reza
Project Manager
New York State Department of Environmental Conservation
Region 1, 50 Circle Road
Stony Brook, NY 11790

149161

Subject: Work Plan - Emerging Contaminant Sampling
Bartlett Tree Company Site No. 0130074

Dear Mr. Reza:

This letter constitutes a work plan for emerging contaminant sampling at the Bartlett Tree Company Site (No. 0130074), located at 345 Union Avenue in the Village of Westbury, Nassau County, New York (the Site). The New York State Department of Environmental Conservation (DEC) requested that F.A. Bartlett Tree Expert Company (Bartlett) collect and analyze groundwater samples for 1,4-Dioxane and per- and polyfluoroalkyl substances (PFAS).

The emerging contaminant sampling will be conducted in conjunction with the regular Spring 2018 round of groundwater monitoring that will be conducted pursuant to the DEC-approved Site Management Plan[1] (SMP). The SMP specifies that groundwater samples will be analyzed for Target Compound List (TCL) Pesticides by Method 8081A[2].

The SMP does not require monitoring groundwater for volatile organic compounds (VOCs) because the RI indicated site operations were not the source of VOC impacts in groundwater. Nevertheless, the DEC's May 2, 2018 letter accepting the 2017 Periodic Review Report refers to sampling monitoring wells for VOCs in response to the November 2017 increase in sub-slab vapor concentrations of some non-chlorinated VOCs under Bartlett's building. Sampling the monitoring wells for VOCs would not provide information about VOCs under the building. The wells are located 130 feet or more north of the building and target groundwater conditions near Drywell 1 (which was shown not to be a source of VOCs). Shallow groundwater at the Site typically flows in a west or west-southwest direction (SMP Figure 5, attached), so the monitoring wells are side-gradient to the building and do not reflect groundwater conditions under the building. Given these facts, the appropriate way to evaluate an increase in non-chlorinated VOCs in sub-slab vapor is by continued monitoring of the vapor and indoor air.

[1] Site Management Plan, Bartlett Tree Company Site, NYSDEC Site #0130074; April 20, 2015 and addendum.
[2] By letter dated April 13, 2017 the DEC approved the removal of organophosphorus (OP) pesticides from the suite of analytes.

Sampling, Analysis and Reporting

With the additions specified below, all groundwater sampling will be conducted in accordance with the groundwater monitoring protocols specified in Section 3.3.1 of the SMP and with the Quality Assurance Project Plan (QAPP) contained in Appendix H of the SMP. Field work will be conducted in accordance with the Health and Safety Plan (HASP) contained in Appendix E of the SMP.

In addition to TCL Pesticides by Method 8081A, the Spring 2018 groundwater samples will be analyzed for 1,4 Dioxane by Method 8270 SIM (selective ion monitoring) as well as the following PFAS compounds by Method 537:

Name (abbreviation) CAS Number

1. Perfluorobutanesulfonic acid (PFBS) 375-73-5
2. Perfluorohexanesulfonic acid (PFHxS) 355-46-4
3. Perfluoroheptanesulfonic acid (PFHpS) 375-92-8
4. Perfluorooctanessulfonic acid (PFOS) 1763-23-1
5. Perfluorodecanesulfonic acid (PFDS) 335-77-3
6. Perfluorobutanoic acid (PFBA) 375-22-4
7. Perfluoropentanoic acid (PFPeA) 2706-90-3
8. Perfluorohexanoic acid (PFHxA) 307-24-4
9. Perfluoroheptanoic acid (PFHpA) 375-85-9
10. Perfluorooctanoic acid (PFOA) 335-67-1
11. Perfluorononanoic acid (PFNA) 375-95-1
12. Perfluorodecanoic acid (PFDA) 335-76-2
13. Perfluoroundecanoic acid (PFUA/PFUdA) 2058-94-8
14. Perfluorododecanoic acid (PFDoA) 307-55-1
15. Perfluorotridecanoic acid (PFTriA/PFTrDA) 72629-94-8
16. Perfluorotetradecanoic acid (PFTA/PFTeDA) 376-06-7
17. 6:2 Fluorotelomer sulfonate (6:2 FTS) 27619-97-2
18. 8:2 Fluorotelomer sulfonate (8:2 FTS) 39108-34-4
19. Perfluroroctanesulfonamide (FOSA) 754-91-6
20. N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) 2355-31-9
21. N-ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) 2991-50-6

Laboratory analysis of all samples will be conducted by Eurofins Lancaster (NYSDOH ELAP ID No. 10670). Reporting limits for PFAS will be within 2 ng/L to 2.5 ng/L, matrix conditions permitting. The method detection limit (MDL) for 1,4-Dioxane will be no higher than 0.28 µg/L, matrix conditions permitting.

The PFAS and 1,4-Dioxane sampling, analysis and reporting will be conducted in accordance with the following guidance documents (Attachments B and C), which were provided by the DEC:

- DRAFT Groundwater Sampling for Emerging Contaminants, February 2018
- Collection of Surface Water Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) Protocol (PFC Groundwater Samples from Monitoring Wells Sample Protocol Revision 1.2 June 29, 2016)

Field QA/QC samples (trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected and analyzed in accordance with the QAPP (SMP Appendix H).

In accordance with the SMP, as a contingency and for informational purposes in the event that the sampling procedure does not produce groundwater samples with low turbidity (i.e., well under 50 NTUs), duplicate samples may be field-filtered to evaluate the effects of sample turbidity on analytical results. In this case, both the unfiltered sample and the filtered sample will be submitted for laboratory analysis, and both results will be reported to the DEC.

Laboratory data will be reported with Category B deliverables. The data will be validated and a Data Usability Summary Report (DUSR) will be prepared by a qualified data validator.

The SMP specifies that a letter report will be prepared for each sampling event that does not coincide with the Periodic Review Report. Accordingly, the results of the emerging contaminant sampling will be included in the letter report for the Spring 2018 sampling.

As discussed, we currently anticipate conducting the sampling on May 30-31, 2018. Please contact me with any questions or concerns.

Very truly yours,

Brown and Caldwell

Frank Williams

Frank Williams, Project Manager

cc: David Marren, FA Bartlett Tree Experts
Thomas West, Esq., The West Firm

Attachments (3)

- Attachment A: SMP Figure 5
- Attachment B: DRAFT Groundwater Sampling for Emerging Contaminants, February 2018

- Attachment C: Collection of Surface Water Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) Protocol (PFC Groundwater Samples from Monitoring Wells Sample Protocol Revision 1.2 June 29, 2016)

Attachment A

N

VILLAGE OF WESTBURY
PARKING LOT

Building

Chain link Fence

Grate=104.28

Storm MH

MW-1S
(75.06)

Concrete Curb

Wood Fence

Edge of Pavement

FORMER
OPEN
SHED

TEST PIT 1
MACADAM PATCH

MW-4
(74.40)

Chain link Fence

DRY WELL 1

MW-2S
(74.12)

MW-3
(74.85)

MW-5
(74.33)

FORMER
PESTICIDE
STORAGE
LOCKER

FORMER
GARAGE

Remains of Foundation

Regional
Groundwater
Flow

MASONRY
WAREHOUSE

LOT 786

LOT 787

LOT 206

LOT 207

Paved
Parking
Lot

DRY WELL 2

TEST PIT 2
MACADAM PATCH

Enclosed
Pesticide
Storage
Area

Gate

0.2'

0.4'

0.4'

5.3'

106

105

105

105

104

104

103

103

102

74.0

74.2

74.4

74.6

74.8

75.0

0 10 20
Feet

P:\GIS\Bartlett_Tree\2010_Data-Summary_Report\Figure_-GW_4_1_10.mxd

Legend

- MONITORING WELL
- SOIL BORING
- DRYWELL
- TEST PIT
- PAVEMENT EDGE
- 103 GROUND SURFACE ELEVATION (FT., NGVD)
- PROPERTY LINE
- FORMER STUCTURE LOCATION (APPROXIMATE, DEMOLISHED JULY 2008)
- WATER ELEVATION CONTOUR (FT., NGVD) DASHED WHERE INFERRED
- 75 WATER TABLE ELEVATION (FT., NGVD)
- LOCALIZED DIRECTION OF GROUNDWATER FLOW

FIGURE 5
WATER TABLE ELEVATION CONTOURS
APRIL 1, 2010

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE: April 2010

PROJECT NUMBER: 138944

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

Attachment B

Groundwater Sampling for Emerging Contaminants

February 2018

Issue: NYSDEC has committed to analyzing representative groundwater samples at remediation sites for emerging contaminants (1,4-dioxane and PFAS) as described in the below guidance.

Implementation

NYSDEC project managers will be contacting site owners to schedule sampling for these chemicals. Only groundwater sampling is required. The number of samples required will be similar to the number of samples where "full TAL/TCL sampling" would typically be required in a remedial investigation. If sampling is not feasible (e.g., the site no longer has any monitoring wells in place), sampling may be waived on a site-specific basis after first considering potential sources of these chemicals and whether there are water supplies nearby.

Upon a new site being brought into any program (i.e., SSF, BCP), PFAS and 1,4-dioxane will be incorporated into the investigation of groundwater as part of the standard "full TAL/TCL" sampling. Until an SCO is established for PFAS, soil samples do not need to be analyzed for PFAS unless groundwater contamination is detected. Separate guidance will be developed to address sites where emerging contaminants are found in the groundwater. The analysis currently performed for SVOCs in soil is adequate for evaluation of 1,4-dioxane, which already has an established SCO.

Analysis and Reporting

Labs should provide a full category B deliverable including preparation of a DUSR.

The work plan should explicitly describe analysis and reporting requirements.

PFAS sample analysis: Samples should be analyzed by an environmental laboratory certified by ELAP to use EPA method 537 or ISO 25101. ELAP does not currently offer certification for PFAS analysis of non-drinking water samples (including groundwater, soil and sediment), so there is no requirement to use an ELAP certified method. The preferred method is the modified EPA Method 537. Labs have been able to achieve reporting limits for PFOA and PFOS of 2 ng/l (part per trillion). If labs are not able to achieve similar reporting limits, the NYSDEC project manager will make case-by-case decisions as to whether the analysis can meet the needs for the specific site.

PFAS sample reporting: DER has developed a PFAS target analyte list (below) with the intent of achieving reporting consistency between labs for commonly reportable analytes. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. This list may be updated in the future as new information is learned and as labs develop new capabilities. If lab and/or matrix specific issues are encountered for any particular compounds, the NYSDEC project manager will make case-by-case decisions as to whether particular analytes may be temporarily or permanently discontinued from analysis for each site. Any technical lab issues should be brought to the attention of a NYSDEC chemist.

Some sampling using this full PFAS target analyte list is needed to understand the nature of contamination. It may also be critical to differentiate PFAS compounds associated with a site from other sources of these chemicals. Like routine refinements to parameter lists based on investigative findings, the full PFAS target analyte list may not be needed for all sampling intended to define the extent of

contamination. Project managers may approve a shorter analyte list (e.g., just the UCMR3 list) for some reporting on a case by case basis.

1,4-Dioxane Analysis and Reporting: The method detection limit (MDL) for 1,4-dioxane should be no higher than 0.28 µg/l (ppb). ELAP offers certification for both EPA Methods 8260 and 8270. In order to get the appropriate detection limits, the lab would need to run either of these methods in "selective ion monitoring" (SIM) mode. DER is advising PMS to use 8270, since this method provides a more robust extraction procedure, uses a larger sample volume, and is less vulnerable to interference from chlorinated solvents (we acknowledge that 8260 has been shown to have a higher recovery in some studies).

Full PFAS Target Analyte List

Perfluoroalkyl sulfonates	**Perfluorobutanesulfonic acid**	**PFBS**	**375-73-5**
	Perfluorohexanesulfonic acid	**PFHxS**	**355-46-4**
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanessulfonic acid	**PFOS**	**1763-23-1**
	Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluoroalkyl carboxylates	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	**PFHpA**	**375-85-9**
	Perfluorooctanoic acid	**PFOA**	**335-67-1**
	Perfluorononanoic acid	**PFNA**	**375-95-1**
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUA/PFUdA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTriA/PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTA/PFTeDA	376-06-7
Fluorinated Telomer Sulfonates	6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
	8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Perfluorooctane-sulfonamides	Perfluroroctanesulfonamide	FOSA	754-91-6
Perfluorooctane-sulfonamidoacetic acids	N-methyl perfluorooctanesulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethyl perfluorooctanesulfonamidoacetic acid	N-EtFOSAA	2991-50-6

Bold entries depict the 6 original UCMR3 chemicals

Attachment C

Collection of Surface Water Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) Protocol

Samples collected using this protocol are intended to be analyzed for perfluorooctanoic acid (PFOA) and other perfluorinated compounds by Modified (Low Level) Test Method 537. Reporting limits of 2 nanograms per liter.

The sampling procedure used must be consistent with the NYSDEC March 1991 SAMPLING GUIDELINES AND PROTOCOLS
http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf with the following materials limitations.

At this time acceptable materials for sampling include: stainless steel, high density polyethylene (HDPE), PVC, silicone, acetate and polypropylene. Equipment blanks should be generated at least daily. Additional materials may be acceptable if pre-approved by NYSDEC. Requests to use alternate equipment should include clean equipment blanks. All sampling equipment components and sample containers should not come in contact with aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer. Standard two step decontamination using detergent and clean water rinse will be performed for equipment that does come in contact with PFC materials. Where conditions permit, (e.g. creek or pond) sampling devices (e.g. stainless steel cup) should be rinsed with site medium to be sampled prior to collection of the sample. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFC materials must be avoided. Many food and drink packaging materials and “plumbers thread seal tape” contain PFCs.

All clothing worn by sampling personnel must have been laundered multiple times. The sampler must wear nitrile gloves while filling and sealing the sample bottles.

Pre-cleaned sample bottles with closures, coolers, sample labels and a chain of custody form will be provided by the laboratory.

1. Fill two pre-cleaned 500 mL HDPE or polypropylene bottle with the sample.
2. Cap the bottles with an acceptable cap and liner closure system.
3. Label the sample bottles.
4. Fill out the chain of custody.
5. Place in a cooler maintained at 4 ± 2º Celsius.

Collect one equipment blank for every sample batch, not to exceed 20 samples.

Collect one field duplicate for every sample batch, not to exceed 20 samples.

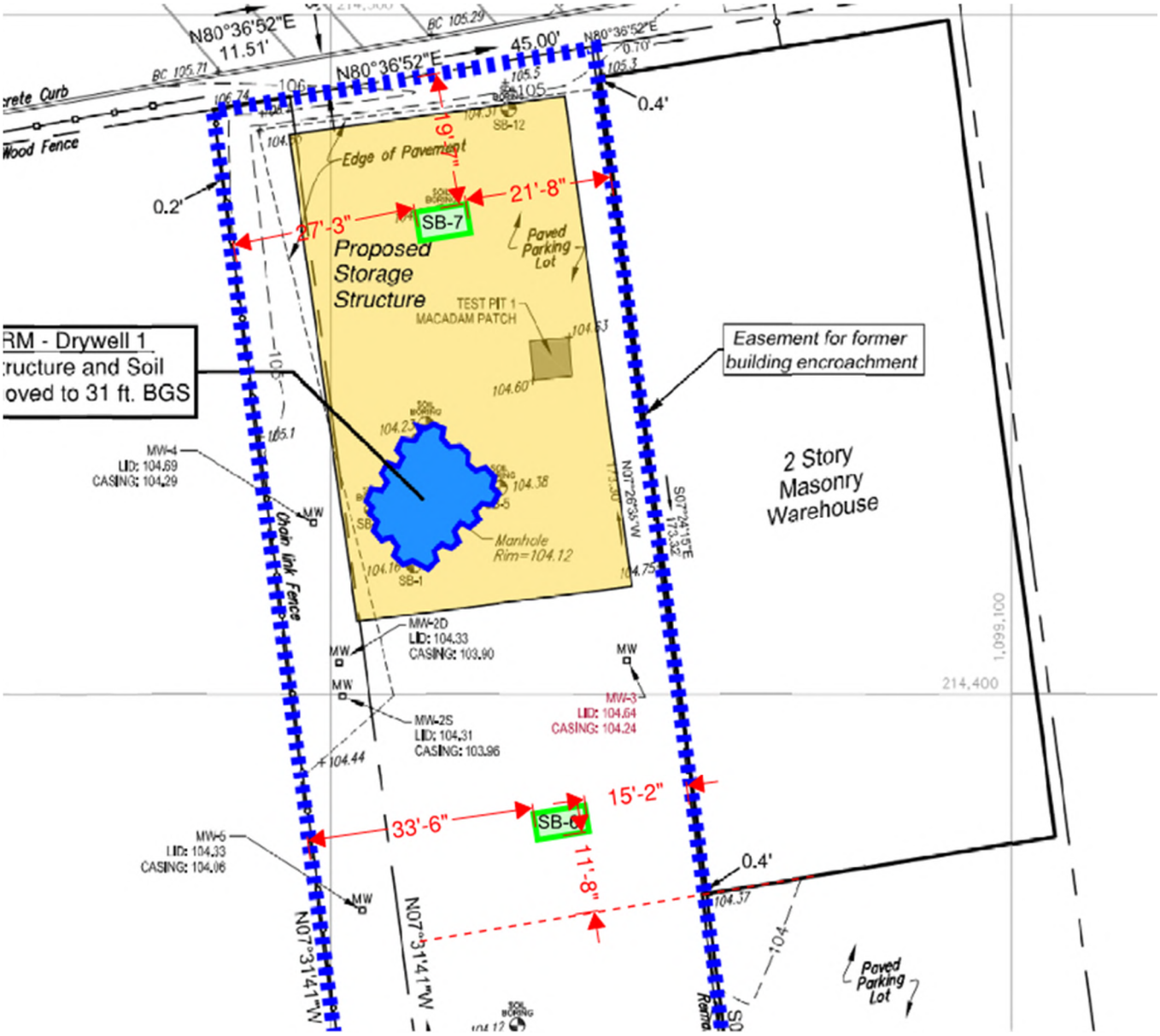
Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, not to exceed 20 samples.

Request appropriate data deliverable (Category A or B) and an electronic data deliverable.

Appendix K: Installation of Aggregate and Well Protection

Locations of Area SB-6 and Area SB-7

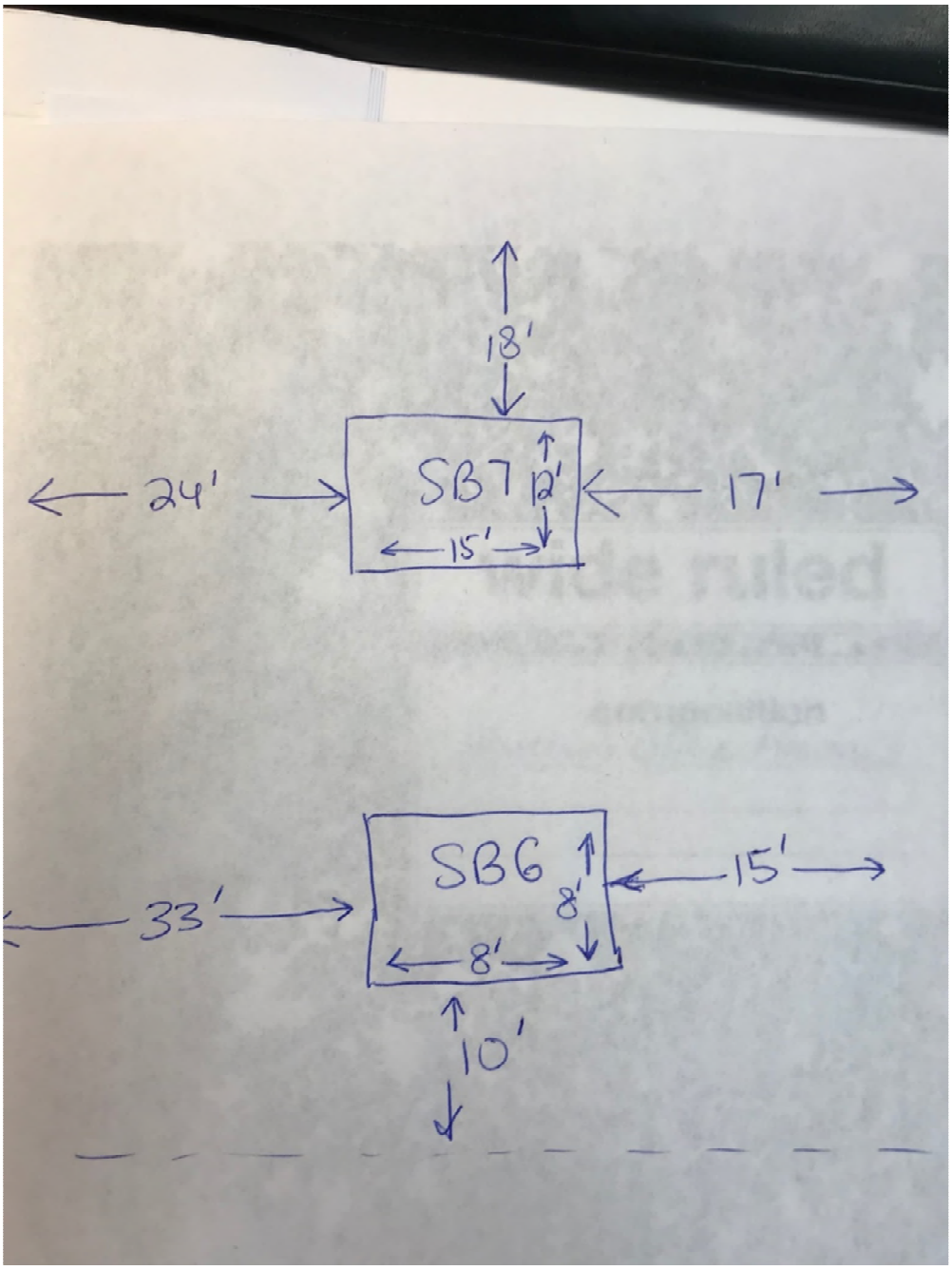
(from Site Management Plan)



Installation of Demarcation Netting over Area SB-6

Installation of Demarcation Netting over Area SB-7

Measured Locations of Demarcation Netting



Typical Installation for Monitoring Well Protection