Phase IV Completion Statement
Response Action Outcome and Activity and Use Limitation
Sprague School Athletic Field
79 Oak Street
Wellesley, Massachusetts

RTN 3-22918

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1.0 Introduction/Description of Release/Phase IV Plan

This Massachusetts Contingency Plan (MCP – 310 CMR 40.0000) Phase IV Completion Statement and Response Action Outcome was prepared by Green Seal Environmental, Inc. (GSE) on behalf of the Town of Wellesley. The general site location is shown on Figure 1 the locus map. The disposal site boundaries and location of test pits, borings and monitoring wells is shown on Figure 2 the site plan. The remedy for this response action involves the improving and replacing of 3 athletic fields, which are in the disposal site area. Figure 3 shows the approximate area of these new fields in relation to the disposal site. The project consisted of covering the disposal site with 2 synthetic athletic fields and 1 natural turf field. Construction of this project was undertaken and completed by Green Acres Landscape and Construction of Lakeville, Massachusetts. Gale Associates Inc was the design engineer for the project overseeing the construction and conformance to the specification. The project was started in July 2008 and completed in the late fall of 2008. Copies of the As-Built drawings have been enclosed in Appendix B.

The site consists of approximately 25.75 acres of land improved by several athletic fields, a one-story maintenance building, paved drives, subsurface utilities and parking areas (please refer to Figure 1, Locus Map). The one-story building (a field house) is used for equipment storage for the athletic fields and is located on the northern portion of the site (please refer to Figure 2, Site Plan). Paved drives and parking areas are located on the northwestern portion of the site. Tennis courts are located on the eastern portion of the site, and the remainder of the site is primarily comprised of an athletic field with paved access drives. The disposal site boundaries are defined by the area where the former landfill and landfill debris is located. The extent of the landfill area was delineated with a subsurface investigation, which included soil borings, monitoring wells, test pits, and a geophysical survey.

A Limited Subsurface Investigation of the Sprague School Athletic Field (completed by Gale in May 2003) concluded that concentrations of Polychlorinated Biphenyls (PCBs), an Extractable Petroleum Hydrocarbon (EPH) carbon fraction, and five (5) Polycyclic Aromatic Hydrocarbons (PAHs) were present in soil samples collected from the site that exceeded applicable Reportable Concentrations (RCs) for those compounds as defined in the MCP. The identification of these compounds triggered a 120-day reporting condition beginning on February 6, 2003.

On June 4, 2003, the Massachusetts Department of Environmental Protection (MassDEP) received a copy of Gale's Limited Subsurface Investigation Report and a Release Notification Form (RNF - BWSC-103) and issued a Release Tracking Number (RTN) 3-22918. To date the following Environmental Reports have been completed at the site:

- Phase I – Initial Site Investigation and Tier Classification, May 2004
- Phase II Scope of Work, May 2004
- Subsurface Investigation Report, July 2005
- Quarterly Groundwater Sampling Reports, December 2006
- Phase II Comprehensive Site Investigation, May 2006
- Phase III Comprehensive Remedial Action Alternatives, April 2007
- Phase IV Remedy Implementation Plan May 2008

2.0 Identification of Source and Extent of Contamination

The Phase II Comprehensive Site Assessment was completed on May 24, 2006. The objective of the Phase II assessment was to determine the nature and extent of the contamination at the property. Complete summary tables, analytical laboratory sheets and Method 3 risk assessment are all included in the Phase II report. A brief summary of that information is presented here. Based on the results of the investigation, Gale made the following conclusions regarding the site:

- Test pits of the area of the former landfill revealed material consistent with the use of the area for disposal of municipal refuse.

- A geophysical study of the disposal site, using ground-penetrating radar, identified several locations with potentially buried metal objects. No large metal objects such as drums, cars, or large amounts of industrial waste were identified during further investigation of these areas with a backhoe.

- Groundwater sampling was performed in 2003 and 2005. The laboratory reports indicate that all parameters analyzed were at concentrations that are an order of magnitude below the applicable MCP Method 1 Risk Characterization Standards (MCP Method 1 Standards). The only exception was low concentrations of lead in the groundwater. To evaluate the presence of lead in groundwater, a quarterly groundwater program was conducted from June to December 2006.

- Each of the monitoring wells with concentrations of lead over the MCP Method 1 GW-3 standards was sampled on four different occasions. The MCP allows groundwater concentrations to be averaged over time to establish exposure point concentrations (EPCs). The EPC can then be compared to the appropriate standard. The MCP allows half of the detection limit to be used when concentrations are below detection limits. The EPCs were calculated for monitoring wells MW-5, GMW-H16, and GMW-K16. All three wells have EPCs for lead that are below the Method 1 GW-3 standard. Previous unfiltered groundwater samples were not included as they are not representative. Given these results, groundwater at the site does not contain lead at concentrations that require further investigation or remediation.

- A Method 3 Risk Assessment was completed for the site by Kera Environmental (Kera). Groundwater was included in the Method 3 Risk Characterization because some compounds were detected above the laboratory method minimum detection limits. The Method 3 Risk Assessment concluded that a complete exposure pathway to groundwater did not exist.

- Cumulative cancer and non-cancer risks for each receptor were calculated as part of this Risk Assessment and are expressed as Excess Lifetime Cancer Risk (ELCR) and Hazard Index (HI) values, respectively. The ELCR and HI values were then compared to the applicable MassDEP risk criteria (1E-05 and 1, respectively) to evaluate risk posed by the site. The comparisons indicate that a condition of No Significant Risk to human health is demonstrated for the current students at the adjacent Sprague Elementary School and utility workers.

- A condition of No Significant Risk was qualitatively inferred for visitors and groundskeepers based on assumptions of less intense, less frequent, and lesser duration exposure.

- Prior to implementing the Phase IV remedy and construction of the new athletic fields, dangerous materials (glass, jagged metal, and other physically hazardous debris) identified within six (6) inches of the ground surface in the southwest corner of the site have to be addressed. These conditions may result in bodily injury to students and trespassers, who are engaged in recreational activities or grounds keepers who are engaged in routine maintenance activities. Therefore, Significant Risk of Harm to Safety is considered to exist at the site.

- The conclusion of No Significant Risk to Human Health assumes the effective implementation of an Activity and Use Limitation (AUL) restricting future uses involving construction/excavation, residential use and childcare use for children less than 6 years old.

- As a supplement to the Risk Assessment (included in the Phase II report) Kera also evaluated the human risk to children 1-3 years of age. The October 12, 2006 Focused Risk Evaluation is enclosed in Appendix C. The focused Risk Assessment indicates that "*a condition of No Significant Risk of harm to human health exists at the site when exposures include children ages 1 to 3 years and 3 to 6 years (i.e., a cumulative exposure for a child from 1 to 18 years) who come in contact with surficial soil while engaged in activities at the Sprague School athletic fields*".

- The groundwater beneath the site is not a drinking water source. According to the MassDEP Priority Resources Map, there are no public water supply wells, zones of contribution to public water supply wells, or potentially productive aquifers mapped on or within one-half mile of the site. According to information from the Wellesley Board of Health, no private wells are located within 500 feet of the site. None of the identified concentrations of volatile organic compounds (VOCs - EPA Method 8260B), eight RCRA metals, Extractable Petroleum Hydrocarbons (EPHs) or Polynuclear Aromatic Hydrocarbons (PAHs) exceeded the applicable Method 1 groundwater clean up standards. Based on this data, a condition of No Significant Risk exists with respect to the groundwater beneath the site.

- Based on the subsurface investigation, evidence of former landfill activities was noted at depths ranging from 0.5-13.0' below surface grade in the central, southern, and western portions of the site. The area of landfill is shown on the drawing enclosed by Gale Associates, Inc. (Appendix E Contract Drawings dated March 03, 2008).

3.0 Phase III Remedial Action Alternative Selection

As part of the 2007 Phase III Identification, Evaluation and Selection of Comprehensive Remedial Action Alternatives, Gale identified four (4) remedial action alternatives to bring this site to closure with permanent solutions. Given the site conditions, a protective barrier along with an Activity and Use Limitations (AUL) will be needed to achieve site closure for all but three of the proposed alternatives. The four alternatives are:

- Alternative 1 – Excavation of soil in the area of concern (no AUL required)
- Alternative 2 – Construction of two synthetic turf fields over the area of concern
- Alternative 3 – Construction of one synthetic turf field and one natural turf field over the area of concern
- Alternative 4 – Construction of two natural turf fields over the area of concern

All of the four alternatives would reduce the risk of exposure to the brick, wood, and glass, which is presently moving through the soil profile at the site. Historically, the site has been used as a landfill and is presently used as athletic fields. The site, which encompasses approximately 25.75 acres, has been covered with urban fill or landfill material in varying thicknesses across its area. To remove the entire fill would be infeasible and far too costly. Effectively eliminating the pathways in which the user is exposed to the fill is the most feasible way to eliminate the hazard.

Based on the Town's future needs and the outcome of the Phase III evaluation, Alternative 3 was chosen as the most appropriate solution.

4.0 Implementation of the Remedy Implementation Plan

The purpose of the Remedy Implementation Plan is to prevent exposure to glass and other sharp materials that have been documented beneath the surface in the area of the former landfill. The Risk Assessment included in the Phase II report indicated there was no significant risk to human health based on the current conditions; however, there was a risk to public safety in areas where the topsoil covering the field was shallow (less then 2 feet). As detailed in the Phase IV plan on the western/southwestern half of the proposed fields the approximate soil cover over the landfill is 0.5 to 2 feet in thickness. In the eastern half of the landfill, the cover soil thickness is 2.5 to 4 feet. The area designated as the remediation area was determined to contain less then 2.5 to 3 feet of topsoil and is potentially a safety hazard. This safety hazard was abated by placing a new synthetic field and natural turf field in the area. The contract drawings from the Phase IV Remedy Implementation plan are enclosed in Appendix E. In Appendix B the As-Built drawings of the completed project are enclosed.

5.0 Construction Monitoring

During the construction of the new fields the LSP monitored the earthwork in the remediation area in accordance with the Phase IV plan. Green Acres began soil stripping on July 07, 2008. Green Acres retained GZA Environmental to conduct real time dust monitoring during excavation of the near surface soil.

A representative from GSE was present on each day that excavation activities were occurring within the remediation area of Sprague Field, from 7:00 AM until 3:00 PM (unless otherwise specified). A representative from GZA was present on site to conduct air monitoring on each day as well, with the exception of July 23. GZA left the site at approximately 9:00 AM on July 23 due to the fact that it was raining and no dust was being created. Nuisance dust levels remained below 1 mg/m3 throughout each day of monitoring, well below the EPA limit of 5 mg/m3.

Copies of the daily field observations are included in Appendix F along with photographs of the construction and placement of the geotextile barrier and synthetic fields.

Soil visibly seen to contain glass and debris was stockpiled on site encapsulated in plastic.

The work was also inspected by the design engineer Gale Associates, Inc. to determine the work was completed in accordance with their specifications and contract drawings. The remediation area has been capped with a new natural or synthetic turf field as detailed in Gale drawings. The design calls for 18 inches of fill above a geotextile barrier for natural turf areas or a geotextile barrier covered with 4 inches of clean fill and 12 inches of stone capped with a synthetic turf. The combination of the clean fill, a geotextile barrier or synthetic turf will provide more then adequate protection from sharp objects in the subsurface from migrating to the surface. Based on GSE's observations during the construction of the fields in July and August of 2008, the fields have be constructed as detailed on the Detail Sheets 5 and 8 of the contract drawings and as shown on As-Built plans.

6.0 Remediation Waste

Representative soil samples from the stockpiled soil were collected by the Contractor's consultant (GZA) under the observation of GSE's field personnel. Soil samples were analyzed for Massachusetts Landfill contaminated soil re-use parameters. A total of 1,477 tons of soil was transported to Charlton Landfill in Charlton, Massachusetts from August 21-26, 2008 under a Bill of Lading (BOL). Original BOLs and supporting data were submitted to MassDEP in Wilmington, Massachusetts in September 2008.

GSE observed the removal and transporting of the soil, and visually inspected the stockpiled areas after the soil had been removed.

7.0 Nature and Extent of Contamination

The nature and extent of the landfill is described in detail in the Phase II Comprehensive Site Assessment previously submitted. A brief summary of that report is detailed as follows.

Based on the information obtained during the Phase II subsurface investigation, the thickness of the "landfill" material and the thickness of the "contaminated fill" can be estimated. For the purposes of this summary, "landfill" material is defined as fill with evidence of solid waste (i.e., glass, metal, wood, etc.).

For the north/northeastern portion of the site, and based on the results of the subsurface investigations, no apparent landfill debris was noted. Analysis of soil samples from this section for EPH with target PAHs identified no concentrations that exceeded the applicable Method 1 clean-up standards. Analysis of groundwater samples from this area for VOCs, eight RCRA metals, and EPH with target PAHs did not identify any compounds that exceeded the applicable Method 1 clean up standards. Thus, it is our opinion that monitoring wells GMW-F12, GMW-F15, and test pit GTP-F14 define the northeastern extent of former landfill operations on the site (see Appendix E Gale Contract drawing dated March 2008).

For the central-southeastern portion of the site, the "landfill" material is estimated to be approximately three to five feet thick beginning at a depth of 4-8 feet and ending at a depth of approximately 8-13 feet (please refer to Figure 2). The soil thickness contours are shown on this plan. These contours represent the approximate thickness of cover soil over the landfill material. As shown on the plan the eastern portion of the site a thin soil cover of 2 feet or less. To the west and north the amount of cover increased. In the northern portion of the disposal site over 4 feet of cover soil was documented.

For the southern portion of the site, the "landfill" material is estimated to be approximately 2 to 4 feet thick beginning at approximately 0.5-4 feet below grade and ending at an approximate depth of 4-6 feet. The "contaminated fill" is estimated to be approximately 5 feet thick beginning at 0.5 feet below grade and ending at approximately 5 feet below grade.

For the west/southwestern portion of the site, the "landfill" material is estimated to be approximately 3 to 7 feet thick beginning at approximately 0.5-4 feet below grade and ending at approximately 4-8 feet below grade. The "contaminated fill" is estimated to be approximately 8 feet thick, beginning at 0.5 feet below grade and ending to approximately 8 feet below grade.

The geophysical investigation determined the approximate boundaries of the former landfill using magnetometry and EM Terrain Conductivity. Details of this geophysical investigation were included in the Phase II Comprehensive Site Investigation prepared by Gale. Of concern was the southern extent of the landfill toward Oak Street. Gale reviewed the 1935 Wellesley Town atlas at Town Hall. This atlas shows most of the properties along Oak Street had residential dwellings on them in 1935. Given this information, coupled with our other data, the southern extent of the landfill most likely ends close to the property line where the school currently has a fence.

7.1 Groundwater Monitoring

At the conclusion of the Phase II study low levels of lead were reported in groundwater samples in 3 monitoring wells sampled in March of 2003. These samples were unfiltered samples with visible turbidity. Accordingly, a groundwater monitoring program was conducted to evaluate the presence of lead in groundwater. Upon resampling the wells with low flow sampling techniques and filtering, the lead concentration drop to within a few parts per billion (ppb) of the GW-3 standard (10 ppb).

Three wells were sampled on four occasions from June through December 2006. Please note monitoring well GMW-F12, which was sampled in 2005 using low flow sampling techniques and filtering, had been destroyed in 2006. A complete copy of the December 2006 sampling report is included in Appendix G. Monitoring wells MW-5, GMW-H16 and GMW-K16 were sampled 4 times.

The MCP allows groundwater concentrations to be averaged over time to establish exposure point concentrations (EPC). The EPC can then be compared to the appropriate standard. The MCP allows ½ of the detection limit to be used when concentrations are below detection limits. Table 2 in the December 2006 monitoring report has the EPC calculated for monitoring wells MW-5, GMW-H16, and GMW-K16. All three wells have EPC for lead that is below the Method 1 GW-3 clean-up standard. Previous unfiltered groundwater samples were not included as they are not representative. The soil sampling completed at the site did not indicate there are elevated levels of lead in the soil. Given these results, lead in groundwater is not considered a contaminant of concern and is eliminated from further evaluation.

8.0 Method 3 Risk Assessment

In support of a Class A-3 Response Action Outcome (RAO), KERA Environmental, LLC has prepared a MCP Method 3 Risk Characterization (310 CMR 40.0900) for Sprague Athletic Field, Oak Street, Wellesley, MA (RTN 3-22918). Assuming the implementation of an Activity and Use Limitation (AUL) to maintain a protective barrier and to restrict future residential activity and uses of the site, current and future risk of harm to human health, safety, the public welfare and the environment posed by soil and groundwater at the site, were evaluated for this report. This risk assessment was submitted to MassDEP with the Phase II report. To provide a reference to support this RAO opinion, a complete copy of this Risk Assessment along with the October 12, 2006 addendum has been included in Appendix C. This Risk Assessment includes the evaluation of current and future risk of harm to human health, safety and the public welfare, assuming the implementation of an Activity and Use Limitation (AUL) for future residential, child-care and non-utility excavation activities. Based on the Phase I – Initial Site Investigation and Tier Classification Report (May 25, 2004) prepared by Gale (Phase I) and reports prepared by ATC, there are no ecological receptors or sensitive habitats in the vicinity of the site; therefore, risk to the environment was evaluated qualitatively.

The Risk Assessment included the site investigation data collected by Gale for soil and groundwater conditions associated with the athletic fields in 2003 and 2005. Samples of each were analyzed for heavy metals, volatile organic compounds (VOCs) and EPH with target PAHs. Soil results indicate elevated concentrations of PAHs and heavy metals at several areas across the site. The VOC Isopropyltoluene was also detected. In addition, PCBs were detected in one of seven soil samples analyzed for this set of compounds. Metals and VOCs were detected in several groundwater samples, but at low concentrations. Very low VOC concentrations were also detected in soil gas samples. Finally, the subsurface investigation revealed evidence of a former landfill within 0.5 feet to 13 feet below the ground surface (bgs) across the central, southern, and western areas of the site.

School children (students attending the Sprague Elementary School [6 – 11 years]) and the same students who may go on to use the athletic fields through high school (6 – 18 years), grounds keepers, trespassers and utility workers represent the current receptors that may come into contact with site-related compounds during routine associated activities. An AUL has been implemented to restrict future residential and child-care activities and also excavation activities, other than those associated with the maintenance and repair of current utility lines. Thus, no future receptors were evaluated for this Risk Characterization.

Following a detailed exposure assessment, a quantitative evaluation of risk was conducted for the utility worker and the student scenarios. Grounds keepers and trespassers were evaluated qualitatively based on quantitative results for the students and utility workers, assuming less intense, less frequent and shorter duration exposures. EPCs for utility workers reflect the maximum site concentrations for soil Compounds of Concern (COC), with ½ the detection limit applied in cases of COC non-detects. Separate EPCs for students reflect average site concentrations for soil COCs from 0 to 3 feet below the ground surface (surficial) and from 0 to 12 feet below the ground surface (subsurface), both with ½ the detection limit applied in cases of COC non-detects.

Cumulative cancer and non-cancer risks for each receptor were calculated as part of this risk assessment and are expressed as Excess Lifetime Cancer Risk (ELCR) and Hazard Index (HI) values, respectively. The ELCR and HI values were then compared to the applicable MassDEP risk criteria (1E-05 and 1, respectively) to evaluate risk posed by the site. The comparisons indicate that a condition of No Significant Risk to human health is demonstrated for the current students and utility workers.

A condition of No Significant Risk was qualitatively inferred for trespassers and grounds keepers based on assumptions of less intense, less frequent and lesser duration exposures.

Currently, dangerous materials (glass, jagged metal, and other physically hazardous debris) have been identified within 6 inches of the ground surface in the southwest corner of the site. These conditions may result in bodily injury to students, trespassers, and grounds keepers who are engaged in recreational or routine maintenance activities. Therefore, Significant Risk of harm to safety is considered to exist at the site.

The assessment concluded that no compounds are present at the site at levels that exceed the MCP Upper Concentration Limits (UCLs), and no conditions defined in Section 40.0994(2) of the MCP are present at the site. Thus, a condition of No Significant Risk of harm to public welfare exists.

No Areas of Critical Environmental Concern are located within a mile of the site. Natural Heritage Maps (2002-2003) indicate that the property is not located within ½ mile of estimated habitat, rare wildlife or endangered species. However, an unnamed body of surface water is located approximately 3/8th of a mile (about 2,000 feet) to the southeast of the site. In addition, although the McCracken Brook transects the south-central portion of the site, this resource is culverted and thus considered an incomplete pathway for site-related compounds. Given the nature of conditions at the site, it is unlikely that site-related compounds will have an impact on these ecological receptors. The risk assessment concluded that a condition of No Significant Risk to the environment exists for the site.

The assessment concluded that no compounds are present at the site at levels that exceed the MCP Upper Concentration Limits (UCLs), and no conditions defined in Section 40.0994(2) of the MCP are present at the site. Thus, a condition of No Significant Risk of harm to public welfare exists.

The conclusion of No Significant Risk to Human Health assumes the effective implementation of an Activity Use Limitation (AUL) restricting future uses involving construction/excavation, residential and childcare for children less than 6 years old.

As a supplement to the Risk Assessment (included in the Phase II report), Kera also evaluated the human risk to children 1-3 years of age. The October 12, 2006 Focused Risk Evaluation is enclosed in Appendix C. The focused Risk Assessment indicates that "*a condition of No Significant Risk of harm to human health exists at the site when exposures include children ages 1 to 3 years and 3 to 6 years (i.e., a cumulative exposure for a child from 1 to 18 years) who come in contact with surficial soil while engaged in activities at the Sprague School athletic fields*".

Prior to implementing the Phase IV and construction of the new athletic fields, dangerous materials (glass, jagged metal, and other physically hazardous debris) have been identified within six (6) inches of the ground surface in the southwest corner of the site. These conditions may result in bodily injury to students and trespassers, who are engaged in recreational activities or grounds keepers who are engaged in routine maintenance activities. Therefore, Significant Risk of harm to safety is considered to exist at the site and is also cited in the risk assessment. The purpose of the Activity and Use Limitation is to maintain this protective covering and prevent exposure to sharp objects with the fill material or the uncovering of large amounts of landfill debris without proper soil management and safety precautions.

An AUL has been implemented for the entire site to address conditions associated with potentially hazardous debris at depths greater than 18 to 24 inches below grade and beneath the protective barrier and fill material. This aspect of the AUL specifies maintenance of the current soil barrier, and alerts to future landscapers utility and construction workers, and restricted future residential activity and uses.

9.0 Imminent Hazard Evaluation

According to the MCP, an Imminent Hazard is defined as a "...hazard which would pose a significant risk of harm to health, safety, public welfare or the environment if it were present for even a short period of time, ...". For the most part, the site is either covered by grass covered athletic fields, gravel parking areas or covered with a building. Based on an evaluation of the soil and groundwater analytical data, an Imminent Hazard does not exist on the site

10. Critical Exposure Pathways

Critical Exposure Pathways are routes by which oil and/or hazardous material(s) released at a disposal site are transported to human receptors via vapor emissions, ingestion, dermal absorption, or inhalation.

The site is covered with athletic fields, which includes both Natural and synthetic turf along with a geotextile barrier. Dermal contact is prohibited by these barriers. Thus, the soil exposure is not a Critical Exposure Pathway at the site.

Groundwater beneath the site is approximately 5-8 feet below grade. The groundwater beneath the site is not used as a drinking water source. Groundwater has not been impacted. Therefore, the groundwater is not a Critical Exposure Pathway for the site.

No VPHs were identified during the site investigation at concentrations, which would have the potential to migrate into indoor air. In addition soil gas probes and air sampling was also completed. Those results do not indicate there is off gas occurring at the site from the fill materials. Therefore, the indoor air is not a Critical Exposure Pathway for the site.

11.0 Feasibility of Restoration to Background

11.1 Technological Feasibility

Pursuant to 310 CMR 40.0860, an evaluation of the feasibility of reducing the concentrations of oil and/or hazardous materials to levels that achieve or approach background was conducted for the site. Based on the laboratory analytical results of soil and groundwater samples, concentrations of some EPH carbon ranges, PAHs, and metals in soil and/or groundwater have not been reduced to background on the site.

Based on a preliminary review of currently available remedial technologies (i.e., structural supporting/soil excavation, bioremediation, pump and treat, etc.), the technology does not exist to achieve or approach background within a reasonable period of time for such low concentrations of EPH, PAHs, and metals. The consideration of technological feasibility does not justify the implementation of remedial actions to reduce the concentrations of oil and/or hazardous materials.

The landfill soil cannot feasibly be removed without extensive excavation. Extensive excavation would be required to remove all the fill at the site. The amount of fill to be removed would be in the 1,000's of cubic yards and would require reconstruction of all the athletic facilities.

11.2 Cost-Benefit Analysis

The achievement of background is not feasible since the benefits of implementing additional remedial actions to achieve or approach background are minimal when compared to the cost of environmental restoration. It is GSE's opinion that the cost of implementing a remedial action to achieve or approach background would be substantial, and as noted in the MCP, "...disproportionate to the incremental benefit of risk reduction, environmental restoration and monetary and non-pecuniary values." In addition, the results of the Method 3 Risk Assessment indicate that a condition of No Significant Risk exists at the site with respect to soil and groundwater.

12.0 Activity and Use Limitation

The MCP (310 CMR 40.1012) requires that an AUL be prepared for a site whenever a Risk Assessment is used to support the RAO which is:

1) based upon the restriction or limitation of site activities or uses to achieve or maintain a level of No Significant Risk, and;
2) based upon an exposure pathway elimination to prevent exposure to concentrations of oil and/or hazardous materials that would otherwise pose a significant risk of harm to human health, public welfare and the environment.

Thus, if the Method 3 Risk Assessment relies on reduced exposure potential due to the assumption of limited site use, the Method 3 Risk Assessment must be accompanied by an AUL. The Method 3 Risk Assessment was conducted based on limiting site use; therefore, an AUL was required for this area. The Method 3 Risk Assessment indicated there was no significant risk in regards to human health over the entire disposal site.

An AUL was required because a condition of No Significant Risk to safety, public welfare, and the environment has been not been achieved at the site in regards to glass and sharp objects present in the subsurface. The risk of harm to safety is always a separate evaluation in accordance with 310 CMR 40.0960.

Visual and subsurface testing did indicate the surface soil and grass layers contain appreciable sharp objects to present a hazard to public health or safety. The MCP does not provide specific criteria for determining a hazard to public safety. Based on the test pit excavations, visual inspection of the surface areas, discussions with maintenance personnel and the historic information on the property, it is GSE's opinion that the top 12 inches of fill material in the southwest portion of the field appear to contain sufficient metal or glass to be considered a hazard to users of the field. These areas have been capped with a geotextile fabric, clean fill and/or natural or synthetic field turf with the construction of the new fields.

A Notice of an AUL (Form 1075) and an AUL Opinion were prepared for the portion of the site in accordance with 310 CMR 40.1074. The AUL was filed at Norfolk County record of deed on August 8, 2009. Please refer to Appendix G for a copy of the AUL that was prepared for the site. Please refer to the AUL for the legal description of the site subject to the AUL and as shown on Exhibit B of the AUL.

13.0 Response Action Outcome

Pursuant to 310 CMR 40.1056, a RAO was prepared for the site using the MassDEP's Bureau of Waste Site Cleanup (BWSC) Form BWSC-104 presented in Appendix D. Based on the completion of subsurface investigations and remedial actions and the achievement of a condition of No Significant Risk, a Class A-3 RAO is recommended for the site. In addition, the following assertions are made in regards to meeting the requirements for the RAO statement:

- There are no other related RAOs associated with the site. This RAO applies to the entire area within the Disposal Site boundaries shown in Figure 2.
- There are no post-RAO operation and maintenance activities required.
- The Class A-3 RAO is based on the implementation of an AUL.
- In accordance with 310 CMR 40.1056(2b), all uncontrolled sources, as specified in 310 CMR 40.1003(5,) have been eliminated.

14.0 Representativeness Evaluation and Data Usability Assessment

The following presents a discussion of the site information used to support the RAO as required by 310 CMR 40.1056 and incorporating the guidance provided in MassDEP Policy WSC-07-350. It provides an evaluation and demonstration of the adequacy of the spatial and temporal data sets used to support the RAO and makes conclusions on the accuracy, precision and sensitivity of the data used.

Conceptual Site Model

Historically, according to Town personnel familiar with the area, Sprague Field was once a low wet area and pond that was filled in the 1930s. Allegedly it was used by the Town of Wellesley to accept household waste and other combustible materials from the 1930s to 1960. Open air burning was also allegedly allowed. During the 1940s, the Town began to use this area for municipal refuse. The dumping continued until 1951 with an estimated depth of fill of 10 to 15 feet. The area north and east of the refuse/ash filled areas was a source of sand and gravel prior to the 1960s and was later filled some time after the 1960s (this information was based on interviews that previous investigators conducted of three Wellesley residents).

A series of shallow borings, installation of monitoring wells, soil gas wells and test pits and geophysical investigations have all been completed to characterize subsurface conditions and contaminants of concerns at the site. The low levels of contaminants detected in the subsurface do not appear to have impacted the groundwater quality in the area. Soil gas samples were also collected to determine if the decomposition of waste was causing an off-gassing problem. The soil gas results indicate there is minimum off-gassing occurring. The test pits revealed the nature of the buried material is consistent with that of an historic municipal landfill. Paper, metal broken glass were all present in test pits completed into the buried material. There was also evidence of ash, which may have been from open burning. Our investigations did not reveal commercial and industrial type waste such as buried drums, large quantities of incineration ash or large buried objects. Based on the history and the information collected this appeared to have been a municipal landfill area that accepted, and probably burned, local household waste. The area was leveled off in the 1960s and covered with clean material most likely obtained from the nearby gravel and sand operation. Differential settlement in the fields was corrected by bringing in additional fill material. Glass and pieces of metal were commonly found on the fields in the southwest portion of the property.

Spatial Distribution

Given the areal extent of the Site, a number of different types of subsurface investigation were completed. This includes 11 test pits, 20 geoprobe borings with truck mounted drill rigs, 9 shallow hand borings and installation of 5 monitoring wells. The subsurface investigation was completed in 4 separate investigations as shown on Figure 2. After the completion of each phase the data was reviewed and additional investigation was completed to establish information without significant data gaps. As shown on the drawing, 7 areas were identified and investigated further. Emphasis was placed on the upper 3 feet of soil as this upper layer represents an exposure pathway to users of the fields. Groundwater and soil samples were analyzed for metals, EPH with target PAHs, PCBS and VOCs. The borings, monitoring wells and test pits provide adequate information to characterize the distribution and concentrations of contaminants across the site. The number of and location of sampling and observation points are considered sufficient to support the conclusions of the RAO.

Temporal Distribution

Groundwater samples were collected on April 28, 2006, September 2006 and June 2008. The multiple groundwater sampling events indicated all sampling results were below MCP groundwater clean up standards and present no significant risk. Soil samples were also collected at various times. Given that the area was filled with this material around 1930 the concentrations detected in the soil are considered representative of current site conditions and not anticipated to change significantly over time.

Field Completeness

As described above in the discussions of sampling locations and spatial and temporal distribution, there was sufficient quantity and placement of samples to support the conclusion of the RAO. The data set is considered adequate to support the RAO because of the large amount of field screening and visual observations and the correlation with the analytical data collected.

Data Inconsistency

There was no inconsistent information that would result in a conclusion of data not being representative of site conditions. Field observations and measurements, original characterization data, disposal characterization data were all consistent and seemingly representative of site conditions. However, there is some uncertainty in the data used to render the RAO. The analytical data set is limited. Limited analytical data was used to determine the vertical and horizontal extent of the impacted soil. This is considered acceptable as historical evidence shows this area was filled and numerous test pits show the fill material is inconsistent but the sufficient analytical testing was done to characterize possible contaminants.

Data Not Used

The groundwater data collected from an open test pit (TP-2) was rejected because it was considered unrepresentative of site conditions. A subsequent monitoring well was installed adjacent to this test pit and analyzed for contaminants of concern. The monitoring data is considered to be representative of groundwater conditions. As explained in the text, preliminary groundwater samples collected from monitoring wells was not used as the samples were unfiltered and had high turbidity.

MCP Activities

The MCP activities that yielded the data, which support the RAO are described in the text of the report.

Analytical Methods

Because of the site history, release location and odors associated with the release, it was determined a variety of contaminants could be present. As such, the initial analyses performed to characterize the release included PCBs, RCRA 8 Metals VOCs and EPH with target PAHs. As such, the list of analyses was determined to be appropriate to support the RAO.

Reporting Limits

Reporting limits provided from the laboratory, for the contaminants of concern, were at or under the MCP S-1 soil standards.

Laboratory Quality

The analytical data provided in support of this RAO have met the method quality control requirements and performance standards for "Presumptive Certainty" as described in CAM VII with some minor exceptions, which are noted on the laboratory sheets. These exceptions include samples for EPA 6010B, which were requested to be run for target analytes, EPH non conformance-reported results for selected analyte exceeded the high standard of the associated calibration curve. This sample was reanalyzed and reported analytes within calibration.

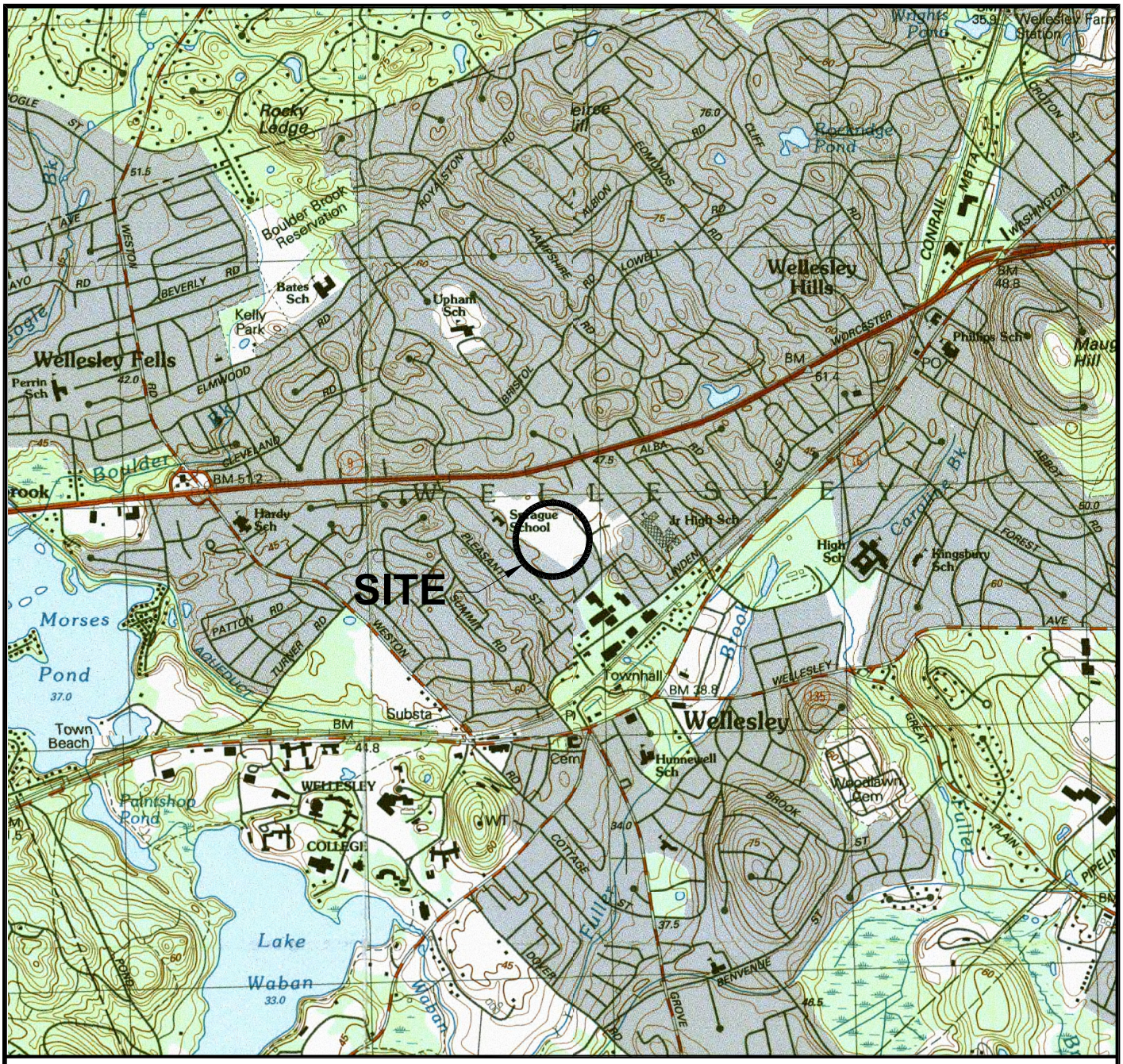
One groundwater sample had laboratory control sample analytes above the recommended recovery limits. As all results for the subject sample were below detection limits, the data used to support the findings of the RAO are defensible and valid pursuant to 310 CMR 40.1056. A complete list of exceptions is listed below.

- *Samples 117633-7 through –9 for dissolved metals analysis were not received filtered. The samples were preserved with HNO# upon receipt by the laboratory.*
- *EPA 8260B Non-conformance: Laboratory control sample (LCS) analytes 4-Methyl-2-Pentanone and 2-Hexanone were above recommended recovery limits for QC batch VM4-4167-W.*
- *EPA 8260B Non-conformance: Laboratory control sample (LCS) analyte 2-Hexanone was above recommended recovery limits for QC batch VM4-416—W.*
- *EPA 6010B Note: Samples 117633-7-8 and –9, 98599-01,02,04,05 98381-05 and 09. Samples were analyzed for selected target analytes, as requested by the client.*
- *MA DEP EPH Non Comformance: Sample 98599-04, 98381-06 and –07. Results for selected analyte exceeded the high standard of the calibration curve. Results are estimated. Sample was reanalyzed and reported with all analytes within the calibration.*
- *MA DEP EPH Note; Sample 98381-05. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration.*
- *EPA 8260B Non-Conformance: Samples 92429-03. Laboratory control sample (LCS) analyte 1,4-Dioxane was above recommended recovery limits for QC batch VM7-2062-W.*
- *EPA 8260B Note: Samples 92429-03. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration.*
- *MA DEP EPH Non-conformance: Samples 92429-02 and –06. Samples had surrogate recoveries outside recommended limits due to sample dilution.*
- *MA DEP EPH Note: Sample 92429-02 and 06 Samples were diluted prior to analysis. Dilution was required to keep all target analytes with calibration.*
- *TPH by GC/FID Non-conformance: Sample 92429-05. Sample had surrogate recoveries outside recommended limits due to required sample dilution.*

Field Data Usability

Field methods used in this investigation, as described in RAO above, are consistent with quality standards.

FIGURES



SCALE 1:25,000

1 0.5 0 1 MILE

KILOMETERS 1 0.5 0 1 2

METERS 500 0 1000 2000

CONTOUR INTERVAL 3 METERS

NATIONAL GEODETIC VERTICAL DATUM OF 1929

DEPTH CURVES AND SOUNDINGS IN FEET – DATUM IS MEAN LOW WATER

THE RELATIONSHIP BETWEEN THE TWO DATUM IS VARIABLE

SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE ON MEAN HIGH WATER

THE MEAN RANGE OF TIDE IS APPROXIMATELY 9.5 FEET

MN GN 16° 284 MILS 1°26' 25 MILS

UTM grid convergence (GN) and 1987 magnetic declination (MN) at center of map
Diagram is approximate

Green Seal Environmental, Inc.
28 Route 6A
Sandwich, MA 02563
Tel: (508) 888-6034
Fax: (508) 888-1506
www.gseenv.com

PROJECT NAME: SPRAGUE SCHOOL ATHLETIC FIELDS	DRAWING TITLE: LOCUS MAP	CAD TECH: V.A.L.	
		CHECKED BY: J.A.L.	
LOCUS: 79 Oak Street Wesllesley, MA	PREPARED FOR: Town of Wellesley 455 Worcester Street Wellesley, MA 02481	SCALE: AS-SHOWN	
		DATE: 04/28/08	
		FIGURE 1	

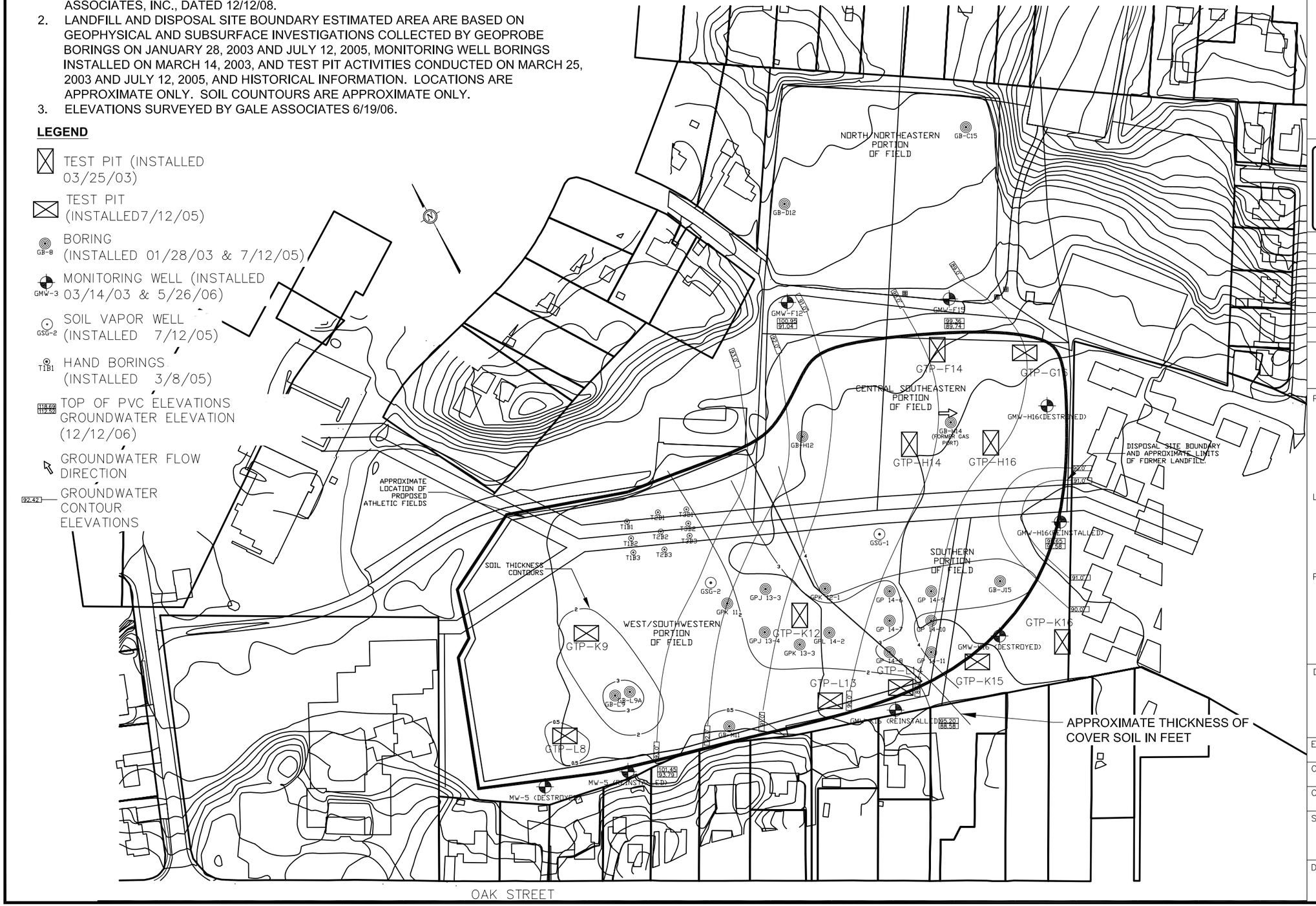
S:\CLIENTS\Town of Wellesley\Active\CAD\AM6-WLS-Locus.dwg

NOTES:

1. THIS DRAWING WAS DERIVED FROM A PLAN ENTITLED "MONITORING WELL LOCATIONS AND GROUNDWATER FLOW/ELEVATIONS", PREPARED BY GALE ASSOCIATES, INC., DATED 12/12/08.
2. LANDFILL AND DISPOSAL SITE BOUNDARY ESTIMATED AREA ARE BASED ON GEOPHYSICAL AND SUBSURFACE INVESTIGATIONS COLLECTED BY GEOPROBE BORINGS ON JANUARY 28, 2003 AND JULY 12, 2005, MONITORING WELL BORINGS INSTALLED ON MARCH 14, 2003, AND TEST PIT ACTIVITIES CONDUCTED ON MARCH 25, 2003 AND JULY 12, 2005, AND HISTORICAL INFORMATION. LOCATIONS ARE APPROXIMATE ONLY. SOIL COUNTOURS ARE APPROXIMATE ONLY.
3. ELEVATIONS SURVEYED BY GALE ASSOCIATES 6/19/06.

LEGEND

- TEST PIT (INSTALLED 03/25/03)
- TEST PIT (INSTALLED7/12/05)
- GB-8 BORING (INSTALLED 01/28/03 & 7/12/05)
- GMW-3 MONITORING WELL (INSTALLED 03/14/03 & 5/26/06)
- GSG-2 SOIL VAPOR WELL (INSTALLED 7/12/05)
- T1B1 HAND BORINGS (INSTALLED 3/8/05)
- 118.69 / 112.52 TOP OF PVC ELEVATIONS GROUNDWATER ELEVATION (12/12/06)
- GROUNDWATER FLOW DIRECTION
- 92.42 GROUNDWATER CONTOUR ELEVATIONS



Green Seal Environmental, Inc.
28 Route 6A
Sandwich, MA 02563
Tel: (508) 888-6034
Fax: (508) 888-1506
www.gseenv.com

REVISIONS

NO.	DATE	COMMENTS

PROJECT:

SPRAGUE SCHOOL ATHLETIC FIELDS

LOCUS:

79 Oak Street
Wellesley, MA

PREPARED FOR:

Town of Wellesley
455 Worcester St.
Wellesley, MA 02481

DRAWING TITLE:

Site Plan with Disposal Site Boundary

ENGINEER:

CAD TECH: V.A.L.

CHECKED BY: J.A.L.

SCALE: 1"=160'

DATE: 04/28/08

SHEET: FIGURE 2

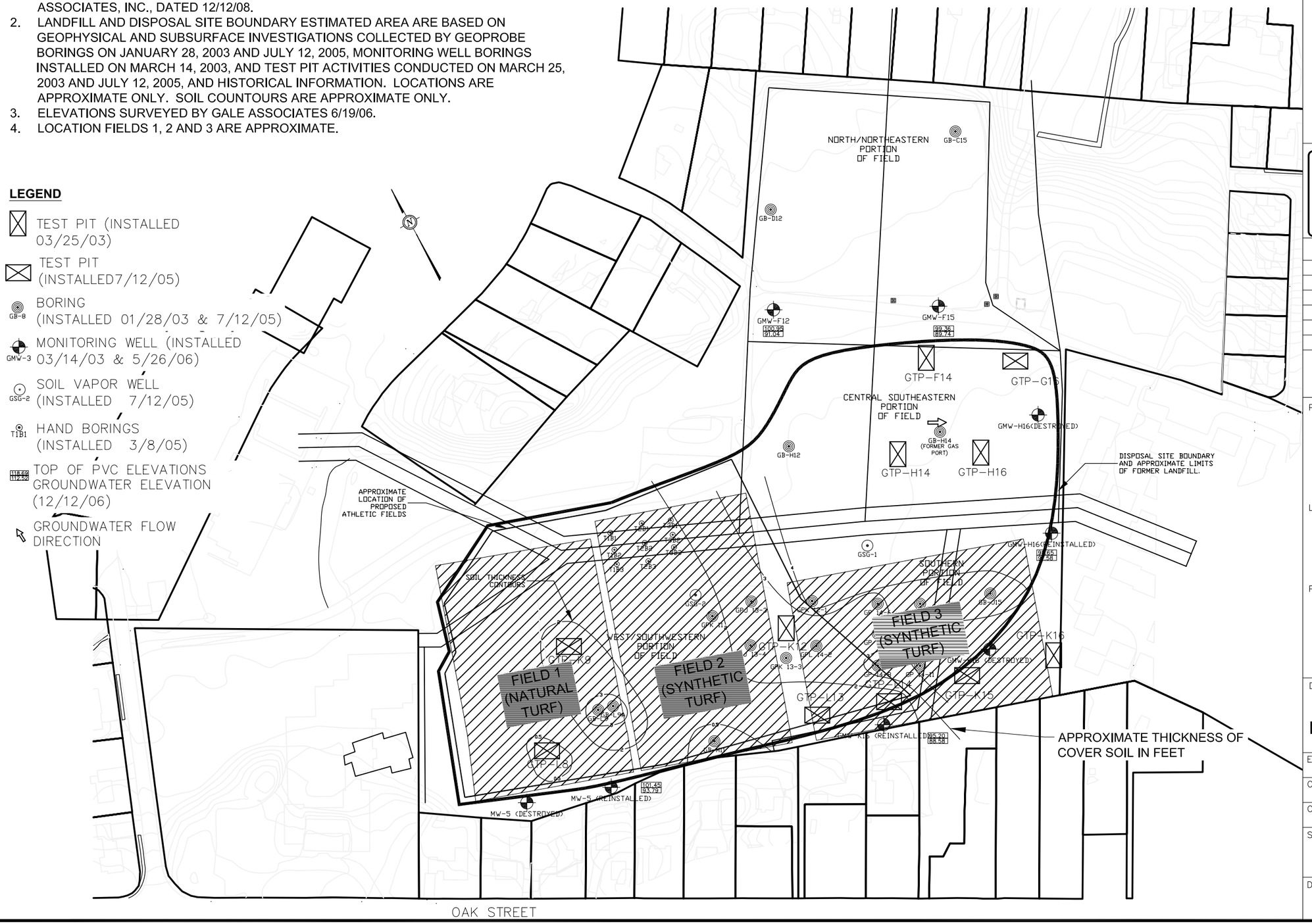
S:\CLIENTS\Town of Wellesley\Active\CAD\AM6-WLS-SP.dwg

NOTES:

1. THIS DRAWING WAS DERIVED FROM A PLAN ENTITLED "MONITORING WELL LOCATIONS AND GROUNDWATER FLOW/ELEVATIONS", PREPARED BY GALE ASSOCIATES, INC., DATED 12/12/08.
2. LANDFILL AND DISPOSAL SITE BOUNDARY ESTIMATED AREA ARE BASED ON GEOPHYSICAL AND SUBSURFACE INVESTIGATIONS COLLECTED BY GEOPROBE BORINGS ON JANUARY 28, 2003 AND JULY 12, 2005, MONITORING WELL BORINGS INSTALLED ON MARCH 14, 2003, AND TEST PIT ACTIVITIES CONDUCTED ON MARCH 25, 2003 AND JULY 12, 2005, AND HISTORICAL INFORMATION. LOCATIONS ARE APPROXIMATE ONLY. SOIL COUNTOURS ARE APPROXIMATE ONLY.
3. ELEVATIONS SURVEYED BY GALE ASSOCIATES 6/19/06.
4. LOCATION FIELDS 1, 2 AND 3 ARE APPROXIMATE.

LEGEND

- TEST PIT (INSTALLED 03/25/03)
- TEST PIT (INSTALLED7/12/05)
- GB-8 BORING (INSTALLED 01/28/03 & 7/12/05)
- GMW-3 MONITORING WELL (INSTALLED 03/14/03 & 5/26/06)
- GSG-2 SOIL VAPOR WELL (INSTALLED 7/12/05)
- TIB1 HAND BORINGS (INSTALLED 3/8/05)
- 118.69 / 112.52 TOP OF PVC ELEVATIONS GROUNDWATER ELEVATION (12/12/06)
- GROUNDWATER FLOW DIRECTION



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28 Route 6A
Sandwich, MA 02563
Tel: (508) 888-6034
Fax: (508) 888-1506
www.gseenv.com

REVISIONS

NO.	DATE	COMMENTS

PROJECT:

SPRAGUE SCHOOL
ATHLETIC FIELDS

LOCUS:

79 Oak Street
Wellesley, MA

PREPARED FOR:

Town of Wellesley
455 Worcester St.
Wellesley, MA 02481

DRAWING TITLE:

Site Plan Showing
Location of New Athletic Fields

ENGINEER:

CAD TECH: V.A.L.

CHECKED BY: J.A.L.

SCALE: 1"=160'

DATE: 07/01/09

SHEET: FIGURE 3

S:\CLIENTS\Town of Wellesley\Active\CAD\AM7-WLS-SP.dwg

APPENDIX A

STATEMENT OF LIMITATIONS AND CONDITIONS

ATTACHMENT TO
OPINION OF MASSACHUSETTS LICENSED SITE PROFESSIONAL

Green Seal Environmental, Inc.

Name of Licensed Site Professional: James A. Luker, Jr.

LSP Registration Number: 6522

Date of Opinion: July 2009

Client to Whom Opinion was Rendered: Town of Wellesley

Date of Agreement between Green Seal Environmental, Inc. and Client pursuant to which Opinion was Rendered: August 30, 2007

Response Tracking No./Site No. 3-22918

This Statement of Limitations and Conditions is an integral part of, and is incorporated by reference into, the Opinion of Massachusetts Licensed Site Professional referenced above.

LIMITATIONS

1. Purpose of Opinion

   A. This Opinion is being provided in compliance with the requirements set forth in the Massachusetts Contingency Plan ("MCP"), 310 CMR 40.0000 et seq. Specifically, the LSP has prepared this Opinion at the request of the Client identified above as part of a Response Action Outcome with an Activity and Use Limitation. This stated purpose has been a significant factor in determining the scope and level of services required to render this Opinion.

   B. Should the purpose for which this Opinion is to be used change; this Opinion shall no longer be valid.

2. General

   A. This Opinion was prepared for the sole and exclusive use of the Client, subject to the provisions of the MCP. No other party is entitled to rely in any way on the conclusions, observations, specifications, or data contained herein without the express written consent of Green Seal Environmental, Inc. and the LSP who rendered this opinion. Any use of this Opinion by anyone other than Client, or any use of this Opinion by Client or others for any purpose other than the stated purpose set forth above, without the LSP's review and the written authorization of Green Seal Environmental, Inc. and the LSP, shall be at the user's sole risk, and neither Green Seal Environmental, Inc. nor the LSP shall have any liability or responsibility therefore.

   B. This Opinion was prepared pursuant to an Agreement between Green Seal Environmental, Inc. and the Client referenced above which defines the scope of work and sets out agreements regarding waivers of consequential damages, limitations on liability, and other important conditions and

restrictions pursuant to which the Opinion is rendered. All uses of the Opinion are subject to and deemed acceptance of the conditions and restrictions contained in such Agreement. A copy of the Agreement or relevant excerpts from the Agreement will be made available upon requests to any authorized person seeking to use the Opinion.

3. Scope of Services

The observations and conclusions described in this Opinion are based solely on the Services provided pursuant to the Agreement with the Client and any approved additional services authorized by Client. Without limitation of any other applicable limitations or conditions, neither Green Seal Environmental, Inc. nor the LSP shall be liable for the existence of any condition, the discovery of which would have required the performance of services not authorized under the Agreement. To the best of the knowledge and belief of Green Seal Environmental, Inc. and the LSP who signed this Opinion, no inquiry of an attorney-at-law having being made, no laws, regulations, orders, permits or approvals are applicable to the response actions to which this Opinion relates except, if and to the extent applicable, M.G.L. c 21A, Sections 19-19J, 309 CMR, M.G.L. c. 21E and 310 CMR 40.0000. Accordingly, this Opinion is not intended to and does not address compliance with any other laws, regulation, orders, permits or approvals.

4. Changed Circumstances

The passage of time may result in changes in technology, economic conditions or regulatory standards, manifestations of latent conditions, or the occurrence of future events, which would render this Opinion inaccurate or otherwise inapplicable. Neither Green Seal Environmental, Inc. nor the LSP shall be liable or responsible for the consequences of any such changed circumstances or conditions on the accuracy of this Opinion. In addition, under no circumstances shall the Client nor any other person or entity rely on the information or conclusions contained in this Opinion after 6 months from its date of submission without the express written consent of Green Seal Environmental, Inc., and the LSP. Reliance on the Opinion after such period of time shall be at the user's sole risk.

5. Should Green Seal Environmental, Inc. or the LSP be required or requested to review or authorize others to use this Opinion after its date of submission, Green Seal Environmental, Inc. shall be entitled to additional compensation at then existing rates or such other terms as may be agreed upon between Green Seal Environmental, Inc. and the Client. Nothing herein contained shall be deemed to require Green Seal Environmental, Inc. or the LSP to undertake any such review or authorize others to use this Opinion.

6. The conclusions stated in this Opinion are based upon [check and initial appropriate boxes]:

☒ X Visual inspection of existing physical conditions;

☒ X Review and interpretation of site history and site usage information which was made available or obtained within the scope of work authorized by the Client;

☒ x Information provided by the Client;

☒ X Information and/or analyses for designated substances or parameters provided by an independent testing service or laboratory on a limited number of samples;

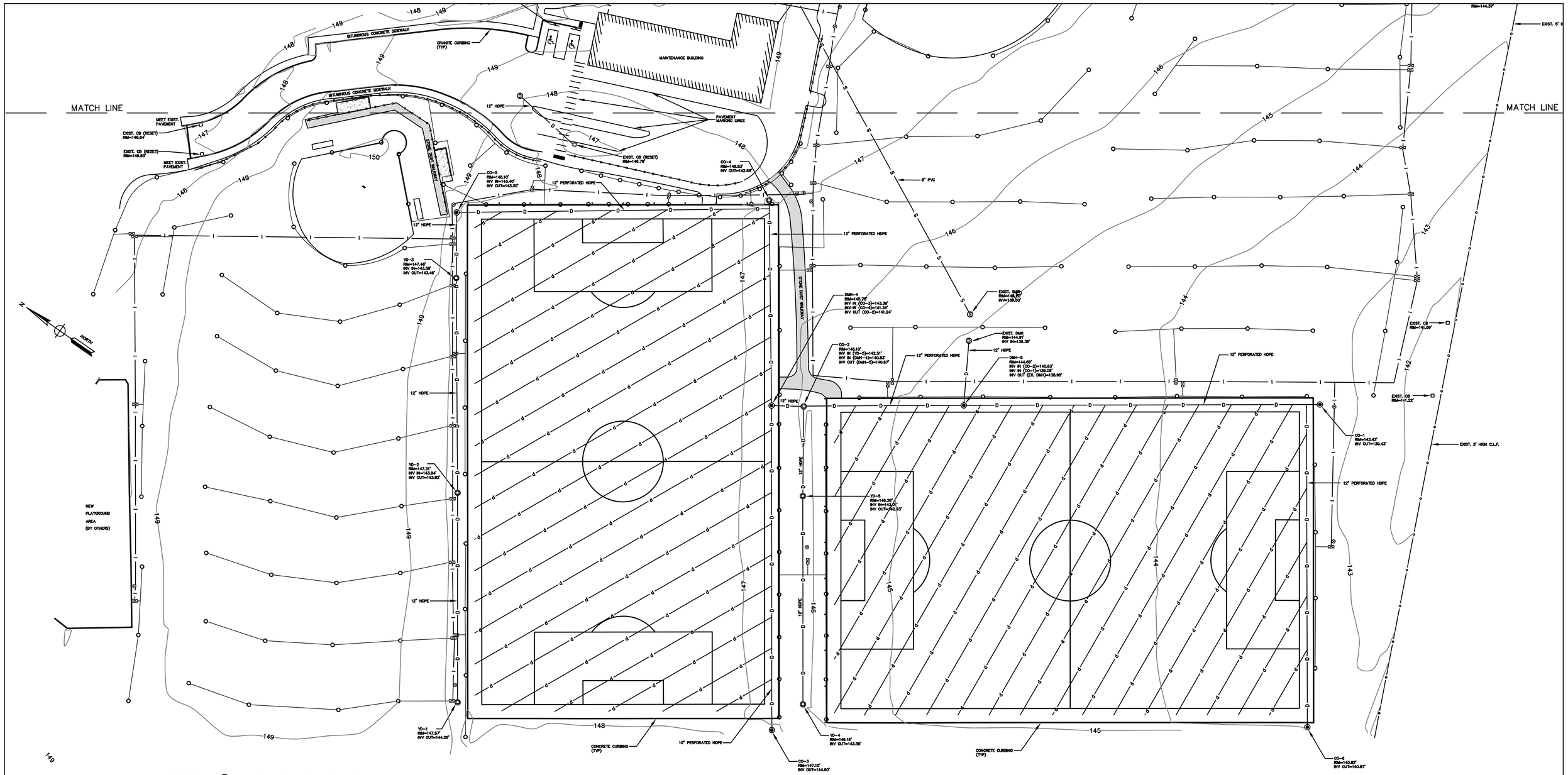
☒ X A limited number of subsurface explorations made on dates indicated in documentation supporting this Opinion;

upon which the LSP has relied and presumed accurate, and upon which the LSP is entitled to reasonably rely. The LSP was not authorized and did not attempt to independently verify the accuracy or completeness of

information or materials received from the Client and/or from laboratories and other third parties during the performance of its services. Neither Green Seal Environmental, Inc. nor the LSP shall be liable for any condition, information, or conclusion, the discovery of which required information not available to the LSP or for independent investigation of information provided to the LSP by the Client and/or independent third parties.

7. This Opinion is rendered for the limited purpose stated above,, and is not and should not be deemed to be an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation. NO WARRANTY OR GUARANTEE, WHETHER EXPRESS OR IMPLIED, IS MADE BY THIS OPINION, AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. Without limiting the generality of the foregoing, no warranty or guarantee is made that all contamination at a site or sources or contamination has been detected or identified, that any action or recommended action will achieve all of its objectives, or that this Opinion or any action as to which this Opinion relates will be upheld by any audit conducted by the DEP or any other party.

APPENDIX B



LEGEND:

- CLEAN-OUT (CATCH BASIN COVER)
- CLEAN-OUT (MANHOLE COVER)
- DRAIN MANHOLE
- SEWER MANHOLE
- — D — DRAINAGE LINE
- — d — FLAT PANEL DRAIN
- — S — SEWER LINE
- — o — CHAIN LINK FENCE
- — □ — STOCKADE FENCE
- SPRINKLER HEAD
- QUICK COUPLER VALVE
- IRRIGATION CONTROL VALVE
- — I — 2" IRRIGATION MAIN LINE
- CONCRETE PAD
- TRUNCATED DOME HANDICAP MAT

0 30 60 90 120 FEET
GRAPHIC SCALE 1" = 30'

REVISIONS		
REV.	COMMENTS	DATE

ORIGINAL FULL SIZE DRAWING=4"
REPRODUCTIONS MAY BE REDUCED SIZE

PREPARED BY:
A-PLUS CONSTRUCTION SERVICES CORPORATION
17 ACCORD PARK DRIVE, UNIT 102 NORWELL, MASS.
TEL. (781) 681-0607 FAX. (781) 681-0670

FIELD CHIEF: BL/HM	DES/COMP: BML	DRAFTED BY: BML	CHECKED BY: MC
DATE: 4 DEC 08	SCALE: 1" = 30 FT.	A-PLUS #:2835	FILE: SPRAGSCHASB

AS-BUILT SURVEY
SPRAGUE FIELDS REDEVELOPMENT
WELLESLEY, MASSACHUSETTS

PREPARED FOR:
GREEN ACRES LANDSCAPE AND CONSTRUCTION

SHEET 1 of 2
REV.0

APPENDIX C

KERA RISK ASSESSMENT ADDENDUM

KERA ENVIRONMENTAL

October 12, 2006

James A. Luker, Jr., LSP
Gale Associates, Inc.
P.O. Box 890189, 163 Libbey Parkway
Weymouth, MA 02189-0004

Dear Mr. Luker:

As requested, KERA Environmental, LLC (KERA) of Worthington, MA has completed a focused evaluation of human health risk associated with the soil exposure pathway for children, ages 1 to 3 years and 3 to 6 years, who may engage in activities at the Sprague School Athletic Fields. This focused evaluation has been prepared as an addendum to the *Method 3 Risk Characterization for the Sprague School Athletic Fields, 79 Oak Street, Wellesley, MA, RTN 3-22918*, April 2006, in accordance with the Massachusetts Contingency Plan (MCP) 310 CMR 40.0900.

Background

The athletic field is comprised of approximately 26 acres and includes the Sprague Field House, a one-story building used for carpentry, welding and vehicle maintenance operations. Historically, the field was the site of a municipal landfill. Gale Associates, Inc. (Gale), of Weymouth, MA initiated a site investigation to screen for soil and groundwater conditions at the athletic fields. Soil samples were analyzed for heavy metals, volatile organic compounds (VOCs) and extractable petroleum hydrocarbons (EPH), including polycyclic aromatic hydrocarbon (PAH) target analytes. Analytical results indicate elevated concentrations of PAHs and heavy metals at several areas across the Site. In addition, polychlorinated biphenyls (PCBs) were detected in one of seven samples analyzed for this set of compounds.

A comprehensive exposure assessment indicated that, assuming the implementation of an Activity and Use Limitation (AUL) to restrict future residential activities and any non-utility related excavation, surficial soil is the only point of exposure to impacted media at the site. Findings from the original risk characterization indicated that surficial soil (0 to 3 feet below grade) at the site did not pose a significant risk of harm to human health for children, ages 6 to 18 years, who use the

athletic fields. However, glass and debris located within 6 inches of the ground surface in southwest areas of the playing fields could pose a significant risk of harm to safety.

Focused Risk Characterization -- Approach

The current, focused, risk characterization was prepared to evaluate human health risk associated with the soil exposure pathway for children, ages 1 to 3 years and 3 to 6 years. These children were assumed to engage in activities with the same frequency and duration as those previously assumed for children, ages 6 to 11 years (140 days/year throughout the implicit time intervals). Soil exposure point concentrations (EPCs) were also assumed to be the same as previous surficial soil EPCs used to evaluate children using the fields. Except for the exposure parameters noted below (soil ingestion, body weight, surface area (skin) and adherence factors, which were adapted to reflect children, ages 1 to 3 years and 3 to 6 years) all other methods and assumptions were retained from the previous risk characterization for the site (see the previously prepared Method 3 Risk Characterization for details of site characteristics and methodology):

	1 to 3 years	3 to 6 years
Body Weight (kg)	11.7	16.8
Ingestion Rate (kg/d)	0.0001	0.0001
Surface Area (cm2/d)	1769	2539
Adherence Factor (kg/cm2)	3.6E-7	3.6E-07

Although this addendum was prepared to evaluated children, ages 1 to 3 years and 3 to 6 years, a risk characterization assumes potentially cumulative effects; therefore, this focused evaluation incorporates risk results previously characterized for children, ages 6 to 18. Risk was assumed to be additive and no changes were made to the previous characterization of risk for this receptor.

Focused Risk Characterization -- Findings

Cumulative cancer and non-cancer risks were calculated for each of the children discussed above. Summary results are provided in Table A-1 of this document. Non-cancer risk (hazard index; HI) was calculated to determine total HI for each age group. No calculated HI value exceeded the risk criteria of one. Cancer risk (excess lifetime cancer risk; ELCR) was also calculated for each age group. In keeping with proper protocol, these calculated ELCR values were summed over the age groups to determine total ELCR risk for children from 1 to 18 years, who engage in activities at the athletic fields. Tables A-2 through A-7 document the percent contribution to cancer and non-cancer risk results by chemical compound and by route of exposure (ingestion and dermal contact).

Results indicate that a condition of No Significant Risk of harm to human health continues to exist at the site when exposures include children, ages 1 to 3 years and 3 to 6 years (i.e., a cumulative exposure for a child from 1 to 18 years) who come into contact with surficial soil while engaged in activities at the Sprague School athletic fields.

These findings are considered conservative since younger children (1 to 6 years) are assumed to spend as many hours at the athletic fields as older children (6 to 11 years). Also, older children (6 to 18 years) were assumed to ingest soil at half the rate of younger children).

This focused risk characterization does not change the previous findings about risk of harm to safety at the site.

KERA Environmental, LLC

Kathryn A. Ewald, PhD
Chief Executive

Table 1A: Summary Cumulative Hazard Index (HI) and Excess Lifetime Cancer Risk (ELCR)
Associated with the Sprague School Athletic Fields, Wellesley, MA

RECEPTOR	EXPOSURE POINT	EXPOSURE ROUTE	HI (Dimensionless)	% Total	ELCR (Dimensionless)	% Total
Student (1 to 3 years)	Surficial Soil (0 - 3 feet)	Ingestion	5.41E-01	78.2	1.98E-06	69.7
		Dermal	1.51E-01	21.8	8.61E-07	30.3
		Cumulative for Receptor	0.7	100	3.E-06	100
		Risk Criteria	*1*	*NSR*	*1.E-05*	---
Student (3 to 6 years)	Surficial Soil (0 - 3 feet)	Ingestion	3.77E-01	71.5	1.38E-06	61.4
		Dermal	1.50E-01	28.5	8.69E-07	38.6
		Cumulative for Receptor	0.5	100	2.E-06	100
		Risk Criteria	*1*	*NSR*	*1.E-05*	---
Student (6 to 18 years)	Surficial Soil (0 - 3 feet)	Ingestion	2.78E-01	46.7	3.51E-06	48.1
		Dermal	3.18E-01	53.3	3.80E-06	51.9
		Cumulative for Receptor	0.6	100	7.E-06	100
		Risk Criteria	*1*	*NSR*	*1.E-05*	---
Cumulative Student (1 to 18)	Surficial Soil (0 - 3 feet)	Ingestion	---	---	6.87E-06	55.4
		Dermal	---	---	5.53E-06	44.6
		Cumulative for Receptor	---	---	1.E-05	100
		Risk Criteria	---	---	*1.E-05*	*NSR*

Table 2A: Hazard Index (HI) for Elementary School Student Subchronic (1 to 3 years) Surficial Soil Exposure Associated with the Sprague School Athletic Fields, Wellesley, MA

	HI ing (Dimensionless)	HI der (Dimensionless)	HI Total (Dimensionless)	% Total
n-C_9 to n-C_{18} aliphatics	5.83E-05	1.86E-04	2.44E-04	0.0
n-C_{19} to n-C_{35} aliphatics	4.70E-05	2.99E-05	7.70E-05	0.0
n-C_{11} to n-C_{22} aromatics	4.86E-04	8.60E-04	1.35E-03	0.2
Acenaphthene	5.84E-07	1.03E-06	1.62E-06	0.0
Acenaphthylene	1.29E-06	2.28E-06	3.57E-06	0.0
Anthracene	1.28E-07	2.26E-07	3.54E-07	0.0
Benzo[a]anthracene	3.43E-06	1.51E-06	4.94E-06	0.0
Benzo (a) pyrene	3.61E-06	1.58E-06	5.19E-06	0.0
Benzo[b]fluoranthene	4.04E-06	1.77E-06	5.81E-06	0.0
Benzo (g, h, i) perylene	2.94E-06	5.20E-06	8.14E-06	0.0
Benzo (k) fluoranthene	2.67E-06	1.17E-06	3.84E-06	0.0
Chrysene	4.51E-06	1.98E-06	6.49E-06	0.0
Dibenzo[a,h]anthracene	1.11E-06	4.89E-07	1.60E-06	0.0
Fluoranthene	6.83E-06	1.21E-05	1.89E-05	0.0
Fluorene	9.66E-07	1.71E-06	2.67E-06	0.0
Indeno[1,2,3-cd]pyrene	2.25E-06	9.86E-07	3.23E-06	0.0
2-Methylnaphthalene	8.76E-06	1.55E-05	2.43E-05	0.0
Naphthalene	1.75E-06	3.10E-06	4.85E-06	0.0
Phenanthrene	6.14E-06	1.09E-05	1.70E-05	0.0
Pyrene	9.52E-06	1.68E-05	2.64E-05	0.0
PCB	8.25E-02	9.89E-02	1.81E-01	26.2
Isopropyltoluene	4.26E-06	1.36E-05	1.78E-05	0.0
Inorganics				
Arsenic	5.64E-02	1.08E-02	6.71E-02	9.7
Barium	4.91E-03	1.56E-03	6.47E-03	0.9
Cadmium	3.75E-03	3.34E-03	7.09E-03	1.0
Chromium (VI)	1.83E-03	1.05E-03	2.89E-03	0.4
Lead	3.78E-01	2.89E-02	4.07E-01	58.9
Mercury	5.00E-03	1.59E-03	6.60E-03	1.0
Selenium	5.45E-03	6.94E-05	5.52E-03	0.8
Silver	2.01E-03	3.20E-03	5.21E-03	0.8
TOTALS	5.41E-01	1.51E-01	6.91E-01	100
%TOTALS	78.2	21.8	100	

Table 3A: Excess Lifetime Cancer Risk (ELCR) for Elementary School Student (1 to 3 years) Surficial Soil Exposure Associated with the Sprague School Athletic Fields, Wellesley, MA

	ELCR ing (Dimensionless)	ELCR der (Dimensionless)	ELCR Total (Dimensionless)	% Total
PAH				
Benzo[a]anthracene	3.22E-08	1.40E-08	4.62E-08	1.6
Benzo[a]pyrene	3.39E-07	1.47E-07	4.86E-07	17.1
Benzo[b]fluoranthene	3.79E-08	1.65E-08	5.44E-08	1.9
Benzo[k]fluoranthene	2.51E-09	1.09E-09	3.60E-09	0.1
Chrysene (B2)	4.23E-09	1.84E-09	6.07E-09	0.2
Dibenzo[a,h]anthracene	1.05E-07	4.55E-08	1.50E-07	5.3
Indeno[1,2,3-cd]pyrene	2.11E-08	9.17E-09	3.03E-08	1.1
PCBs	3.54E-07	4.20E-07	7.73E-07	27.2
Inorganics				
Arsenic	1.09E-06	2.06E-07	1.29E-06	45.5
TOTALS	1.98E-06	8.61E-07	2.84E-06	100
%TOTALS	69.7	30.3	100	

Table 4A: Hazard Index (HI) for Elementary School Student Subchronic (3 to 6 years) Surficial Soil Exposure Associated with the Sprague School Athletic Fields, Wellesley, MA

	HI ing (Dimensionless)	HI der (Dimensionless)	HI Total (Dimensionless)	% Total
n-C_9 to n-C_{18} aliphatics	4.06E-05	1.85E-04	2.26E-04	0.0
n-C_{19} to n-C_{36} aliphatics	3.27E-05	2.99E-05	6.27E-05	0.0
n-C_{11} to n-C_{22} aromatics	3.39E-04	8.59E-04	1.20E-03	0.2
Acenaphthene	4.07E-07	1.03E-06	1.44E-06	0.0
Acenaphthylene	8.97E-07	2.28E-06	3.17E-06	0.0
Anthracene	8.89E-08	2.26E-07	3.15E-07	0.0
Benzo[a]anthracene	2.39E-06	1.51E-06	3.90E-06	0.0
Benzo (a) pyrene	2.51E-06	1.58E-06	4.10E-06	0.0
Benzo[b]fluoranthene	2.81E-06	1.77E-06	4.58E-06	0.0
Benzo (g, h, i) perylene	2.05E-06	5.20E-06	7.24E-06	0.0
Benzo (k) fluoranthene	1.86E-06	1.17E-06	3.03E-06	0.0
Chrysene	3.14E-06	1.98E-06	5.12E-06	0.0
Dibenzo[a,h]anthracene	7.76E-07	4.89E-07	1.26E-06	0.0
Fluoranthene	4.76E-06	1.21E-05	1.68E-05	0.0
Fluorene	6.73E-07	1.71E-06	2.38E-06	0.0
Indeno[1,2,3-cd]pyrene	1.56E-06	9.86E-07	2.55E-06	0.0
2-Methylnaphthalene	6.10E-06	1.55E-05	2.16E-05	0.0
Naphthalene	1.22E-06	3.10E-06	4.32E-06	0.0
Phenanthrene	4.28E-06	1.09E-05	1.51E-05	0.0
Pyrene	6.63E-06	1.68E-05	2.35E-05	0.0
PCB	5.74E-02	9.88E-02	1.56E-01	29.6
Isopropyltoluene	2.97E-06	1.36E-05	1.65E-05	0.0
Inorganics				
Arsenic	3.92E-02	1.08E-02	5.00E-02	9.5
Barium	3.42E-03	1.56E-03	4.98E-03	0.9
Cadmium	2.61E-03	3.34E-03	5.95E-03	1.1
Chromium (VI)	1.28E-03	1.05E-03	2.33E-03	0.4
Lead	2.64E-01	2.89E-02	2.92E-01	55.5
Mercury	3.48E-03	1.59E-03	5.08E-03	1.0
Selenium	3.80E-03	6.94E-05	3.87E-03	0.7
Silver	1.40E-03	3.20E-03	4.59E-03	0.9
TOTALS	3.77E-01	1.50E-01	5.27E-01	100
%TOTALS	71.5	28.5	100	

Table 5A: Excess Lifetime Cancer Risk (ELCR) for Elementary School Student (3 to 6 years) Surficial Soil Exposure Associated with the Sprague School Athletic Fields, Wellesley, MA

	ELCR ing (Dimensionless)	ELCR der (Dimensionless)	ELCR Total (Dimensionless)	% Total
PAH				
Benzo[a]anthracene	2.24E-08	1.41E-08	3.66E-08	1.6
Benzo[a]pyrene	2.36E-07	1.49E-07	3.85E-07	17.1
Benzo[b]fluoranthene	2.64E-08	1.66E-08	4.30E-08	1.9
Benzo[k]fluoranthene	1.74E-09	1.10E-09	2.84E-09	0.1
Chrysene (B2)	2.95E-09	1.86E-09	4.80E-09	0.2
Dibenzo[a,h]anthracene	7.28E-08	4.59E-08	1.19E-07	5.3
Indeno[1,2,3-cd]pyrene	1.47E-08	9.25E-09	2.39E-08	1.1
PCBs	2.46E-07	4.24E-07	6.70E-07	29.8
Inorganics				
Arsenic	7.57E-07	2.08E-07	9.64E-07	42.9
TOTALS	1.38E-06	8.69E-07	2.25E-06	100
%TOTALS	61.4	38.6	100	

Table 6A: Hazard Index (HI) for Elementary School Student Chronic (6 to 18 years) Surficial Soil Exposure Associated with the Sprague School Athletic Fields, Wellesley, MA

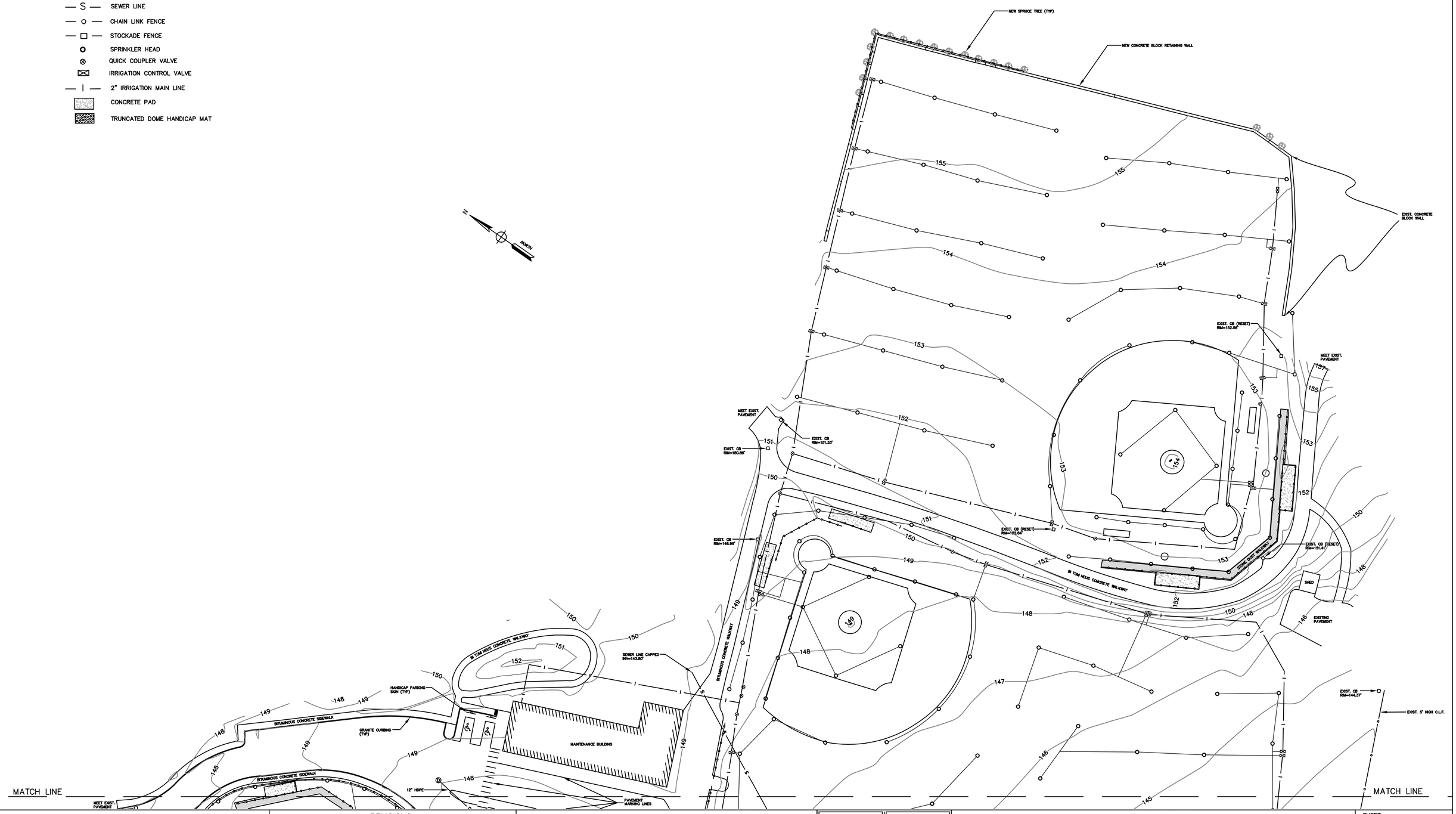
	HI ing (Dimensionless)	HI der (Dimensionless)	HI Total (Dimensionless)	% Total
n-C_9 to n-C_{18} aliphatics	2.38E-04	1.87E-03	2.11E-03	0.4
n-C_{19} to n-C_{36} aliphatics	5.77E-05	9.06E-05	1.48E-04	0.0
n-C_{11} to n-C_{22} aromatics	1.99E-03	8.67E-03	1.07E-02	1.8
Acenaphthene	1.92E-06	1.04E-05	1.23E-05	0.0
Acenaphthylene	4.24E-06	2.30E-05	2.72E-05	0.0
Anthracene	4.21E-07	2.28E-06	2.70E-06	0.0
Benzo[a]anthracene	1.40E-05	1.52E-05	2.92E-05	0.0
Benzo (a) pyrene	1.48E-05	1.60E-05	3.07E-05	0.0
Benzo[b]fluoranthene	1.65E-05	1.79E-05	3.44E-05	0.0
Benzo (g, h, i) perylene	9.68E-06	5.24E-05	6.21E-05	0.0
Benzo (k) fluoranthene	1.09E-05	1.18E-05	2.27E-05	0.0
Chrysene	1.84E-05	2.00E-05	3.84E-05	0.0
Dibenzo[a,h]anthracene	4.56E-06	4.93E-06	9.49E-06	0.0
Fluoranthene	2.25E-05	1.22E-04	1.44E-04	0.0
Fluorene	3.18E-06	1.72E-05	2.04E-05	0.0
Indeno[1,2,3-cd]pyrene	9.19E-06	9.94E-06	1.91E-05	0.0
2-Methylnaphthalene	2.89E-05	1.56E-04	1.85E-04	0.0
Naphthalene	5.77E-06	3.12E-05	3.70E-05	0.0
Phenanthrene	2.02E-05	1.09E-04	1.30E-04	0.0
Pyrene	3.14E-05	1.70E-04	2.01E-04	0.0
PCBs	8.44E-02	2.49E-01	3.34E-01	56.0
Isopropyltoluene	1.74E-06	1.37E-05	1.54E-05	0.0
Inorganics				
Arsenic	2.31E-02	1.09E-02	3.39E-02	5.7
Barium	2.01E-03	1.57E-03	3.58E-03	0.6
Cadmium	1.53E-03	3.37E-03	4.90E-03	0.8
Chromium (VI)	5.00E-03	7.06E-03	1.21E-02	2.0
Lead	1.55E-01	2.92E-02	1.84E-01	30.9
Mercury	2.05E-03	1.61E-03	3.65E-03	0.6
Selenium	2.23E-03	7.00E-05	2.30E-03	0.4
Silver	8.22E-04	3.22E-03	4.04E-03	0.7
TOTALS	2.78E-01	3.18E-01	5.96E-01	100
%TOTALS	46.7	53.3	100	

Table 7A: Excess Lifetime Cancer Risk (ELCR) for Elementary School Student (6 to 18 years) Surficial Soil Exposure Associated with the Sprague School Athletic Fields, Wellesley, MA

	ELCR ing (Dimensionless)	ELCR der (Dimensionless)	ELCR Total (Dimensionless)	% Total
Benzo[a]anthracene	5.71E-08	6.18E-08	1.19E-07	1.6
Benzo[a]pyrene	6.01E-07	6.50E-07	1.25E-06	17.1
Benzo[b]fluoranthene	6.71E-08	7.27E-08	1.40E-07	1.9
Benzo[k]fluoranthene	4.44E-09	4.81E-09	9.25E-09	0.1
Chrysene (B2)	7.50E-09	8.12E-09	1.56E-08	0.2
Dibenzo[a,h]anthracene	1.85E-07	2.01E-07	3.86E-07	5.3
Indeno[1,2,3-cd]pyrene	3.74E-08	4.04E-08	7.78E-08	1.1
PCBs	6.27E-07	1.85E-06	2.48E-06	33.9
Inorganics				
Arsenic	1.93E-06	9.07E-07	2.83E-06	38.8
TOTALS	3.51E-06	3.80E-06	7.31E-06	100
%TOTALS	48.1	51.9	100	

LEGEND:

- CLEAN-OUT (CATCH BASIN COVER)
- CLEAN-OUT (MANHOLE COVER)
- DRAIN MANHOLE
- SEWER MANHOLE
- DRAINAGE LINE
- FLAT PANEL DRAIN
- SEWER LINE
- CHAIN LINK FENCE
- STOCKADE FENCE
- SPRINKLER HEAD
- QUICK COUPLER VALVE
- IRRIGATION CONTROL VALVE
- 2" IRRIGATION MAIN LINE
- CONCRETE PAD
- TRUNCATED DOME HANDICAP MAT



0 30 60 90 120 FEET

GRAPHIC SCALE 1" = 30'

REVISIONS

REV.	COMMENTS	DATE

ORIGINAL FULL SIZE DRAWING=4"

REPRODUCTIONS MAY BE REDUCED SIZE

PREPARED BY:
A-PLUS CONSTRUCTION SERVICES CORPORATION
17 ACCORD PARK DRIVE, UNIT 22B NORWELL, MASS.
TEL. (781) 681-0007 FAX. (781) 681-0676

FIELD CHIEF: BL/HM	DES/COMP: BML	DRAFTED BY: BML	CHECKED BY: MC
DATE: 4 DEC 08	SCALE: 1" = 30 FT.	A-PLUS #:2835	FILE: SPRAGSCHASB

AS-BUILT SURVEY
SPRAGUE FIELDS REDEVELOPMENT
WELLESLEY, MASSACHUSETTS

PREPARED FOR:

GREEN ACRES LANDSCAPE AND CONSTRUCTION

SHEET 2 of 2

OF

REV.0

APPENDIX E

NOTES

1. LANDFILL AND DISPOSAL SITE BOUNDARY ESTIMATED AREA ARE BASED ON GEOPHYSICAL AND SUBSURFACE INVESTIGATIONS COLLECTED BY GEOPROBE BORINGS ON JANUARY 28, 2003 AND JULY 12, 2005, MONITORING WELL BORINGS INSTALLED ON MARCH 14, 2003, AND TEST PIT ACTIVITIES CONDUCTED ON MARCH 25, 2003 AND JULY 12, 2005. AND HISTORICAL INFORMATION. LOCATIONS ARE APPROXIMATE ONLY.
2. ELEVATIONS SURVEYED BY GALE ASSOCIATES 6/19/06.

TEST PIT (INSTALLED 03/25/03)

TEST PIT (INSTALLED7/12/05)

GB-8 BORING (INSTALLED 01/28/03 & 7/12/05)

GMW-3 MONITORING WELL (INSTALLED 03/14/03 & 5/26/06)

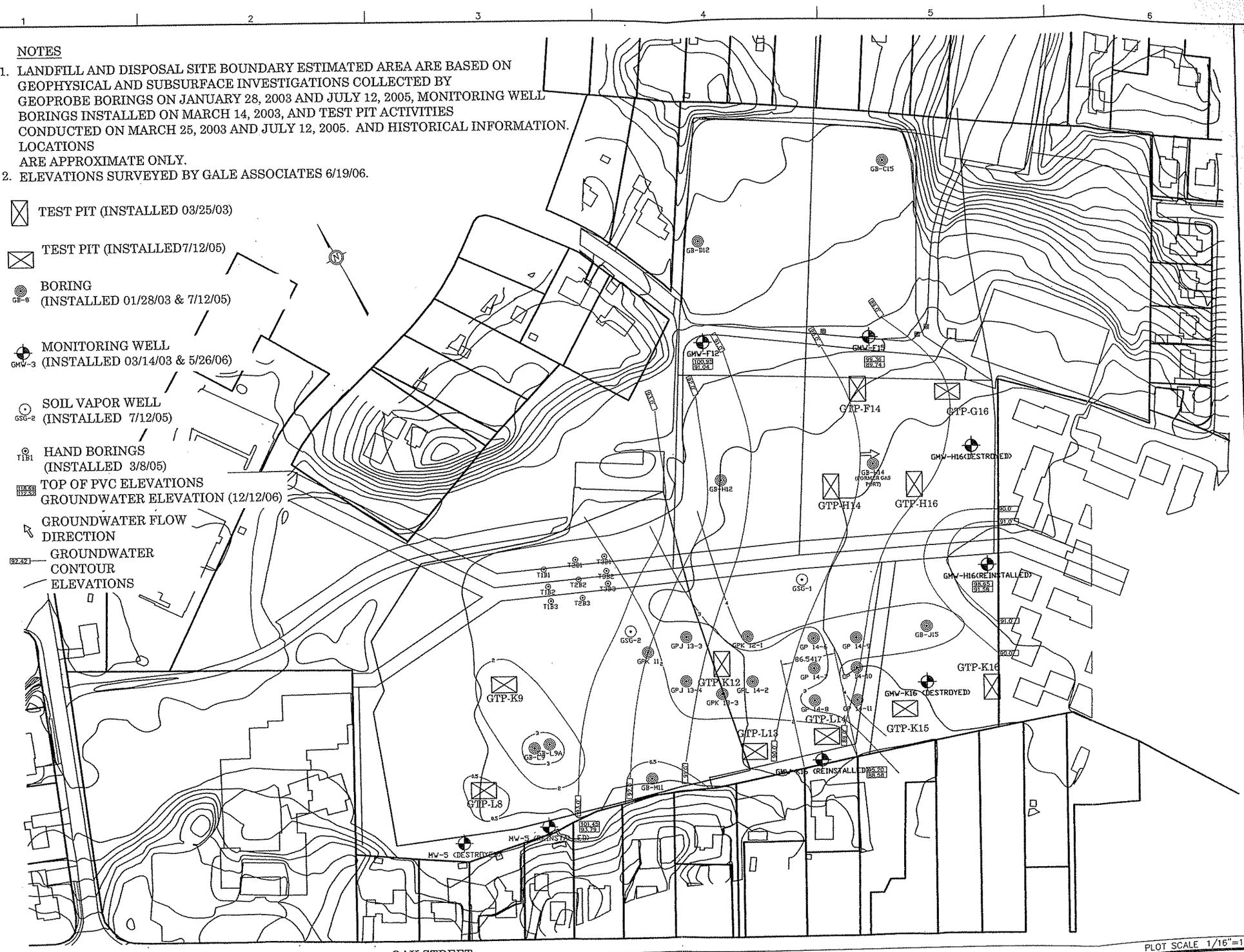
GSG-2 SOIL VAPOR WELL (INSTALLED 7/12/05)

T1B1 HAND BORINGS (INSTALLED 3/8/05)

114.69 / 112.57 TOP OF PVC ELEVATIONS GROUNDWATER ELEVATION (12/12/06)

GROUNDWATER FLOW DIRECTION

92.42 GROUNDWATER CONTOUR ELEVATIONS



PLOT SCALE 1/16"=1'-0"

GALE

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PROJECT
SPRAGUE SCHOOL ATHLETIC FIELDS
WELLESLEY, MASSACHUSETTS

OWNER
TOWN OF WELLESLEY
WELLESLEY, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	756211
CADD FILE	Schematic Site 1
DESIGNED BY	CWM
DRAWN BY	KTD
CHECKED BY	JAL
DATE	12/12/06
DRAWING SCALE	1"=150'

GRAPHIC SCALE

SHEET TITLE

MONITORING WELL LOCATIONS AND GROUNDWATER FLOW/ELEVATIONS

DRAWING NO.

FIGURE 2

4 OF 4

MATCHLINE
SHEET 2
SHEET 1

MATCHLINE

STOCKPILE TO BE REMOVED, AND REUSED OR DISPOSED OF OFF-SITE.

EXISTING GATES TO BE REMOVED AND RELOCATED

CASTING TO BE ADJUSTED AS REQUIRED

APRON TO BE PROTECTED

LIGHT POLE TO BE REMOVED AND RELOCATED

LIGHT POLE TO BE REMOVED AND RELOCATED

STONE RET. WALL TO BE PROTECTED

CB TO BE CONVERTED TO DMH AND RIM ADJUSTED AS REQUIRED

SAWCUT LINE

WOOD GUARD RAIL TO BE REMOVED AND STOCKPILED FOR TOWN USE

LIGHT POLE TO BE REMOVED AND RELOCATED

TREE TO BE REMOVED

CASTING TO BE ADJUSTED AS REQUIRED

WOOD GUARD RAIL TO BE REMOVED AND STOCKPILED FOR TOWN USE

TREE TO BE REMOVED

SIGNAGE TO BE REMOVED

TREE TO BE REMOVED

LIGHT POLE TO BE REMOVED AND RELOCATED

GOAL POSTS TO BE REMOVED

LIMIT OF WORK

TEMPORARY CONSTRUCTION FENCE

TREES TO BE REMOVED

HANDHOLES AND ASSOCIATED IRRIGATION PIPING TO BE REMOVED AND DISPOSED

LIMITS OF REMEDIATION AREA

MONITORING WELL TO BE PROTECTED AND CASING TO BE CONVERTED TO ROAD BOX

REMOVE AND DISPOSE

PROPOSED HAYBALES

WOOD GUARD RAIL TO BE PROTECTED

WATER SERVICE AND FOUNTAIN TO BE PROTECTED

EXISTING BIT CONC TO BE REMOVED

EXISTING BACKSTOP FENCING, AND BIT CONC. PADS TO BE PROTECTED

EXISTING BIT CONC TO BE REMOVED

EXISTING INFIELD MIX TO BE REMOVED AND DISPOSED

SHED TO BE PROTECTED

SAWCUT LINE

TEMPORARY CONSTRUCTION FENCE

PROPOSED HAYBALES

PROPOSED HAYBALES

LIMIT OF WORK

① TREES TO BE PROTECTED
② HANDHOLES TO BE REMOVED
③ SIGN TO BE REMOVED AND RETURNED TO THE TOWN

OAK ST

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PROJECT
SPRAGUE FIELDS REDEVELOPMENT
WELLESLEY, MA 02481

OWNER
TOWN OF WELLESLEY
525 WASHINGTON STREET
WELLESLEY, MA 02481

REVISIONS

NO.	DATE	DESCRIPTION
1	3/27/08	RESPONSE TO COMMENTS

CADD FILE	712800_EC-2.DWG
DESIGNED BY	TMH
DRAWN BY	MFS
CHECKED BY	TMH
DATE	2/6/08
DRAWING SCALE	1"=40'

GRAPHIC SCALE
0 20' 40' 80'

SHEET TITLE

EXISTING CONDITIONS & DEMOLITION PLAN SHEET 1

DRAWING NO.
C1.02

PROJECT NO. 712800

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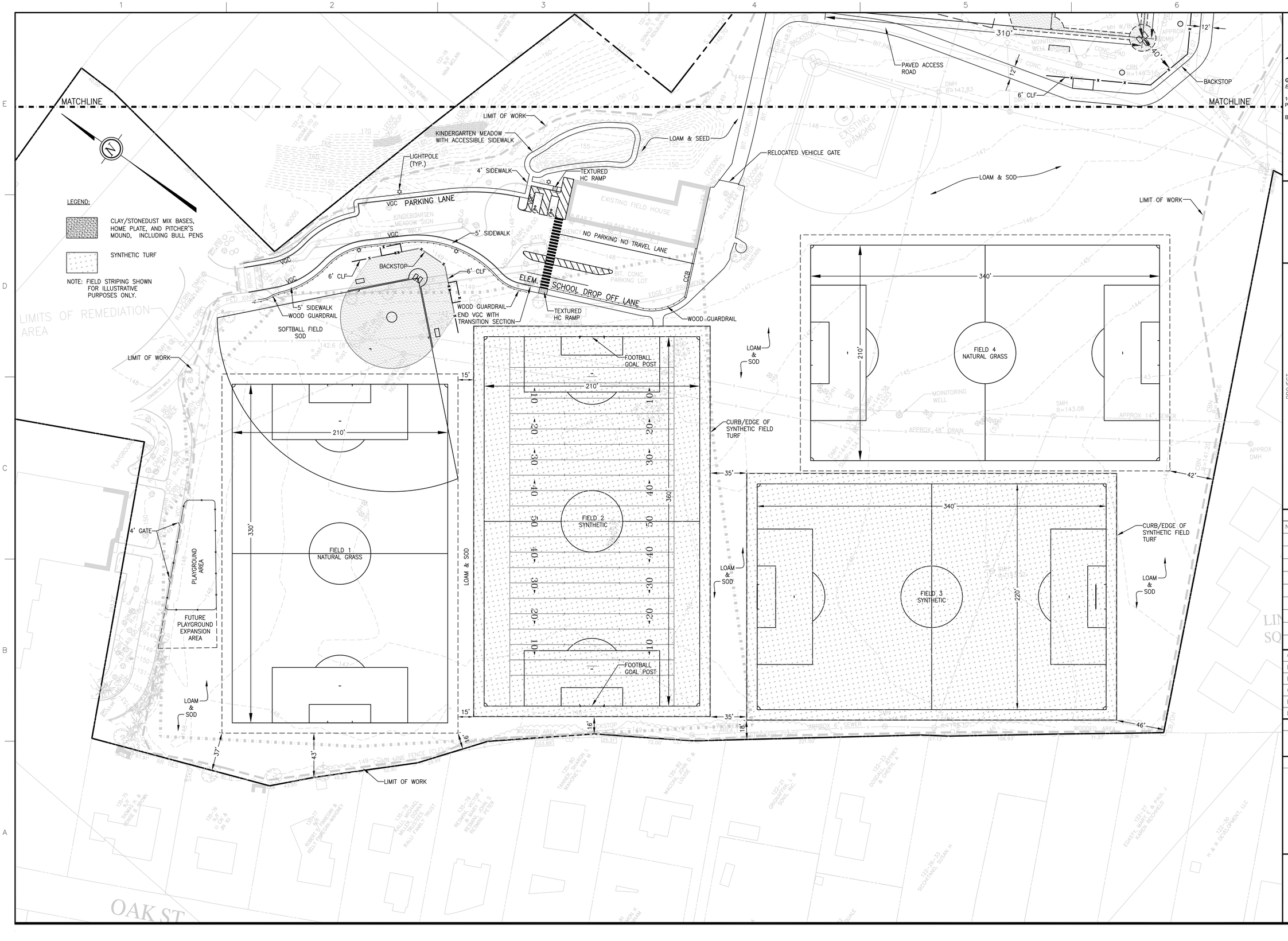

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PROJECT
SPRAGUE FIELDS REDEVELOPMENT
WELLESLEY, MA 02481

OWNER
TOWN OF WELLESLEY
525 WASHINGTON STREET
WELLESLEY, MA 02481

REVISIONS

NO.	DATE	DESCRIPTION
1	3/27/08	RESPONSE TO COMMENTS

CADD FILE	712800_LO.DWG
DESIGNED BY	TMH
DRAWN BY	MFS
CHECKED BY	TMH
DATE	2/6/08
DRAWING SCALE	1"=40'

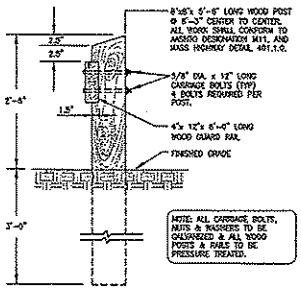
GRAPHIC SCALE
0 20' 40' 80'

SHEET TITLE

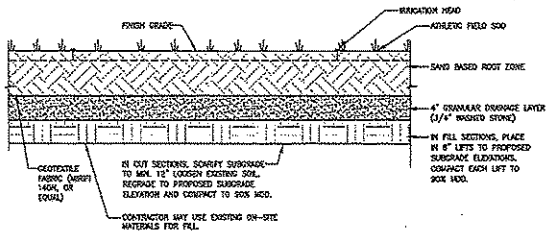
LAYOUT & MATERIALS PLAN SHEET 1

DRAWING NO.
C1.05

PROJECT NO. 712800



TYP. WOODEN GUARD RAIL DETAIL
N.T.S.



NATURAL TURF ATHLETIC FIELD SECTION
N.T.S.

MOWING

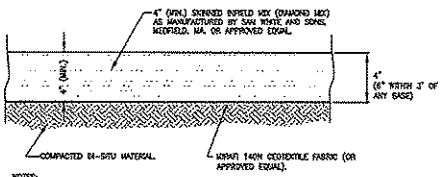
1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MOWING THROUGH TURF ACCEPTANCE.
2. WHEN THE GRASS REACHES A HEIGHT OF 2.5", MOW TO A HEIGHT OF 2" AND REMOVE CLIPPINGS.
3. MOWING FREQUENCY SHOULD DEPEND ON THE RATE OF GROWTH OF THE GRASS.
4. NEVER REMOVE MORE THAN 1/3 OF THE LEAF AREA IN ANY ONE MOWING.
5. CHANGE THE DIRECTION OF THE MOWING EACH TIME.

WATERING

1. IMMEDIATELY AFTER SOD PLACEMENT IS COMPLETE, COMMENCE WATERING. KEEP THE SOD, CONTINUOUSLY MOIST FOR AT LEAST THREE (3) WEEKS.
2. IF THE SURFACE 2"-3" OF SOIL IS DRY, IRRIGATE SUFFICIENTLY TO MOISTEN THE SOIL TO A DEPTH OF 4"-6".
3. ONCE THE TURF IS ESTABLISHED, FOLLOW A SCHEDULED IRRIGATION PLAN. SEE SPECS.
4. RUN-OFF, PUDDLING AND WILTING SHALL BE PREVENTED.

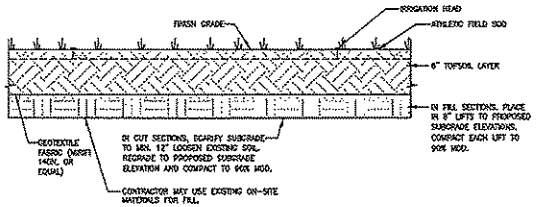
FERTILIZATION

1. KENTUCKY BLUEGRASS AND PERENNIAL RYE GRASS GROW BEST WITH A pH RANGE OF 6.0-6.5.
2. CONTRACTOR TO TEST ORGANIC CONTENT, MICRO NUTRIENT CONTENT, AND ADJUST ACCORDING TO SPEC OR APPROVED TESTING LAB RECOMMENDATION. ALL FERTILIZERS AND PESTICIDES TO BE APPROVED BY THE OWNER.

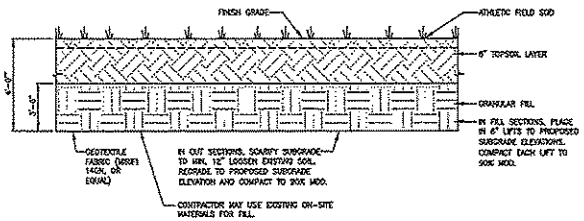


NOTES:
1. CONTRACTOR TO INSTALL INFIELD MIX TO A DEPTH OF 6" AT EACH BASE, APPROXIMATELY 3' FROM EDGE OF BASE IN ALL DIRECTIONS.
2. INFIELD MIX TO BE INSTALLED WITH SMOOTH TRANSITION TO NATURAL GRASS AREAS.
3. CONTRACTOR TO INSTALL 14" OF GRANULAR FILL BELOW GEOTEXTILE FABRIC IN REMEDIATION AREA.

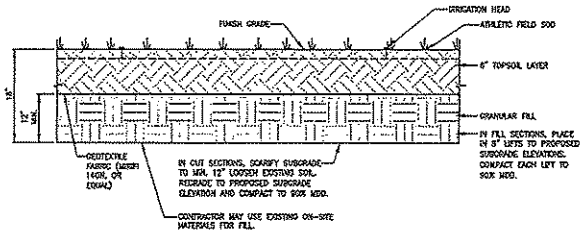
INFIELD CLAY
N.T.S.



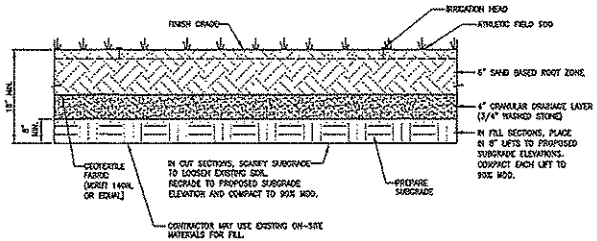
NON-ATHLETIC FIELD NATURAL TURF SECTION
N.T.S.



FUTURE PLAYGROUND AREA
N.T.S.



NON-ATHLETIC FIELD SECTION IN REMEDIATION AREA
N.T.S.



NATURAL TURF ATHLETIC FIELD IN REMEDIATION AREA
N.T.S.

GALE
Gale Associates, Inc.
Engineers Architects Planners
163 LIBERTY PARKWAY | WEYMOUTH, MA 02189
P 781.335.8450 F 781.335.8477 www.gale.com
Boston Baltimore Orlando San Francisco

PROJECT
SPRAGUE FIELDS REDEVELOPMENT
CONTRACT NO. 08C-10-18
WELLESLEY, MA 02482

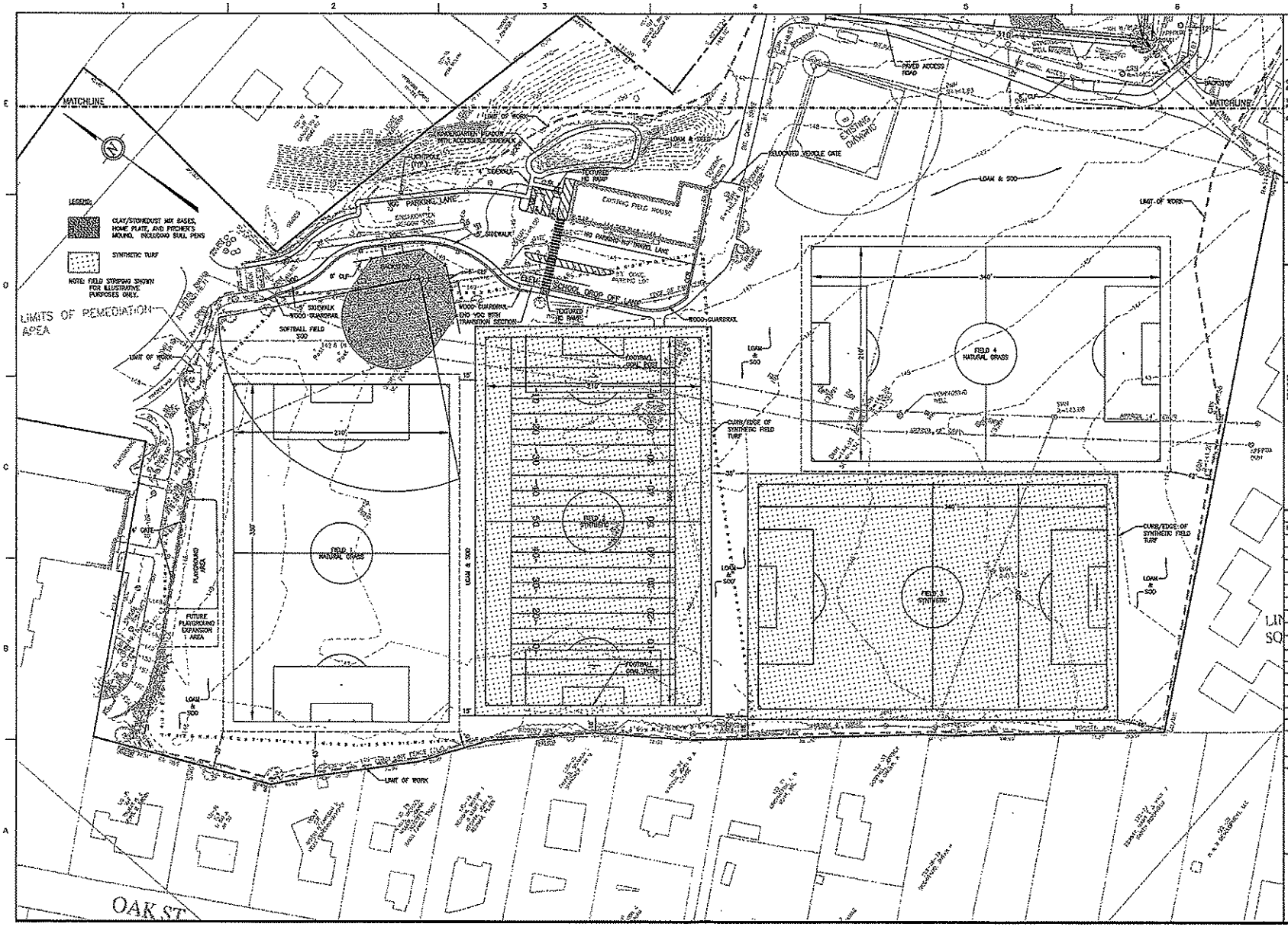
OWNER
TOWN OF WELLESLEY
525 WASHINGTON STREET
WELLESLEY, MA 02482

REVISIONS		
NO.	DATE	DESCRIPTION

CADD FILE	712000_DET.DWG
DESIGNED BY	TWH
DRAWN BY	MFS/CAS
CHECKED BY	TWH
DATE	4/13/08
DRAWING SCALE	AS SHOWN
GRAPHIC SCALE	

SHEET TITLE
DETAIL SHEET 5

DRAWING NO.
C-21
PROJECT NO. 712000



GALE

Gale Associates, Inc.
Engineers Architects Planners

PROJECT
SPRAGUE FIELDS REDEVELOPMENT
WELLESLEY, MA 02481

OWNER
TOWN OF WELLESLEY
525 WASHINGTON STREET
WELLESLEY, MA 02481

REVISIONS

NO.	DATE	DESCRIPTION
1	3/27/06	RESPONSE TO COMMENTS

CADD FILE	712000_L0.DWG
DESIGNED BY	TMH
DRAWN BY	MFS
CHECKED BY	TMH
DATE	2/6/06
DRAWING SCALE	1"=40'

GRAPHIC SCALE

SHEET TITLE

LAYOUT & MATERIALS PLAN SHEET 1

DRAWING NO.
C1.05

PROJECT NO. 712000

APPENDIX D

BWSC FORMS AND PUBLIC NOTICES

VIA CERTIFIED MAIL/RETURN RECEIPT REQ.

August 18, 2009

Town of Wellesley
Board of Selectmen
525 Washington Street, 3rd Floor
Wellesley, MA 02482

Re: Sprague School Athletic Field
Oak Street
Wellesley, MA
DEP RTN 3-22918

To Whom It May Concern:

In accordance with the Public Involvement Activities (310 CMR 40.1403) pursuant to the Massachusetts Contingency Plan (310 CMR 40.0000), Green Seal Environmental Inc is informing the Town of Wellesley that a Response Action Outcome with an Activity and Use Limitation has been prepared for the above-referenced site, and will be filed with the Massachusetts Department of Environmental Protection (MADEP).

A copy of the document can be obtained by contacting the File Review Department of the MADEP's Northeast Regional Office at 205 Lowell Street, Wilmington, MA 01887.

Please do not hesitate to call with any comments or questions.

Very truly yours,

GREEN SEAL ENVIRONMENTAL, INC.

James A. Luker, Jr., C.P.G., L.S.P.
Vice President of Environmental Services

cc: DEP, Northeast Regional Office
Board of Health, Town of Wellesley

VIA CERTIFIED MAIL/RETURN RECEIPT REQ.

August 18, 2009

Town of Wellesley Health Department
Annie F. Warren Building
90 Washington Street, 2nd Floor
Wellesley, MA 02481

Re: Sprague School Athletic Field
Oak Street
Wellesley, MA
DEP RTN 3-22918

To Whom It May Concern:

In accordance with the Public Involvement Activities (310 CMR 40.1403) pursuant to the Massachusetts Contingency Plan (310 CMR 40.0000), Green Seal Environmental Inc is informing the Town of Wellesley that a Response Action Outcome with an Activity and Use Limitation has been prepared for the above-referenced site, and will be filed with the Massachusetts Department of Environmental Protection (MADEP).

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Please do not hesitate to call with any comments or questions.

Very truly yours,

GREEN SEAL ENVIRONMENTAL, INC.

James A. Luker, Jr., C.P.G., L.S.P.
Vice President of Environmental Services

cc: DEP, Northeast Regional Office

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC113

ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 & 40.1070 - 40.1084 (Subpart J)

Release Tracking Number: 3 - 22918

A. DISPOSAL SITE LOCATION:

1. Disposal Site Name: SPRAGUE SCHOOL ATHLETIC FIELDS

2. Street Address: 79 OAK ST

3. City/Town: WELLESLEY 4. ZIP Code: 02481-0000

☐ 5. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.
☐ a. Tier 1A ☐ b. Tier 1B ☐ c. Tier 1C ☐ d. Tier 2

6. If a Tier I Permit has been issued, provide Permit Number: _____

B. THIS FORM IS BEING USED TO: (check one)

☑ 1. Submit a certified copy of a **Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1074.

☐ 2. Submit an **Evaluation of Changes in Land Uses/Activities and/or Site Conditions after a Response Action Outcome Statement** has been filed pursuant to 310 CMR 40.1080.

☐ 3. Submit a certified copy of an **Amended Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1081

☐ 4. Submit a certified copy of a **Partial Termination of a Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1083(3).

☐ 5. Submit a certified copy of a **Termination of a Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1083(1)(d).

☐ 6. Submit a certified copy of a **Grant of Environmental Restriction**, pursuant to 310 CMR 40.1071.

☐ 7. Submit a certified copy of an **Amendment of a Grant of Environmental Restriction**, pursuant to 310 CMR 40.1081(3).

☐ 8. Submit a certified copy of a **Partial Release of a Grant of Environmental Restriction**, pursuant to 310 CMR 40.1083(2).

☐ 9. Submit a certified copy of a **Release of a Grant of Environmental Restriction,** pursuant to 310 CMR 40.1083(1)(c).

☐ 10. Submit a certified copy of a **Confirmatory Activity and Use Limitation,** pursuant to 310 CMR 40.1085(4).

11. Provide Additional RTNs:

☐ a. Check here if this AUL Submittal covers additional Release Tracking Numbers (RTNs).

b. Provide the additional Release Tracking Number(s) covered by this AUL Submittal. ☐ - ☐ ☐ - ☐

(All sections of this transmittal form must be filled out unless otherwise noted above. BWSC113A is required for all submittals listed above)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC113

ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 & 40.1070 - 40.1084 (Subpart J)

Release Tracking Number: 3 - 22918

C. AUL INFORMATION:

1. Document (per Section B) Recording and/or Registration Information:
   a. Name of Registry of Deeds and/or Land Registration Office: NORFOLK
   b. Book and Page Number and/or Document Number: BOOK 26975 PAGE 448
   c. Date of recording and/or registration: 8/12/2009 (mm/dd/yyyy)
2. Is the address of the property subject to AUL different from the disposal site address listed above?
   ☑ a. No ☐ b. Yes If yes, then fill out address section below.
3. Street Address: _____
4. City/Town: _____ 5. ZIP Code: _____

D. PERSON SUBMITTING AUL TRANSMITTAL FORM:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: WELLESLEY TOWN OF
3. Contact First Name: STEVE 4. Last Name: FADER
5. Street: 455 WORCESTER ST 6. Title:
7. City/Town: WELLESLEY 8. State: MA 9. ZIP Code: 02481-0000
10. Telephone: (781) 235-7600 11. Ext.: 12. FAX:
13. Is the person described in this section the owner of the property?
    ☑ a. Yes ☐ b. No , if checked then Section G must be filled out by at least one owner.
    ☐ c. Check here if providing names and addresses of any additional owners in an attachment.

E. RELATIONSHIP TO DISPOSAL SITE OF PERSON SUBMITTING AUL TRANSMITTAL FORM: (check one)

☑ 1. RP or PRP ☑ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter
☐ e. Other RP or PRP Specify: _____

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Submitting AUL Specify: _____

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC113

ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 & 40.1070 - 40.1084 (Subpart J)

Release Tracking Number: 3 - 22918

F. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here to certify that notice of the proposed Activity and Use Limitation (AUL) was given to all record-interest holders, if any, in accordance with 310 CMR 40.1074(1)(e), via certified mail.

☑ a. Check here if there were no record interest holders. b. Date of certified mailing: _____ mm/dd/yyyy

☐ c. Check here to certify that names and addresses of all record holders notified is attached.

☑ 2. Check here to certify that within 30 days of recording and/or registering the AUL, including amending, releasing or terminating the AUL, a copy of the AUL was/will be provided to the Chief Municipal Officer, the Board of Health, the Zoning Official, and the Building Code Enforcement Official in the community(ies) where the the property subject to such Activity and Use Limitation is located.

☑ 3. Check here to certify that within 30 days of recording and/or registering the AUL, including amending, releasing or terminating the AUL, a Legal Notice was/will be published in a newspaper with circulation in the community(ies) where the property subject to the AUL is located.

☑ 4. Check here to certify that within 7 days of publishing a Legal Notice in a newspaper with circulation in the community(ies) where the property subject to the AUL is located, a copy of the notice was/will be submitted to DEP.

☑ 5. Check here to certify that within 30 days of recording and/or registering the AUL, including amending, releasing or terminating the AUL, a certified copy of the AUL, including the LSP Opininon containing the material facts, data, and other information, will be submitted to DEP.

☐ 6. Check here if any non-updatable information provided on this form is incorrect, e.g. Site Address/Location Aid. Send corrections to the DEP Regional Office.

☐ 7. If an **Evaluation of Changes in Land Uses/Activities and/or Site Conditions after a Response Action Outcome Statement** is being submitted, check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

G. CERTIFICATION OF OWNER OF PROPERTY, IF NOT PERSON SUBMITTING AUL TRANSMITTAL FORM:

1. I, _____, attest under the pains and penalties of perjury that I am the owner of said property(ies), subject to the AUL

2. _____ (Signature) 3. Date: _____ mm/dd/yyyy

4. Name of Organization: _____

5. Contact First Name: _____ 6. Last Name: _____

7. Street: _____ 8. Title: _____

9. City/Town: _____ 10. State: _____ 11. ZIP Code: _____

12. Telephone: _____ 13. Ext.: _____ 14. FAX: _____

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC113

ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 & 40.1070 - 40.1084 (Subpart J)

Release Tracking Number
3 - 22918

H. CERTIFICATION OF PERSON MAKING SUBMITTAL:

1. I, _____, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

Pursuant to 310 CMR 40.1074 (1)(f), I also hereby certify under penalties of perjury, that either I (if person submitting the AUL Transmittal Form is the property owner), or

_____
2. Name of Property Owner

am/is identified on the Notice of AUL as the owner of the property subject to the AUL, owned such property on the date that the AUL was recorded and /or registered

3. By: _____ 4. Title: _____
Signature

5. For: WELLESLEY TOWN OF 6. Date: _____
(Name of person or entity recorded in Section D) mm/dd/yyyy

☐ 7. Check here if the address of the person providing certification is different from address recorded in Section D.

8. Street: _____

9. City/Town: _____ 10. State: _____ 11. ZIP Code: _____

12. Telephone: _____ 13. Ext.: _____ 14. FAX: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC113A

ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Pursuant to 310 CMR 40.1056 & 40.1070 - 40.1084 (Subpart J)

Release Tracking Number
3 - 22918

A. DISPOSAL SITE LOCATION:

1. Disposal Site Name: SPRAGUE SCHOOL ATHLETIC FIELDS
2. Street Address: 79 OAK ST
3. City/Town: WELLESLEY 4. ZIP Code: 02481-0000

B. THIS FORM IS BEING USED TO: (check one)

- [x] 1. Provide the LSP Opinion for a **Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1074.
- [ ] 2. Provide the LSP Opinion for an **Evaluation of Changes in Land Uses/Activities and/or Site Conditions after a Response Action Outcome Statement,** pursuant to 310 CMR 40.1080. Include BWSC113A as an attachment to BWSC113. Section A and C do not need to be completed.
- [ ] 3. Provide the LSP Opinion for an **Amended Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1081(4).
- [ ] 4. Provide the LSP Opinion for a **Partial Termination of a Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1083(3) .
- [ ] 5. Provide the LSP Opinion for a **Termination of a Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1083(1)(d).
- [ ] 6. Provide the LSP Opinion for a **Grant of Environmental Restriction**, pursuant to 310 CMR 40.1071.
- [ ] 7. Provide the LSP Opinion for an **Amendment of a Grant of Environmental Restriction**, pursuant to 310 CMR 40.1081(3).
- [ ] 8. Provide the LSP Opinion for a **Partial Release of a Grant of Environmental Restriction**, pursuant to 310 CMR 40.1083(2).
- [ ] 9. Provide the LSP Opinion for a **Release of a Grant of Environmental Restriction**, pursuant to 310 CMR 40.1083(1)(c).
- [ ] 10. Provide the LSP Opinion for a **Confirmatory Activity and Use Limitation**, pursuant to 310 CMR 40.1085(4).

(Unless otherwise noted above, all sections of this form (BWSC113A) must be completely filled out, printed, stamped, signed with black ink and attached as an exhibit to the AUL Document to be recorded and/or registered with the Registry of Deeds and/or Land Registration Office.)

C. AUL INFORMATION:

1. Is the address of the property subject to AUL different from the disposal site address listed above?

- [x] a. No
- [ ] b. Yes If yes, then fill out address section below.

2. Street Address:
3. City/Town: 4. ZIP Code:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC113A

ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Pursuant to 310 CMR 40.1056 & 40.1070 - 40.1084 (Subpart J)

Release Tracking Number
3 - 22918

D. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> *if Section B indicates that a* ***Notice of Activity and Use Limitation*** *is being registered and/or recorded*, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1074;

> *if Section B indicates that an* ***Evaluation of Changes in Land Uses/Activities and/or Site Conditions after a Response Action Outcome Statement*** is being submitted, this evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1080;

> *if Section B indicates that an* ***Amended Notice of Activity and Use Limitation or Amendment to a Grant of Environmental Restriction*** *is being registered and/or recorded*, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 40.1081;

> *if Section B indicates that a* ***Termination or a Partial Termination of a Notice of Activity and Use Limitation, or a Release or Partial Release of a Grant of Environmental Restriction*** *is being registered and/or recorded*, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1083;

> *if Section B indicates that a* ***Grant of Environmental Restriction*** *is being registered and/or recorded*, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1071;

> *if Section B indicates that a* ***Confirmatory Activity and Use Limitation*** *is being registered and/or recorded*, the Activity and Use Limitation that is the subject of this submittal (i) is being provided in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (ii) complies with 310 CMR 40.1085(4);

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: **6522**

2. First Name: **JAMES A** 3. Last Name: **LUKER JR**

4. Telephone: **(508) 888-6034** 5. Ext.: 6. FAX: **(508) 888-1506**

7. Signature: 8. Date: mm/dd/yyyy

9. LSP Stamp:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC104

RESPONSE ACTION OUTCOME (RAO) STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number: 3 - 22918

For sites with multiple RTNs, enter the Primary RTN above.

A. SITE LOCATION:

1. Site Name/Location Aid: SPRAGUE SCHOOL ATHLETIC FIELDS
2. Street Address: 79 OAK ST
3. City/Town: WELLESLEY 4. ZIP Code: 024810000
5. ☐ Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.
   ☐ a. Tier IA ☐ b. Tier IB ☐ c. Tier IC ☐ d. Tier II
6. If a Tier I Permit has been issued, provide Permit Number:

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of RAO Statement (if previously submitted): mm/dd/yyyy
2. ☑ Submit a **Response Action Outcome (RAO) Statement**
   a. ☐ Check here if this RAO Statement covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Tier Classified Primary RTN do not need to be listed here.
   b. Provide additional Release Tracking Number(s) covered by this RAO Statement. ☐ - ☐ ☐ - ☐
3. ☐ Submit a **Revised Response Action Outcome Statement**
   a. ☐ Check here if this Revised RAO Statement covers additional Release Tracking Numbers (RTNs), not listed on the RAO Statement or previously submitted Revised RAO Statements. RTNs that have been previously linked to a Tier Classified Primary RTN do not need to be listed here.
   b. Provide additional Release Tracking Number(s) covered by this RAO Statement. ☐ - ☐ ☐ - ☐
4. ☐ Submit a **Response Action Outcome Partial (RAO-P) Statement**

   Check above box, if any Response Actions remain to be taken to address conditions associated with this disposal site having the Primary RTN listed in the header section of this transmittal form. This RAO Statement will record only an RAO-Partial Statement for that RTN. A final RAO Statement will need to be submitted that references all RAO-Partial Statements and, if applicable, covers any remaining conditions not covered by the RAO-Partial Statements.

   Also, specify if you are an Eligible Person or Tenant pursuant to M.G.L. c. 21E s.2, and have no further obligation to conduct response actions on the remaining portion(s) of the disposal site:

   ☐ a. Eligible Person ☐ b. Eligible Tenant
5. ☐ Submit an optional **Phase I Completion Statement** supporting an RAO Statement
6. ☐ Submit a **Periodic Review Opinion evaluating the status of a Temporary Solution** for a Class C-1 RAO Statement, as specified in 310 CMR 40.1051 (Section F is optional)
7. ☐ Submit a **Retraction** of a previously submitted **Response Action Outcome Statement** (Sections E & F are not required)

(All sections of this transmittal form must be filled out unless otherwise noted above)

C. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply; for volumes, list cumulative amounts)

- ☐ 1. Assessment and/or Monitoring Only
- ☐ 2. Temporary Covers or Caps
- ☐ 3. Deployment of Absorbent or Containment Materials
- ☐ 4. Treatment of Water Supplies
- ☐ 5. Structure Venting System
- ☐ 6. Engineered Barrier
- ☐ 7. Product or NAPL Recovery
- ☐ 8. Fencing and Sign Posting
- ☐ 9. Groundwater Treatment Systems
- ☐ 10. Soil Vapor Extraction
- ☐ 11. Bioremediation
- ☐ 12. Air Sparging
- ☐ 13. Monitored Natural Attenuation
- ☐ 14. In-situ Chemical Oxidation

- ☑ 15. Removal of Contaminated Soils
  - ☐ a. Re-use, Recycling or Treatment
    - ☐ i. On Site Estimated volume in cubic yards
    - ☐ ii. Off Site Estimated volume in cubic yards

    iia. Facility Name: Town: State:

    iib. Facility Name: Town: State:

    iii. Describe:
  - ☑ b. Landfill
    - ☑ i. Cover Estimated volume in cubic yards: 1,000

      Facility Name: CHARLETON LANDFILL Town: CHARLETON State: MA
    - ☐ ii. Disposal Estimated volume in cubic yards

      Facility Name: Town: State:

- ☐ 16. Removal of Drums, Tanks or Containers:
  - a. Describe Quantity and Amount:
  - b. Facility Name: Town: State:
  - c. Facility Name: Town : State:

- ☐ 17. Removal of Other Contaminated Media:
  - a. Specify Type and Volume:
  - b. Facility Name: Town: State:
  - c. Facility Name: Town: State:

C. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply; for volumes, list cumulative amounts)

☐ 18. Other Response Actions:

Describe:

☐ 19. Use of Innovative Technologies:

Describe:

D. SITE USE:

1. Are the response actions that are the subject of this submittal associated with the *redevelopment, reuse* or the *major expansion of the current use* of property(ies) impacted by the presence of oil and/or hazardous materials?

☐ a. Yes ☑ b. No ☐ c. Don't know

2. Is the property a *vacant or under-utilized commercial or industrial* property ("a brownfield property")?

☐ a. Yes ☑ b. No ☐ c. Don't know

3. Will funds from a state or federal brownfield incentive program be used on one or more of the property(ies) within the disposal site?

☐ a. Yes ☑ b. No ☐ c. Don't know If Yes, identify program(s):

4. Has a Covenant Not to Sue been obtained or sought?

☐ a. Yes ☑ b. No ☐ c. Don't know

5. Check all applicable categories that apply to the person making this submittal: ☐ a. Redevelopment Agency or Authority

☐ b. Community Development Corporation ☐ c. Economic Development and Industrial Corporation

☐ d. Private Developer ☐ e. Fiduciary ☐ f. Secured Lender ☑ g. Municipality

☐ h. Potential Buyer (non-owner) ☐ i. Other, describe:

This data will be used by MassDEP for information purposes only, and does not represent or create any legal commitment, obligation or liability on the part of the party or person providing this data to MassDEP.

E. RESPONSE ACTION OUTCOME CLASS:

Specify the Class of Response Action Outcome that applies to the disposal site, or site of the Threat of Release.
Select **ONLY** one Class.

☐ **1. Class A-1 RAO**: Specify one of the following:

☐ a. Contamination has been reduced to background levels. ☐ b. A Threat of Release has been eliminated.

☐ **2. Class A-2 RAO:** You **MUST** provide justification that reducing contamination to or approaching background levels is infeasible.

☑ **3. Class A-3 RAO**: You **MUST** provide an implemented Activity and Use Limitation (AUL) and justification that reducing contamination to or approaching background levels is infeasible.

☐ **4. Class A-4 RAO**: You **MUST** provide an implemented AUL, justification that reducing contamination to or approaching background levels is infeasible, and justification that reducing contamination to less than Upper Concentration Limits (UCLs) 15 feet below ground surface or below an Engineered Barrier is infeasible. If the Permanent Solution relies upon an Engineered Barrier, you must provide or have previously provided a Phase III Remedial Action Plan that justifies the selection of the Engineered Barrier.

E. RESPONSE ACTION OUTCOME CLASS (cont.):

☐ **5. Class B-1 RAO: Specify one of the following:**

☐ a. Contamination is consistent with background levels ☐ b. Contamination is **NOT** consistent with background levels.

☐ **6. Class B-2 RAO**: You **MUST** provide an implemented AUL.

☐ **7. Class B-3 RAO**: You **MUST** provide an implemented AUL and justification that reducing contamination to less than Upper Concentration Limits (UCLs) 15 feet below ground surface is infeasible.

☐ **8. Class C-1 RAO**: You must submit a plan as specified at 310 CMR 40.0861(2)(h). Indicate type of ongoing response actions.

☐ a. Active Remedial System ☐ b. Active Remedial Monitoring Program ☐ c. None

☐ d. Other Specify: _____

☐ **9. Class C-2 RAO**: You must hold a valid Tier I Permit or Tier II Classification to continue response actions toward a Permanent Solution.

F. RESPONSE ACTION OUTCOME INFORMATION:

1. Specify the Risk Characterization Method(s) used to achieve the RAO described above:

☐ a. Method 1 ☐ b. Method 2 ☑ c. Method 3

☐ d. Method Not Applicable-Contamination reduced to or consistent with background, or Threat of Release abated

2. Specify all Soil Category(ies) applicable. More than one Soil Category may apply at a Site. Be sure to check off all **APPLICABLE** categories:

☐ a. S-1/GW-1 ☐ d. S-2/GW-1 ☐ g. S-3/GW-1

☐ b. S-1/GW-2 ☐ e. S-2/GW-2 ☐ h. S-3/GW-2

☑ c. S-1/GW-3 ☑ f. S-2/GW-3 ☑ i. S-3/GW-3

3. Specify all Groundwater Category(ies) impacted. A site may impact more than one Groundwater Category. Be sure to check off all **IMPACTED** categories:

☐ a. GW-1 ☐ b. GW-2 ☐ c. GW-3 ☑ d. No Groundwater Impacted

4. Specify remediation conducted:

☐ a. Check here if soil remediation was conducted.

☐ b. Check here if groundwater remediation was conducted.

5. Specify whether the analytical data used to support the Response Action Outcome was generated pursuant to the Department's Compendium of Analytical Methods (CAM) and 310 CMR 40.1056:

☑ a. CAM used to support all analytical data. ☐ b. CAM used to support some of the analytical data.

☐ c. CAM not used.

☐ 6. Check here to certify that the Class A, B or C Response Action Outcome includes a Data Usability Assessment and Data Representativeness Evaluation pursuant to 310 CMR 40.1056.

7. Estimate the number of acres this RAO Statement applies to: 1.5

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC104

RESPONSE ACTION OUTCOME (RAO) STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number: 3 - 22918

G. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> *if Section B indicates that either an **RAO Statement, Phase I Completion Statement and/or Periodic Review Opinion** is being provided,* the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 6522

2. First Name: JAMES A 3. Last Name: LUKER JR

4. Telephone: (508) 888-6034 5. Ext.: 6. FAX: (508) 888-1506

7. Signature:

8. Date: mm/dd/yyyy

9. LSP Stamp:

H. PERSON MAKING SUBMITTAL:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WELLESLEY TOWN OF

3. Contact First Name: STEVE 4. Last Name: FADER

5. Street: 455 WORCESTER ST 6. Title:

7. City/Town: WELLESLEY 8. State: MA 9. ZIP Code: 024810000

10. Telephone: (781) 235-7600 11. Ext.: 12. FAX:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC104

RESPONSE ACTION OUTCOME (RAO) STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number
3 - 22918

I. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON MAKING SUBMITTAL:

☑ 1. RP or PRP ☑ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☐ e. Other RP or PRP Specify:

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Making Submittal Specify Relationship:

J. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☐ 2. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of an RAO Statement that relies on the public way/rail right-of-way exemption from the requirements of an AUL.

☑ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of a RAO Statement with instructions on how to obtain a full copy of the report.

☑ 4. Check here to certify that documentation is attached specifying the location of the Site, or the location and boundaries of the Disposal Site subject to this RAO Statement. If submitting an RAO Statement for a PORTION of a Disposal Site, you must document the location and boundaries for both the portion subject to this submittal and, to the extent defined, the entire Disposal Site.

☑ 5. Check here to certify that, pursuant to 310 CMR 40.1406, notice was provided to the owner(s) of each property within the disposal site boundaries, or notice was not required because the disposal site boundaries are limited to property owned by the party conducting response actions. (check all that apply)

☐ a. Notice was provided prior to, or concurrent with the submittal of a Phase II Completion Statement to the Department.

☐ b. Notice was provided prior to, or concurrent with the submittal of this RAO Statement to the Department.

☑ c. Notice not required. d. Total number of property owners notified, if applicable:

☑ 6. Check here if required to submit one or more AULs. You must submit an AUL Transmittal Form (BWSC113) and a copy of each implemented AUL related to this RAO Statement. Specify the type of AUL(s) below: (required for Class A-3, A-4, B-2, B-3 RAO Statements)

☑ a. Notice of Activity and Use Limitation b. Number of Notices submitted: 1

☐ c. Grant of Environmental Restriction d. Number of Grants submitted:

☐ 7. If an RAO Compliance Fee is required for any of the RTNs listed on this transmittal form, check here to certify that an RAO Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.

☐ 8. Check here if any non-updatable information provided on this form is incorrect, e.g. Site Address/Location Aid. Send corrections to the DEP Regional Office.

☑ 9. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

K. CERTIFICATION OF PERSON MAKING SUBMITTAL:

1. I, _____, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ (Signature) 3. Title: _____

4. For: WELLESLEY TOWN OF (Name of person or entity recorded in Section H) 5. Date: _____ mm/dd/yyyy

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section H.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext.: _____ 13. FAX: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

APPENDIX H

Form 1075

NOTICE OF ACTIVITY AND USE LIMITATION
M.G.L. c. 21E, § 6 and 310 CMR 40.0000

Disposal Site Name Sprague Field 79 Oak Street Wellesley Massachusetts
DEP Release Tracking No.(s): 3-1996

This Notice of Activity and Use Limitation ("Notice") is made as of this 31st day of August 2009, by the Town of Wellesley, a municipal corporation with a business address at 455 Worcester Street, Wellesley Massachusetts together with his/her/its/their successors and assigns (collectively "Owner").

WITNESSETH:

WHEREAS, the Town of Wellesley is the owner in fee simple of those certain parcel(s) of land known as Sprague Field, situated in Wellesley, Norfolk County, Massachusetts, shown on Assessors' Plans as Map 122, Lot 40 Wellesley , Norfolk County, Massachusetts with the buildings and improvements thereon, pursuant to deeds recorded with the Norfolk County Registry of Deeds in Book 3438, Page 106; Book 2838, Page 54; Book 4132, Page 112, Book 4132, Page 113 and Book 2675, Page 167;

WHEREAS, said parcels of land, which are more particularly bounded and described in Exhibit A, attached hereto and made a part hereof ("Property") is subject to this Notice of Activity and Use Limitation. The Property is shown on a plan recorded in the Norfolk Registry of Deeds as Plan No. 104 of 1946, Plan No. 1648 of 1955 and Plan No. 1366 of 1963;

WHEREAS, a portion of the Property ("Portion of the Property") is subject to this Notice of Activity and Use Limitation. The Portion of the Property is more particularly bounded and described in Exhibit A-1, attached hereto and made a part hereof. The Portion of the Property is shown on a plan recorded herewith;

WHEREAS, the Portion of the Property comprises all of a disposal site as the result of a release of oil and/or hazardous material. Exhibit B is a sketch plan showing the relationship of the Portion of the Property subject to this Notice of Activity and Use Limitation to the boundaries of said disposal site (to the extent such boundaries have been established). Exhibit B is attached hereto and made a part hereof; and

WHEREAS, one or more response actions have been selected for the Disposal Site in accordance with M.G.L. c. 21E ("Chapter 21E") and the Massachusetts Contingency Plan, 310 CMR 40.0000 ("MCP"). Said response actions are based upon (a) the restriction of human access to and contact with oil and/or hazardous material in soil and/or (b) the restriction of certain activities occurring in, on, through, over or under the Property. The basis for such restrictions is set forth in an Activity and Use Limitation Opinion ("AUL Opinion"), dated June 19, 2009, which is attached hereto as Exhibit C and made a part hereof;

NOW, THEREFORE, notice is hereby given that the activity and use limitations set forth in said AUL Opinion are as follows:

1. Activities and Uses Consistent with the AUL Opinion. The AUL Opinion provides that a condition of No Significant Risk to health, safety, public welfare or the environment exists for any foreseeable period of time (pursuant to 310 CMR 40.0000) so long as any of the following activities and uses occur on the Portion of the Property:

(i) Any activity including without limitation, use for outdoor recreation, taking place above ground which does not disturb the subsurface to a depth of greater then 18-24 inches below grade.

(ii) Subsurface excavation on the Portion of the Property which are less then 24 inches in depth or if greater then 24 inches in depth, satisfy the requirements of Paragraph 3 (i) below; and

(iii) Such other activities or uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare or the environment than the activities and uses set forth in this Paragraph;

2. Activities and Uses Inconsistent with the AUL Opinion. Activities and uses which are inconsistent with the objectives of this Notice of Activity and Use Limitation, and which, if implemented at the Property , may result in a significant risk of harm to health, safety, public welfare or the environment or in a substantial hazard, are as follows:

(i) Residential and agricultural use.

(ii) Movement, transport or disposal of contaminated soil without the guidance of an LSP.

(iii) Permanent removal of artificial turf and geotextile membrane ("the cap") that would result in potential exposure to impacted soils.

(iv) Installation of drinking water supply wells.

(v) Any other use that would result in significant uncontrolled exposures to adults or children through an exposure to site soil.

3. Obligations and Conditions Set Forth in the AUL Opinion. If applicable, obligations and/or conditions to be undertaken and/or maintained at the Portion of the Property to maintain a condition of No Significant Risk as set forth in the AUL Opinion shall include the following:

(i) Any activity, including construction, which results in the exposure to subsurface soils located at a depth greater than 24 inches without the proper safety procedures. These safety procedures shall include a property developed and implemented Health and Safety Plan and Soil Management Plan prepared by qualified professional, trained and practicing in those areas and certified by a Massachusetts Licensed Site Professional; and

(ii) The cap comprised of artificial turf and geotextile membrane shall be

repaired and maintained in good condition, over the existing soils at this Portion of the Property in order to restrict access to the existing soils located at a depth greater than 24 inches below the ground surface. The Owner or another party may remove the artificial turf or another part of the cap in the future, but only if another type of protective barrier is substituted which, in the Opinion of a Licensed Site Professional is sufficient to maintain a condition of No Significant Risk. The Massachusetts Contingency Plan 310 CMR 40:1080 & 4018 provides procedures to implement changes in land uses and activities for properties with AUL after the AUL and RAO have been filed. The AUL and RAO can modified as appropriate under the supervision and direction of a Licensed Site Professional according to the regulations cited above

4. Proposed Changes in Activities and Uses. Any proposed changes in activities and uses at the Portion of the Property which may result in higher levels of exposure to oil and/or hazardous material than currently exist shall be evaluated by an LSP who shall render an Opinion, in accordance with 310 CMR 40.1080 *et seq.*, as to whether the proposed changes will (select one) present a significant risk of harm to health, safety, public welfare or the environment. Any and all requirements set forth in the Opinion to meet the objective of this Notice shall be satisfied before any such activity or use is commenced.

5. Violation of a Response Action Outcome. The activities, uses and/or exposures upon which this Notice is based shall not change at any time to cause a significant risk of harm to health, safety, public welfare, or the environment or to create substantial hazards due to exposure to oil and/or hazardous material without the prior evaluation by an LSP in accordance with 310 CMR 40.1080 *et seq.*, and without additional response actions, if necessary, to achieve or maintain a condition of No Significant Risk or to eliminate substantial hazards.

If the activities, uses, and/or exposures upon which this Notice is based change without the prior evaluation and additional response actions determined to be necessary by an LSP in accordance with 310 CMR 40.1080 *et seq.*, the owner or operator of the [Property] [Portion of the Property] subject to this Notice at the time that the activities, uses and/or exposures change, shall comply with the requirements set forth in 310 CMR 40.0020.

6. Incorporation Into Deeds, Mortgages, Leases, and Instruments of Transfer. This Notice shall be incorporated either in full or by reference into all future deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer, whereby an interest in and/or a right to use the Property or a portion thereof is conveyed.

Owner hereby authorizes and consents to the filing and recordation and/or registration of this Notice, said Notice to become effective when executed under seal by the undersigned LSP, and recorded and/or registered with the appropriate Registry(ies) of Deeds and/or Land Registration Office(s).

WITNESS the execution hereof under seal this 3rd day of August, 2009.

TOWN OF WELLESLEY
By its Board of Selectmen

Barbara D. Searle

Katherine L. Babson

Terri Tsagaris

Gregory B. Mills

Owen H. Dugan

Approved As To Form:

Town Counsel
Dated: 8/3/09.

COMMONWEALTH OF MASSACHUSETTS

Norfolk, ss

On this 3rd day of August, 2009, before me, the undersigned notary public, personally appeared Barbara D. Searle, Chairman of the Wellesley Board of Selectmen., proved to me through satisfactory evidence of identification, which were personal knowledge, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose.

ALBERT S. ROBINSON
Notary Public
Commonwealth of Massachusetts
My Commission Expires
June 26, 2012

(official signature and seal of notary)

The undersigned LSP hereby certifies that [he][she] executed the aforesaid Activity and Use Limitation Opinion attached hereto as Exhibit C and made a part hereof and that in his Opinion this Notice of Activity and Use Limitation is consistent with the terms set forth in said Activity and Limitation Opinion.

Date: August 07, 2009

James A. Luker, Jr.
[LSP Seal]

COMMONWEALTH OF MASSACHUSETTS

Barnstable
~~Norfolk~~, ss

On this 7 day of ~~July~~ Aug, 2009, before me, the undersigned notary public, personally appeared James A. Luker, Jr., L.S.P., proved to me through satisfactory evidence of identification, which were Ma Lic, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he) (she) signed it voluntarily for its stated purpose.

Nicholas Brad
(official signature and seal of notary)

Upon recording, return to:

Robert M. Schlein, Esquire
Prince Lobel Glovsky & Tye, LLP
100 Cambridge Street, Suite 2200
Boston, MA 02114

EXHIBIT A

Description of Property

Three (3) parcels of land situated within the boundaries of land owned by the Town of Wellesley, known as Sprague Field, situated in Wellesley, Norfolk County, Massachusetts, shown on Assessors' Plans as Map 122, Lot 40, as follows:

Parcel One

The parcel of land comprising 5.264 acres of land conveyed to the Town of Wellesley by F. Diehl &Son, Inc, by deed dated May 23, 1949, recorded with Norfolk Registry of Deeds in Book a2838, Page 54, to which reference is made for a more complete description and incorporated herein by reference.

Parcel Two

The parcel of land comprising 9 acres of land, more or less, conveyed to the Town of Wellesley by Mary A. Mulcahy, Jr., et al by deed dated February 20, 1947, recorded with said Deeds in Book 2675, Page 167, , to which reference is made for a more complete description and incorporated herein by reference.

Parcel Three

The parcel of land comprising 8.578 acres of land, conveyed to the Town of Wellesley by Albion B. Clapp and Clarence Alfred Bunker and Arthur I Charron, Trustees under the will of Albion R. Clapp, by deed dated December 19, 1955, recorded with said Deeds in Book 3438, Page 106, to which reference is made for a more complete description and incorporated herein by reference.

EXHIBIT A-1

AUL Boundary Description

AUL AREA

A parcel of land situated within the boundaries of land owned by the Town of Wellesley, known as Sprague Field, situated in Wellesley, Norfolk County, Massachusetts, shown on Assessors' Plans as Map 122, Lot 40, said AUL Area more particularly described as follows;

Commencing at a concrete bound with drillhole at the southwesterly corner of said Sprague Field thence N 38°05'38" E a distance of 217.49 feet to the POINT OF BEGINNING;

thence N 62°10'18" E a distance of 78.00 feet;
thence N 50°40'45" E a distance of 73.00 feet;
thence N 46°23'39" E a distance of 100.00 feet;
thence N 40°18'35" E a distance of 52.32 feet;
thence with a curve to the left with an arc length of 84.56', with a radius of 60.00';
thence N 40°26'11" W a distance of 71.51 feet;
thence N 45°22'02" W a distance of 80.00 feet;
thence N 48°50'07" W a distance of 75.00 feet;
thence N 52°59'26" W a distance of 88.73 feet;
thence with a curve to the left with an arc length of 65.33', with a radius of 70.00';
thence S 73°32'20" W a distance of 90.69 feet;
thence with a curve to the right with an arc length of 60.97', with a radius of 85.00';
thence N 65°21'54" W a distance of 219.05 feet;
thence N 54°23'00" W a distance of 202.16 feet;
thence S 79°31'52" W a distance of 146.56 feet;
thence S 32°42'25" W a distance of 81.67 feet;
thence S 75°01'39" W a distance of 36.26 feet;
thence S 37°20'27" W a distance of 216.51 feet;
thence S 51°13'36" E a distance of 203.85 feet;
thence S 57°45'14" E a distance of 451.97 feet;
thence S 65°51'38" E a distance of 100.00 feet;
thence S 75°01'29" E a distance of 75.00 feet;
thence S 84°53'40" E a distance of 75.00 feet;
thence N 83°53'16" E a distance of 75.00 feet;
thence N 72°02'10" E a distance of 75.00 feet to the point of beginning containing 10.92 acres more or less as shown hereon.

EXHIBIT B

Plan of Portion of the Property Subject to Notice of Activity and Use Limitation

See plan entitled "Activity and Use Limitation Plan, Sprague Field, School Street, Wellesley, MA," by Cavanaro Consulting, a paper copy of which is attached hereto. The original of the same plan is also being separately recorded herewith

EXHIBIT B

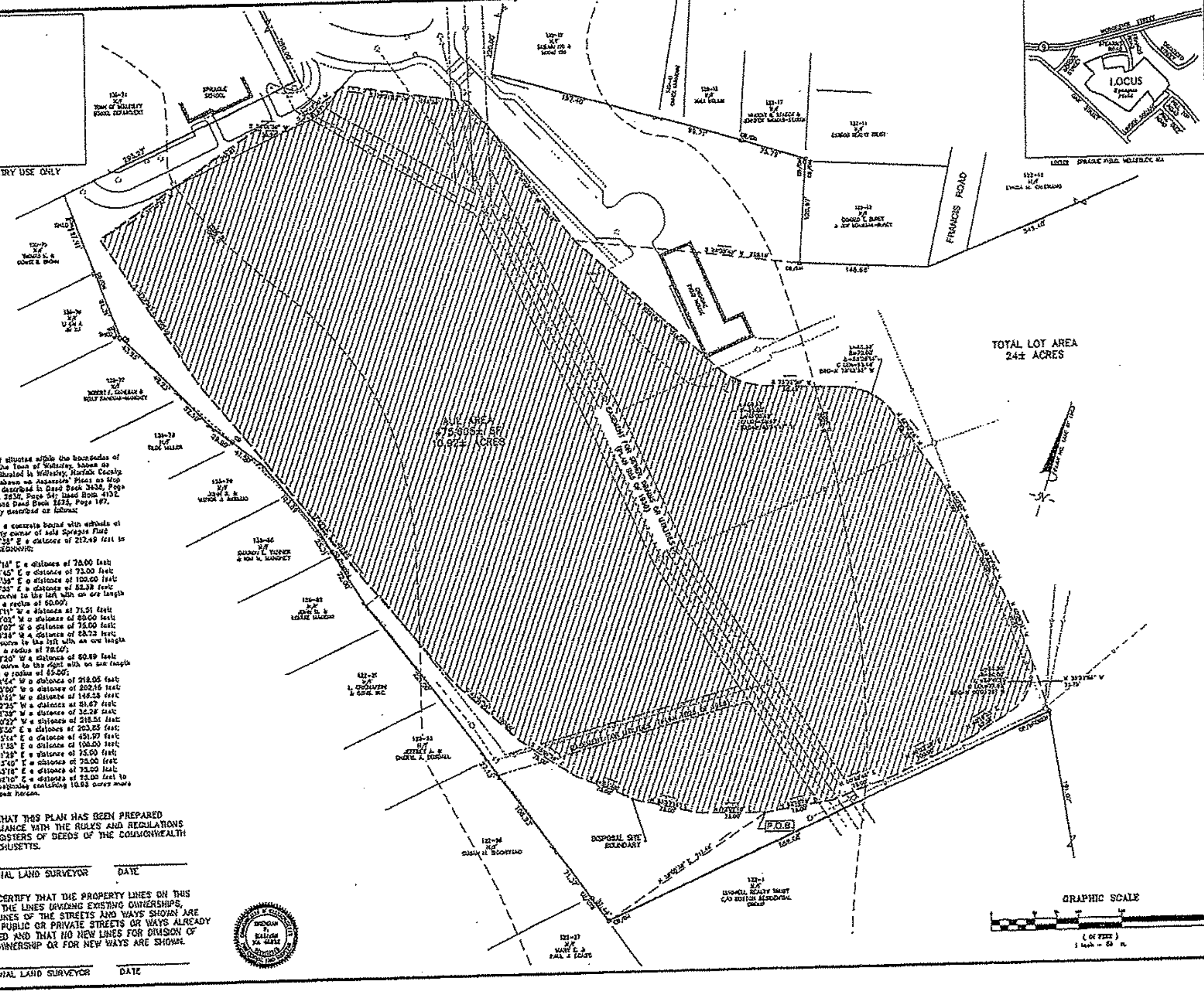


EXHIBIT A-1

AUL AREA
A parcel of land situated within the boundaries of land owned by the Town of Wellesley, known as Sprague Field, situated in Wellesley, Norfolk County, Massachusetts, shown on Assessors' Plans as Map 122, Lot 43 as described in Deed Book 3436, Page 106; Deed Book 2836, Page 54; Deed Book 4132, Page 112-113 and Deed Book 2675, Page 187, more particularly described as follows:

Commencing at a concrete bound with drillhole at the southwesterly corner of said Sprague Field thence N 33°05'35" E a distance of 217.49 feet to the POINT OF BEGINNING;

thence N 82°10'16" E a distance of 78.00 feet;
thence N 50°40'45" E a distance of 73.00 feet;
thence N 45°23'38" E a distance of 100.00 feet;
thence N 40°18'33" E a distance of 52.38 feet;
thence with a curve to the left with an arc length of 84.50', with a radius of 60.00';
thence N 40°38'11" W a distance of 71.51 feet;
thence N 45°22'02" W a distance of 80.00 feet;
thence N 48°50'07" W a distance of 75.00 feet;
thence N 52°59'36" W a distance of 88.73 feet;
thence with a curve to the left with an arc length of 85.35', with a radius of 78.00';
thence S 25°37'20" W a distance of 80.59 feet;
thence with a curve to the right with an arc length of 80.97', with a radius of 65.00';
thence N 65°21'54" W a distance of 218.05 feet;
thence N 61°23'00" W a distance of 202.16 feet;
thence S 78°31'52" W a distance of 145.25 feet;
thence S 31°42'25" W a distance of 81.67 feet;
thence S 75°01'39" W a distance of 34.28 feet;
thence S 37°20'27" W a distance of 218.51 feet;
thence S 51°13'36" E a distance of 203.25 feet;
thence S 37°45'14" E a distance of 451.97 feet;
thence S 65°51'35" E a distance of 100.00 feet;
thence S 73°01'28" E a distance of 75.00 feet;
thence S 84°35'40" E a distance of 75.00 feet;
thence N 85°53'18" E a distance of 75.00 feet;
thence N 72°02'10" E a distance of 75.00 feet to the point of beginning containing 10.92 acres more or less as shown hereon.

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

PROFESSIONAL LAND SURVEYOR DATE

I HEREBY CERTIFY THAT THE PROPERTY LINES ON THIS PLAN ARE THE LINES DIVIDING EXISTING OWNERSHIPS, AND THE LINES OF THE STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.

PROFESSIONAL LAND SURVEYOR DATE

DRAWING REVISIONS

ACTION	DATE	DESCRIPTION

ZONING:

ZONING CLASSIFICATION: SINGLE RESIDENCE 10 GENERAL RESIDENCE

FLOOD:

LOCUS LIES IN ZONES [illegible] AS SHOWN ON COMMUNITY PANEL NO. 250250 [illegible] DATED SEPTEMBER [illegible]

OWNER OF RECORD:

TOWN OF WELLESLEY
SCHOOL DEPARTMENT
40 KINGSBURY STREET
WELLESLEY, MA 02482
ASSESSOR'S PARCEL: 122-43

PLAN REFERENCES:

1. PLAN [illegible] OF 1948
2. PLAN [illegible] OF 1953
3. PLAN [illegible] OF 1963
4. PLAN OF LAND IN WELLESLEY, MA OWNED BY [illegible] PREPARED BY [illegible] ENGINEERING COMPANY ON MAY [illegible] AND FILED AT THE TOWN OF WELLESLEY ENGINEERING DEPARTMENT.

UTILITIES:

UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON VISIBLE ABOVE GROUND UTILITIES AND RECORD INFORMATION OF BELOW GROUND UTILITIES AND ARE APPROXIMATE ONLY. CONTRACTOR IS RESPONSIBLE FOR TAKING ALL NECESSARY PRECAUTIONS BEFORE BEGINNING ANY EXCAVATION. DIGSAFE 1-888-344-7233

NOTE:
OWNERSHIP OF LAND IS DERIVED FROM THE FOLLOWING DEEDS FILED AT THE NORFOLK COUNTY REGISTRY OF DEEDS:

DEED BOOK 3436, PAGE 106
DEED BOOK 2836, PAGE 54
DEED BOOK 4132, PAGE 112
DEED BOOK 4132, PAGE 113
DEED BOOK 2675, PAGE 187

CAVANARO CONSULTING
687 MAIN STREET
P.O. BOX 5175
NORWELL, MASSACHUSETTS 02061
PHONE 781.659.8187
FAX 781.659.8188

ACTIVITY & USE LIMITATION PLAN

SPRAGUE FIELD
SCHOOL STREET
WELLESLEY, MA

PREPARED FOR
TOWN OF WELLESLEY
SCHOOL DEPARTMENT
40 KINGSBURY STREET
WELLESLEY, MA 02482

PROJECT NO. : 9813	DRAWING NO. AUL
SCALE : AS SHOWN	
DATE : 2/12/02	
DESIGNED BY : –	
DRAWN BY : DB	SHEET NO. 1 OF 1
CHECKED BY : SPS	FILENAME: [illegible]

EXHIBIT C

RTN 3-22918

NOW, THEREFORE, notice is hereby given that the activity and use limitations set forth in said AUL Opinion are as follows:

1. Activities and Uses Consistent with the AUL Opinion. The AUL Opinion provides that a condition of No Significant Risk to health, safety, public welfare or the environment exists for any foreseeable period of time (pursuant to 310 CMR 40.0000) so long as any of the following activities and uses occur on the Portion of the Property:

(i) Any activity including without limitation, use for outdoor recreation taking place above ground which does not disturb the subsurface to a depth of greater than 18-24 inches below grade.

(ii) Subsurface excavation at the portion of the property which are less then 24 inches in depth or if greater than 24 inches in depth satisfy the requirements of Paragraph 3 (i) below; and

(iii) Such other activities or uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare or the environment than the activities and uses set forth in this Paragraph;

2. Activities and Uses Inconsistent with the AUL Opinion. Activities and uses which are inconsistent with the objectives of this Notice of Activity and Use Limitation, and which, if implemented at the Property, may result in a significant risk of harm to health, safety, public welfare or the environment or in a substantial hazard, are as follows:

(i) Residential, recreation and agricultural use.

(ii) Movement, transport or disposal of contaminated soil without the guidance of an LSP.

(iii) Permanent removal artificial turf and geotextile membrane ("the cap") that would result in potential exposure to impacted soils.

(iv) Installation of drinking water supply wells.

(v) Any other use that would result in significant uncontrolled exposures to adults or children through an exposure to site soil.

3. Obligations and Conditions Set Forth in the AUL Opinion. If applicable, obligations and/or conditions to be undertaken and/or maintained at the Portion of the Property to maintain a condition of No Significant Risk as set forth in the AUL Opinion shall include the following:

(i) Any activity, including construction, which results in the exposure to subsurface soils located at a depth greater than 24 inches without the proper safety procedures. These safety procedures shall include a property developed and implemented Health and Safety Plan and Soil Management Plan prepared by qualified professional, trained and practicing in those areas and certified by a Massachusetts Licensed Site Professional; and

(ii) The cap comprised of artificial turf and geotextile membrane shall be repaired and maintained in good condition, over the existing soils at this Portion of the Property in order to restrict access to the existing soils located at a depth greater than 24 inches below the ground surface. The Owner or another party may remove the artificial turf or another part of the cap in the future, but only if another type of protective barrier is substituted which, in the Opinion of a Licensed Site Professional is sufficient to maintain a condition of No Significant Risk. The Massachusetts Contingency Plan 310 CMR 40:1080 & 4018 provides procedures to implement changes in land uses and activities for properties with AUL after the AUL and RAO have been filed. The AUL and RAO can modified as appropriate under the supervision and direction of a Licensed Site Professional according to the regulations cited above

Reason(s) the Notice of Activity and Use Limitation is appropriate to achieve and/or maintain a level of No Significant Risk

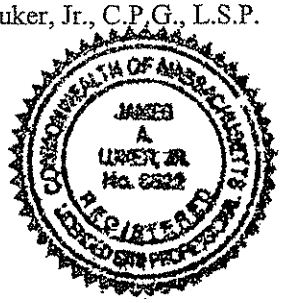
The MCP (310 CMR 40.1012) requires that an AUL be prepared for a site whenever an RAO and Risk Characterization used to support the RAO are: 1) based upon the restriction or limitation of site activities or uses to achieve or maintain a level of No Significant Risk, and; 2) based upon an exposure pathway elimination to prevent exposure to concentrations of oil and/or hazardous materials that would otherwise pose a significant risk of harm to human health, public welfare and the environment. Thus, if the Method 3 Risk Characterization relies on reduced exposure potential due to the assumption of limited site use, the Method 3 Risk Characterization must be accompanied by an AUL. The Method 3 Risk assessment indicated there was no significant risk in regards to human health, however there was a risk to safety and public welfare in regards to sharp objects (glass and metal) potentially reaching the surface. The Method 3 Risk Characterization was conducted based on limiting site use; therefore, an AUL was required for this area. The property was once used as municipal landfill and household refuse has been documented at depth in the area of the AUL. Excavating to depths greater then 3 feet will likely expose this material, which should be properly managed under a soil management plan.

This AUL referred to as a safety AUL was required because a condition of No Significant Risk to safety. Public welfare, and the environment has not been achieved at the site in regards to potential glass objects penetrating the surface. The risk of harm to safety is always a separate evaluation in accordance with 310 CMR 40.0960. The 310 CMR 40:000 does not provide specific criteria for determining a hazard to public safety. The implemented remedial solution was to place a geotextile

membrane over the area with potential sharp objects and cover that area with crush stone and place artificial turf or loam and seed over the entire area. These barriers will prevent sharp objects from rising to the surface through the freeze and thaw process. Repairs to utilities within the easements with the AUL area may require the temporary removal and subsequent replacement of the artificial turf and geotextile barrier. Any maintenance activities that involve the removal of the artificial turf and excavating beyond the geotextile membrane should be preformed under a soil management plan and direction of a Licensed site Professional.

Date: August 07 2009

James A. Luker, Jr., C.P.G., L.S.P.



APPENDIX G

Gale Associates, Inc.
163 Libbey Parkway | P.O. Box 890189 | Weymouth, MA 02189-0004
P 781.335.6465 F 781.335.6467 www.gainc.com

December 27, 2006

Hans Larsen, Executive Director
Town of Wellesley
525 Washington Street, 3rd Floor
Wellesley, MA 02482

Re: Groundwater Monitoring Report
Sprague School Athletic Fields
Wellesley, MA
RTN 3-022918
Gale JN 756211

Dear Mr. Larsen:

Gale Associates, Inc. (Gale) is pleased to present the findings of the groundwater sampling conducted on December 12, 2006 at the above-referenced site (see Locus Map – Figure 1). Figure 2 is a site schematic which indicates the locations of the referenced monitoring wells.

Gale was present on-site on December 12, 2006 to obtain groundwater samples from the three newly-installed groundwater monitoring wells.

After measuring the wells' total depth, the wells' standing volume of water was calculated. The wells were then purged of approximately three standing volumes of water to ensure that a representative sample of groundwater was obtained after recharge. Stabilization of indicator field parameters was used to indicate that conditions were suitable for sampling to begin. A GeoTech Model II adjustable rate, peristaltic pump, and polyethylene tubing was used for groundwater extraction from each monitoring well. Adjustments were made in the first fifteen minutes of pumping in order to help minimize purging time.

During well purging, field indicator parameters (temperature, specific conductance, pH, Dissolved Oxygen) were monitored every three to five minutes (or less frequently, if appropriate). Achievement of stable drawdown of less than 0.3 feet, while desirable, was not mandatory. Purging was considered complete and sampling began when all the above indicator field parameters had stabilized. Stabilization was considered to be achieved when three consecutive readings, taken at three (3) to five (5) minute intervals, were within the following limits:

GALE

Dissolved Oxygen (10%);
Specific conductance (3%);
Temperature (3%);
pH (± 0.1 unit).

Indicator field parameters were monitored using an YSI model 55 Dissolved Oxygen Meter and YSI 63 Conductivity Meter. A flow-through-cell was used when measuring temperature, pH, dissolved oxygen (DO), and specific conductance.

Wells with groundwater recharge rates lower than extraction rate capabilities of the peristaltic pump, which resulted in well dewatered during purging, were sampled as soon as the water level had recovered sufficiently to collect the appropriate volume needed for all samples.

The groundwater samples were collected following the Department of Environmental Protections (DEP's) "Interim Site Investigation Protocol Document" (#WSC-401-91), and the DEP's "Minimum Standards for Analytical Data for Remedial Response Actions" (#WSC-89-004)

Groundwater samples from three wells were placed into the appropriate laboratory-supplied containers and submitted for analysis of Lead (dissolved) by EPA Method. The groundwater samples were field filtered using a 0.45 micron membrane filter. The groundwater samples were placed in pre-preserved containers, stored on ice and submitted via chain-of-custody protocol to Groundwater Analytical, Inc., of Buzzards Bay, MA on October 13, 2006. Copies of the laboratory analytical reports are included in Appendix A.

Laboratory Analytical Results

The results of the laboratory analytical results from the latest round of sampling, the previous groundwater sampling events, and the Massachusetts Contingency Plan (310 CMR 40.0000, the MCP) Method 1 GW-2 and GW-3 standards are presented in Table 1.

Analytical Results

No lead concentrations were detected above the instrument's reporting limits in GMW-H16 and GMW-K16. Lead concentrations in MW-5 were above Method 1 GW-3 standards.

GALE

Conclusions and Recommendations

Each of the monitoring wells with concentrations of lead over the Method 1 GW-3 standards has been sampled on four different occasions. The MCP allows groundwater concentrations to be averaged over time to establish exposure point concentrations (EPC). The EPC can then be compared to the appropriate standard. The MCP allows ½ of the detection limit to be used when concentrations are below detection limits. Table 2 has the EPC calculated for monitoring wells MW-5, GMW-H16, and GMW-K16. All three wells have EPC for lead that is below the Method 1 GW-3 standard. Previous unfiltered groundwater samples were not included as they are not representative. Given these results, groundwater at the site does not contain lead at concentrations that require further investigation or remediation.

If you have any questions or comments regarding this matter, please feel free to contact the undersigned.

Very truly yours,

GALE ASSOCIATES, INC.

Kevin T. Duffy
Environmental Engineer

James A. Luker, Jr., C.P.G., L.S.P.
Project Manager

KTD/gmc

Attachments

G:\756211\reports\GWSamplingRpt Dec06.doc

Table 2
Average Lead Concentration Results
Sprague School Athletic Fields
Wellesley, MA
JN 756211

Parameter	MCP Method One GW-1 Standard	MCP Method One GW-2 Standard	MCP Method One GW-3 Standard	MW-5				
				6/2/2006	6/19/2006	10/13/2006	12/12/2006	EPC
Lead, Dissolved	15	NS	10	**10**	**12**	<5	**14**	9.625

Parameter	MCP Method One GW-1 Standard	MCP Method One GW-2 Standard	MCP Method One GW-3 Standard	GMW-H16				
				4/10/2003	6/2/2006	10/13/2006	12/12/2006	EPC
Lead, Dissolved	15	NS	10	<5	7	<5	<5	3.625

Parameter	MCP Method One GW-1 Standard	MCP Method One GW-2 Standard	MCP Method One GW-3 Standard	GMW-K16				
				4/10/2003	6/2/2006	10/13/2006	12/12/2006	EPC
Lead, Dissolved	15	NS	10	<5	9	<5	<5	4.125

Notes:
1. (1) Massachusetts Contingency Plan (MCP) 310 CMR 40.000
2. < denotes Below Reporting Limit (BRL)
3. NA denotes Not Analyzed
4. NS denotes No Standard
4. Bold denotes MCP GW-3 exceedance

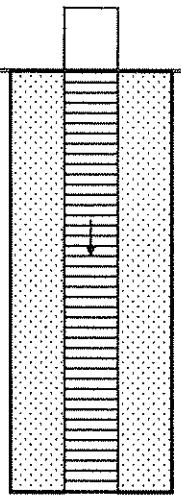
Figure 3

Well Construction Diagram
Sprague School
Wellesley, MA

onstruction Diagram

	Site: Sprague School Athelltic Fields	Boring Designation: MW-5
	Job No.: 756211	Surface Elevation:
	Inspector:	
	Water Level: 4.5'	Well Depth: 10'
	Logged By: HPL	Checked by: KTD

Soil Log	Materials Description (size, grade, color, moisture)	Well Construction
	GROUND SURFACE	
S-1a	8" Loam	
S-1b	Black fine to medium SAND and SILT, some gravel, wood ash.	
S-2a	Same as S-1b	
S-2b	Brown fine to medium SAND and SILT, trace gravel	
	End of Borehole 10' bgs	



Drilling Company: NE Geotech
Drilling Method: Direct Push
Sample Method:

Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

Figure 3

Well Construction Diagram
Sprague School
Wellesley, MA

BORING LOG and Well Construction Diagram

GALE
Engineers Architects Planners

Gale Associates, Inc.
163 Libbey Parkway
Weymouth, MA
(781) 335-6465

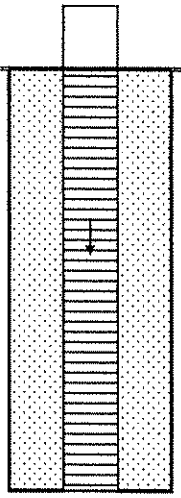
Site: Sprague School Athelic Fields
Job No.: 756211
Inspector:
Water Level: 4.5'
Logged By: HPL

Boring Designation: GMW-H16
Surface Elevation:
Well Depth: 10'
Checked by: KTD

Date: 5/25/2006

Sample No.	Penetration/Recovery (inches)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)
					GROUND SURFACE
					6" Topsoil
			1		Brown medium to coarse SAND, some silt, some gravel.
			2	S-1a	
S-1	60 / 24				
			3		
					Reddish brown fine to medium SAND, trace brick, glass.
			4		
			5	S-1b	
			6	S-2a	
					Same as S-1b.
			7		
S-2	60 / 24				
			8		Brown medium to coarse SAND and SILT, some gravel, wet.
				S-2b	
			9		
			10		
					End of Borehole 10' bgs
			11		
			12		
			13		
			14		
			15		
			16		
			17		
			18		
			19		
			20		
			21		
			22		
			23		
			24		
			25		
			26		
			27		
			28		

Well Construction



Comments:
Standpipe is approximately three feet above ground surface.

Well Location:
See Figure 2
Rationale:

Drilling Company:Geosearch
Drilling Method:Direct Push
Sample Method:

Figure 3

Well Construction Diagram
Sprague School
Wellesley, MA

BORING LOG and Well Construction Diagram

GALE
Engineers Architects Planners

Gale Associates, Inc.
163 Libbey Parkway
Weymouth, MA
(781) 335-6465

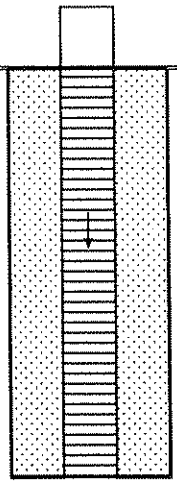
Site: Sprague School Athletic Fields
Job No.: 756211
Inspector:
Water Level: 4.5'
Logged By: HPL

Boring Designation: GMW-K16
Surface Elevation:
Well Depth: 10'
Checked by: KTD

Date: 5/25/2006

Sample No.	Penetration/Recovery (inches)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)
					6" Topsoil
S-1	60 / 24		1	S-1a	Reddish Brown, medium to fine SAND and SILT, trace
			2		
				S-1b	Black fine SAND and silt, some medium sand, ash.
			3		
				S-1c	Brown medium SAND and SILT.
			4		
			5		
S-2	60 / 24		6	S-2a	Tan medium to fine SAND and SILT, trace gravel, dense.
			7		
			8	S-2b	Tan medium to fine SAND and SILT, trace gravel, dense.
			9		
			10		
			11		End of Borehole 10' bgs
			12		
			13		
			14		
			15		
			16		
			17		
			18		
			19		
			20		
			21		
			22		
			23		
			24		
			25		
			26		
			27		
			28		

Well Construction



Comments:
Standpipe is approximately three feet above ground surface.

Well Location:
See Figure 2

Rationale:

Drilling Company:Geosearch
Drilling Method:Direct Push
Sample Method:

Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

APPENDIX A

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

December 19, 2006

Mr. James Luker
Gale Associates, Inc.
163 Libbey Parkway
Weymouth, MA 02189

LABORATORY REPORT

Project: **Sprague School/756211**
Lab ID: **102040**
Received: **12-12-06**

Dear Jim:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/jll
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Sprague School/756211**
Client: **Gale Associates, Inc.**
Lab ID: **102040**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **12-12-06**

Temperature: **2.8'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
102040-1	MW-5		Aqueous	12/12/06 10:00	EPA 6010B Pb Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C896196	250 mL Plastic	Greenwood	BX23264	HNO3	R-4808D	09-18-06	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
102040-2	GMW-K16		Aqueous	12/12/06 11:00	EPA 6010B Pb Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C896167	250 mL Plastic	Greenwood	BX23264	HNO3	R-4808D	09-18-06	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
102040-3	GMW-H16		Aqueous	12/12/06 12:00	EPA 6010B Pb Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C896028	250 mL Plastic	Greenwood	BX23264	HNO3	R-4808D	09-18-06	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project: **Sprague School/756211** Lab ID: **102040**
Client: **Gale Associates, Inc.** Received: **12-12-06 18:10**

MA DEP Compendium of Analytical Methods

Project Location: **n/a** MA DEP RTN: **n/a**

This Form provides certifications for the following data set:

EPA 6010B: 102040-01,-02,-03

Sample Matrices:	Groundwater (X)	Soil/Sediment ( )	Drinking Water ( )	Other ( )	
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B (X)	7470A/1A ( )
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9012A[2] ( )
	8082 ( )	8021B ( )	EPH ( )	7000 S[3] ( )	Other ( )

As specified in MA DEP Compendium of Analytical Methods. (check all that apply)

1. List Release Tracking Number (RTN), if known.
2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method.
3. S: SW-846 Methods 7000 Series. List individual method and analyte.

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	n/a

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	Yes
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	No

All No answers are addressed in the attached Project Narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Operations Manager

Printed Name: Eric H. Jensen Date: 12-19-06

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	MW-5	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	250 mL Plastic
Client:	Gale Associates, Inc.	Preservation:	HNO3 / Cool
Laboratory ID:	102040-1	Preserved:	12-12-06 10:00
Sampled:	12-12-06 10:00		
Received:	12-12-06 18:10		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2446-W	EPA 3010A	12-13-06 08:06	50 mL	ICP-1 PE 3000	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead, Dissolved	**0.014**		mg/L	0.005	1	12-14-06 10:37	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**GMW-H16**	Matrix:	**Aqueous**
Project:	**Sprague School/756211**	Container:	**250 mL Plastic**
Client:	**Gale Associates, Inc.**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**102040-3**	Preserved:	**12-12-06 12:00**
Sampled:	**12-12-06 12:00**		
Received:	**12-12-06 18:10**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2446-W	EPA 3010A	12-13-06 08:06	50 mL	ICP-1 PE 3000	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead, Dissolved	BRL		mg/L	0.005	1	12-14-06 10:43	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Sprague School/756211**	Lab ID:	**102040**
Client:	**Gale Associates, Inc.**	Received:	**12-12-06 18:10**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1. EPA 6010B Note: Samples 102040-01 through -03. Samples were analyzed for selected target analytes, as requested by client.

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 213076

Project Name: Sprague School

Project Number: 756211

Sampler Name: KTD

Project Manager: JAL

Firm: Gale Associates

Address: 163 Libbey Industrial Pkw

City / State / Zip: Weymouth MA 02189

Telephone: 781-335-6465

TURNAROUND

☐ STANDARD (10 Business Days)
☒ PRIORITY (5 Business Days)
☐ RUSH (RAN- ______) (Rush requires Rush Authorization Number)
☒ Please Email to: KTD@gainc.com
☐ Please FAX to:

BILLING

☒ Purchase Order No.: 2313
☐ Third Party Billing:
☐ GWA Quote:

INSTRUCTIONS: Use separate line for each container (except replicates).

ANALYSIS REQUEST

Date	Time	Sample Identification	Matrix: Groundwater	Type: Grab	Containers: Number	Preservation	Filtered	Laboratory Number (Lab Use Only)
12/12	10:00	MW-5	X	X	1	\	Yes	
12/12	11:00	GMW-K16	X	X	1	\	\	
12/12	12:00	GMW-H16	X	X	1	\	\	

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

☒ YES ☐ NO MCP Data Certification required.

☐ YES ☒ NO MCP Drinking Water Sample included. (Require collection of contingent duplicate sample. Trip blanks are also required if VOA sample collected)

Signature: [signature]

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☒ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-2	☐ MWRA
☒ MA	☐ NY STARS	☐
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐	☐	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required: ☐ Sample Duplicate ☐ Matrix Spike ☐ Matrix Spike Duplicate

Selection of QC Sample: ☐ Please use sample: ______

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by	Date	Time	Received by
Sampler: Kevin Duffy	12/12/06	17:00	[signature]
[signature]	12/13	18:10	[signature] Almeida
			Received by Laboratory:

Receipt Temperature: 2.8

Container Count: 3

Shipping/Airbill Number:

Custody Seal Number:

Method of Shipment: ☒ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐

5-4

GROUNDWATER ANALYTICAL

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

Category: Metals
Matrix: Aqueous
Units: mg/L

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 6010B	MB-2446-WL	EPA 3010A	12-13-06 08:06	12-14-06 10:22	ICP-1 PE 3000	MWR
LCSD	EPA 6010B	MB-2446-WL	EPA 3010A	12-13-06 08:06	12-14-06 10:25	ICP-1 PE 3000	MWR

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7439-92-1	Lead	5.0	4.7	94%	5.0	4.8	96%	1 %	80-120 %	20 %	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Aqueous**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B	MB-2446-WB	EPA 3010A	12-13-06 08:06	50 mL	ICP-1 PE 3000	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead	BRL		mg/L	0.005	1	12-14-06 10:20	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
DF Dilution Factor.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states. Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT, Department of Health Services, PH-0586

Categories: Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental_Lab/OutStateLabList.htm

FLORIDA, Department of Health, Bureau of Laboratories, E87643

Categories: SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE, Department of Human Services, MA103

Categories: Drinking Water and Wastewater
http://www.state.me.us/dhs/eng/water/Compliance.htm

MASSACHUSETTS, Department of Environmental Protection, M-MA-103

Categories: Potable Water and Non-Potable Water
http://www.state.ma.us/dep/bspt/wes/files/certlabs.pdf

NEW HAMPSHIRE, Department of Environmental Services, 202703

Categories: Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NEW YORK, Department of Health, 11754

Categories: Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

PENNSYLVANIA, Department of Environmental Protection, 68-665

Environmental Laboratory Registration (Non-drinking water and Non-wastewater)
http://www.dep.state.pa.us/Labs/Registered/

RHODE ISLAND, Department of Health, 54

Categories: Surface Water, Air, Wastewater, Potable Water, Sewage
http://www.healthri.org/labs/labsCT_MA.htm

U.S. Department of Agriculture, Soil Permit, S-53921

Foreign soil import permit

VERMONT, Department of Environmental Conservation, Water Supply Division

Category: Drinking Water
http://www.vermontdrinkingwater.org/wsops/labtable.PDF

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GROUNDWATER ANALYTICAL

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October 20, 2006

Mr. James Luker
Gale Associates, Inc.
163 Libbey Parkway
Weymouth, MA 02189

LABORATORY REPORT

Project: **Sprague School/756211**
Lab ID: **99943**
Received: **10-13-06**

Dear Jim:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Jonathan R. Sanford
President

JRS/ajh
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Sprague School/756211**
Client: **Gale Associates, Inc.**
Lab ID: **99943**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **10-13-06**

Temperature: **2.0°C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
99943-1	MW-5		Aqueous	10/13/06 11:20	EPA 6010B Pb Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C605910	250 mL Plastic	Proline	BX16282	HNO3	R-4338C	04-13-05	04-22-05		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
99943-2	GMW-K16		Aqueous	10/13/06 13:50	EPA 6010B Pb Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C606046	250 mL Plastic	Proline	BX16282	HNO3	R-4338C	04-13-05	04-22-05		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
99943-3	GMW-H16		Aqueous	10/13/06 12:30	EPA 6010B Pb Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C606006	250 mL Plastic	Proline	BX16282	HNO3	R-4338C	04-13-05	04-22-05		

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	MW-5	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	250 mL Plastic
Client:	Gale Associates, Inc.	Preservation:	HNO3 / Cool
Laboratory ID:	99943-01	Preserved:	10-13-06 11:20
Sampled:	10-13-06 11:20	Filtered:	10-13-06 11:20
Received:	10-13-06 18:35		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2344-W	EPA 3010A	10-16-06 07:48	50 mL	ICP-2 PE 3300	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead, Dissolved	BRL		mg/L	0.005	1	10-19-06 18:02	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**GMW-K16**	Matrix:	**Aqueous**
Project:	**Sprague School/756211**	Container:	**250 mL Plastic**
Client:	**Gale Associates, Inc.**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**99943-02**	Preserved:	**10-13-06 13:50**
Sampled:	**10-13-06 13:50**	Filtered:	**10-13-06 13:50**
Received:	**10-13-06 18:35**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2344-W	EPA 3010A	10-16-06 07:48	50 mL	ICP-2 PE 3300	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead, Dissolved	BRL		mg/L	0.005	1	10-19-06 18:06	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**GMW-H16**	Matrix:	**Aqueous**
Project:	**Sprague School/756211**	Container:	**250 mL Plastic**
Client:	**Gale Associates, Inc.**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**99943-03**	Preserved:	**10-13-06 12:30**
Sampled:	**10-13-06 12:30**	Filtered:	**10-13-06 12:30**
Received:	**10-13-06 18:35**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2344-W	EPA 3010A	10-16-06 07:48	50 mL	ICP-2 PE 3300	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead, Dissolved	BRL		mg/L	0.005	1	10-17-06 12:13	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

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DF Dilution Factor.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Sprague School/756211**	Lab ID:	**99943**
Client:	**Gale Associates, Inc.**	Received:	**10-13-06 18:35**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1. No method modifications, non-conformances or analytical issues were noted.

GROUNDWATER ANALYTICAL

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Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 212549

Project Name: SPRAGUE SCHOOL	Firm: GALE ASSOCIATES
Project Number: 756211	Address: 163 LIBBEY PARKWAY
Sampler Name: H. VANLINGEN	City / State / Zip: WEYMOUTH, MA
Project Manager: J. LUKER	Telephone: 02189

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☐ STANDARD (10 Business Days)
- ☒ PRIORITY (5 Business Days)
- ☐ RUSH (RAN: ______) (Rush requires Rush Authorization Number)
- ☒ Please Email to: HPL@GAINE.COM
- ☐ Please FAX to:

BILLING

- ☒ Purchase Order No. 2504-756211
- ☐ Third Party Billing:
- ☐ GWA Quote:

ANALYSIS REQUEST

Sampling Date	Sampling Time	Sample Identification	Matrix: Groundwater	Type: Grab	Container(s)	Preservation	Filtered	Laboratory Number (Lab Use Only)	Analysis
10/13	1120	MW-5	X	X	1 X	X	X X		X
10/13	1350	GMW-K16	X	X	1 X	X	X X		X
10/13	1250	GMW-H16	X	X	1 X	X	X X		X

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

- ☒ YES ☐ NO MCP Data Certification required.
- ☐ YES ☒ NO MCP Drinking Water Sample included. (Requires collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature: [signature]

DATA QUALITY OBJECTIVES

Regulatory Program

State / Standard / Deliverables

- ☐ CT ☒ MCP GW-1/S-1 ☐ PWS Form
- ☐ ME ☐ MCP GW-2/S-2 ☐ MWRA
- ☒ MA ☐ NY STARS ☐ ______
- ☐ NH ☐ Drinking Water
- ☐ NY ☐ Wastewater
- ☐ RI ☐ Waste Disposal
- ☐ VT ☐ Dredge Material
- ☐ ___ ☐ ___

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. Each MS, MSD and Sample Duplicate requires an additional sample aliquot.

Project Specific QC Required: ☐ Sample Duplicate ☐ Matrix Spike ☐ Matrix Spike Duplicate

Selection of QC Sample: ☐ Please use sample: ______

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by	Date	Time	Received by	
Sampler: [signature]	10/13	1715	[signature]	Receipt Temperature: 2 (☐ Ice ☐ Refrigerated, 2-6°C Recommended)
[signature]	10/13/06	1915	Penny Almeida	Container Count: 3
			Received by Laboratory:	Shipping/Airbill Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ ______

Custody Seal Number:

Quality Assurance/Quality Control

A. Program Overview

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Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

Category: **Metals**
Matrix: **Aqueous**
Units: **mg/L**

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 6010B	MB-2344-WL	EPA 3010A	10-16-06 07:48	10-19-06 17:56	ICP-2 PE 3300	MWR
LCSD	EPA 6010B	MB-2344-WL	EPA 3010A	10-16-06 07:48	10-19-06 17:59	ICP-2 PE 3300	MWR

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7439-92-1	Lead	5.0	5.0	99%	5.0	5.1	101%	1 %	80-120 %	20 %	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: Metals
Matrix: Aqueous

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B	MB-2344-WB	EPA 3010A	10-16-06 07:48	50 mL	ICP-2 PE 3300	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead	BRL		mg/L	0.005	1	10-19-06 17:52	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states. Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT, Department of Health Services, PH-0586

Categories: Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental_Lab/OutStateLabList.htm

FLORIDA, Department of Health, Bureau of Laboratories, E87643

Categories: SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE, Department of Human Services, MA103

Categories: Drinking Water and Wastewater
http://www.state.me.us/dhs/eng/water/Compliance.htm

MASSACHUSETTS, Department of Environmental Protection, M-MA-103

Categories: Potable Water and Non-Potable Water
http://www.state.ma.us/dep/bspt/wes/files/certlabs.pdf

NEW HAMPSHIRE, Department of Environmental Services, 202703

Categories: Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NEW YORK, Department of Health, 11754

Categories: Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

PENNSYLVANIA, Department of Environmental Protection, 68-665

Environmental Laboratory Registration (Non-drinking water and Non-wastewater)
http://www.dep.state.pa.us/Labs/Registered/

RHODE ISLAND, Department of Health, 54

Categories: Surface Water, Air, Wastewater, Potable Water, Sewage
http://www.healthri.org/labs/labsCT_MA.htm

U.S. Department of Agriculture, Soil Permit, S-53921

Foreign soil import permit

VERMONT, Department of Environmental Conservation, Water Supply Division

Category: Drinking Water
http://www.vermontdrinkingwater.org/wsops/labtable.PDF

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June 9, 2006

Mr. James Luker
Gale Associates, Inc.
163 Libbey Parkway
Weymouth, MA 02189

LABORATORY REPORT

Project: **Sprague School/756211**
Lab ID: **95310**
Received: **06-02-06**

Dear Jim:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Jonathan R. Sanford
President

JRS/jll
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: Sprague School/756211
Client: Gale Associates, Inc.
Lab ID: 95310

Delivery: GWA Courier
Airbill: n/a
Lab Receipt: 06-02-06

Temperature: 2'C
Chain of Custody: Present
Custody Seal(s): n/a

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-1	MW-5		Aqueous	6/1/06 0:00	EPA 8260B Volatile Organics with Oxygenates				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C801617	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		
C801613	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		
C801606	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-2	GMW-K16		Aqueous	6/1/06 0:00	EPA 8260B Volatile Organics with Oxygenates				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C801643	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		
C801632	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		
C801631	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-3	GMW-H16		Aqueous	6/1/06 0:00	EPA 8260B Volatile Organics with Oxygenates				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C801642	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		
C801630	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		
C801616	40 mL VOA Vial	Proline	BX20762	HCl	R-4683B	04-12-06	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-4	MW-5		Aqueous	6/1/06 0:00	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C798960	1 L Amber Glass	Proline	BX20014	None	n/a	n/a	02-17-06		
C795318	1 L Amber Glass	Proline	BX21515	H2SO4	R-4843B	05-16-06	05-16-06		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-5	GMW-K16		Aqueous	6/1/06 0:00	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C798963	1 L Amber Glass	Proline	BX20014	None	n/a	n/a	02-17-06		
C798956	1 L Amber Glass	Proline	BX20014	None	n/a	n/a	02-17-06		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-6	GMW-H16		Aqueous	6/1/06 0:00	EPA 8082 PCBs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C749973	1 L Amber Glass	Proline	BX20013	None	n/a	n/a	02-17-06		
C798959	1 L Amber Glass	Proline	BX20014	None	n/a	n/a	02-17-06		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-7	MW-5		Aqueous	6/1/06 0:00	MA DEP EPH with PAHs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C795319	1 L Amber Glass	Proline	BX21515	H2SO4	R-4843B	05-16-06	05-16-06		
C795312	1 L Amber Glass	Proline	BX21515	H2SO4	R-4843B	05-16-06	05-16-06		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-8	GMW-K16		Aqueous	6/1/06 0:00	MA DEP EPH with PAHs				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C795311	1 L Amber Glass	Proline	BX21515	H2SO4	R-4843B	05-16-06	05-16-06		
C795310	1 L Amber Glass	Proline	BX21515	H2SO4	R-4843B	05-16-06	05-16-06		

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project: **Sprague School/756211**
Client: **Gale Associates, Inc.**
Lab ID: **95310**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **06-02-06**

Temperature: **2'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-9	GMW-H16		Aqueous	6/1/06 0:00	MA DEP EPH with PAHs				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C795317	1 L Amber Glass	Proline	BX21515	H2SO4	R-4843B	05-16-06	05-16-06		
C795313	1 L Amber Glass	Proline	BX21515	H2SO4	R-4843B	05-16-06	05-16-06		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-10	MW-5		Aqueous	6/1/06 0:00	EPA 6010B/7470A 8 RCRA Metals Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C605924	250 mL Plastic	Proline	BX16282	HNO3	R-4338C	04-13-05	04-22-05		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-11	GMW-K16		Aqueous	6/1/06 0:00	EPA 6010B/7470A 8 RCRA Metals Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C605929	250 mL Plastic	Proline	BX16282	HNO3	R-4338C	04-13-05	04-22-05		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95310-12	GMW-H16		Aqueous	6/1/06 0:00	EPA 6010B/7470A 8 RCRA Metals Dissolved				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C605998	250 mL Plastic	Proline	BX16282	HNO3	R-4338C	04-13-05	04-22-05		

GROUNDWATER ANALYTICAL

Data Certification

Project: **Sprague School/756211**
Client: **Gale Associates, Inc.**

Lab ID: **95310**
Received: **06-02-06 14:30**

MA DEP Compendium of Analytical Methods

Project Location: **n/a** MA DEP RTN: **n/a**

This Form provides certifications for the following data set:

EPA 8260B:	95310-01,-02,-03
EPA 8082:	95310-04,-05,-06
MA DEP EPH:	95310-07,-08,-09
EPA 6010B:	95310-10,-11,-12
EPA 7470A/1A:	95310-10,-11,-12

Sample Matrices:	Groundwater (X)	Soil/Sediment ( )	Drinking Water ( )	Other ( )	
MCP SW-846 Methods Used	8260B (X)	8151A ( )	8330 ( )	6010B (X)	7470A/1A (X)
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9012A[2] ( )
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 (X)	8021B ( )	EPH (X)	7000 S[3] ( )	Other ( )

1. List Release Tracking Number (RTN), if known.
2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method
3. S - SW-846 Methods 7000 Series: List individual method and analyte.

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	Yes

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	No
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	No

All No answers are addressed in the attached Project Narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: 
Printed Name: Jonathan K. Sanford

Position: President
Date: 06-09-06

GROUNDWATER ANALYTICAL

EPA Method 8260B
Volatile Organics by GC/MS

Field ID:	MW-5	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	40 mL VOA Vial
Client:	Gale Associates, Inc.	Preservation:	HCl/Cool
Laboratory ID:	95310-01	QC Batch ID:	VM4-3556-W
Sampled:	06-01-06 00:00	Instrument ID:	MS-4 HP 6890
Received:	06-02-06 14:30	Sample Volume:	25 mL
Analyzed:	06-06-06 12:02	Dilution Factor:	1
Analyst:	KMC		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	2.5
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5
108-90-7	Chlorobenzene	BRL		ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.5
100-41-4	Ethylbenzene	BRL		ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	0.5
95-47-6	*ortho*-Xylene	BRL		ug/L	0.5

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued)
Volatile Organics by GC/MS

Field ID:	MW-5	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	40 mL VOA Vial
Client:	Gale Associates, Inc.	Preservation:	HCl/Cool
Laboratory ID:	95310-01	QC Batch ID:	VM4-3556-W
Sampled:	06-01-06 00:00	Instrument ID:	MS-4 HP 6890
Received:	06-02-06 14:30	Sample Volume:	25 mL
Analyzed:	06-06-06 12:02	Dilution Factor:	1
Analyst:	KMC		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
100-42-5	Styrene	BRL		ug/L	0.5
75-25-2	Bromoform	BRL		ug/L	0.5
98-82-8	Isopropylbenzene	BRL		ug/L	0.5
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
103-65-1	*n*-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	*tert*-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	*sec*-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	*n*-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.5
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	*tert*-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	9.2	92 %	70 - 130 %
1,2-Dichloroethane-d_4	10	9.3	93 %	70 - 130 %
Toluene-d_8	10	8.5	85 %	70 - 130 %
4-Bromofluorobenzene	10	8.7	87 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8260B
Volatile Organics by GC/MS

Field ID:	GMW-K16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	40 mL VOA Vial
Client:	Gale Associates, Inc.	Preservation:	HCl/Cool
Laboratory ID:	95310-02	QC Batch ID:	VM4-3556-W
Sampled:	06-01-06 00:00	Instrument ID:	MS-4 HP 6890
Received:	06-02-06 14:30	Sample Volume:	25 mL
Analyzed:	06-06-06 12:31	Dilution Factor:	1
Analyst:	KMC		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	2.5
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5
108-90-7	Chlorobenzene	BRL		ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.5
100-41-4	Ethylbenzene	BRL		ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	0.5
95-47-6	*ortho*-Xylene	BRL		ug/L	0.5

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued)
Volatile Organics by GC/MS

Field ID:	GMW-K16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	40 mL VOA Vial
Client:	Gale Associates, Inc.	Preservation:	HCl/Cool
Laboratory ID:	95310-02	QC Batch ID:	VM4-3556-W
Sampled:	06-01-06 00:00	Instrument ID:	MS-4 HP 6890
Received:	06-02-06 14:30	Sample Volume:	25 mL
Analyzed:	06-06-06 12:31	Dilution Factor:	1
Analyst:	KMC		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
100-42-5	Styrene	BRL		ug/L	0.5
75-25-2	Bromoform	BRL		ug/L	0.5
98-82-8	Isopropylbenzene	BRL		ug/L	0.5
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
103-65-1	*n*-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	*tert*-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	*sec*-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	*n*-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.5
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	*tert*-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	9.0	90 %	70 - 130 %
1,2-Dichloroethane-d_4	10	9.5	95 %	70 - 130 %
Toluene-d_8	10	8.5	85 %	70 - 130 %
4-Bromofluorobenzene	10	8.6	86 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8260B
Volatile Organics by GC/MS

Field ID:	GMW-H16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	40 mL VOA Vial
Client:	Gale Associates, Inc.	Preservation:	HCl/Cool
Laboratory ID:	95310-03	QC Batch ID:	VM4-3556-W
Sampled:	06-01-06 00:00	Instrument ID:	MS-4 HP 6890
Received:	06-02-06 14:30	Sample Volume:	25 mL
Analyzed:	06-06-06 13:00	Dilution Factor:	1
Analyst:	KMC		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	2.5
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5
108-90-7	Chlorobenzene	BRL		ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.5
100-41-4	Ethylbenzene	BRL		ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	0.5
95-47-6	*ortho*-Xylene	BRL		ug/L	0.5

GROUNDWATER ANALYTICAL

EPA Method 8260B (Continued)
Volatile Organics by GC/MS

Field ID:	GMW-H16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	40 mL VOA Vial
Client:	Gale Associates, Inc.	Preservation:	HCl/Cool
Laboratory ID:	95310-03	QC Batch ID:	VM4-3556-W
Sampled:	06-01-06 00:00	Instrument ID:	MS-4 HP 6890
Received:	06-02-06 14:30	Sample Volume:	25 mL
Analyzed:	06-06-06 13:00	Dilution Factor:	1
Analyst:	KMC		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
100-42-5	Styrene	BRL		ug/L	0.5
75-25-2	Bromoform	BRL		ug/L	0.5
98-82-8	Isopropylbenzene	BRL		ug/L	0.5
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
103-65-1	*n*-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	*tert*-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	*sec*-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	*n*-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.5
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	*tert*-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	8.8	88 %	70 - 130 %
1,2-Dichloroethane-d_4	10	9.3	93 %	70 - 130 %
Toluene-d_8	10	8.3	83 %	70 - 130 %
4-Bromofluorobenzene	10	8.6	86 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8082
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	MW-5	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	1 L Amber Glass
Client:	Gale Associates, Inc.	Preservation:	Cool
Laboratory ID:	95310-04	QC Batch ID:	PB-2238-F
Sampled:	06-01-06 00:00	Instrument ID:	GC-6 HP 5890
Received:	06-02-06 14:30	Sample Weight:	1000 mL
Extracted:	06-02-06 22:00	Final Volume:	1 mL
Cleaned Up:	06-05-06 12:00	Dilution Factor:	1
Analyzed:	06-05-06 21:28		
Analyst:	CRL		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 †	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 †	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro-*m*-xylene	0.20	0.15	**76** %	30 - 150 %
	Decachlorobiphenyl	0.20	0.20	**100** %	30 - 150 %
Second Column	Tetrachloro-*m*-xylene	0.20	0.15	**76** %	30 - 150 %
	Decachlorobiphenyl	0.20	0.20	**100** %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Non-target analyte. Result is based on a single mid-range calibration standard.

GROUNDWATER ANALYTICAL

EPA M
Polychlorinated B

Field ID:	GMW-K16
Project:	Sprague School/756211
Client:	Gale Associates, Inc.
Laboratory ID:	95310-05
Sampled:	06-01-06 00:00
Received:	06-02-06 14:30
Extracted:	06-02-06 22:00
Cleaned Up:	06-05-06 12:00
Analyzed:	06-05-06 22:38
Analyst:	CRL

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CAS Number	Analyte	Con.	Limit
12674-11-2	Aroclor 1016		
11104-28-2	Aroclor 1221		
11141-16-5	Aroclor 1232		
53469-21-9	Aroclor 1242	BRL	
12672-29-6	Aroclor 1248	BRL	
11097-69-1	Aroclor 1254	BRL	
11096-82-5	Aroclor 1260	BRL	
37324-23-5	Aroclor 1262 †	BRL	
11100-14-4	Aroclor 1268 †	BRL	

QC Surrogate Compound		Spiked	Measured	Recovery	
First Column	Tetrachloro-*m*-xylene	0.20	0.17	83 %	
	Decachlorobiphenyl	0.20	0.20	98 %	30 -
Second Column	Tetrachloro-*m*-xylene	0.20	0.16	82 %	30 - 150
	Decachlorobiphenyl	0.20	0.20	101 %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Non-target analyte. Result is based on a single mid-range calibration standard.

GROUNDWATER ANALYTICAL

EPA Method 8082
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	GMW-H16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	1 L Amber Glass
Client:	Gale Associates, Inc.	Preservation:	Cool
Laboratory ID:	95310-06	QC Batch ID:	PB-2238-F
Sampled:	06-01-06 00:00	Instrument ID:	GC-6 HP 5890
Received:	06-02-06 14:30	Sample Weight:	1000 mL
Extracted:	06-02-06 22:00	Final Volume:	1 mL
Cleaned Up:	06-05-06 12:00	Dilution Factor:	1
Analyzed:	06-06-06 02:43		
Analyst:	CRL		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 †	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 †	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro-*m*-xylene	0.20	0.16	78 %	30 - 150 %
	Decachlorobiphenyl	0.20	0.19	96 %	30 - 150 %
Second Column	Tetrachloro-*m*-xylene	0.20	0.15	77 %	30 - 150 %
	Decachlorobiphenyl	0.20	0.19	95 %	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Non-target analyte. Result is based on a single mid-range calibration standard.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	MW-5	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	1 L Amber Glass
Client:	Gale Associates, Inc.	Preservation:	H2SO4/Cool
Laboratory ID:	95310-07	QC Batch ID:	EP-1743-F
Sampled:	06-01-06 00:00	Instrument ID:	GC-9 Agilent 6890
Received:	06-02-06 14:30	Sample Volume:	950 mL
Extracted:	06-06-06 15:00	Final Volume:	1 mL
Analyzed (AL):	06-07-06 16:32	Aliphatic Dilution Factor:	1
Analyzed (AR):	06-07-06 17:17	Aromatic Dilution Factor:	1
Analyst:	CMM		

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		ug/L	530
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		ug/L	530
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		ug/L	160
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		ug/L	160

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	5
91-57-6	2-Methylnaphthalene	BRL		ug/L	5
85-01-8	Phenanthrene	BRL		ug/L	5
83-32-9	Acenaphthene	BRL		ug/L	5
208-96-8	Acenaphthylene	BRL		ug/L	5
86-73-7	Fluorene	BRL		ug/L	5
120-12-7	Anthracene	BRL		ug/L	5
206-44-0	Fluoranthene	BRL		ug/L	5
129-00-0	Pyrene	BRL		ug/L	5
56-55-3	Benzo[a]anthracene	BRL		ug/L	5
218-01-9	Chrysene	BRL		ug/L	5
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	5
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	5
50-32-8	Benzo[a]pyrene	BRL		ug/L	5
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	5
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	5
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	5

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	42	36	84 %	40 - 140 %
	2-Bromonaphthalene	42	35	84 %	40 - 140 %
Extraction:	Chloro-octadecane	42	34	81 %	40 - 140 %
	ortho-Terphenyl	42	28	67 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by separatory funnel technique.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	GMW-K16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	1 L Amber Glass
Client:	Gale Associates, Inc.	Preservation:	H2SO4/Cool
Laboratory ID:	95310-08	QC Batch ID:	EP-1743-F
Sampled:	06-01-06 00:00	Instrument ID:	GC-9 Agilent 6890
Received:	06-02-06 14:30	Sample Volume:	950 mL
Extracted:	06-06-06 15:00	Final Volume:	1 mL
Analyzed (AL):	06-07-06 18:00	Aliphatic Dilution Factor:	1
Analyzed (AR):	06-07-06 18:44	Aromatic Dilution Factor:	1
Analyst:	CMM		

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		ug/L	530
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		ug/L	530
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		ug/L	160
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		ug/L	160

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	5
91-57-6	2-Methylnaphthalene	BRL		ug/L	5
85-01-8	Phenanthrene	BRL		ug/L	5
83-32-9	Acenaphthene	BRL		ug/L	5
208-96-8	Acenaphthylene	BRL		ug/L	5
86-73-7	Fluorene	BRL		ug/L	5
120-12-7	Anthracene	BRL		ug/L	5
206-44-0	Fluoranthene	BRL		ug/L	5
129-00-0	Pyrene	BRL		ug/L	5
56-55-3	Benzo[a]anthracene	BRL		ug/L	5
218-01-9	Chrysene	BRL		ug/L	5
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	5
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	5
50-32-8	Benzo[a]pyrene	BRL		ug/L	5
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	5
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	5
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	5

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	42	36	85 %	40 - 140 %
	2-Bromonaphthalene	42	35	82 %	40 - 140 %
Extraction:	Chloro-octadecane	42	34	81 %	40 - 140 %
	ortho -Terphenyl	42	29	70 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by separatory funnel technique.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	GMW-H16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	1 L Amber Glass
Client:	Gale Associates, Inc.	Preservation:	H2SO4/Cool
Laboratory ID:	95310-09	QC Batch ID:	EP-1743-F
Sampled:	06-01-06 00:00	Instrument ID:	GC-9 Agilent 6890
Received:	06-02-06 14:30	Sample Volume:	1000 mL
Extracted:	06-06-06 15:00	Final Volume:	1 mL
Analyzed (AL):	06-07-06 16:31	Aliphatic Dilution Factor:	1
Analyzed (AR):	06-07-06 17:11	Aromatic Dilution Factor:	1
Analyst:	CMM		

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		ug/L	500
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		ug/L	500
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		ug/L	150
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		ug/L	150

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	5
91-57-6	2-Methylnaphthalene	BRL		ug/L	5
85-01-8	Phenanthrene	BRL		ug/L	5
83-32-9	Acenaphthene	BRL		ug/L	5
208-96-8	Acenaphthylene	BRL		ug/L	5
86-73-7	Fluorene	BRL		ug/L	5
120-12-7	Anthracene	BRL		ug/L	5
206-44-0	Fluoranthene	BRL		ug/L	5
129-00-0	Pyrene	BRL		ug/L	5
56-55-3	Benzo[a]anthracene	BRL		ug/L	5
218-01-9	Chrysene	BRL		ug/L	5
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	5
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	5
50-32-8	Benzo[a]pyrene	BRL		ug/L	5
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	5
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	5
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	5

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	40	30	76 %	40 - 140 %
	2-Bromonaphthalene	40	30	74 %	40 - 140 %
Extraction:	Chloro-octadecane	40	31	78 %	40 - 140 %
	ortho-Terphenyl	40	22	56 %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by separatory funnel technique.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	MW-5	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	250 mL Plastic
Client:	Gale Associates, Inc.	Preservation:	HNO3 / Cool
Laboratory ID:	95310-10	Preserved:	06-01-06 00:00
Sampled:	06-01-06 00:00		
Received:	06-02-06 14:30		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2114-W	EPA 3010A	06-05-06 08:52	50 mL	ICP-2 PE 3300	MWR
EPA 7470A[2]	MP-1844-W	EPA 7470A	06-06-06 11:35	25 mL		MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-38-2	Arsenic, Dissolved	BRL		mg/L	0.03	1	06-06-06 11:29	EPA 6010B[1]
7440-39-3	Barium, Dissolved	BRL		mg/L	0.2	1	06-06-06 11:29	EPA 6010B[1]
7440-43-9	Cadmium, Dissolved	BRL		mg/L	0.004	1	06-06-06 11:29	EPA 6010B[1]
7440-47-3	Chromium, Dissolved	BRL		mg/L	0.01	1	06-06-06 11:29	EPA 6010B[1]
7439-92-1	Lead, Dissolved	0.010		mg/L	0.005	1	06-08-06 15:49	EPA 6010B[1]
7439-97-6	Mercury, Dissolved	BRL		mg/L	0.0002	1	06-06-06 16:48	EPA 7470A[2]
7782-49-2	Selenium, Dissolved	BRL		mg/L	0.05	1	06-06-06 11:29	EPA 6010B[1]
7440-22-4	Silver, Dissolved	BRL		mg/L	0.007	1	06-06-06 11:29	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	GMW-K16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	250 mL Plastic
Client:	Gale Associates, Inc.	Preservation:	HNO3 / Cool
Laboratory ID:	95310-11	Preserved:	06-01-06 00:00
Sampled:	06-01-06 00:00		
Received:	06-02-06 14:30		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2114-W	EPA 3010A	06-05-06 08:52	50 mL	ICP-2 PE 3300	MWR
EPA 7470A[2]	MP-1844-W	EPA 7470A	06-06-06 11:35	25 mL		MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-38-2	Arsenic, Dissolved	BRL		mg/L	0.03	1	06-06-06 11:38	EPA 6010B[1]
7440-39-3	Barium, Dissolved	BRL		mg/L	0.2	1	06-06-06 11:38	EPA 6010B[1]
7440-43-9	Cadmium, Dissolved	BRL		mg/L	0.004	1	06-06-06 11:38	EPA 6010B[1]
7440-47-3	Chromium, Dissolved	BRL		mg/L	0.01	1	06-06-06 11:38	EPA 6010B[1]
7439-92-1	Lead, Dissolved	**0.009**		mg/L	0.005	1	06-08-06 15:58	EPA 6010B[1]
7439-97-6	Mercury, Dissolved	BRL		mg/L	0.0002	1	06-06-06 16:58	EPA 7470A[2]
7782-49-2	Selenium, Dissolved	BRL		mg/L	0.05	1	06-06-06 11:38	EPA 6010B[1]
7440-22-4	Silver, Dissolved	BRL		mg/L	0.007	1	06-06-06 11:38	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	GMW-H16	Matrix:	Aqueous
Project:	Sprague School/756211	Container:	250 mL Plastic
Client:	Gale Associates, Inc.	Preservation:	HNO3 / Cool
Laboratory ID:	95310-12	Preserved:	06-01-06 00:00
Sampled:	06-01-06 00:00		
Received:	06-02-06 14:30		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2114-W	EPA 3010A	06-05-06 08:52	50 mL	ICP-2 PE 3300	MWR
EPA 7470A[2]	MP-1844-W	EPA 7470A	06-06-06 11:35	25 mL		MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-38-2	Arsenic, Dissolved	BRL		mg/L	0.03	1	06-06-06 11:41	EPA 6010B[1]
7440-39-3	Barium, Dissolved	BRL		mg/L	0.2	1	06-06-06 11:41	EPA 6010B[1]
7440-43-9	Cadmium, Dissolved	BRL		mg/L	0.004	1	06-06-06 11:41	EPA 6010B[1]
7440-47-3	Chromium, Dissolved	BRL		mg/L	0.01	1	06-06-06 11:41	EPA 6010B[1]
7439-92-1	Lead, Dissolved	**0.007**		mg/L	0.005	1	06-08-06 16:01	EPA 6010B[1]
7439-97-6	Mercury, Dissolved	BRL		mg/L	0.0002	1	06-06-06 17:01	EPA 7470A[2]
7782-49-2	Selenium, Dissolved	BRL		mg/L	0.05	1	06-06-06 11:41	EPA 6010B[1]
7440-22-4	Silver, Dissolved	BRL		mg/L	0.007	1	06-06-06 11:41	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 208438

Project Name: Sprague School
Firm: Gale Associates, Inc.
Project Number: 756211
Address: 163 Libbey Industrial Parkway
Sampler Name: Kevin T. Duffy (KTD)
City / State / Zip: Weymouth, MA 02189
Project Manager: TK
Telephone: 781-335-6465

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

☐ STANDARD (10 Business Days)
☒ PRIORITY (5 Business Days)
☐ RUSH (RAN: ______) (Rush requires Rush Authorization Number)
☒ Please Email to: ktd@gaike.com
☐ Please FAX to:

BILLING

☒ Purchase Order No.: 2309
☐ Third Party Billing:
☐ GWA Quote:

ANALYSIS REQUEST

Volatiles / Semivolatiles / Pest/Herb/PCBs / Metals / Petroleum Hydrocarbons / Haz. Waste / General Chemistry / Other

Marked: 8082 PCBs; RCRA 8 metals (Dissolved); MA DEP EPH w/o targets

Date	Time	Sample Identification	Matrix: Groundwater	Type: Grab	Containers: Number	Laboratory Number (Lab Use Only)
6/1/06		MW-5	X	X	3	
		MW-5	X	X	2	
		MW-5	X	X	2	
		MW-5	X	X	1	
		GMW-K16	X	X	3	
		GMW-K16	X	X	2	
		GMW-K16	X	X	2	
		GMW-K16	X	X	1	
		GMW-H16	X	X	3	
		GMW-H16	X	X	2	
		GMW-H16	X	X	2	
		GMW-H16	X	X	1	

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation
☒ YES ☐ NO MCP Data Certification required.
☐ YES ☒ NO MCP Drinking Water Sample included. (Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).
Signature: [signature]

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☒ MCP GW-2/S-2	☐ MWRA
☒ MA	☐ NY STARS	☐ ______
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ ______	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. Each MS, MSD and Sample Duplicate requires an additional sample aliquot.

Project Specific QC Required
☐ Sample Duplicate
☐ Matrix Spike
☐ Matrix Spike Duplicate

Selection of QC Sample
☐ Please use sample: ______

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by	Date	Time	Received by
Relinquished by Sampler: KTD	6/2/06	11:00	Received by: [signature]
Relinquished by: [signature]	6/2/06	14:30	Received by: Jenny Almeida
Relinquished by:	Date	Time	Received by Laboratory:

Receipt Temperature: ☐ Ice ☐ Refrigerated 2-6°C Recommended: 2
Container Count:
Shipping/Airbill Number:
Custody Seal Number:

Method of Shipment: ☒ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ ______

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	MA DEP EPH Method	Instrument ID:	GC-12 Agilent 6890	Instrument ID:	GC-12 Agilent 6890
QC Batch ID:	EP-1743-F	Extracted:	06-06-06 15:00	Extracted:	06-06-06 15:00
Matrix:	Aqueous	Analyzed (AL):	06-07-06 14:10	Analyzed (AL):	06-07-06 15:41
Units:	ug/L	Analyzed (AR):	06-07-06 14:55	Analyzed (AR):	06-07-06 16:26
		Analyst:	CMM	Analyst:	CMM

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
111-84-2	*n*-Nonane (C_9)	50	22	43 %	50	24	48 %	10 %	30 - 140 %	25%
124-18-5	*n*-Decane (C_{10})	50	25	51 %	50	28	57 %	11 %	40 - 140 %	25%
112-40-3	*n*-Dodecane (C_{12})	50	27	54 %	50	30	60 %	11 %	40 - 140 %	25%
629-59-4	*n*-Tetradecane (C_{14})	50	32	63 %	50	33	67 %	6 %	40 - 140 %	25%
544-76-3	*n*-Hexadecane (C_{16})	50	35	70 %	50	38	75 %	7 %	40 - 140 %	25%
593-45-3	*n*-Octadecane (C_{18})	50	37	75 %	50	41	82 %	10 %	40 - 140 %	25%
n/a	*n*-C9 to *n*-C18 Group	300	180	59 %	300	190	65 %	9 %	40 - 140 %	25%
629-92-5	*n*-Nonadecane (C_{19})	50	37	74 %	50	42	83 %	12 %	40 - 140 %	25%
112-95-8	*n*-Eicosane (C_{20})	50	38	77 %	50	43	86 %	11 %	40 - 140 %	25%
629-97-0	*n*-Docosane (C_{22})	50	38	76 %	50	42	85 %	11 %	40 - 140 %	25%
646-31-1	*n*-Tetracosane (C_{24})	50	36	73 %	50	41	81 %	11 %	40 - 140 %	25%
630-01-3	*n*-Hexacosane (C_{26})	50	37	74 %	50	41	83 %	11 %	40 - 140 %	25%
630-02-4	*n*-Octacosane (C_{28})	50	36	72 %	50	40	81 %	11 %	40 - 140 %	25%
638-68-6	*n*-Triacontane (C_{30})	50	35	71 %	50	39	79 %	11 %	40 - 140 %	25%
630-06-8	*n*-Hexatriacontane (C_{36})	50	32	63 %	50	34	69 %	8 %	40 - 140 %	25%
n/a	*n*-C19 to *n*-C36 Group	400	290	73 %	400	320	81 %	11 %	40 - 140 %	25%
91-20-3	Naphthalene	50	25	51 %	50	27	53 %	5 %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	50	27	54 %	50	29	58 %	6 %	40 - 140 %	25%
208-96-8	Acenaphthylene	50	28	55 %	50	29	58 %	5 %	40 - 140 %	25%
83-32-9	Acenaphthene	50	29	58 %	50	31	61 %	5 %	40 - 140 %	25%
86-73-7	Fluorene	50	30	60 %	50	32	65 %	7 %	40 - 140 %	25%
85-01-8	Phenanthrene	50	32	65 %	50	36	72 %	11 %	40 - 140 %	25%
120-12-7	Anthracene	50	33	67 %	50	37	74 %	10 %	40 - 140 %	25%
206-44-0	Fluoranthene	50	34	67 %	50	36	72 %	7 %	40 - 140 %	25%
129-00-0	Pyrene	50	33	66 %	50	35	70 %	6 %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	50	34	68 %	50	37	75 %	9 %	40 - 140 %	25%
218-01-9	Chrysene	50	32	65 %	50	34	69 %	6 %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	50	30	61 %	50	34	69 %	12 %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	50	31	62 %	50	33	67 %	7 %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	50	30	61 %	50	34	67 %	10 %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	50	33	66 %	50	37	74 %	11 %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	50	31	61 %	50	32	65 %	6 %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	50	30	59 %	50	32	64 %	8 %	40 - 140 %	25%
n/a	PAH Group	850	520	62 %	850	570	67 %	8 %	40 - 140 %	25%

QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Fractionation:	2-Fluorobiphenyl	40	32	81 %	40	31	78 %		40 - 140 %
	2-Bromonaphthalene	40	33	82 %	40	33	83 %		40 - 140 %
Extraction:	Chloro-octadecane	40	25	63 %	40	27	67 %		40 - 140 %
	ortho-Terphenyl	40	24	59 %	40	27	67 %		40 - 140 %

Fractionation Breakthrough Evaluation						QC Limits
91-20-3	Naphthalene	LCS	0 %	LCSD	0 %	5%
91-57-6	2-Methylnaphthalene	LCS	1 %	LCSD	1 %	5%

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by separatory funnel technique.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: MA DEP EPH
QC Batch ID: EP-1743-F
Matrix: Aqueous

Instrument ID: GC-12 Agilent 6890
Extracted: 06-06-06 15:00
Analyzed (AL): 06-07-06 12:40
Analyzed (AR): 06-07-06 13:25
Analyst: CMM

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		ug/L	500
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		ug/L	500
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		ug/L	150
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		ug/L	150

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	5
91-57-6	2-Methylnaphthalene	BRL		ug/L	5
85-01-8	Phenanthrene	BRL		ug/L	5
83-32-9	Acenaphthene	BRL		ug/L	5
208-96-8	Acenaphthylene	BRL		ug/L	5
86-73-7	Fluorene	BRL		ug/L	5
120-12-7	Anthracene	BRL		ug/L	5
206-44-0	Fluoranthene	BRL		ug/L	5
129-00-0	Pyrene	BRL		ug/L	5
56-55-3	Benzo[a]anthracene	BRL		ug/L	5
218-01-9	Chrysene	BRL		ug/L	5
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	5
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	5
50-32-8	Benzo[a]pyrene	BRL		ug/L	5
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	5
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	5
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	5

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	40	37	92 %	40 - 140 %
	2-Bromonaphthalene	40	35	86 %	40 - 140 %
Extraction:	Chloro-octadecane	40	27	68 %	40 - 140 %
	ortho-Terphenyl	40	30	75 %	40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Sample extraction performed by separatory funnel technique.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.
◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	EPA 8082	Instrument ID:	GC-6 HP 5890	Instrument ID:	GC-6 HP 5890
QC Batch ID:	PB-2238-F	Extracted:	06-02-06 22:00	Extracted:	06-02-06 22:00
Matrix:	Aqueous	Cleaned Up:	06-05-06 12:00	Cleaned Up:	06-05-06 12:00
Units:	ug/L	Analyzed:	06-06-06 00:23	Analyzed:	06-06-06 00:58
		Analyst:	CRL	Analyst:	CRL

CAS Number	Analyte	LCS					LCS Duplicate							QC Limits	
		Spiked	Measured		Recovery		Spiked	Measured		Recovery		RPD			
			1st Col	2nd Col	1st Col	2nd Col		1st Col	2nd Col	1st Col	2nd Col	1st Col	2nd Col	Spike	RPD
12674-11-2	Aroclor 1016	5.0	4.8	4.6	95%	91%	5.0	4.9	4.7	99%	94%	4 %	3 %	40 - 140%	30 %
11096-82-5	Aroclor 1260	5.0	5.2	5.4	105%	107%	5.0	5.3	5.4	106%	108%	1 %	1 %	40 - 140%	30 %

QC Surrogate Compound	Surrogate Recovery										QC Limits
Tetrachloro-*m*-xylene	0.20	0.17	0.17	86%	85%	0.20	0.18	0.18	91%	88%	30 - 150 %
Decachlorobiphenyl	0.20	0.21	0.21	103%	103%	0.20	0.21	0.21	104%	104%	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8082**
QC Batch ID: **PB-2238-F**
Matrix: **Aqueous**

Instrument ID: **GC-6 HP 5890**
Extracted: **06-02-06 22:00**
Cleaned Up: **06-05-06 12:00**
Analyzed: **06-05-06 23:48**
Analyst: **CRL**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2
37324-23-5	Aroclor 1262 †	BRL		ug/L	0.2
11100-14-4	Aroclor 1268 †	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro-*m*-xylene	0.20	0.17	**83 %**	30 - 150 %
	Decachlorobiphenyl	0.20	0.20	**99 %**	30 - 150 %
Second Column	Tetrachloro-*m*-xylene	0.20	0.16	**81 %**	30 - 150 %
	Decachlorobiphenyl	0.20	0.20	**99 %**	30 - 150 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Non-target analyte. Result is based on a single mid-range calibration standard.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

Category: Metals
Matrix: Aqueous
Units: mg/L

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 6010B	MB-2114-WL	EPA 3010A	06-05-06 08:52	06-06-06 11:24	ICP-2 PE 3300	MWR
LCS	EPA 7470A	MP-1844-WL	EPA 7470A	06-06-06 11:35	06-06-06 16:22	CVAA-1 PE FIMS	MFP
LCSD	EPA 6010B	MB-2114-WL	EPA 3010A	06-05-06 08:52	06-06-06 11:27	ICP-2 PE 3300	MWR
LCSD	EPA 7470A	MP-1844-WL	EPA 7470A	06-06-06 11:35	06-06-06 16:25	CVAA-1 PE FIMS	MFP

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7440-38-2	Arsenic	5.0	5.5	109%	5.0	5.0	100%	4 %	80-120 %	20 %	EPA 6010B
7440-39-3	Barium	5.0	5.3	106%	5.0	4.5	90%	8 %	80-120 %	20 %	EPA 6010B
7440-43-9	Cadmium	1.0	1.1	111%	1.0	1.0	102%	4 %	80-120 %	20 %	EPA 6010B
7440-47-3	Chromium	1.0	1.1	106%	1.0	1.0	97%	4 %	80-120 %	20 %	EPA 6010B
7439-92-1	Lead	5.0	4.9	97%	5.0	4.5	90%	4 %	80-120 %	20 %	EPA 6010B
7439-97-6	Mercury	0.0010	0.0009	92%	0.0010	0.0009	94%	1 %	80-120 %	20 %	EPA 7470A
7782-49-2	Selenium	5.0	5.4	108%	5.0	4.9	98%	5 %	80-120 %	20 %	EPA 6010B
7440-22-4	Silver	1.0	1.1	105%	1.0	0.9	90%	8 %	80-120 %	20 %	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: Metals
Matrix: Aqueous

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B	MB-2114-WB	EPA 3010A	06-05-06 08:52	50 mL	ICP-2 PE 3300	MWR
EPA 7470A	MP-1844-WB	EPA 7470A	06-06-06 11:35	25 mL	CVAA-1 PE FIMS	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-38-2	Arsenic	BRL		mg/L	0.03	1	06-06-06 11:15	EPA 6010B
7440-39-3	Barium	BRL		mg/L	0.2	1	06-06-06 11:15	EPA 6010B
7440-43-9	Cadmium	BRL		mg/L	0.005	1	06-06-06 11:15	EPA 6010B
7440-47-3	Chromium	BRL		mg/L	0.01	1	06-06-06 11:15	EPA 6010B
7439-92-1	Lead	BRL		mg/L	0.005	1	06-08-06 15:09	EPA 6010B
7439-97-6	Mercury	BRL		mg/L	0.0002	1	06-06-06 16:22	EPA 7470A
7782-49-2	Selenium	BRL		mg/L	0.05	1	06-06-06 11:15	EPA 6010B
7440-22-4	Silver	BRL		mg/L	0.007	1	06-06-06 11:15	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
DF Dilution Factor.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	EPA Method 8260B	Instrument ID:	MS-4 HP 6890	Instrument ID:	MS-4 HP 6890
QC Batch ID:	VM4-3556-WL	Analyzed:	06-06-06 08:55	Analyzed:	06-06-06 09:24
Matrix:	Aqueous	Analyst:	KMC	Analyst:	KMC
Units:	ug/L				

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
75-71-8	Dichlorodifluoromethane	10	12	122 %	10	11	108 %	13 %	70 - 130 %	25%
74-87-3	Chloromethane	10	11	106 %	10	9.6	96 %	10 %	70 - 130 %	25%
75-01-4	Vinyl Chloride	10	11	105 %	10	9.6	96 %	9 %	70 - 130 %	25%
74-83-9	Bromomethane	10	10	105 %	10	9.6	96 %	9 %	70 - 130 %	25%
75-00-3	Chloroethane	10	11	106 %	10	9.8	98 %	8 %	70 - 130 %	25%
75-69-4	Trichlorofluoromethane	10	9.7	97 %	10	8.8	88 %	10 %	70 - 130 %	25%
60-29-7	Diethyl Ether	20	20	99 %	20	16	81 %	19 %	70 - 130 %	25%
75-35-4	1,1-Dichloroethene	10	10	103 %	10	9.5	95 %	8 %	70 - 130 %	25%
76-13-1	1,1,2-Trichlorotrifluoroethane	20	19	95 %	20	17	85 %	11 %	70 - 130 %	25%
67-64-1	Acetone	20	17	83 %	20	17	86 %	3 %	70 - 130 %	25%
75-15-0	Carbon Disulfide	20	18	91 %	20	17	84 %	9 %	70 - 130 %	25%
75-09-2	Methylene Chloride	10	9.6	96 %	10	8.8	88 %	9 %	70 - 130 %	25%
156-60-5	*trans*-1,2-Dichloroethene	10	10	103 %	10	9.5	95 %	8 %	70 - 130 %	25%
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	10	11	106 %	10	8.8	88 %	18 %	70 - 130 %	25%
75-34-3	1,1-Dichloroethane	10	10	104 %	10	9.5	95 %	9 %	70 - 130 %	25%
594-20-7	2,2-Dichloropropane	10	11	106 %	10	9.5	95 %	10 %	70 - 130 %	25%
156-59-2	*cis*-1,2-Dichloroethene	10	11	106 %	10	9.7	97 %	9 %	70 - 130 %	25%
78-93-3	2-Butanone (MEK)	20	19	94 %	20	14	72 %	26 % q	70 - 130 %	25%
74-97-5	Bromochloromethane	10	11	108 %	10	9.6	96 %	12 %	70 - 130 %	25%
109-99-9	Tetrahydrofuran (THF)	20	19	97 %	20	16	81 %	18 %	70 - 130 %	25%
67-66-3	Chloroform	10	10	104 %	10	9.2	92 %	12 %	70 - 130 %	25%
71-55-6	1,1,1-Trichloroethane	10	9.6	96 %	10	9.7	97 %	1 %	70 - 130 %	25%
56-23-5	Carbon Tetrachloride	10	8.5	85 %	10	9.7	97 %	13 %	70 - 130 %	25%
563-58-6	1,1-Dichloropropene	10	9.2	92 %	10	10	101 %	10 %	70 - 130 %	25%
71-43-2	Benzene	10	8	80 %	10	9.9	99 %	22 %	70 - 130 %	25%
107-06-2	1,2-Dichloroethane	10	10	101 %	10	9.2	92 %	9 %	70 - 130 %	25%
79-01-6	Trichloroethene	10	10	102 %	10	9.4	94 %	8 %	70 - 130 %	25%
78-87-5	1,2-Dichloropropane	10	10	104 %	10	9.8	98 %	5 %	70 - 130 %	25%
74-95-3	Dibromomethane	10	11	107 %	10	9.4	94 %	13 %	70 - 130 %	25%
75-27-4	Bromodichloromethane	10	11	108 %	10	9.9	99 %	9 %	70 - 130 %	25%
123-91-1	1,4-Dioxane	200	260	129 %	200	220	108 %	18 %	70 - 130 %	25%
10061-01-5	*cis*-1,3-Dichloropropene	10	11	110 %	10	9.8	98 %	11 %	70 - 130 %	25%
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	22	109 %	20	16	82 %	27 % q	70 - 130 %	25%
108-88-3	Toluene	10	10	104 %	10	9.7	97 %	7 %	70 - 130 %	25%
10061-02-6	*trans*-1,3-Dichloropropene	10	11	107 %	10	10	102 %	4 %	70 - 130 %	25%
79-00-5	1,1,2-Trichloroethane	10	11	108 %	10	10	101 %	8 %	70 - 130 %	25%
127-18-4	Tetrachloroethene	10	11	108 %	10	10	102 %	6 %	70 - 130 %	25%
142-28-9	1,3-Dichloropropane	10	11	108 %	10	10	101 %	7 %	70 - 130 %	25%
591-78-6	2-Hexanone	20	20	102 %	20	17	84 %	20 %	70 - 130 %	25%
124-48-1	Dibromochloromethane	10	11	111 %	10	10	101 %	10 %	70 - 130 %	25%
106-93-4	1,2-Dibromoethane (EDB)	10	11	115 %	10	10	105 %	9 %	70 - 130 %	25%
108-90-7	Chlorobenzene	10	10	102 %	10	10	100 %	2 %	70 - 130 %	25%
630-20-6	1,1,1,2-Tetrachloroethane	10	11	109 %	10	11	107 %	2 %	70 - 130 %	25%
100-41-4	Ethylbenzene	10	11	105 %	10	11	106 %	1 %	70 - 130 %	25%
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	20	21	106 %	20	21	105 %	1 %	70 - 130 %	25%
95-47-6	*ortho*-Xylene	10	11	106 %	10	10	103 %	3 %	70 - 130 %	25%
100-42-5	Styrene	10	11	110 %	10	11	108 %	1 %	70 - 130 %	25%
75-25-2	Bromoform	10	12	124 %	10	11	111 %	11 %	70 - 130 %	25%
98-82-8	Isopropylbenzene	10	10	102 %	10	10	102 %	0 %	70 - 130 %	25%

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	EPA Method 8260B	Instrument ID:	MS-4 HP 6890	Instrument ID:	MS-4 HP 6890
QC Batch ID:	VM4-3556-WL	Analyzed:	06-06-06 08:55	Analyzed:	06-06-06 09:24
Matrix:	Aqueous	Analyst:	KMC	Analyst:	KMC
Units:	ug/L				

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
108-86-1	Bromobenzene	10	10	103 %	10	10	104 %	1 %	70 - 130 %	25%
79-34-5	1,1,2,2-Tetrachloroethane	10	10	105 %	10	9.1	91 %	14 %	70 - 130 %	25%
96-18-4	1,2,3-Trichloropropane	10	11	115 %	10	10	103 %	11 %	70 - 130 %	25%
103-65-1	*n*-Propylbenzene	10	10	104 %	10	10	104 %	1 %	70 - 130 %	25%
95-49-8	2-Chlorotoluene	10	10	102 %	10	10	101 %	1 %	70 - 130 %	25%
108-67-8	1,3,5-Trimethylbenzene	10	10	105 %	10	11	105 %	1 %	70 - 130 %	25%
106-43-4	4-Chlorotoluene	10	10	102 %	10	10	101 %	1 %	70 - 130 %	25%
98-06-6	*tert*-Butylbenzene	10	11	105 %	10	10	104 %	1 %	70 - 130 %	25%
95-63-6	1,2,4-Trimethylbenzene	10	10	104 %	10	10	104 %	1 %	70 - 130 %	25%
135-98-8	*sec*-Butylbenzene	10	10	104 %	10	10	103 %	1 %	70 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	10	9.9	99 %	10	9.9	99 %	0 %	70 - 130 %	25%
99-87-6	4-Isopropyltoluene	10	10	103 %	10	11	105 %	2 %	70 - 130 %	25%
106-46-7	1,4-Dichlorobenzene	10	9.9	99 %	10	9.8	98 %	2 %	70 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	10	10	101 %	10	9.8	98 %	2 %	70 - 130 %	25%
104-51-8	*n*-Butylbenzene	10	10	102 %	10	10	103 %	0 %	70 - 130 %	25%
96-12-8	1,2-Dibromo-3-chloropropane	10	11	115 %	10	10	103 %	11 %	70 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	10	11	107 %	10	10	103 %	3 %	70 - 130 %	25%
87-68-3	Hexachlorobutadiene	10	11	107 %	10	11	106 %	0 %	70 - 130 %	25%
91-20-3	Naphthalene	10	11	114 %	10	10	105 %	9 %	70 - 130 %	25%
87-61-6	1,2,3-Trichlorobenzene	10	11	111 %	10	10	103 %	8 %	70 - 130 %	25%
75-65-0	*tert*-Butyl Alcohol (TBA)	200	210	104 %	200	180	88 %	17 %	70 - 130 %	25%
108-20-3	Di-isopropyl Ether (DIPE)	10	8.8	88 %	10	8	80 %	10 %	70 - 130 %	25%
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	10	9	90 %	10	8.5	85 %	6 %	70 - 130 %	25%
994-05-8	*tert*-Amyl Methyl Ether (TAME)	10	8.7	87 %	10	8.1	81 %	7 %	70 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Dibromofluoromethane	10	8.9	89 %	10	8.5	85 %		70 - 130 %
1,2-Dichloroethane-d_4	10	8.5	85 %	10	9.3	93 %		70 - 130 %
Toluene-d_8	10	9.1	91 %	10	8.4	84 %		70 - 130 %
4-Bromofluorobenzene	10	8.5	85 %	10	8.4	84 %		70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample preparation performed by EPA Method 5030B.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

q Recovery outside recommended limits.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: EPA Method 8260B
QC Batch ID: VM4-3556-WB
Matrix: Aqueous

Instrument ID: MS-4 HP 6890
Analyzed: 06-06-06 09:54
Analyst: KMC

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	2.5
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5
108-90-7	Chlorobenzene	BRL		ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.5
100-41-4	Ethylbenzene	BRL		ug/L	0.5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL		ug/L	0.5
95-47-6	*ortho*-Xylene	BRL		ug/L	0.5
100-42-5	Styrene	BRL		ug/L	0.5
75-25-2	Bromoform	BRL		ug/L	0.5
98-82-8	Isopropylbenzene	BRL		ug/L	0.5

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: EPA Method 8260B
QC Batch ID: VM4-3556-WB
Matrix: Aqueous

Instrument ID: MS-4 HP 6890
Analyzed: 06-06-06 09:54
Analyst: KMC

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
103-65-1	*n*-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	*tert*-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	*sec*-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	*n*-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	0.5
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	20
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	*tert*-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	8.6	86 %	70 - 130 %
1,2-Dichloroethane-d_4	10	9	90 %	70 - 130 %
Toluene-d_8	10	8.5	85 %	70 - 130 %
4-Bromofluorobenzene	10	8.7	87 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states. Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT, Department of Health Services, PH-0586

Categories: Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental_Lab/OutStateLabList.htm

FLORIDA, Department of Health, Bureau of Laboratories, E87643

Categories: SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE, Department of Human Services, MA103

Categories: Drinking Water and Wastewater
http://www.state.me.us/dhs/eng/water/Compliance.htm

MASSACHUSETTS, Department of Environmental Protection, M-MA-103

Categories: Potable Water and Non-Potable Water
http://www.state.ma.us/dep/bspt/wes/files/certlabs.pdf

NEW HAMPSHIRE, Department of Environmental Services, 202703

Categories: Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NEW YORK, Department of Health, 11754

Categories: Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

PENNSYLVANIA, Department of Environmental Protection, 68-665

Environmental Laboratory Registration (Non-drinking water and Non-wastewater)
http://www.dep.state.pa.us/Labs/Registered/

RHODE ISLAND, Department of Health, 54

Categories: Surface Water, Air, Wastewater, Potable Water, Sewage
http://www.healthri.org/labs/labsCT_MA.htm

U.S. Department of Agriculture, Soil Permit, S-53921

Foreign soil import permit

VERMONT, Department of Environmental Conservation, Water Supply Division

Category: Drinking Water
http://www.vermontdrinkingwater.org/wsops/labtable.PDF

GROUNDWATER ANALYTICAL

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June 26, 2006

Mr. James Luker
Gale Associates, Inc.
163 Libbey Parkway
Weymouth, MA 02189

LABORATORY REPORT

Project: **Spraque School/756211**
Lab ID: **95935**
Received: **06-19-06**

Dear Jim:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/jll
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Spraque School/756211**
Client: **Gale Associates, Inc.**
Lab ID: **95935**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **06-19-06**

Temperature: **2.0'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
95935-1	MW-5		Aqueous	6/19/06 10:20	EPA 6010B Pb Total				
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship		
C739440	500 mL Plastic	Proline	BX20047	None	n/a	n/a	02-17-06		

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Data Certification

Project: Spraque School/756211
Client: Gale Associates, Inc.

Lab ID: 95935
Received: 06-19-06 20:30

MA DEP Compendium of Analytical Methods						
Project Location: n/a				MA DEP RTN: n/a		
This Form provides certifications for the following data set:						
EPA 6010B: 95935-01						
Sample Matrices:	Groundwater (X)	Soil/Sediment ( )	Drinking Water ( )	Other ( )		
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B (X)	7470A/1A ( )	
	8270C ( )	8081A ( )	VPH ( )	6020 ( )	9012A[2] ( )	
As specified in MA DEP Compendium of Analytical Methods:	8082 ( )	8021B ( )	EPH ( )	7000 S[3] ( )	Other ( )	
(check all that apply)	1- List Release Tracking Number (RTN), if known.					
	2- SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method.					
	3- S- SW-846 Methods 7000 Series. List individual method and analyte.					

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	n/a

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	Yes
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	No

All No answers are addressed in the attached Project Narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:

Printed Name: Eric H. Jensen

Position: Operations Manager

Date: 06-26-06

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	MW-5	Matrix:	Aqueous
Project:	Spraque School/756211	Container:	500 mL Plastic
Client:	Gale Associates, Inc.	Preservation:	HNO3 / Cool
Laboratory ID:	95935-01	Preserved:	06-19-06 10:20
Sampled:	06-19-06 10:20		
Received:	06-19-06 20:30		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B[1]	MB-2136-W	EPA 3010A	06-20-06 09:05	50 mL	ICP-2 PE 3300	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead, Total	0.012		mg/L	0.005	1	06-21-06 15:24	EPA 6010B[1]

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

DF Dilution Factor.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Project Narrative

Project: **Spraque School/756211**
Client: **Gale Associates, Inc.**

Lab ID: **95935**
Received: **06-19-06 20:30**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1. EPA 6010B Note: Sample 95935-01. Sample was analyzed for selected target analytes, as requested by client.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 210518

Project Name: Sprague School	Firm: Gale Associates, Inc
Project Number: 756211	Address: 163 Libbey Parkway
Sampler Name: KTD/HPL	City / State / Zip: Weymouth MA 02189
Project Manager: JAL	Telephone: 781-335-6465

TURNAROUND

☐ STANDARD (10 Business Days)
☒ PRIORITY (5 Business Days)
☐ RUSH (RAN-) (Rush requires Rush Authorization Number)
☐ Please Email to: KTD@gainc.com
☐ Please FAX to:

BILLING

☒ Purchase Order No.: 2064
☐ Third Party Billing:
☐ GWA Quote:

INSTRUCTIONS: Use separate line for each container (except replicates).

ANALYSIS REQUEST

Sampling DATE	TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
6/19	10:20	MW-5	Groundwater ✓	Grab ✓	✓	✓	No ☒	

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

☒ YES ☐ NO MCP Data Certification required.
☐ YES ☒ NO MCP Drinking Water Sample Included. (Require collection of contingent duplicate sample. Trip blanks ☒ also required if VOA sample collected).
Signature: [signature]

DATA QUALITY OBJECTIVES

Regulatory Program

State: ☐ CT ☐ ME ☒ MA ☐ NH ☐ NY ☐ RI ☐ VT ☐
Standard: ☐ MCP GW-1/S-1 ☒ MCP GW-2/S-2 ☐ NY STARS ☐ Drinking Water ☐ Wastewater ☐ Waste Disposal ☐ Dredge Material ☐
Deliverables: ☐ PWS Form ☐ MWRA ☐

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. Each MS, MSD and Sample Duplicate requires an additional sample aliquot.

Project Specific QC Required: ☐ Sample Duplicate ☐ Matrix Spike ☐ Matrix Spike Duplicate
Selection of QC Sample: ☐ Please use sample:

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by	Date	Time	Received by
Sampler: KTD [signature]	12:30	6/19	[signature]
[signature]	6/19/04	2030	[signature]
			Received by Laboratory:

Receipt Temperature: ☐ Ice ☐ Refrigerated 2-6°C Recommended 2
Container Count: 1
Shipping/Airbill Number:
Custody Seal Number:

Method of Shipment: ☒ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐

GROUNDWATER ANALYTICAL

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

Category: Metals
Matrix: Aqueous
Units: mg/L

Sample Type	Method	QC Batch ID	Prep Method	Prepared	Analyzed	Instrument ID	Analyst
LCS	EPA 6010B	MB-2136-WL	EPA 3010A	06-20-06 09:05	06-21-06 15:00	ICP-2 PE 3300	MWR
LCSD	EPA 6010B	MB-2136-WL	EPA 3010A	06-20-06 09:05	06-21-06 15:03	ICP-2 PE 3300	MWR

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits		Method
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	LCS	RPD	
7439-92-1	Lead	5.0	4.7	93%	5.0	4.4	87%	3 %	80-120 %	20 %	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: Metals
Matrix: Aqueous

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 6010B	MB-2136-WB	EPA 3010A	06-20-06 09:05	50 mL	ICP-2 PE 3300	MWR

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7439-92-1	Lead	BRL		mg/L	0.005	1	06-21-06 14:57	EPA 6010B

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
DF Dilution Factor.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states. Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT, Department of Health Services, PH-0586

Categories: Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental_Lab/OutStateLabList.htm

FLORIDA, Department of Health, Bureau of Laboratories, E87643

Categories: SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE, Department of Human Services, MA103

Categories: Drinking Water and Wastewater
http://www.state.me.us/dhs/eng/water/Compliance.htm

MASSACHUSETTS, Department of Environmental Protection, M-MA-103

Categories: Potable Water and Non-Potable Water
http://www.state.ma.us/dep/bspt/wes/files/certlabs.pdf

NEW HAMPSHIRE, Department of Environmental Services, 202703

Categories: Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NEW YORK, Department of Health, 11754

Categories: Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

PENNSYLVANIA, Department of Environmental Protection, 68-665

Environmental Laboratory Registration (Non-drinking water and Non-wastewater)
http://www.dep.state.pa.us/Labs/Registered/

RHODE ISLAND, Department of Health, 54

Categories: Surface Water, Air, Wastewater, Potable Water, Sewage
http://www.healthri.org/labs/labsCT_MA.htm

U.S. Department of Agriculture, Soil Permit, S-53921

Foreign soil import permit

VERMONT, Department of Environmental Conservation, Water Supply Division

Category: Drinking Water
http://www.vermontdrinkingwater.org/wsops/labtable.PDF

NOTES

1. LANDFILL AND DISPOSAL SITE BOUNDARY ESTIMATED AREA ARE BASED ON GEOPHYSICAL AND SUBSURFACE INVESTIGATIONS COLLECTED BY GEOPROBE BORINGS ON JANUARY 28, 2003 AND JULY 12, 2005, MONITORING WELL BORINGS INSTALLED ON MARCH 14, 2003, AND TEST PIT ACTIVITIES CONDUCTED ON MARCH 25, 2003 AND JULY 12, 2005. AND HISTORICAL INFORMATION. LOCATIONS ARE APPROXIMATE ONLY.
2. ELEVATIONS SURVEYED BY GALE ASSOCIATES 6/19/06.

TEST PIT (INSTALLED 03/25/03)

TEST PIT (INSTALLED7/12/05)

GB-8 BORING (INSTALLED 01/28/03 & 7/12/05)

GMW-3 MONITORING WELL (INSTALLED 03/14/03 & 5/26/06)

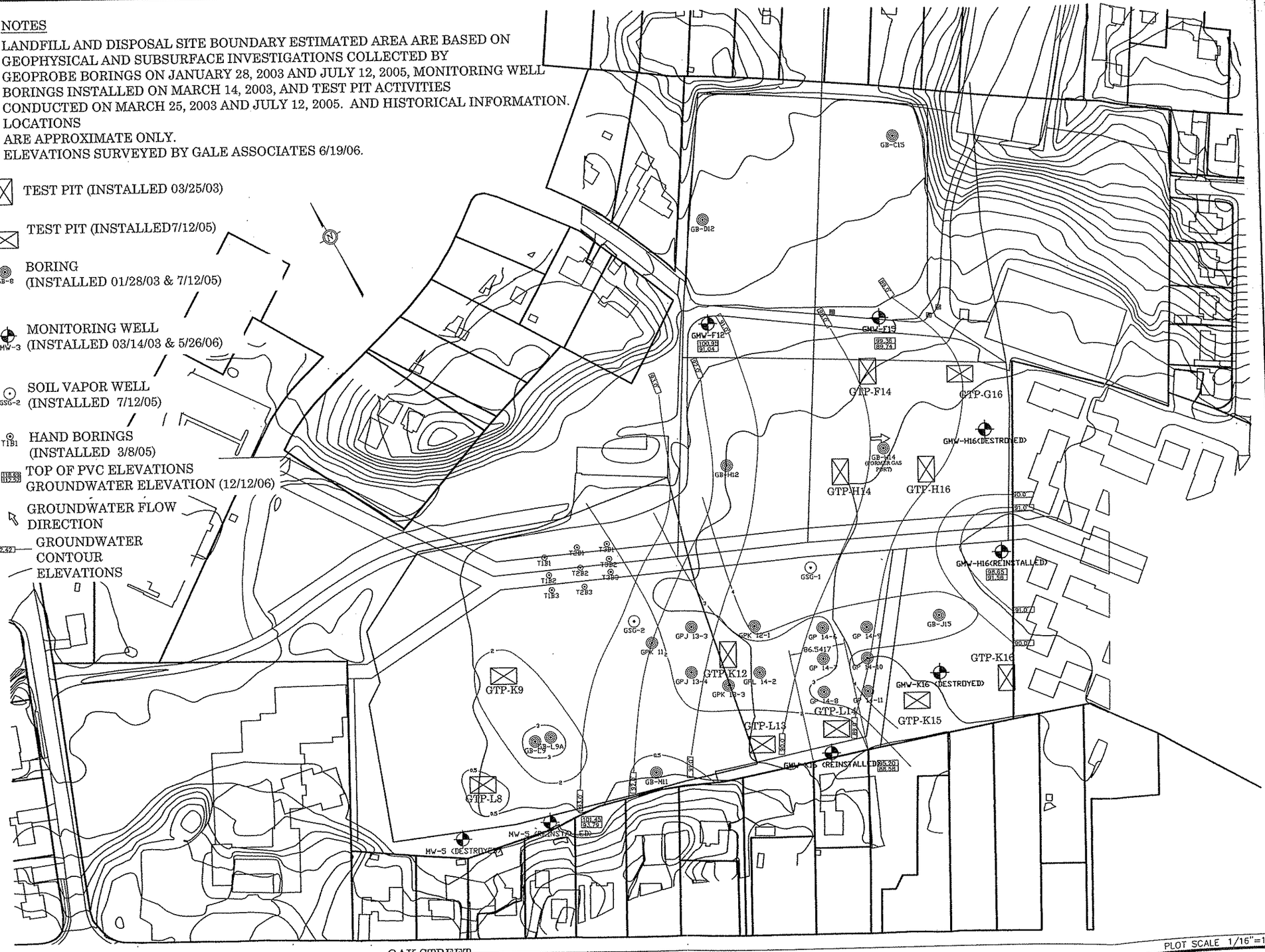
GSG-2 SOIL VAPOR WELL (INSTALLED 7/12/05)

T1B1 HAND BORINGS (INSTALLED 3/8/05)

115.89 / 112.59 TOP OF PVC ELEVATIONS GROUNDWATER ELEVATION (12/12/06)

GROUNDWATER FLOW DIRECTION

92.42 GROUNDWATER CONTOUR ELEVATIONS



PLOT SCALE 1/16"=1'-0"

GALE

Gale Associates, Inc.
Engineers Architects Planners
163 LIBBEY PARKWAY | WEYMOUTH, MA
02189P 781.335.6465 F
781.335.6467www.galeinc.com
Boston Baltimore Orlando San Francisco

PROJECT
SPRAGUE SCHOOL ATHLETIC FIELDS
WELLESLEY, MASSACHUSETTS

OWNER
TOWN OF WELLESLEY
WELLESLEY, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	756211
CADD FILE	Schematic Site 1
DESIGNED BY	CWM
DRAWN BY	KTD
CHECKED BY	JAL
DATE	12/12/06
DRAWING SCALE	1"=150'

GRAPHIC SCALE

SHEET TITLE

MONITORING WELL LOCATIONS AND GROUNDWATER FLOW/ELEVATIONS

DRAWING NO.

FIGURE 2

Table 1
Historical Summary of Groundwater Sampling Results
Sprague School Athletic Fields
Wellesley, MA
JN 756211

Parameter	MCP Method One GW-2 Standard	MCP Method One GW-3 Standard	Sample Designation: GMW-F12[5] 3/21/2003	GMW-F12 7/21/2005	GMW-F15[5] 3/21/2003	GMW-F15 7/21/2005	MW-5 6/2/2006	MW-5 6/19/2006	MW-5 10/13/2006	MW-5 12/12/2006	GMW-H16[6] 3/21/2003	GMW-H16 4/10/2003	GMW-H16 6/2/2006	GMW-H16 10/13/2006	GMW-H16 12/12/2006	GMW-K16[6] 3/21/2003	GMW-K16 4/10/2003	GMW-K16 6/2/2006	GMW-K16 10/13/2006	GMW-K16 12/12/2006
EPH (ug/l)																				
C9 -C18 aliphatics	1,000	20,000	<500	NA	NA	<530	<530	NA	NA	NA	<500	NA	<500	NA	NA	<500	NA	<530	NA	NA
C19 -C36 aliphatics	NA	20,000	<500	NA	NA	<530	<530	NA	NA	NA	<500	NA	<500	NA	NA	<500	NA	<530	NA	NA
C11 - C22 aromatics	50,000	30,000	160	NA	NA	<160	<160	NA	NA	NA	<160	NA	<150	NA	NA	<160	NA	<160	NA	NA
PAHs (ug/l)																				
Naphthalene	1,000	20,000	<10	NA	NA	<0.5	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
2-Methylnaphthalene	10,000	3,000	<5	NA	NA	<0.5	<0.5	NA	NA	NA	<5	NA	<0.5	NA	NA	<5	NA	<0.5	NA	NA
Acenaphthylene	NS	3,000	<10	NA	NA	<0.5	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Acenaphthene	NS	5,000	<10	NA	NA	<0.5	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Fluorene	NS	3,000	<10	NA	NA	<0.5	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Phenanthrene	NS	50	<10	NA	NA	<0.5	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Anthracene	NS	3,000	<10	NA	NA	<0.5	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Fluoranthene	NS	200	<10	NA	NA	<0.5	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Pyrene	NS	20	<10	NA	NA	<0.5	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Benzo[a]anthracene	NS	1,000	<10	NA	NA	<0.1	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Chrysene	NS	3,000	<10	NA	NA	<0.1	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Benzo[b]fluoranthene	NS	400	<10	NA	NA	<0.1	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Benzo[k]fluoranthene	NS	100	<10	NA	NA	<0.1	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Benzo[a]pyrene	NS	500	<10	NA	NA	<0.1	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Indeno[1,2,3-c,d]pyrene	NS	100	<10	NA	NA	<0.1	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Dibenzo[a,h,]anthracene	NS	40	<10	NA	NA	<0.1	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
Benzo[g,h,I]pyrelene	NS	3,000	<10	NA	NA	<0.1	<0.5	NA	NA	NA	<10	NA	<0.5	NA	NA	<10	NA	<0.5	NA	NA
VOCs (ug/l)																				
Tolulene	6,000	50,000	2	2	<0.5	<0.5	<0.5	NA	NA	NA	<0.5	NA	<0.5	NA	NA	<0.5	NA	<0.5	NA	NA
All others	Various	Various	BGWS	BRL	BRL	BRL	BRL	NA	NA	NA	BGWS	NA	BRL	NA	NA	BRL	NA	BRL	NA	NA
PCB's (ug/l)																				
Aroclor 1016	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Aroclor 1221	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Aroclor 1232	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Aroclor 1242	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Aroclor 1248	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Aroclor 1254	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Aroclor 1260	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Aroclor 1262	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Aroclor 1268	NS	0.3	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA	NA
Trace Metals (ug/l)																				
Arsenic, Dissolved	NS	900	10	<10	NA	<10	<30	NA	NA	NA	<10	<10	<30	NA	NA	400	<10	<30	NA	NA
Barium, Dissolved	NS	50,000	500	<200	NA	<200	<200	NA	NA	NA	800	<200	<200	NA	NA	2700	<200	<200	NA	NA
Cadmium, Dissolved	NS	4	<5	<5	NA	<5	<4	NA	NA	NA	**32**	<5	<4	NA	NA	<5	<5	<4	NA	NA
Chromium, Dissolved	NS	300	40	<10	NA	<10	<10	NA	NA	NA	40	<10	<10	NA	NA	30	<10	<10	NA	NA
Lead, Dissolved	NS	10	**28**	<5	NA	<5	**10**	**12**	<5	**14**	**510**	<5	7	<5	<5	**52**	<5	9	<5	<5
Mercury, Dissolved	NS	20	<0.2	<0.2	NA	<0.2	<0.2	NA	NA	NA	1.9	<0.2	<0.2	NA	NA	0.6	<0.2	<0.2	NA	NA
Selenium, Dissolved	NS	100	<50	<50	NA	<50	<50	NA	NA	NA	<50	<50	<50	NA	NA	<50	<50	<50	NA	NA
Silver, Dissolved	NS	7	<7	<7	NA	<7	<7	NA	NA	NA	<7	<7	<7	NA	NA	<7	<7	<7	NA	NA

Notes:
1. (1) Massachusetts Contingency Plan (MCP) 310 CMR 40.000
2. < denotes Below Reporting Limit (BRL)
3. NA denotes Not Analyzed
4. NS denotes No Standard
5. BGWS denotes below the Method 1 GW-2 and GW-3 Standards
6. (6) April 2003 RCRA 8 Metal analysis were unfiltered.

APPENDIX F

Sprague Field Prior to Construction

Crushed gravel for artificial turf field

Geotextile Fabric cover with crushed stone

Geotextile fabric and crushed gravel

GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** 50 Kingsbury St

SITE LOCATION: Sprague Field Wellesley, MA DATE: 7/7/08

WEATHER: Temp: 80 Conditions: cloudy

Inspector: LT

Arrived On Site: 7:00 Depart Site 3:00 Travel Time:. 2½ hours

Subcontractor/Equipment Operating: Green Acres

Visitors to Site: Steve Fader (engineer for town)

Personnel and Equipment: 2 excavators in remediation area, 1 laborer on ground

Work Activities: (Contaminated Stockpile = 105' X 12') 94' X

Met w/ Jim, met Joe - left @ 7:15 to get camera, back @ 7:40

→ Material stockpiled to south of remediation area is contaminated

7:00 began work along southern portion of remediation area - moving north toward school - skimming off inches, looks like clean loam

→ 8:15 began on other side of pile - encountered some landfill mat - told excavator to lift up w/ dozer & skim less off

→ 9:45 - 2 TEREX trucks mobilized - excavator began loading them w/ material from clean pile

PREPARED BY: _____
(Signature)
Name: Liz Tustin
Title: Env. Scientist

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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: 58 Kingsbury St DATE: 7/7/08 pg 2

WEATHER: Temp: 80°F Conditions: Cloudy

Inspector: LT

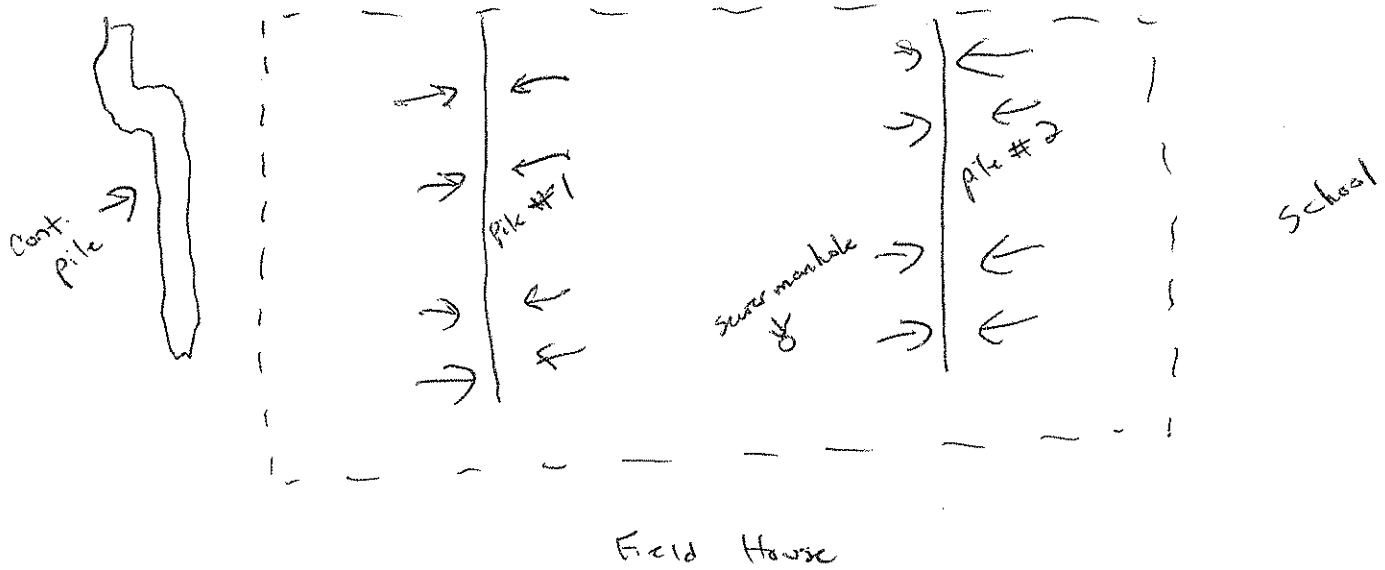
Arrived On Site: 700 Depart Site 300 Travel Time:. 2½ hrs

Subcontractor/Equipment Operating: Green Acres

Visitors to Site:

Personnel and Equipment:

Work Activities: pushing loam & grass into piles w/ excavator



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Title: Env. Scientist

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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: 50 Kingsbury St DATE: 7/8/08

WEATHER: Temp: 80-85 Conditions: sunny, hot, humid

Inspector: LT

Arrived On Site: 7^00 Depart Site 3^00 Travel Time:. 1 hour

Subcontractor/Equipment Operating: Green Acres

Visitors to Site: Jim Lukes, Steve Feder, rep from Gale

Personnel and Equipment: 12 pieces equipment

Work Activities: exavated area in northern section of remediation area, grading with soil that was excavated (okayed by Jim L. and the town), Town workers picked up timbers near school driveway, moved dirt from pile # 1 (excavated) to stockpile area for screening,

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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: 50 Kingsbury St DATE: 7/9/08

WEATHER: Temp: 85-90F Conditions: hot, humid, mostly sunny

Inspector: LT

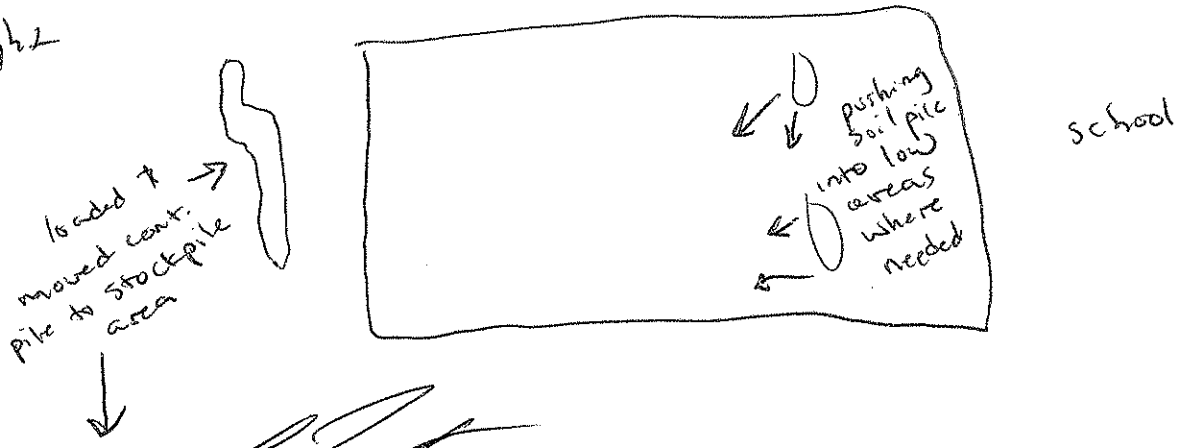
Arrived On Site: 7 00 Depart Site 3 15 Travel Time:. 2 1/2 hours

Subcontractor/Equipment Operating: Green Acres

Visitors to Site:

Personnel and Equipment: 12 pieces

Work Activities: Moved contaminated pile to stockpile area - segregated on poly sheet, grading in north area by school, dust monitoring, collected soil samples with Marvin (GZA), covered pile before leaving for the night



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: **SITE:**

SITE LOCATION: _ DATE: 7/10/08

WEATHER: Temp: 80°F Conditions: sunny, breezy

Inspector: LT

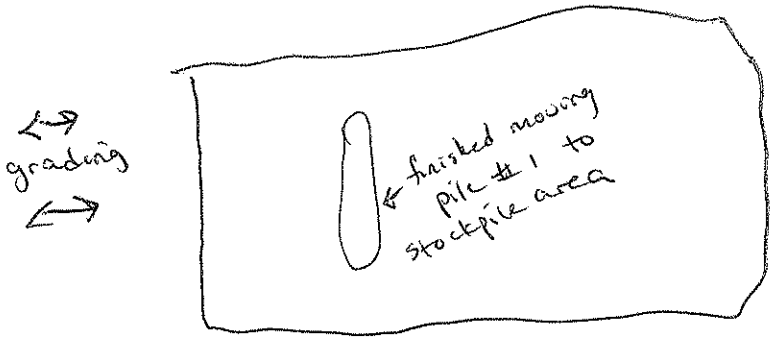
Arrived On Site: 715 Depart Site 300 Travel Time:. 2½ hours

Subcontractor/Equipment Operating: Green Acres

Visitors to Site:

Personnel and Equipment:

Work Activities: Grading finished in remediation area, moved rest of pile # 1 to stockpile area for screening, grading & building outside remediation area



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: 50 Kingsbury St DATE: 7/11/08

WEATHER: Temp: 80°F Conditions: sunny

Inspector: LT

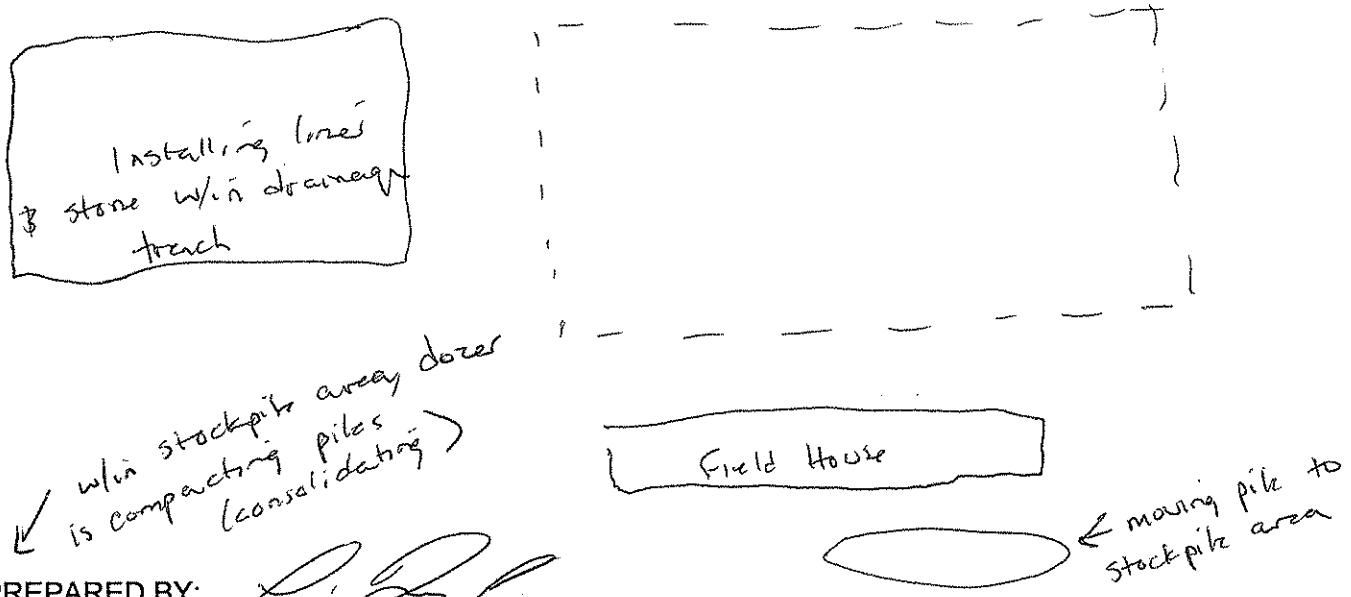
Arrived On Site: 1:40 Depart Site 2:15 Travel Time:. 2 1/2

Subcontractor/Equipment Operating: Green Acres

Visitors to Site:

Personnel and Equipment:

Work Activities: Site visit just to check in, no work being done in remediation area



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: 50 Kingsbury St DATE: 7/16/08

WEATHER: Temp: 80° F Conditions:

Inspector: LT

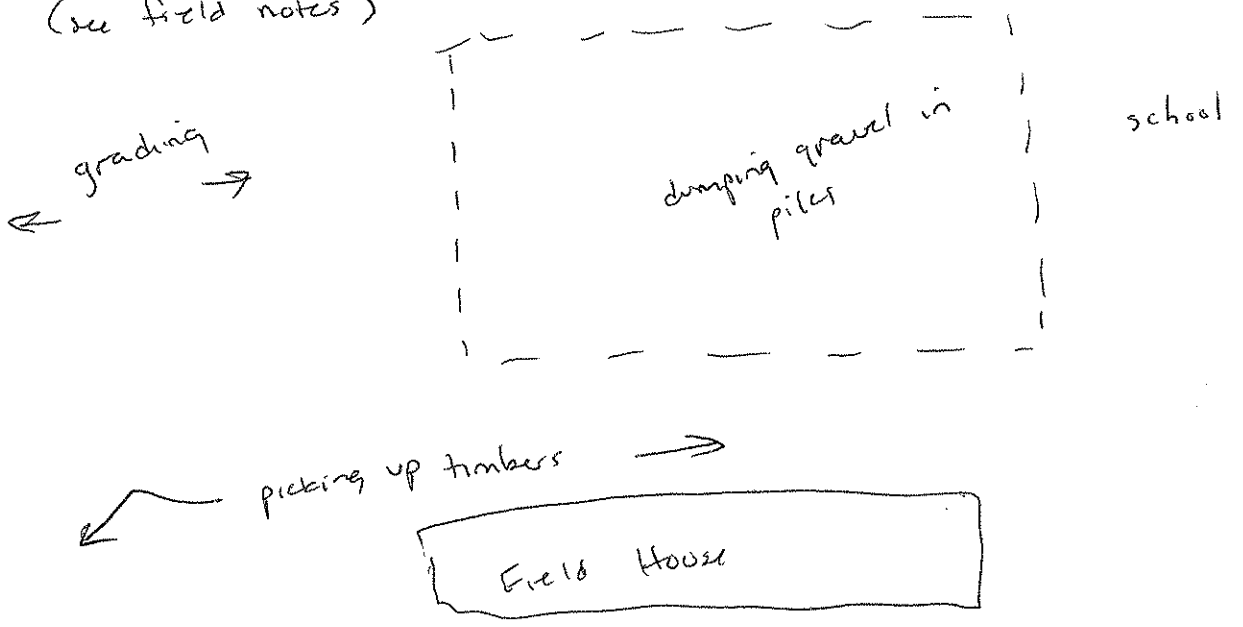
Arrived On Site: 9:25 Depart Site ~~9:25~~ 11:00 Travel Time:. 2½ hrs

Subcontractor/Equipment Operating: Green Acres

Visitors to Site:

Personnel and Equipment:

Work Activities: Site visit only - contaminated pile has been added to (see field notes)



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: **SITE:**

SITE LOCATION: Sprague Field – Wellesley, MA DATE: 7/17/08

WEATHER: Temp: 80-90°F Conditions: sunny, dry

Inspector: CT

Arrived On Site: 7:05 Depart Site 2:55 Travel Time:. 2½ hrs.

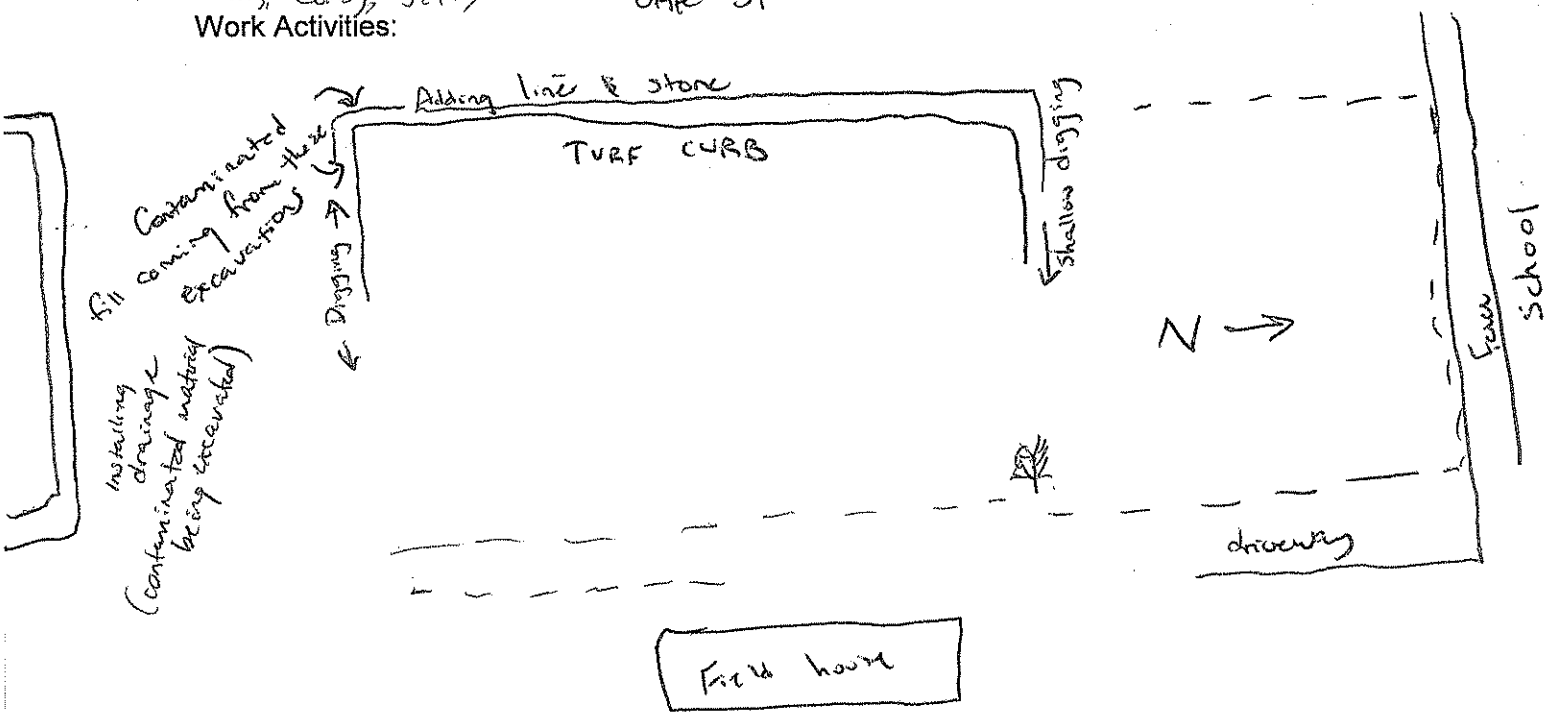
Subcontractor/Equipment Operating: Green Acres

Visitors to Site: Dorchester Tire Service (to fix tires on water truck)

Personnel and Equipment: 2 excavators, 2 big dumps, roller,

Tony, Corey, Jeff,

Work Activities: OAK ST



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: **SITE:**

SITE LOCATION: Sprague Field Wellesley, MA DATE: 7/18/08

WEATHER: Temp: 80-90°F Conditions: Sunny, hot, dry

Inspector: LT

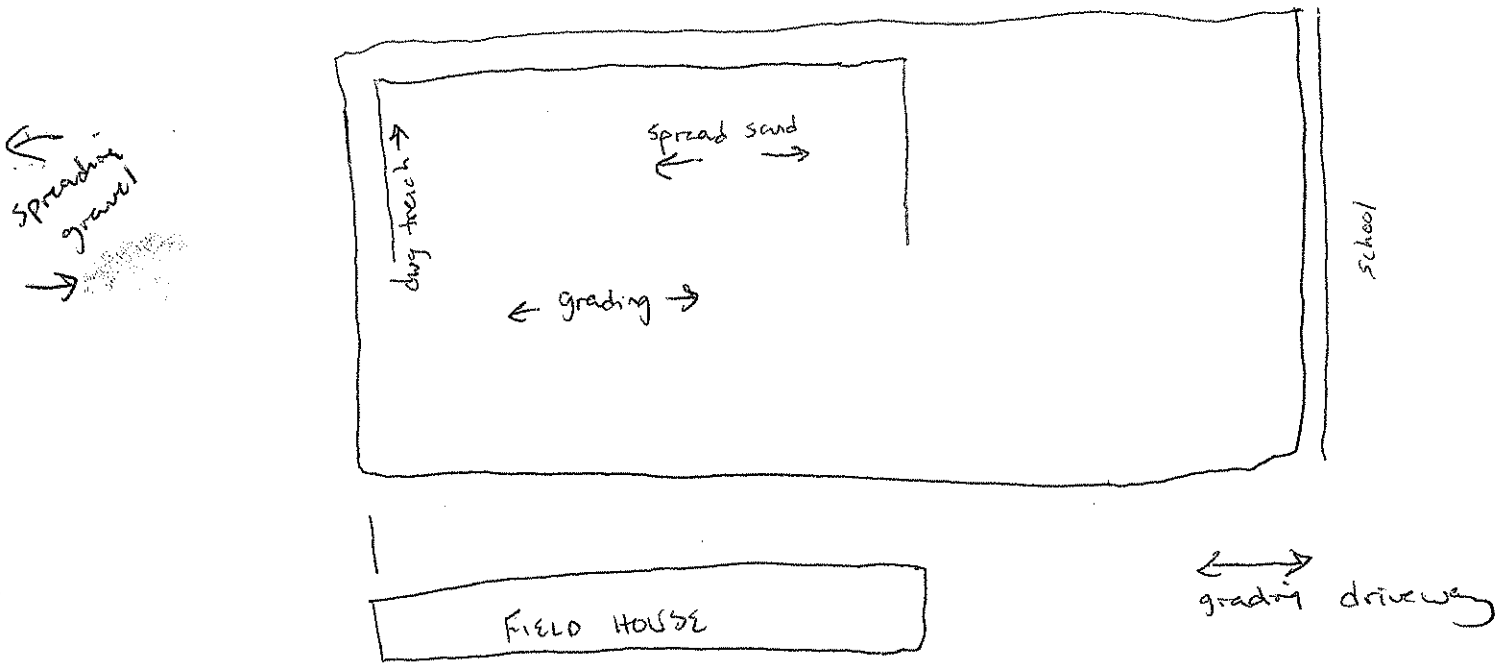
Arrived On Site: 7:00 Depart Site 3:00 Travel Time:. 2 ½ hours

Subcontractor/Equipment Operating: Green Acres

Visitors to Site:

Personnel and Equipment:

Work Activities:



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: 50 Kingsbury St DATE: 7/21/08

WEATHER: Temp: 80-85°F Conditions: overcast, muggy, fields very wet & muddy in the morning

Inspector: LT

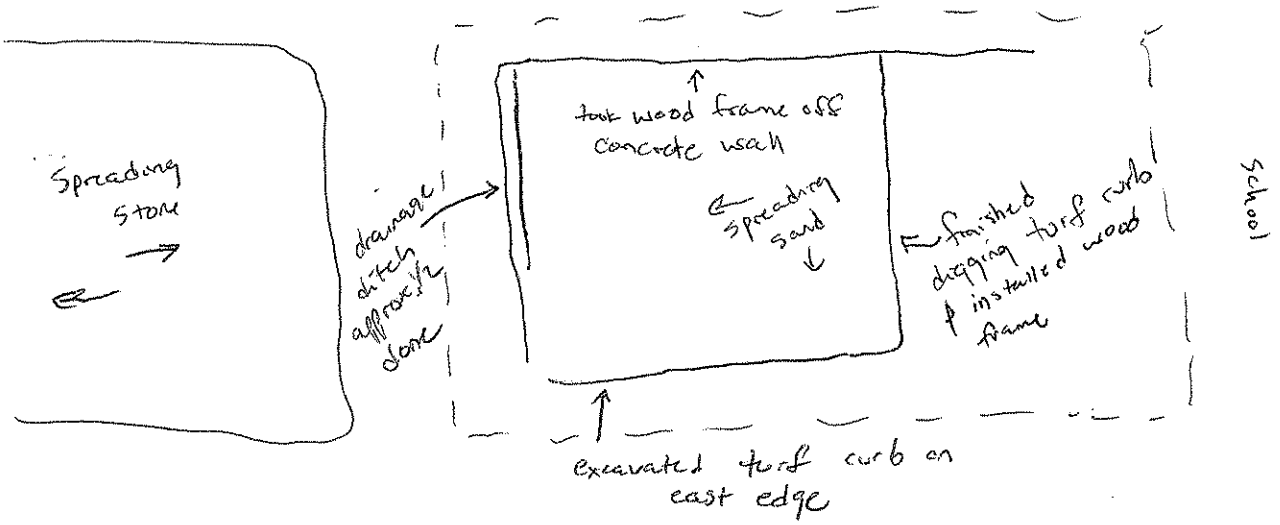
Arrived On Site: 7:00 Depart Site Travel Time:. 2½ hours

Subcontractor/Equipment Operating: Green Acres

Visitors to Site: Systems Contracting, Steve Fader

Personnel and Equipment:

Work Activities:



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: _ 50 Kingsbury St DATE: 7/22/08

WEATHER: Temp: Conditions:

Inspector: LT

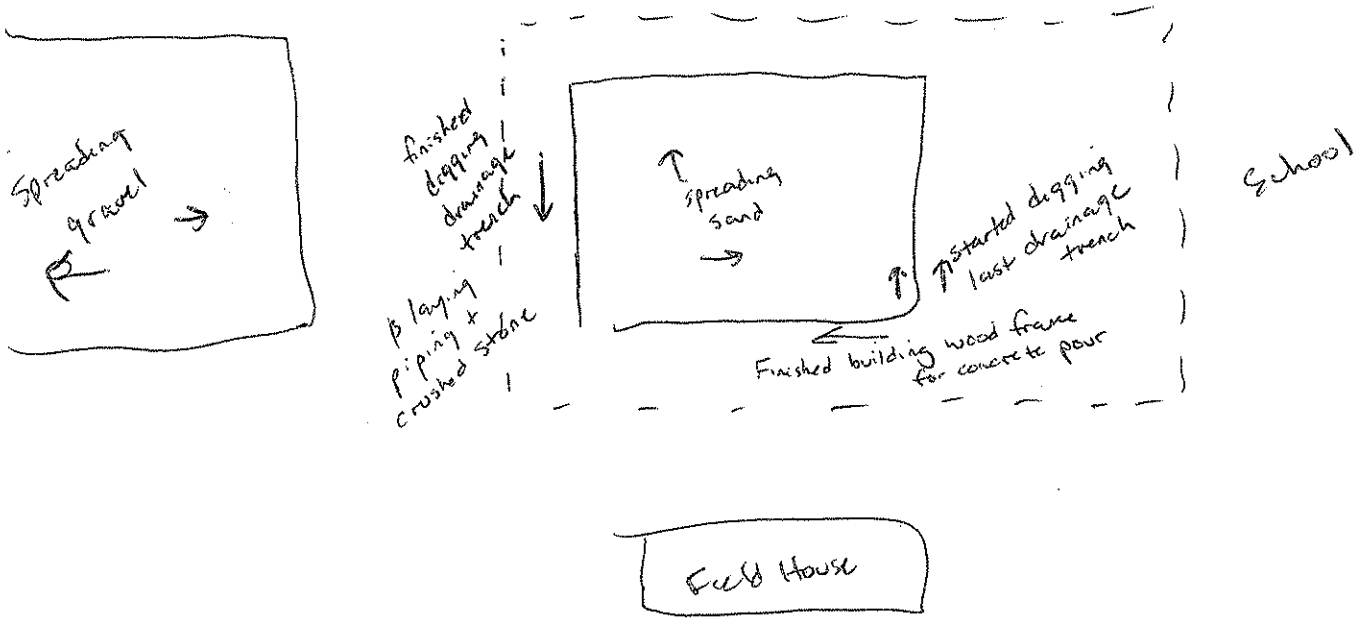
Arrived On Site: 6 50 Depart Site Travel Time:. 2

Subcontractor/Equipment Operating: Green Acres

Visitors to Site: Town Engineers

Personnel and Equipment:

Work Activities:



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: _ 50 Kingsbury St DATE: 7/23/08

WEATHER: Temp: 75° Conditions: overcast, drizzle

Inspector: LT

Arrived On Site: 7⁰⁰ Depart Site Travel Time:. 2½ hrs

Subcontractor/Equipment Operating: Green Acres

Visitors to Site: Town Engineer, town workers (to access field house equip.)

Personnel and Equipment: 1 large dump, 2 dozers, 2 bobcats, 2 excavators, roller, several personal pickups, several tractor trailers in & out of site

Work Activities:

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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: _ 50 Kingsbury St DATE: 7/25/08

WEATHER: Temp: 75-80°F Conditions: Sunny

Inspector: L Tustin

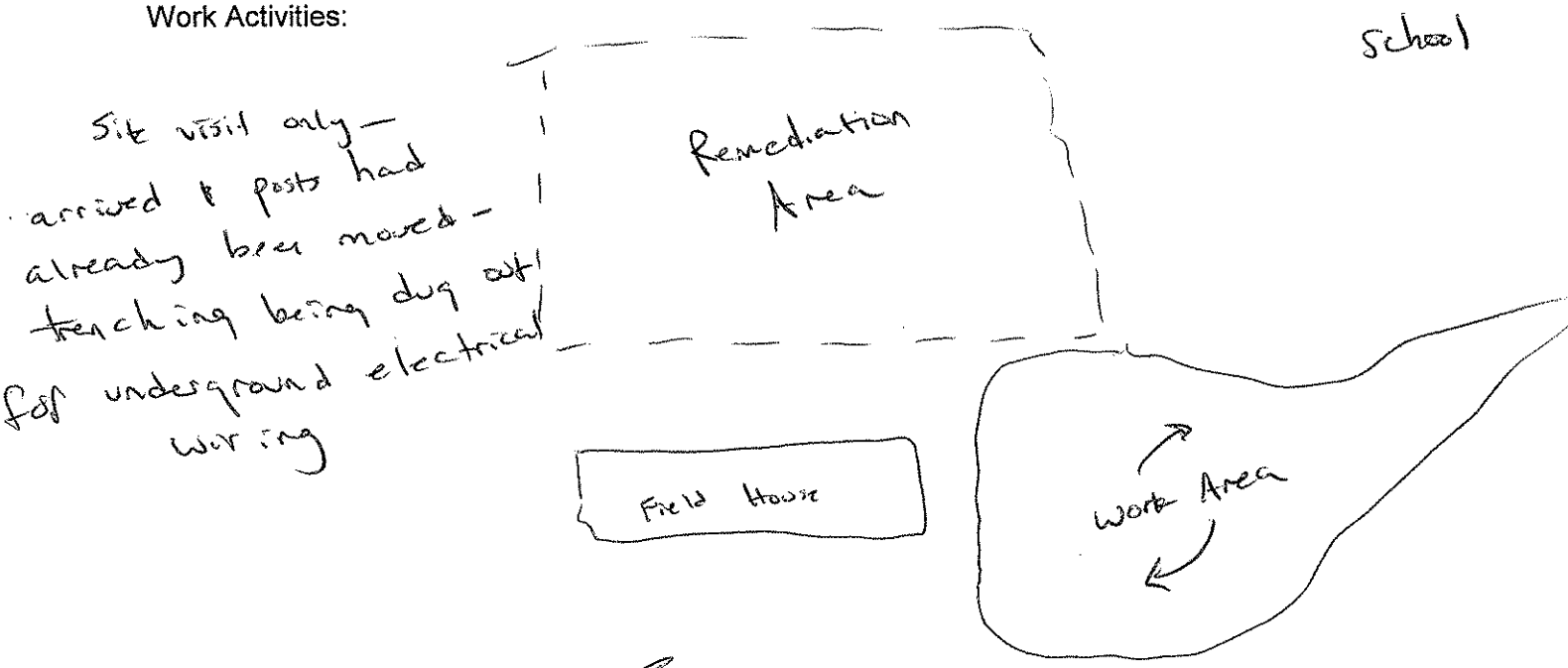
Arrived On Site: 12^30 Depart Site 1^15 Travel Time:. 2½ hrs

Subcontractor/Equipment Operating: Green Acres

Visitors to Site: Electrical Contractor

Personnel and Equipment: excavator bulldozer, electrical contractor

Work Activities:



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(Signature)
Name:
Title:

GSE did not observe any sign of landfill material within areas already executed, or during excavation activities that occurred while GSE was present on-site

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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: 50 Kingsbury St DATE: 8/1/08

WEATHER: Temp: 85°F Conditions: mostly sunny

Inspector: L Tustin

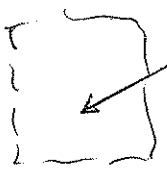
Arrived On Site: 7^40 Depart Site 12^30 Travel Time:. 2 hrs.

Subcontractor/Equipment Operating: Green Acres

Visitors to Site: GZA, Town engineers,

Personnel and Equipment: big dump, normal dump, 1 excavator, 1 loader, 1 bulldozer, 1 roller, personal trucks

Work Activities:



excavated area of what appears to be landfill material (glass & visible solid waste) from surface & moved to contaminated pile

Moved pile on bare ground onto plastic sheeting, Completely covered contaminated material w/ plastic

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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: **SITE:**

SITE LOCATION: _ DATE: 8/5/08

WEATHER: Temp: Conditions:

Inspector:

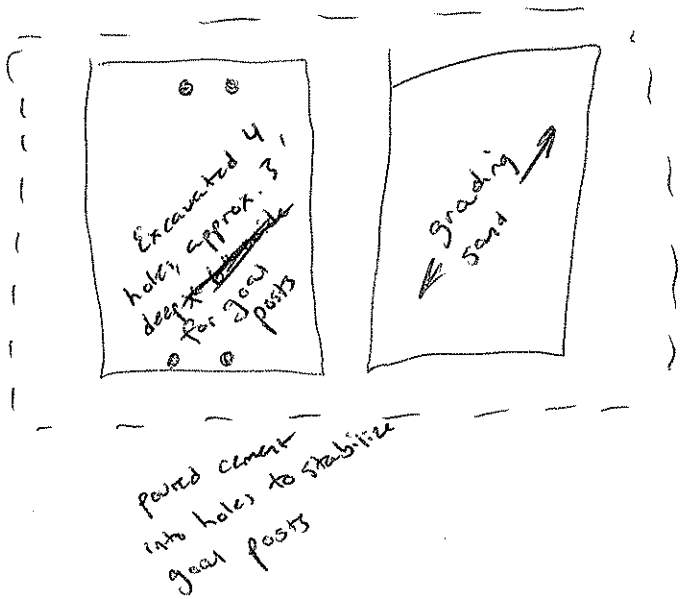
Arrived On Site: 12^30 Depart Site 2^30 Travel Time:. 2 1/2

Subcontractor/Equipment Operating: Green Acres

Visitors to Site: Town Engineer (Steve), DPW, Dale (Peter), Engineers Josh & Dennis

Personnel and Equipment: Excavator, loader, large dump, tractor t/a

Work Activities:



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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: _ 50 Kingsbury St DATE: 8/20/08

WEATHER: Temp: ~~80-85°~~ 75-80° Conditions: Sunny, ~~breezy~~ clear

Inspector: LT

Arrived On Site: 115 Depart Site 300 Travel Time:. 2 1/2 hrs.

Subcontractor/Equipment Operating: Green Acres

Visitors to Site:

Personnel and Equipment: 2 dumps, 2 excavators, 1 loader, 1 dozer, screener

Work Activities:

Roller rolling area between Field #3 & stockpile area; screening being conducted to clean loam pile; observed some rocky material that was screened out of loam pile was dumped into former driveway that had been excavated - to be used as fill to bring driveway back up to grade;

2 large dumptrucks bringing loads of clean loam to Field #1 (Natural field) & spreading over fabric that's been laid down;

Approx. 1/4 - 1/3 of contaminated pile has been removed - excavator said they only took about 3 loads out yesterday.

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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: _ 50 Kingsbury St DATE: 8/25/08

WEATHER: Temp: 80°F Conditions: overcast, drizzle at times

Inspector: LT

Arrived On Site: 12:35 Depart Site Travel Time:. 2 1/2 hrs.

Subcontractor/Equipment Operating: Green Acres Landscaping

Visitors to Site: Josh ? from Town Engineer

Personnel and Equipment: 1 excavator, 1 loader, 2 large dumps in stockpile area (3 workers), 1 dozer in natural field + 2 guys on ground

Work Activities: Contaminated stockpile not being loaded at time of arrival, but only between 1/3 - 1/4 of it left. Completely uncovered. Clean stockpile loam being screened & trucked over to Field #1 for spreading.

Observed truckloads of contaminated soil being taken away: III

Spoke w/ driver @ 2 PM & asked him to run water truck through traffic area - very dry & dust being kicked up
He said they scheduled 6 more trailers for tomorrow - should be abl to get it done - he also said the landfill wouldn't take plastic or tires

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over →

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GSE DAILY WORK ACTIVITY REPORT

PROJECT NAME: Sprague Field **SITE:** Wellesley, MA

SITE LOCATION: 50 Kingsbury St DATE: 8/26/08

WEATHER: Temp: 80 Conditions: Sunny, 80°F

Inspector: LT

Arrived On Site: 700 Depart Site Travel Time:. 2½ hours

Subcontractor/Equipment Operating: Green Acres

Visitors to Site:

Personnel and Equipment: 1 excavator, 1 loader, 1 screener, 2 lg dump trucks in stockpile area 1 dozer + 3 laborers in field areas

Work Activities:

Screening clean loam pile, moving contaminated pile to landfill, bringing screened loam to Field # 1 & spreading over fabric

Moving pile:

Jon said they already had 7 trucks by 9 AM - I observed an additional 5 - loaders pushed the pile of junk landfill won't except (plastic, tires, big chunks of metal) onto poly sheet I put down.

1 50 PM left site (pile completely moved)

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4/2

AIR MONITORING DATA:

DATE: 7-7-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST II HD 1002 DUST MONITORS

SOUTH SIDE — MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PERSONAL DATA RAM	Equipment #2 HD 1002 HAZDUST II	Equipment #3	Equipment #4	Equipment #5	
	0.0				0700
0.042	0.0				0715
0.047	0.12				0730
0.046 (0735)					
0.04	0.05				0745
0.042	0.07				800
0.024	0.10				815
0.030	0.07				830
0.020	0.10				845
0.030	0.11				900
0.014	0.09				915
0.020	0.08				930
0.004	0.06				945
0.010	0.12				1000
0.003	0.15				1015
0.008	0.06				1030
0.007	0.04				1045
0.020	0.12				1100
0.007	0.08				1115
0.00	0.05				1130
0.004	0.13				1145
.040					1200
.820					1230

1230. REMOVED PDR FROM FLUGE AND USED IT FOR MOBIL READINGS. HD 1002 OFFLINE.

2/2

AIR MONITORING DATA:

DATE: 7-7-09 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITOR

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.5					1245
0.12					1300
.070					1315
.360					1330
.043					1345
.008					1400
.350					1415
.011					1430
1.391 K	# BEHIND DUMP	TRUCK			1445
.075					1500

AIR MONITORING DATA:

DATE: 7-8-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SARAUSE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST II HD 1002 DUST MONITORS

SOUTH SIDE	MONITORING EQUIPMENT READINGS (list equipment types below)				TIME OF READINGS
Equipment #1 PERSONAL DATA RAM	Equipment #2 HD 1002 / HAZDUST II	Equipment #3	Equipment #4	Equipment #5	
0.055	0.17				0745
0.058	0.09				0800
0.045	0.07				0815
0.062	0.07				0830
0.055	0.04				0845
0.054	0.06				0900
0.052	0.08				0915
0.053	0.05				0930
0.042	0.11				0945
0.061	0.04				1000
0.061	0.06				1015
0.059	0.07				1030
0.054	0.09				1045
0.060	0.14				1100
0.050	0.07				1115
0.065	0.04				1130
0.055	0.06				1145
0.060	0.08				1200
0.056	0.09				1215
0.055	0.15				1230
0.059	0.26				1245
0.055	0.13				1300
0.057	0.31				1315

* PDR - MONITORING AT SOUTH SIDE OF SITE

HD 1002 - PORTABLE UNIT.

AIR MONITORING DATA:

DATE: 7-8-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: _____

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1: PDR	Equipment #2: HD-1002	Equipment #3	Equipment #4	Equipment #5	
0.058	0.2				1330
0.062	0.24				1345
0.053	0.36				1400
0.133	0.78				1415
0.062	0.61				1430
0.051	1.67 M	AFTER TRUCK DRIVES BY			1445
0.056	0.71				1500

AIR MONITORING DATA:

DATE: 7.9.02 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST IV HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 SOUTH SIDE PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.074	0.0				0700
0.065	0.04				0715
0.075	0.08				0750
0.070	0.02				0745
0.062	0.05				0805
0.091	0.10	* DRIVEN WATER TRUCK AROUND SITE			0815
0.072	0.03				0830
0.071	0.12				0845
0.068	0.09				0900
0.074	0.07				0915
0.065	0.04				0950
0.065	0.18				0945
0.075	0.09				1000
0.069	0.12				1015
0.094	0.06				1030
0.064	0.25				1045
0.071	0.15				1100
0.056	0.42				1115
0.061	0.25				1130
0.071	0.21				1145
0.071	0.41	* WATER TRUCK DRIVEN AROUND SITE			1200
0.068	0.11				1215
0.061	1.00				1230

* PDR MONITORING AT SOUTH END OF SITE.
HD 1002 PORTABLE UNIT.

AIR MONITORING DATA:

DATE: 7-9-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 100Z DUST MONITOR

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PID	Equipment #2 HD 100Z	Equipment #3	Equipment #4	Equipment #5	
0.071	0.62				1245
0.078	0.44				1300
0.053	0.61				1315
0.062	0.51				1330
0.057	0.24				1345
0.141	0.80				1400
0.057	0.62				1415
0.054	2.12	@ WEST END BY	SCHOOL, Green Acres	started pulling	1430
0.101	0.67				1445
0.065	0.63				1450
0.044	0.31				1500

AIR MONITORING DATA:

DATE: 7-10-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 WEST SIDE OF SCHOOL PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.0160	0.11				0715
0.000	0.06				0730
0.000	0.05				0745
0.000	0.04				0800
0.020	0.07				0815
0.000	0.10				0830
0.005	0.09				0845
0.000	0.15				0900
0.000	0.08				0915
0.000	0.04				0930
0.000	0.08				0945
0.000	0.10				1000
0.000	0.11				1015
0.000	0.08				1030
0.002	0.09				1045
0.000	0.04				1100
0.000	0.06				1115
0.004	0.08				1130
0.005	0.13				1145
0.001	0.09				1200
0000	0.07				1230
0.005	0.18				1245
0.002	0.15				1300

* PDR - MONITORING AT WEST END OF SITE, NEAR SCHOOL.
HD 1002 - PORTABLE UNIT

AIR MONITORING DATA:

DATE: 7/10/08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM 1 HAZDUST MD 1402 DUST MONITOR

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 MD 1402	Equipment #3	Equipment #4	Equipment #5	
0.004	0.13				1315
0.003	0.15				1330
0.000	0.11				1345
0.000	0.20				1400
0.000	0.02				1415
0.000	0.03				1430
0.001	0.25				1445
0.002	0.02				1500

DUPLICATE 20

AIR MONITORING DATA:

DATE: 7-23-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1200 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.000	0.00				0715
0.000	0.01				0730
0.000	0.03				0745
0.000	0.03				0800
0.000	0.03				0815
0.000	0.02				0830
0.000	0.04				0845
0.000	0.05				0900
					0915
					0930
					0945
					1000
					1015
					1030
					1045
					1100
					1115
					1130
					1145
					1200
					1215
					1230

* PDR MONITORING DUST LEVELS AT WEST END OF SITE.
HD 1200 PORTABLE UNIT.

0900 - LEFT SITE PER JOE BARBOSA

AIR MONITORING DATA:

DATE: 7-22-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.004	0.01				1245
0.000	0.00				1300
0.000	0.04				1315
0.014	0.07				1330
0.001	0.05				1345
0.017	0.01				1400
0.010	0.04				1415
0.006	0.05				1430
0.029	0.20				1445
0.013	0.03				1500

P. drawer 1201

AIR MONITORING DATA:

DATE: 7-22-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.000	0.05				0715
0.000	0.01				0730
0.000	0.02				0745
0.000	0.02				0800
0.000	0.01				0815
0.000	0.03				0830
0.000	0.02				0845
0.000	0.00				0900
0.000	0.01				0915
0.000	0.00				0930
0.000	0.01				0945
0.000	0.01				1000
0.000	0.00				1015
0.007	0.01				1030
0.000	0.02				1045
0.000	0.01				1100
0.000	0.00				1115
0.000	0.02				1130
0.009	0.03				1145
0.000	0.01				1200
0.000	0.02				1215
0.000	0.02				1230

* PDR MONITORING DUST LEVELS AT WEST END OF SITE (MAIN SENSOR)
HD 1200 PORTABLE UNIT.

AIR MONITORING DATA:

DATE: 7-21-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.076	0.06				1245
0.056	0.01				1300
0.058	0.02				1315
0.054	0.05				1330
0.054	0.07				1345
0.100	0.06				1400
0.101	0.09				1415
0.094	0.14				1430
0.099	0.16				1445
0.013	0.20				1500

1/2

CLEAR 80°

AIR MONITORING DATA:

DATE: 7-17-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.000	0.03				0730
0.000	0.07				0745
0.000	0.02				0800
0.005	0.07				0815
0.002	0.05				0830
0.001	0.04				0845
0.001	0.08				0900
0.005	0.11				0915
0.002	0.05				0930
0.005	0.42				0945
0.010	0.06				1000
0.009	0.15				1015
0.130	0.16				1030
0.008	0.27				1045
0.010	0.16				1100
0.010	0.14				1115
0.007	0.18				1130
0.013	0.19				1145
0.020	0.15				1200
0.021	0.11				1215
0.007	0.24				1230
0.008	0.80				1245
0.011	0.71				1300

PDR - MONITORING DUST LEVELS AT WEST END OF SITE, NEAR SCHOOL.

HD 1002 - PORTABLE UNIT.

AIR MONITORING DATA:

DATE: 7-17-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.008	0.19				1315
0.002	0.61				1330
0.001	0.25				1345
0.000	0.17				1400
0.006	0.51				1415
0.002	0.24				1430
0.008	0.79				1445
0.013	0.20				1500

P. cleary 007

AIR MONITORING DATA:

DATE: 7-21-08 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.009	0.02				0715
0.016	0.03				0730
0.007	0.01				0745
0.010	0.02				0800
0.005	0.02				0815
0.010	0.02				0830
0.031	0.02				0845
0.027	0.02				0900
0.035	0.01				0915
0.050	0.03				0930
0.032	0.04				0945
0.040	0.06				1000
0.045	0.06				1015
0.045	0.06				1030
0.053	0.09				1045
0.050	0.06				1100
0.064	0.10				1115
0.055	0.05				1130
0.064	0.07				1145
0.059	0.05				1200
0.061	0.04				1215
0.061	0.01				1230

PDR MONITORING DUST LEVELS AT WEST END OF SITE, NEAR SCHOOL.
HD 1200 PORTABLE UNIT

AIR MONITORING DATA:

DATE: 7-10-00 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORING

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.021	0.06				1245
0.022	0.09				1300
0.017	0.66				1315
0.022	0.05				1330
0.027	0.04				1345
0.023	0.09				1400
0.018	0.05				1415
0.016	0.10				1430
0.022	0.80				1445
0.020	0.20				1500

CLEAN COPY

AIR MONITORING DATA:

DATE: 7/18/06 SHSO Signature: _____

DESCRIPTION OF AREA BEING MONITORED: SPRAGUE FIELD REDEVELOPMENT

MONITORING EQUIPMENT: PERSONAL DATA RAM & HAZDUST HD 1002 DUST MONITORS

MONITORING EQUIPMENT READINGS (list equipment types below)					TIME OF READINGS
Equipment #1 PDR	Equipment #2 HD 1002	Equipment #3	Equipment #4	Equipment #5	
0.000	0.00				0715
0.000	0.04				0730
0.007	0.11				0745
0.057	0.21				0800
0.011	0.03				0815
0.000	0.30				0830
0.001	0.06				0845
0.015	0.13				0900
0.014	0.40				0915
0.008	0.13				0930
0.019	0.80				0945
0.018	0.20				1000
0.020	0.03				1015
0.150	0.08				1030
0.017	0.02				1045
0.014	0.03				1100
0.012	0.05				1115
0.013	0.06				1130
0.015	0.02				1145
0.023	0.16				1200
0.020	0.24				1215
0.024	0.90				1230

* PDR MONITORING DUST LEVELS AT WEST END OF SITE, NEAR SCHOOL.

HD 1002 PORTABLE UNIT.

APPENDIX E

NOTES

1. LANDFILL AND DISPOSAL SITE BOUNDARY ESTIMATED AREA ARE BASED ON GEOPHYSICAL AND SUBSURFACE INVESTIGATIONS COLLECTED BY GEOPROBE BORINGS ON JANUARY 28, 2003 AND JULY 12, 2005, MONITORING WELL BORINGS INSTALLED ON MARCH 14, 2003, AND TEST PIT ACTIVITIES CONDUCTED ON MARCH 25, 2003 AND JULY 12, 2005. AND HISTORICAL INFORMATION. LOCATIONS ARE APPROXIMATE ONLY.
2. ELEVATIONS SURVEYED BY GALE ASSOCIATES 6/19/06.

TEST PIT (INSTALLED 03/25/03)

TEST PIT (INSTALLED7/12/05)

GB-8 BORING (INSTALLED 01/28/03 & 7/12/05)

GMW-3 MONITORING WELL (INSTALLED 03/14/03 & 5/26/06)

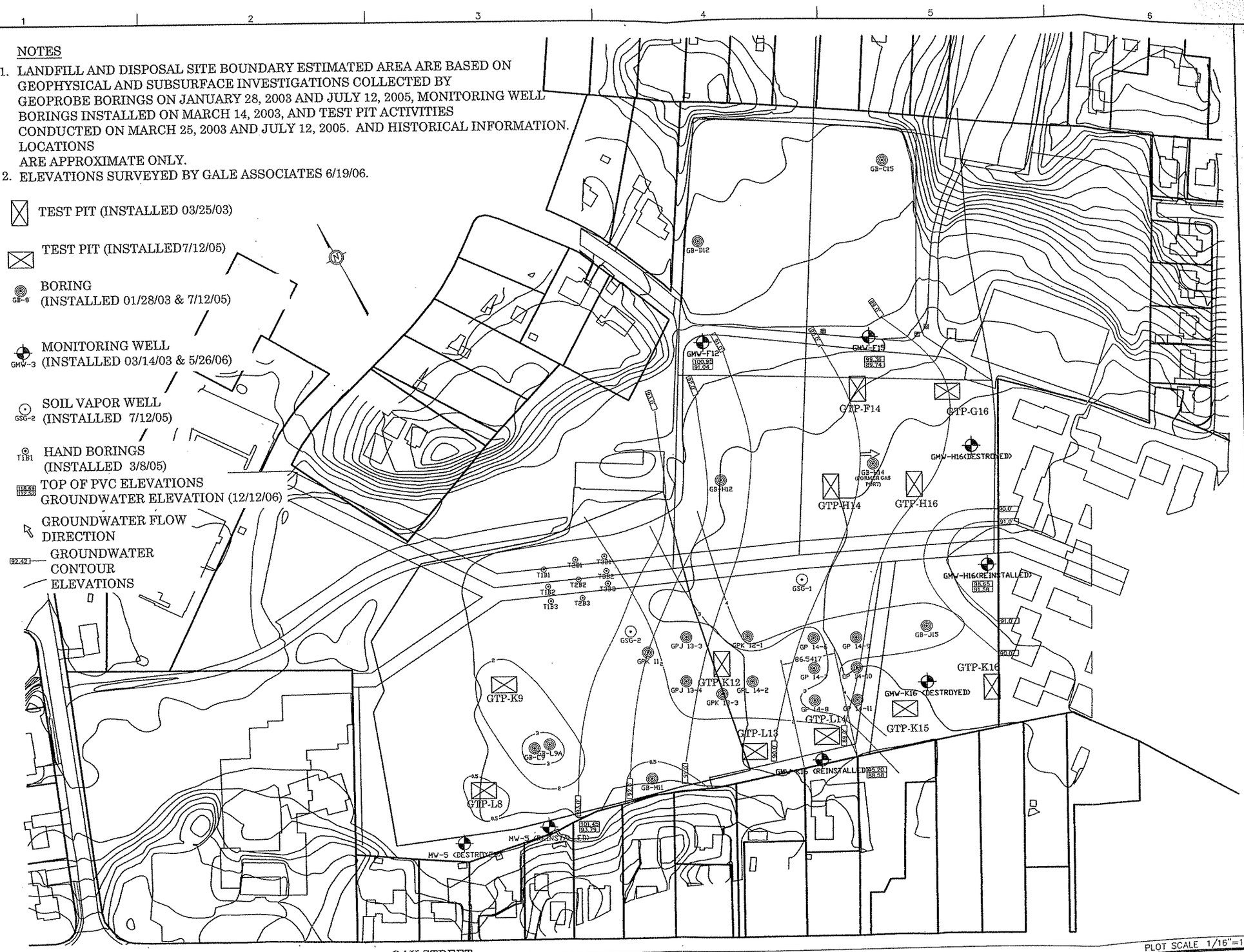
GSG-2 SOIL VAPOR WELL (INSTALLED 7/12/05)

T1B1 HAND BORINGS (INSTALLED 3/8/05)

114.69 / 112.57 TOP OF PVC ELEVATIONS GROUNDWATER ELEVATION (12/12/06)

GROUNDWATER FLOW DIRECTION

92.42 GROUNDWATER CONTOUR ELEVATIONS



PLOT SCALE 1/16"=1'-0"

GALE

Gale Associates, Inc.
Engineers Architects Planners

163 LIBBEY PARKWAY | WEYMOUTH, MA
02189P 781.335.6465 F
781.335.6467www.galeinc.com

Boston Baltimore Orlando San Francisco

PROJECT
SPRAGUE SCHOOL ATHLETIC FIELDS
WELLESLEY, MASSACHUSETTS

OWNER
TOWN OF WELLESLEY
WELLESLEY, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY

PROJECT NO.	756211
CADD FILE	Schematic Site 1
DESIGNED BY	CWM
DRAWN BY	KTD
CHECKED BY	JAL
DATE	12/12/06
DRAWING SCALE	1"=150'

GRAPHIC SCALE

SHEET TITLE

MONITORING WELL LOCATIONS AND GROUNDWATER FLOW/ELEVATIONS

DRAWING NO.

FIGURE 2

4 OF 4

MATCHLINE
SHEET 2
SHEET 1

MATCHLINE

STOCKPILE TO BE REMOVED, AND REUSED OR DISPOSED OF OFF-SITE.

EXISTING GATES TO BE REMOVED AND RELOCATED

CASTING TO BE ADJUSTED AS REQUIRED

APRON TO BE PROTECTED

LIGHT POLE TO BE REMOVED AND RELOCATED

LIGHT POLE TO BE REMOVED AND RELOCATED

STONE RET. WALL TO BE PROTECTED

CB TO BE CONVERTED TO DMH AND RIM ADJUSTED AS REQUIRED

SAWCUT LINE

WOOD GUARD RAIL TO BE REMOVED AND STOCKPILED FOR TOWN USE

LIGHT POLE TO BE REMOVED AND RELOCATED

TREE TO BE REMOVED

CASTING TO BE ADJUSTED AS REQUIRED

WOOD GUARD RAIL TO BE REMOVED AND STOCKPILED FOR TOWN USE

TREE TO BE REMOVED

SIGNAGE TO BE REMOVED

TREE TO BE REMOVED

LIGHT POLE TO BE REMOVED AND RELOCATED

GOAL POSTS TO BE REMOVED

LIMIT OF WORK

TEMPORARY CONSTRUCTION FENCE

TREES TO BE REMOVED

HANDHOLES AND ASSOCIATED IRRIGATION PIPING TO BE REMOVED AND DISPOSED

LIMITS OF REMEDIATION AREA

MONITORING WELL TO BE PROTECTED AND CASING TO BE CONVERTED TO ROAD BOX

REMOVE AND DISPOSE

PROPOSED HAYBALES

WOOD GUARD RAIL TO BE PROTECTED

WATER SERVICE AND FOUNTAIN TO BE PROTECTED

EXISTING BIT CONC TO BE REMOVED

EXISTING BACKSTOP FENCING, AND BIT CONC. PADS TO BE PROTECTED

EXISTING BIT CONC TO BE REMOVED

EXISTING INFIELD MIX TO BE REMOVED AND DISPOSED

SHED TO BE PROTECTED

SAWCUT LINE

TEMPORARY CONSTRUCTION FENCE

PROPOSED HAYBALES

PROPOSED HAYBALES

LIMIT OF WORK

① TREES TO BE PROTECTED
② HANDHOLES TO BE REMOVED
③ SIGN TO BE REMOVED AND RETURNED TO THE TOWN

OAK ST

GALE

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Engineers Architects Planners

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Boston Baltimore Orlando San Francisco

PROJECT
SPRAGUE FIELDS REDEVELOPMENT
WELLESLEY, MA 02481

OWNER
TOWN OF WELLESLEY
525 WASHINGTON STREET
WELLESLEY, MA 02481

REVISIONS

NO.	DATE	DESCRIPTION
1	3/27/08	RESPONSE TO COMMENTS

CADD FILE	712800_EC-2.DWG
DESIGNED BY	TMH
DRAWN BY	MFS
CHECKED BY	TMH
DATE	2/6/08
DRAWING SCALE	1"=40'

GRAPHIC SCALE
0 20' 40' 80'

SHEET TITLE

EXISTING CONDITIONS & DEMOLITION PLAN SHEET 1

DRAWING NO.
C1.02

PROJECT NO. 712800

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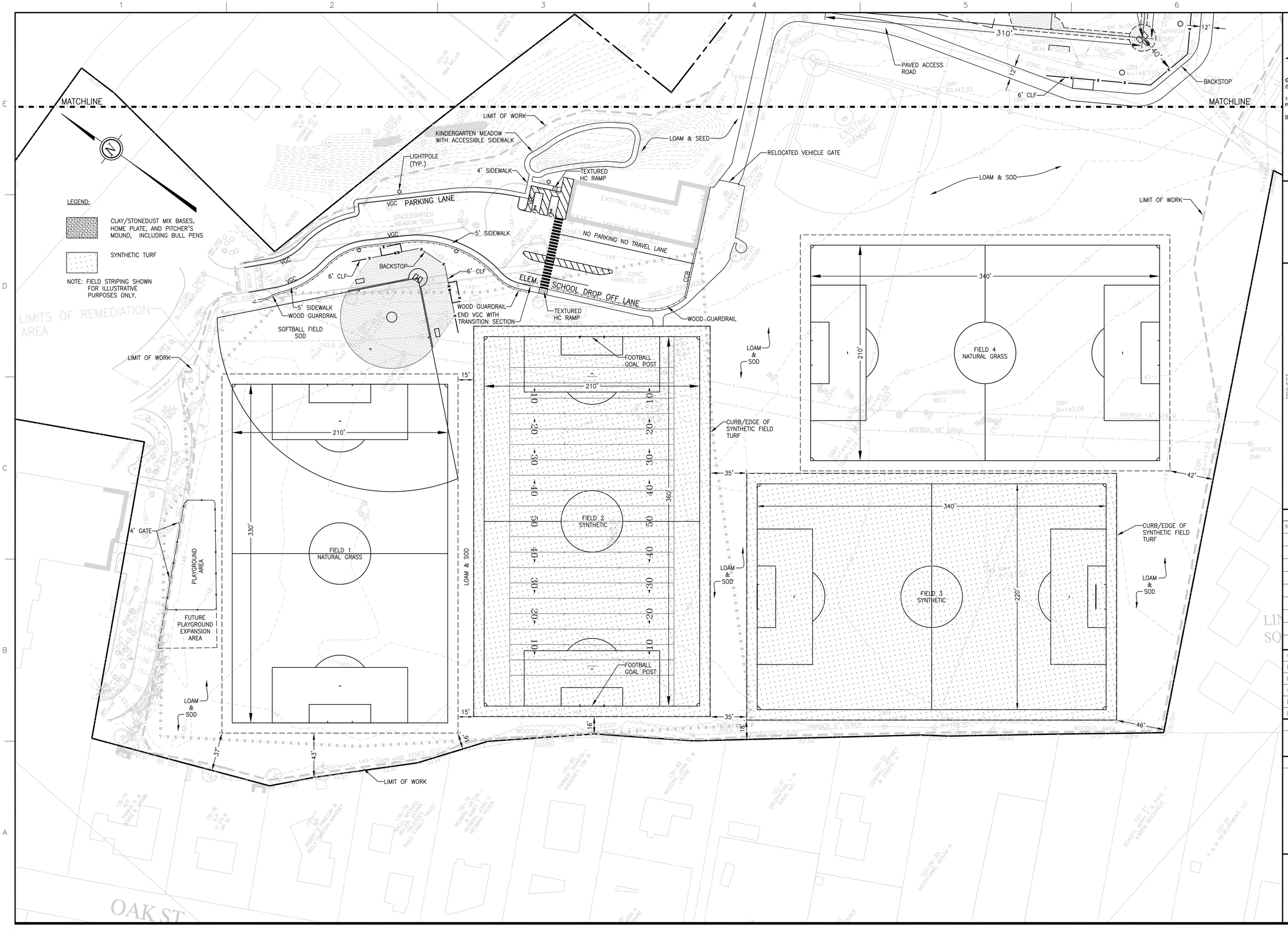

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Boston Baltimore Orlando San Francisco

PROJECT
SPRAGUE FIELDS REDEVELOPMENT
WELLESLEY, MA 02481

OWNER
TOWN OF WELLESLEY
525 WASHINGTON STREET
WELLESLEY, MA 02481

REVISIONS

NO.	DATE	DESCRIPTION
1	3/27/08	RESPONSE TO COMMENTS

CADD FILE	712800_LO.DWG
DESIGNED BY	TMH
DRAWN BY	MFS
CHECKED BY	TMH
DATE	2/6/08
DRAWING SCALE	1"=40'

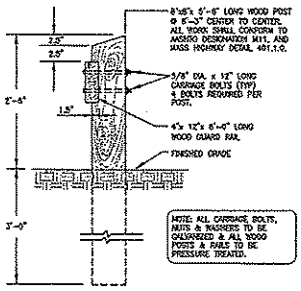
GRAPHIC SCALE
0 20' 40' 80'

SHEET TITLE

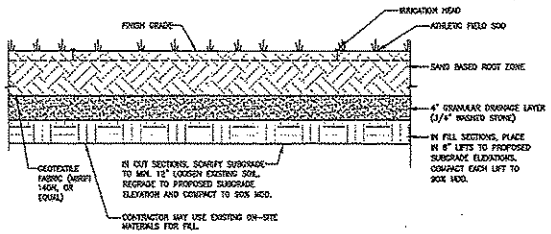
LAYOUT & MATERIALS PLAN SHEET 1

DRAWING NO.
C1.05

PROJECT NO. 712800



TYP. WOODEN GUARD RAIL DETAIL
N.T.S.



NATURAL TURF ATHLETIC FIELD SECTION
N.T.S.

MOWING

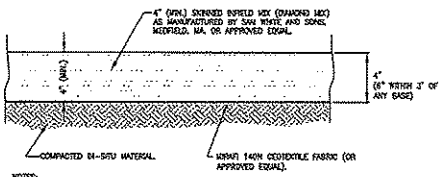
1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MOWING THROUGH TURF ACCEPTANCE.
2. WHEN THE GRASS REACHES A HEIGHT OF 2.5", MOW TO A HEIGHT OF 2" AND REMOVE CLIPPINGS.
3. MOWING FREQUENCY SHOULD DEPEND ON THE RATE OF GROWTH OF THE GRASS.
4. NEVER REMOVE MORE THAN 1/3 OF THE LEAF AREA IN ANY ONE MOWING.
5. CHANGE THE DIRECTION OF THE MOWING EACH TIME.

WATERING

1. IMMEDIATELY AFTER SOD PLACEMENT IS COMPLETE, COMMENCE WATERING. KEEP THE SOD, CONTINUOUSLY MOIST FOR AT LEAST THREE (3) WEEKS.
2. IF THE SURFACE 2"-3" OF SOIL IS DRY, IRRIGATE SUFFICIENTLY TO MOISTEN THE SOIL TO A DEPTH OF 4"-6".
3. ONCE THE TURF IS ESTABLISHED, FOLLOW A SCHEDULED IRRIGATION PLAN. SEE SPECS.
4. RUN-OFF, PUDDLING AND WILTING SHALL BE PREVENTED.

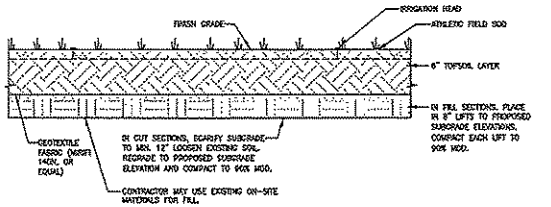
FERTILIZATION

1. KENTUCKY BLUEGRASS AND PERENNIAL RYE GRASS GROW BEST WITH A pH RANGE OF 6.0-6.5.
2. CONTRACTOR TO TEST ORGANIC CONTENT, MICRO NUTRIENT CONTENT, AND ADJUST ACCORDING TO SPEC OR APPROVED TESTING LAB RECOMMENDATION. ALL FERTILIZERS AND PESTICIDES TO BE APPROVED BY THE OWNER.

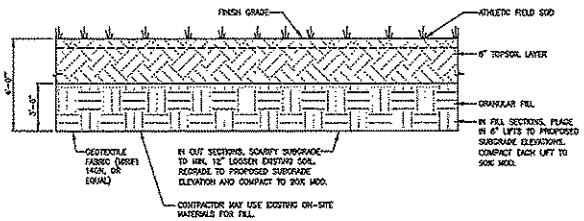


NOTES:
1. CONTRACTOR TO INSTALL INFIELD MIX TO A DEPTH OF 6" AT EACH BASE, APPROXIMATELY 3' FROM EDGE OF BASE IN ALL DIRECTIONS.
2. INFIELD MIX TO BE INSTALLED WITH SMOOTH TRANSITION TO NATURAL GRASS AREAS.
3. CONTRACTOR TO INSTALL 14" OF GRANULAR FILL BELOW GEOTEXTILE FABRIC IN REMEDIATION AREA.

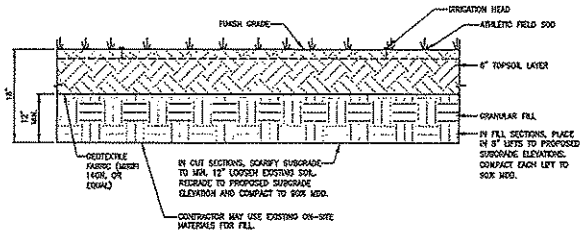
INFIELD CLAY
N.T.S.



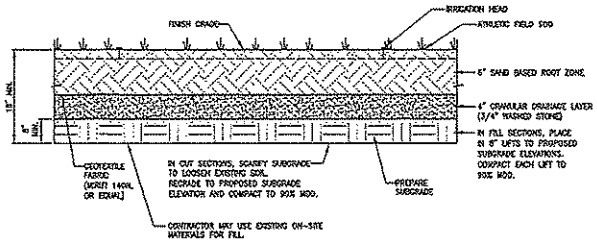
NON-ATHLETIC FIELD NATURAL TURF SECTION
N.T.S.



FUTURE PLAYGROUND AREA
N.T.S.



NON-ATHLETIC FIELD SECTION IN REMEDIATION AREA
N.T.S.



NATURAL TURF ATHLETIC FIELD IN REMEDIATION AREA
N.T.S.

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P 781.335.8450 F 781.335.8477 www.gale.com
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PROJECT
SPRAGUE FIELDS REDEVELOPMENT
CONTRACT NO. 08C-10-18
WELLESLEY, MA 02482

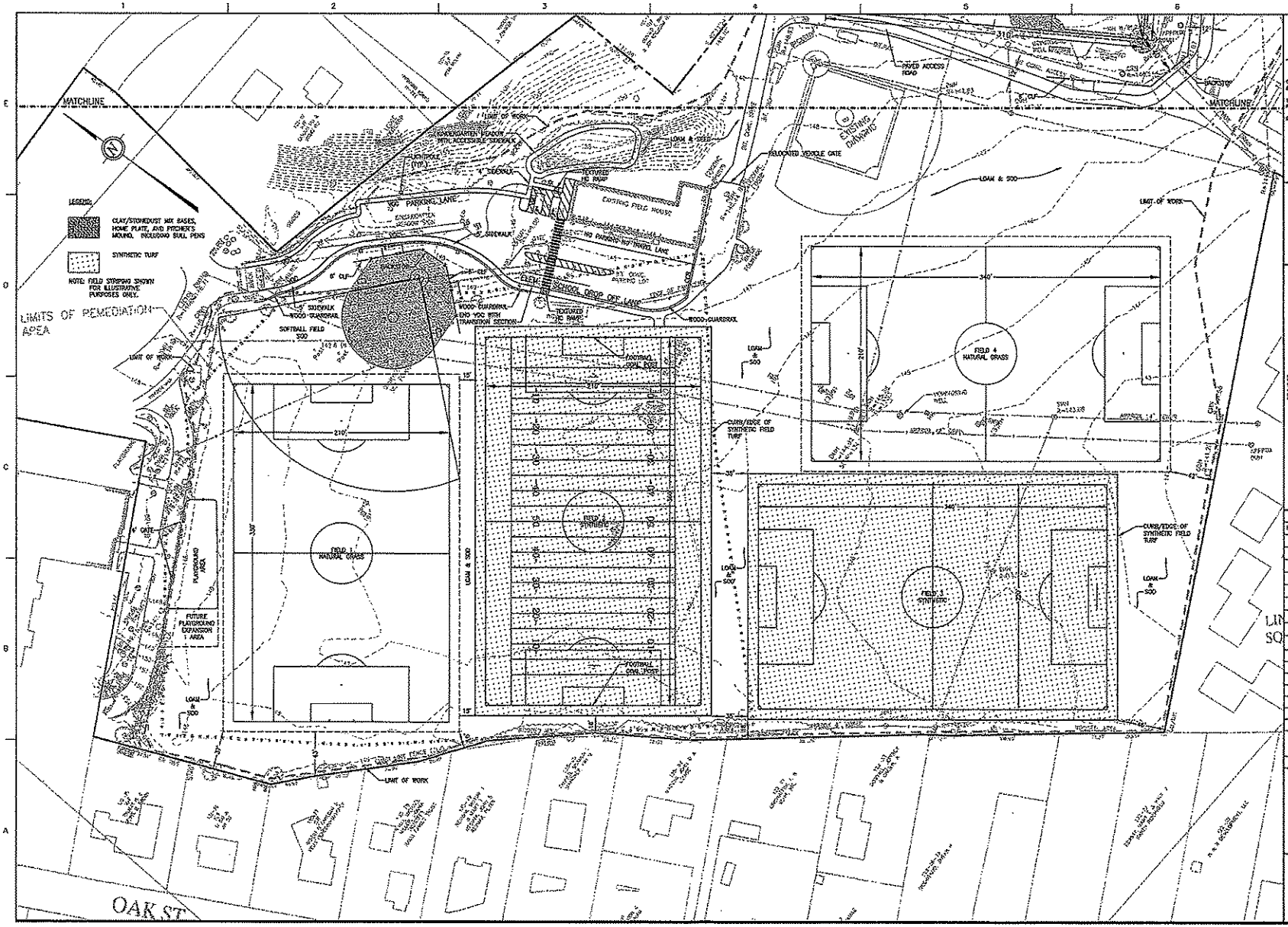
OWNER
TOWN OF WELLESLEY
525 WASHINGTON STREET
WELLESLEY, MA 02482

REVISIONS		
NO.	DATE	DESCRIPTION

CADD FILE	712000_DET.DWG
DESIGNED BY	TWH
DRAWN BY	MFS/CAS
CHECKED BY	TWH
DATE	4/13/08
DRAWING SCALE	AS SHOWN
GRAPHIC SCALE	

SHEET TITLE
DETAIL SHEET 5

DRAWING NO.
C-21
PROJECT NO. 712000



GALE

Gale Associates, Inc.
Engineers Architects Planners

PROJECT
SPRAGUE FIELDS REDEVELOPMENT
WELLESLEY, MA 02481

OWNER
TOWN OF WELLESLEY
525 WASHINGTON STREET
WELLESLEY, MA 02481

REVISIONS

NO.	DATE	DESCRIPTION
1	3/27/06	RESPONSE TO COMMENTS

CADD FILE	712000_L0.DWG
DESIGNED BY	TMH
DRAWN BY	MFS
CHECKED BY	TMH
DATE	2/6/06
DRAWING SCALE	1"=40'

GRAPHIC SCALE

SHEET TITLE

LAYOUT & MATERIALS PLAN SHEET 1

DRAWING NO.
C1.05

PROJECT NO. 712000