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March 3, 2017

Kimberly N. Tisa
PCB Coordinator
Office of Site Remediation & Restoration
EPA New England, Region 1,
5 Post Office Square - Suite 100
Boston, MA 02109-3912

RE: Request for Coordinated Approval for PCB Cleanup – Response Letter
Mass Mills III Lot 3B
169.2 Bridge Street Lowell, MA
MADEP RTN: 3-33101 (no. 6 fuel oil), 3-33474 (PCBs and metals), 3-33853 (asbestos) and 3-33793 (oily sheen on Concord River)

Dear Ms. Tisa:

Goldman Environmental Consultants, Inc. (GEC), on behalf of Massachusetts Mill III Limited Partnership LLC (MMIII), the current owner of the 169.2 Bridge St. property, is seeking a TSCA PCB Coordinated Approval for the Risk-Based Cleanup of PCBs at the above referenced site. On December 8, 2016, GEC submitted an *Application for Risk-Based Clean-up of Polychlorinated Biphenyls (PCBS)* on behalf of MMIII. On February 2, 2017 MMIII received a letter of response from the EPA regarding the application.

Based on EPA's review of the submitted information, MMIII's proposed plan under 40 CFR § 761.77 include the following activities:

1. Conduct sampling of the area identified as B-18 to confirm PCB concentrations, remove PCB-contaminated soil with greater than or equal to ("≥") 50 parts per million ("ppm") and any additional contaminated-soil required to achieve a 95% upper confidence limit on the mean of 10 ppm, and dispose at a TSCA-permitted disposal facility or RCRA hazardous waste landfill in accordance with 40 CFR § 761.61(a)(5)(i)(B)(*2*)(*iii*)

2. Modify an existing utility vault to establish a clean utility corridor for an existing sewer line and to establish a repository for up to a 125 cubic yards ("yd^3") of PCB-contaminated soil associated with a 300-400 yd^3 stockpiles currently located on the west end of the courtyard

3. Remove contaminated soil, including soil associated with stockpile SP-3 and located on top of fuel oil bunker ("FO")-1, soil in underground storage tank graves GT-1 and GT-2, and the soil from the top foot of soil in the central and eastern end of the courtyard and place into existing stockpile located on the western end of the courtyard

4. Conduct any additional remedial actions necessary to address asbestos and/or petroleum-contaminated soil (which likely also contain PCBs with greater than (">") 1 ppm) located on the central and eastern end of the courtyard (visibly petroleum-contaminated soil will be disposed off-site)

5. Create FO-1 soil repository for on-site disposal of stockpiled contaminated soil located on the western end of the courtyard, which will include orange snow fencing along the sidewalls with geotextile lining along both the sidewalls and bottom

6. Following removal of the western end stockpiled soil, remove a minimum of an additional 2 feet of soil from the western end of the courtyard and place into the FO-1 repository. As part of the western courtyard work, the coal chute and 4 drywells previously filled with contaminated soil will be excavated to 3 feet below finish grade and the structures dismantled to that depth. Each structure will be capped with a minimum 4-inch thick concrete cap to prevent future exposure. In the event that the FO-1 soil repository does not have adequate capacity, contaminated soil will be shipped off-site for disposal in accordance with federal and state requirements

7. Following a completion of remaining Site work, including installation of a clean corridor for a future storm water management system and covering of contaminated soil with geotextile, construct a minimum 3-foot thick clean soil cover over the entire Site area

8. Place a deed notice in the form of Activity and Use Limitation ("AUL") to establish use restrictions, to prohibit disturbances of the clean soil cap, to provide for maintenance of the clean soil cap, and to detail any future soil handling practices and requirements at the Site

GEC has reviewed the EPA's comments, and provided below is the additional information and/or clarification required.

General Comments

1. Please confirm that EPA's understanding of the proposed PCB plan as summarized above, is correct. If not, please clarify.

   The EPA's understanding of the proposed PCB plan as summarized above is correct.

2. The paper copy of the PCB risk-based plan ("PCB Plan") was provided in black and white and on 8.5x11-inch paper, which includes all figures. Thus, review of the hard copies of the figures and the detail outlining the designated areas is difficult and/or impossible. For future reference, colored figures should be provided when colors are used to represent specific and differentiated details. Figures should also be presented on appropriately sized paper for ease of review. It would also have been helpful to ensure that each of the appendices were tabbed for ease of location and review. The only attachments individually tabbed were the attachments to Appendix X.

   Refer to Attachment 1 for colored copies of Figures 1 through 12.

3. With respect to the Appendices, EPA was unable to find Appendix G in Book 2 and Appendices R through U in Book 4 in the paper copy of the plan. EPA was able to locate these Appendices in the electronic version of the plan.

   Refer to Attachment 2 for Appendix G and Appendices R through U.

4. In the PCB Plan, a coordinated approval is requested, which was previously discussed with EPA. However, given the approval issued by the MassDEP, it is unclear if it meets the requirements under 40 CFR § 761.77(c) for a coordinated approval. If information exists to support that the MassDEP approval falls under the provisions of 40 CFR § 761.77 for a coordinated approval, please clarify and provide said information for EPA review and consideration (see Specific Comment 30).

GEC reached out to Kyle MacAfee with the MassDEP regarding this issue the week of February 27, 2017. Mr. MacAfee indicated that he would contact EPA in order to determine what additional information would be required for the MassDEP approval letter.

Specific Comments

1. It was indicated in the information provided that three monitoring wells and soil vapor points were destroyed during renovation activities. EPA is unclear as to why/how this may have occurred since these elements were installed to satisfy specific current and/or future monitoring requirements/needs.

   The three monitoring wells and soil vapor points were destroyed during renovation activities. GEC spoke to the General Contractor on multiple occasions to request that both the monitoring wells and soil vapor points were protected from the multitude of sub-contractors performing both demolition and renovation work. The monitoring wells were destroyed by the operation of a man-lift that was performing demolition work, placing windows, and repointing brick. The soil vapor points were destroyed during the second floor demolitions. Since it was not possible to preserve these monitoring points, GEC, on behalf of MMIII, plans to replace monitoring wells within the courtyard. Additional monitoring wells were going to be necessary even if the original wells were saved, and a contingency was discussed whereby GEC would collect soil vapor samples directly from the sub-slab radon system, if it were not possible to preserve the soil vapor points.

2. It is unclear what the "property" described in this plan consists of. On page 13 it is indicated to be Lot 3B and on page 14, it is indicated to be approximately 47,218 square feet in size and include the Boiler House, the courtyard to the south and the adjacent property. While the Boiler House and courtyard areas are clear, reference to "the adjacent property" is not. Please clarify.

   The "property" is identified as Lot 3B, as shown on Figure 3, and consists of the boiler house, the courtyard, and a portion of the "Picker" building, which has been razed to create a parking area.

3. It is not clear what PCB-contaminated waste is to be covered under this proposed PCB Plan. For example, in the remedial alternatives section, the narrative appears to be only requesting EPA approval for management of the on-site stockpile and perhaps the B-18 area. However, based on the information contained in the PCB Plan, activities occurred at the Site during renovation activities (e.g., site grading) which could have resulted in spread of PCB contamination across the courtyard area. Further, EPA was concerned that certain work appeared to continue at the Site even when contamination at the Site had not been fully delineated and/or addressed. EPA has indicated in prior correspondence with Goldman Environmental, that insufficient information exists to support a conclusive finding that the PCBs remaining at the Site are not regulated for cleanup under the federal PCB regulations at 40 CFR Part 761. Thus, clarification is requested on the intent of the PCB plan with respect to 40 CFR Part 761.

   In a letter to EPA, dated July 5, 2015, GEC explained how the PCB contaminated soils were discovered, and summarized follow-up assessment and remedial actions conducted that included confirmatory sampling of soils for PCBs. EPA responded by requesting additional sampling be conducted around B-9 to determine if PCBs equal to or greater than 50 mg/kg remain on-site. EPA also requested that additional borings and soil samples be collected in the petroleum release areas, to determine the vertical and horizontal extent of

the petroleum contamination and the extent to which the PCB contamination is commingled with the petroleum contamination. EPA also requested a cost estimate to remove the existing stockpile of PCB-contaminated soils relative to the cost to reuse the soils on-site. The additional assessment was conducted and reported to EPA in a letter dated November 2, 2016, which indicated that the soils tested were all below 50 mg/kg PCBs. In a follow-up email from EPA dated November 18, 2016, the agency was concerned that PCB concentration equal or greater than 50 mg/kg could remain in soils in the vicinity of B-18, and that it was possible that the greater than 50 mg/kg PCB soils may have contributed to the source of the lower concentrations found on-site. In follow-up conversations with EPA and MassDEP, the agency concluded that it was unlikely that the remaining on-site soils contained PCBs equal to or greater than 50 mg/kg, with the possible exception of the soils in the vicinity of B-18. Therefore under this proposed PCB plan, the PCB-contaminated waste includes potentially contaminated soil in the vicinity of B-18. The RAM Plan also discusses the reuse of the stockpiled soils and the top three feet of soil from the courtyard in on-site soil repositories. Any 50 mg/kg or greater PCB remediation waste that is discovered in the vicinity of B-18 will be disposed of off-site at an appropriate facility. Any excess soil that is unable to be placed in the soil repositories will be disposed of off-Site at an appropriate facility.

In summary, the proposed PCB Plan is intended to cover: (1) the existing stockpile, which will be placed in on-Site repositories; (2) the contaminated soil in the vicinity of B-18, if it contains PCBs equal to or greater than 50 mg/kg; and (if necessary) the top 3 feet of soils, based on original grade in the courtyard, which will be placed in on-Site repositories. The soils below 3 feet are not included in the plan because out of approximately 33 soil samples collected more than three feet below grade, the maximum PCB concentration detected is 6.3 mg/kg, which is significantly less than 50 mg/kg.

4. Page 6. It is indicated that as part of the renovation activities, the Asbestos containing material ("ACM") was reportedly removed between 2015 and 2016. It is also indicated that removal of "caulk windows" may have occurred during this same time period, but no further information was provided. Please clarify what is/was known about the caulk and if any samples were collected for PCBs, including a figure with window locations (also see Specific Comment 7).

   Terracon performed limited testing for PCB building materials of interior/exterior components, including caulk/sealant materials. The samples of caulk were collected by scraping the material with a metal scraper equipped with disposal blades. Refer to Attachment 3 for a copy of Terracon's Pre-renovation Asbestos and Hazardous Building Materials Survey, which includes the lab reports and figures of the PCB samples.

5. Page 17. Section 4.1, 2nd paragraph. It is stated that with exception of certain samples analyzed for disposal criteria, PCB samples were analyzed by the EPA Method 8082 with Soxhlet extraction. Please clarify how those samples analyzed for disposal criteria differed from the other PCB samples analyzed/extracted by the EPA Method 8082/3540.

   The disposal criteria sample, identified below, was analyzed for PCBs via USEPA Method 8082A, with extraction via USEPA Method 3546 (microwave extraction). This sample was the first soil sample collected for PCB analysis, the result of which was the first indication of the presence of PCBs in soils. All subsequent soil samples, whether analyzed for disposal criteria or analyzed to determine the distribution of PCBs in the courtyard, were analyzed via USEPA Method 8082A with Soxhlet extraction.

Sample	Laboratory	Lab Report #	Lab Report Date
SP-1	Con-Test Analytical Laboratory	16B1140	3/8/2016

6. Pages 18-19. During the due diligence investigation in August 2015, it is stated that 3 soil borings were installed and samples were collected based on visual observations of petroleum. These locations were then completed as monitoring wells. While samples were analyzed for EPH, including target PAHs, and VOCs, samples were not collected for PCBs. Given that there was evidence of petroleum NAPL contamination, please clarify why samples were not tested for PCBs at this time.

   The samples collected were not tested for PCBs during this time because the focus of the investigation pertained to petroleum hydrocarbons associated with the underground storage tanks, specifically gasoline and fuel oil. The fuel oil was believed to be Number 6 oil, or bunker oil. If it were believed to be waste oil then GEC would have recommended PCB analyses be included in the assessment. Upon testing of the oil it was shown to be Number 6 oil.

7. Page 22. Stockpile SP-1. It is indicated that a stockpile (SP-1) was identified at the Site on February 29, 2016. Later it is indicated that this stockpile was generated when the renovation contractor cleaned out the window wells and scraped the ground surface and that it contained PCB at 63 ppm. It is not clear what waste was associated with the window wells and how much of the ground surface may have been scraped/impacted by the renovation contractor. Further, it appears that there was ongoing assessment work and/or remediation work outstanding at this time. Thus, it is unclear why/how renovation activity proceeded prior to completion of required assessment and/or remediation work. Please clarify.

   Renovation activities had been ongoing at the site for months leading up to the initial planned removal of two abandoned gasoline USTs, and the fuel oil bunker in the courtyard. Terracon had completed a pre-renovation asbestos and hazardous building materials survey before the initiation of building renovations. At this point known contamination was limited to light non-aqueous phase liquid (LNAPL) in onsite monitoring wells. Most of the renovation work was occurring within the building; however some preparation work occurred in the courtyard included cleaning dirt and debris out from the window wells. This was necessary in anticipation of pumping flow-able concrete fill into the basement of the Picker Building, and prior to the replacement of certain windows. The renovation work is/was overseen by the general contractor, Delbrook. On February 29, 2016 prior to the removal of the two USTs, GEC and ENPRO discovered the soil pile which created an issue because it was located near the planned UST work area; therefore it was sampled prior to off-site recycling or disposal. Analytical results were available on March 8, 2016. The General Contractor had assumed that the petroleum-impacted soils were at depth; therefore there was no concern with surface work occurring. The material generated from the window wells was a mixture of urban fill and trash that had accumulated over the years. It is not clear how much of SP-1 came from the window wells and how much came from pushing the debris into a pile near the Boiler House. Once the analytical results were made available, certain precautions were put in place in an attempt to manage the ongoing renovation activities within the courtyard, including limiting renovations to the extent possible, placing poly and plywood on the ground throughout the courtyard, placing clean

fill on the ground when creating an access road behind the Picker Building, putting up caution tape, and locking a gate at the entrance to the tunnel to restrict access.

8. Page 23. Gasoline UST Removal.

   a. The 1st paragraph states that PCBs were not detected in the water samples collected from GT-1 and GT-2 and refers to Table 5 for the PCB results. Table 5 indicates that PCBs were detected at 1.2 and 1.5 µg/L in GT-1 and GT-2, respectively.

      This is an error in the text. It should read that PCBs were detected in the water samples collected from GT-1 and GT-2.

   b. The disposal documents in Appendix J indicate that the water was shipped to Cyn Environmental Services for disposal (Manifest #003015017). EPA does not understand how the tanks were disposed of other than reference to "recycling" (page 24). If regulated PCB concentrations were identified in the tank contents, there is potential that interior surface of either of these tanks was also contaminated. Yet, wipe samples appear only to have been collected from the tanks' exteriors. Please clarify.

      Both GT-1 and GT-2 were pressured washed and the scaling was removed from the interior and exterior of the tanks. Once the interior of the tanks were cleaned of debris and water they were presumed to be free of OHM. It is not standard practice to collect wipe samples from the inside of a UST during closure as long as they are properly cleaned and inspected. Wipe samples were collected from the outside of the tanks because they were in direct contact with contaminated soil, and the cleaning/decon procedure was not as vigorous as what is required for the inside of the USTs where the gasoline was stored.

   c. EPA was unable to locate the tanks' exteriors wipe sampling results in the tables. Please provide these results.

      Refer to Attachment 4 for a copy of the Alpha Analytical Laboratory report for the tanks' exteriors wipe samples.

   d. PCBs were detected in two samples collected from the UST removal locations. It is indicated in the last paragraph (page 23 and continued on page 24) that PCBS were detected at > 1 ppm and at concentrations consistent with shallow courtyard soils. However, at least one of these samples, NSW-GT-2, was collected at 5-6 feet below ground surface ("ftbgs"). Sample NSW-GT-1 collected at 3-4 ftbgs contained PCBs at 6.3 ppm. Other than these samples, it does not appear that any other samples were collected from the overburden soil prior to removal of these tanks. If not, and given that PCBs were identified in the stockpiled soil (SP-1) generated by the renovation contractor, it is unclear why samples were not collected to confirm PCBs were present in the UST area, if the PCB results for SP-1 were known. Please clarify.

      Samples were not collected to confirm PCBs were present in the UST area because the overburden of GT-1 and GT-2 was removed on March 7, 2016 prior to the receipt of the lab report indicating that PCBs were present March 8, 2016 in SP-1. Upon receiving this knowledge GEC amended the sampling plan to include the analyses of 8082/3540 from the sidewalls and bottom samples of the tank grave.

9. Pages 24-26

   a. Page 25. The text indicates that there are two fuel oil bunkers (FO-1 and FO-2) located within the courtyard area. The only discussion pertaining to sampling of soil appears to be associated with FO-1 and only Figure 5A shows any reference to the location of FO-2. Please clarify why this structure is not shown on other figures and what soil is associated with this bunker.

      FO-2 is not shown on other figures because it has not yet been identified in the field; GEC plans on performing further investigation on FO-2 during the excavation and removal of FO-1.

   b. Page 24. Please confirm the depth interval where the sand sample was collected. The text indicates 3.5 ftbsg whereas Table 1 indicates 3 ftbsg.

      The sand sample was collected at approximately 3-3.5' below surface grade, where it was apparent that the sands were not impacted, by visual evidence of the urban fill materials above them.

   c. Page 24. 3rd paragraph. This paragraph indicates that the UST graves were backfilled with overburden soil from above the tanks as well as approximately 10 cubic yards of material from above the [fuel oil] bunkers. However, on page 25 it is indicated that the PCB-containing soil on top of FO-1 bunker was placed into stockpile SP-2. Please clarify what soil was placed into the UST graves as backfill and what was known about PCB concentrations contained in the backfill.

      The overburden soils from above the USTs were used to backfill the tank grave. The void left by the removal of the two USTs required additional soil, therefore approximately 10 cubic yards of overburden soil from FO-1 was used to bring the area up to grade. The remainder of the overburden from FO-1 was placed into SP-2. Nothing was known about potential PCBs within the FO-1 overburden, or the content of the tanks, at that time. Once it was discovered that PCBs had been detected in on-Site soils this material was later sampled and tested for PCBs during test pitting.

   d. The text indicates that the contents (i.e., sand) of the FO-1 bunker were sampled ("FO-1(3')). Table 1 shows a PCB concentration for this sample of ND. The text later indicates that the contents of FO-1 were removed and placed in a stockpile designated as SP-3. Table 1 reports a PCB concentration of 2.6 ppm for a sample collected from SP-3. There is no discussion of the reported PCB concentration found in SP-3 versus the PCB concentration reported in the sand removed from the bunker. Please clarify.

      The in-situ sample was one discreet sample of the sand. The SP-3 sample was a composite sample from throughout the stockpile. It is also possible that some overburden material was mixed in with the sand, which could be the source of the low levels of PCBs.

   e. Bottom of page 25 and top of page 26. It is indicated that petroleum-impacted soil was observed at approximately 5.5 ftbgs or approximately 1 foot below the bottom of the

bunker wall. Please confirm if there was any visibly petroleum-impacted material identified within the bunker itself.

There was not any visibly petroleum-impacted material identified within the bunker itself.

10. Page 26. Shallow Soil Sampling across Courtyard. It is indicated that 7 boring locations were placed across the courtyard utilizing a three-meter grid. In its review of the figures provided and the scale, the sampling locations appear to be much farther apart than 3-meters (aka 10-feet). Please review and confirm all PCB sample location grid sampling intervals.

    GEC established a 3 meter grid across the courtyard. Please see attached Figure 12 in Attachment 1. The sampling grid resulted in approximately 75 separate sampling nodes. Because at the time 40 CFR § 761.61 was thought not to apply to the release due to the presumed pre 1978 release. GEC collected samples at approximately 12% of the grid nodes. Multiple samples were collected at various depth intervals at each node.

11. Page 28. The last paragraph states that the roll-off dumpsters containing the ≥ 50 ppm PCB waste was shipped to Tradebe in Newington, NH prior to shipment to Wayne Disposal. Please clarify under what authority Tradebe was able to store this waste. Based on EPA's records, Tradebe is not a permitted PCB commercial storage facility under 40 CFR § 761.65(d).

    Tradebe's facility in Newington, NH has a Hazardous Waste Transfer Permit, DES-HW-TF-2015-01, issued by NH Department of Environmental Services on November 9, 2015 (see Attachment 10). This permit, in Section C.4 (g), includes a 10-day holding period exemption that ordinarily enables the facility to transfer wastes (usually drums) from trucks onto rail cars for shipment to appropriate waste disposal facilities. In this case, National Response Corporation (NRC), formerly ENPRO, had coordinated with Tradebe to receive and transfer the roll-offs from truck to rail at the Newington, NH facility, then on to the Wayne Disposal Inc. in Michigan by rail. The first roll-off left Newington well within its 10-day window; however, before the remaining roll-offs could be shipped from Newington, the MassDEP froze any further movement of these roll-offs, and required further sampling and testing, a review by them of the laboratory analyses, and finally their approval, all prior to any further shipment. As the 10-day window was closing, Tradebe, NRC and GEC were in close communication with each other and with both MassDEP and EPA in the spirit of open communication and full disclosure.

12. Page 28. Following removal of the B-11 PCB-contaminated soil, it is indicated that three 5-point composite samples were collected for PCB analysis. Given this, please clarify how and/if this verification sampling met the 40 CFR Part 761 Subpart O sampling requirement. If not, please clarify why.

    The samples were not sampled by the methodology set out in 40 CFR Part 761 Subpart O because at the time, 40 CFR § 761.61 was thought not to apply to the release due to the presumed pre 1978 release.

13. Page 29. Remaining Shallow Soil Courtyard Activities.

a. 1st paragraph. Please clarify why it was necessary to remove the top 1 foot of soil from the far west side of the courtyard for stockpiling of soil from the east end of the courtyard overlying the FO bunkers.

Based on the results of the field investigations and risk assessment, higher levels of PCBs and other hazardous materials were detected in the 0-1 foot interval soils than in the 1-3 foot interval soils, which resulted in higher risk estimates for the 0-1 foot interval soils. Therefore, a decision was made to handle these soils separately from the underlying 1-3 foot interval soils. This decision was made prior to the discovery of asbestos in both the 0-1 and 1-3 foot interval soils, but was retained because there was a significant difference in PCB levels in the 0-1 and 1-3 foot soils.

Because of the tight conditions in the courtyard, a decision was made to address the contamination in the eastern portion of the courtyard first and to utilize the western portion of the courtyard for stockpiling the excavated soils from the eastern portion of the courtyard. The top 1 foot of soil from the far west side of the courtyard was removed to be placed at depth in the soil repository of the coal chute, in an attempt reuse the highest concentrations of PCBs soils to the lower depths of the repositories. This was to ensure that the 1-3 foot interval soils of the eastern courtyard would be stockpiled on top of the 1-3 foot interval soils in the western courtyard in an attempt to keep those intervals separate from each other.

b. 2nd paragraph. SP-2 management. Given that these overburden soils were identified to contain PCBs > 1 ppm, please explain the rational for placement of these contaminated soils into the coal chute repository rather than shipment for off-site disposal.

The overburden soils were placed into the coal chute repository rather than transported off-site for disposal because of the associated costs with disposal off-site, rather than reusing them in an on-site repository. The off-site disposal costs are higher than normal due to the time (labor and equipment) necessary to load the soils though the tunnel to the awaiting containers, as incurred for SP-1 and the PCB hot spot soils.

c. 3rd paragraph. Given that PCB concentrations > 1 ppm were identified in the top 1-foot of soil, please clarify the rational of placement into a soil repository rather than off-site disposal. Please clarify which repository these soils were placed into.

The top 1-foot of soil was placed into a soil repository rather than off-site disposal because the cost of off-Site transportation and disposal, as discussed above. These soils were placed in the coal chute and dry wells #1 through #4 identified in Figure 5A in Attachment 1. The subsequent discovery of asbestos in the shallow soils of the courtyard increases the risk to human health from excessive handling and transport of the soils, and further supports leaving the soils in an isolated soil repository.

d. Last paragraph. Based on this information, please confirm that currently, the 300-400 yd^3 stockpile located on the western end of the courtyard contains only soil excavated from the 1-3 foot interval of soil removed from the east end of the courtyard to about the west end of the FO bunker. It would be helpful if you could provide a table with the PCB results for

those soils that you believe are contained within the 300-400 yd^3 stockpile (see Specific Comment 24).

The 300-400 yd^3 stockpile located on the western end of the courtyard contains only soils excavated from the 1-3 foot interval at the east end of the courtyard to about the west end of the FO bunker. Refer to Attachment 5 for a table with the PCB results for soils that were excavated from the 1-3 foot interval and are contained within the 300-400 yd^3 stockpile.

e. Throughout this discussion, there is no indication of how/why the PCB requirements were/were not complied with, especially given that PCB concentrations ≥ 50 ppm were identified at the Site and the fact that activities as the Site (e.g., grading, soil excavation, etc.) had been conducted prior to in situ sampling of the soil for PCBs. With respect to items a thru d, above, please explain how the handling of the PCB-contaminated soil, including placement into the soil repositories, complied with 40 CFR Part 761. If not, please explain why.

During the building renovation activities the general contractor removed soils from window wells and placed them in a stockpile. No pre-excavation soil sampling and analyses for PCBs were conducted because at the time the focus was the remediation of number 6 oil in soil and groundwater. It was known that the shallow soils contained coal and coal ash, consistent with urban fill. Once the analytical results from the stockpile (SP-1) were known indicating that > 50 ppm PCBs were present precautions were put in place to eliminate exposure, and additional testing was initiated, as discussed above. At the time that the PCB results were available, UST removal activities were underway within the courtyard under an IRA Plan. Therefore, on March 8, 2016, sidewall and bottom soil samples were collected from the tank graves for PCB analysis. PCB concentrations in the UST tank grave soils ranged between <0.11 and 6.3 mg/kg. On March 9, 2016, soil samples were collected from over, within and beneath the FO-1 fuel oil vault, located at the east end of the courtyard. No PCBs were detected in the soil samples collected within and beneath the FO-1 vault, but was detected at levels between 2.6 and 13 mg/kg in soils overlying the FO-1 vault. Subsequent field investigations were conducted throughout the courtyard, which entailed test borings and collection of soil samples for analysis of Aroclor PCBs, congener PCBs, pesticides, herbicides, 14 metals, extractable petroleum hydrocarbons and polycyclic aromatic hydrocarbons.

The initial analytical data indicated that the PCB and fuel oil contamination (associated with the FO-1 vault) were not commingled. Therefore, on March 28, 2016, the IRA Plan activities were resumed and an attempt was made to remove the soils from within the fuel oil bunker. Due to the unexpected dimensions of the bunker, the presence of petroleum contamination at shallower depth than originally anticipated and the complicating factor of the discovery of PCBs in shallow on site soils, the remedial effort was put on hold until the in-situ testing was completed and the analytical data was evaluated.

Following completion of the data evaluation and risk assessment, an IRA Plan Modification was prepared and submitted to the MassDEP to address all known OHMs including PCBs. The IRA Plan Modification provided information on the

history of the property, including proof that the PCB release likely occurred prior to 1978. Therefore, at that time, an assumption was made that 40 CFR § 761.61 did not apply. However, select soil samples were analyzed to determine the distribution of dioxin-like congeners and the remaining soil samples were analyzed for PCBs via USEPA Method 8082 with Soxhlet extraction, consistent with TSCA. The PCB exposure point concentration was the 95th percentile upper confidence limit on the mean for each exposure point / exposure depth interval, consistent with TSCA. Site-specific clean-up goals were derived consistent with TSCA's requirements for an Application for Site-Specific Clean-up of PCBs. This approach identified the use of on-Site soil repositories as an acceptable remedial technique for the courtyard.

Given the difficult access issues within the courtyard, excavation and direct loading of soils for off-site disposition was determined not to be feasible. Placing the soils within on-Site repositories was determined to be feasible. Stockpile SP-2 was created in March 2016, when soils were excavated from the top of the FO-1 vault. These soils were placed in the coal chute when the IRA remedial activities resumed in late May 2016. Other 0-1 foot soils were excavated from the east portion and west end of the courtyard and directly placed in the designated on-Site soil repositories (i.e., coal chute and four dry wells). Soils excavated from the 1-3 foot interval of the eastern portion of the courtyard (excluding the FO-1 overburden) were placed over the 1-3 foot interval soils of the west end of the courtyard, until the excavation of petroleum-contaminated soils from beneath the FO-1 vault could be completed and the FO-1 soil repository could be created. The soils associated with the FO-1 overburden were placed into SP-2, which was in turn placed into the coal chute.

In early June 2016, a historic release of asbestos was discovered in the courtyard and IRA activities stopped. By this time, all soils known to contain 50 ppm PCBs or more were removed from the courtyard and transported to a facility approved to accept 50 ppm PCB waste. Subsequent to the discovery of asbestos in the courtyard soils, EPA was asked to determine if 40 CFR § 761.61 applied to the site, specifically for those soils that had not yet been disposed off-site. Although the work conducted prior to that time was not conducted under TSCA, because TSCA was thought not to apply, the work was conducted keeping in mind the requirements of TSCA.

14. Pages 31 and 32. In September 2016, 16 test borings (B-14 to B-28) were advanced to depths up to 23.5 ftbsg (at prior grade) with most PCB samples collected over 5-ft sampling intervals. Samples collected over a large interval can result in dilution of regulated PCB concentrations. The highest PCB concentration (29 ppm) was identified in/around B-18, where additional characterization samples are proposed.

    a. Given that this data was being collected in part to assess PCB concentrations, EPA does not understand the sampling interval rational, especially if contaminated waste will be removed and disposed off-site. Please clarify.

        Borings B-14 through B-28 were installed to assess the nature and extent of petroleum contamination around the fuel oil bunker, and to collect waste characterization samples for the planned off-site disposal of petroleum-

contaminated soils. The focus of the investigation was to gather the necessary data to characterize the waste so that it can be disposed at the proper disposal facility. With the detection of 29 ppm PCBs in B-18, additional sampling will be conducted at smaller sample intervals in the vicinity of B-18. Refer to Attachment 2 Appendix S for the B-18 sampling plan.

b. Footer (page 32). It is indicated that for certain samples, composite samples were collected for disposal criteria analysis. It is not clear which samples were composited together and what the results of the composite analyses were.

The composited samples were collected from samples that showed visible evidence of petroleum impacted soils, since these soils would be disposed off-site. Composite samples 1 through 4 include soil from the following borings and depth intervals.
B-21 0-5', 5-10', 10-13.5',
B-24 0-5', 5-8',
B-25 0-5', 5-7.5'
B-26 0-5', 5-10', 10-13'
B-27 0-5', 5-10', 10-11'
B-28 0-5', 5-10', 10-15', 15-18'
The analytical results are provided on Table 10 in Attachment 9.

c. The information provided in the table spanning pages 31 and 32 is inconsistent with the information provided in Table 1. For examples, Table 1 indicates only 1 sample was collected for B-14 (10-15') with multiple samples collected from B-14A. This is not shown in the table spanning pages 31/32. Please review and correct for consistency and accuracy. Please also explain what these borings represent as they appear to be shown as the same boring location on Figure 8A.

The table on pages 31/32 is corrected to indicate that soil samples were collected from boring B-14A for analysis of PCBs, EPH and target PAHs, and asbestos. Boring B-14 was advanced first and was intended to collect a soil sample for analysis of VOCs via EPA Method 8260 for use in disposal criteria documentation. Because no. 6 fuel oil was observed at the bottom of this boring, a field decision was made to advance B-14A in the same general area to collect soil samples for PCB, EPH/PAH and asbestos analysis. This decision was made to help in evaluating the extent to which the PCB and asbestos contamination are commingled with the petroleum contamination.

Boring	Depth Interval (feet)	PCBs with Soxhlet	EPH and PAHs	Asbestos
B-14 **[A]	5-10***			
B-14A **[A]	0-5	X	X	X
B-14A **[A]	5-10	X	X	X
B-14A **[A]	10-15	X	X	X
B-14A **[A]	15-16.5	X	X	X
B-15 **[A]	0-5	X		
	5-10	Hold, then Activated	X	X
B-16 **[A]	0-5	X		
	5-10	Hold		X

	10-15	Hold	X	
B-17 **[A]	0-5	Hold		
*	5-7.5	Hold	X	X
B-18 **[A]	0-5	X		
Sa	5-10	Hold, then Activated	Hold, then X****	
mp	10-15	Hold, then Activated	X	
le B-19 **[A]	0-5	X		
e	5-10	Hold, then Activated	Hold, then X****	X
re	10-15	Hold, then Activated	Hold, then X****	
co	15-17		X	
o B-20 **[A]	0-5	X		
v	5-8	Hold	X	
er B-21 **[A]	0-5*	X	X	X
d	5-10*	X	X	X
	10-13.5*	X	X	X
B-22 **[B]	0-5		Hold	
*	5-10		Hold	
	10-15		X	
S	15-20		X	
a B-23 **[B]	0-5		Hold	
m	5-9		X	
p B-24 **[A]	0-5*			
*	5-8*			
B-25 **[A]	0-5*			
S *	5-7.5*			
B-14A **[A]	0-5	X	X	X
	5-10	X	X	X
S	10-15***	X	X	X
a	15-16.5	X	X	X
m B-26 **[A]	0-5*			
p	5-10*			
le	10-13*, ***			
s B-27 **[A]	0-5*			
	5-10*, ***			
c	10-11*			
o B-28 **[A]	0-5*			
l	5-10*			
l	10-15*, ***			
e	15-18*			
c				

* Sample recoveries collected from this boring had visible or olfactory evidence of petroleum contamination. All or a portion of this sample recovery was retained, mixed with other soils collected for disposal criteria testing, and four composite samples were created for disposal criteria testing. The composite soil samples were submitted to Con-Test for disposal criteria analysis, as follows: TPH via USEPA Method 8100M, SVOCs via USEPA Method 8270, PCBs via USEPA Method 8082 with Soxhlet extraction, pesticides via USEPA Method 8081, herbicides via USEPA Method 8151, MA14 metals via USEPA Method 6010, reactive sulfide via USEPA Method 9030A, reactive cyanide via USEPA Method 9014, specific conductance via Method SM 2510B, pH via USEPA Method 9045C, ignitability via USEPA Method 1030, and asbestos via USEPA Method 600/R-93/116.

**[A] Feet below current grade. Original grade was three feet higher, and was lowered during excavation activities during June 2016.

**[B] Feet below current grade. Original grade was one foot higher, and was lowered during excavation activities during June 2016.

***This soil sample was submitted for analysis of VOCs via USEPA Method 8260, as part of disposal criteria testing.

****This sample was held pending other EPH and PAH analytical results. Analysis was activated and conducted, with extraction occurring on day 29 (more than 2-fold the MassDEP's CAM (Compendium of Analytical Methods) 14-day limit for extraction for this analysis). As a result, the EPH and PAH data for this sample meets the CAM criterion for gross failure. This data was only used to define the distribution of petroleum-related contamination.

15. Page 33. The discussion relating to the depth of identified visual and olfactory observations is unclear when compared to the information provided on Figure 8A. For example, the 3rd paragraph states that petroleum was encountered at 2.5 feet at B-14 during the test boring conducted in September 2016. However, on Figure 8A, it is indicated that petroleum was encountered at 5 feet (as of the grade on October 1, 2016). Based on the information provided (page 34, Section 4.3, 1st paragraph), it appears that the grade during the September work should have been at the same grade as the October work. Clarification is requested. Please also review and confirm that all depths shown on the figures representing current Site conditions are accurately shown.

    The grades for the September and October work are the same. As documented in the boring logs, petroleum was encountered at approximately 2.5 feet in boring B-14A and at approximately 5 feet in boring B-14. The boring logs are provided in Appendix H of the Application for Risk-Based Clean-up of PCBs. Figure 8A in Attachment 1 was updated to show that sheen/product was observed at B-14/B-14A from 2.5-16.5 feet below grade. GEC confirms that the distribution of contaminants on Figures 6, 7, 8, 8A and 9 reflect current Site grade.

16. Page 34, Section 4.3. The 1st paragraph under the PCB subsection refers to Figure 6 for the horizontal/vertical distribution of PCBs. This information was provided on an 8.5x11 figure. Please provide this figure on an F-size drawing. The information is much too congested to be legible.

    Figure 6 is provided as a D-size drawing to allow for less congestion. Figure 6 is provided in Attachment 6.

17. Page 40. The 2nd and 3rd paragraphs.

    a. It is indicated in the 3rd paragraph that the area between B-25 to B-27 will be excavated. In the 2nd paragraph, it states that no samples were collected from these borings for PCBs. However, results of the composite samples collected for disposal criteria (4th paragraph) identified PCB concentrations > 1 ppm. It is unclear how the composites were generated and how the composite results were considered in determining PCB requirements for off-site disposal. Please clarify.

        An explanation of how the composite samples were collected is provided under question 14.b. The composite samples included soil from borings B-21 and B-24 through B-28, and depth intervals such as 0-5', 5-10', 10-15'. These samples

represent the grossly petroleum contaminated soils that are slated for off-site disposal. The levels of PCBs in these samples ranged between 0.17 and 1.3 mg/kg, with one of four samples containing more than 1 ppm PCBs.

The composite samples were generated from soils collected over the full lengths of the test borings, and included 0-5 foot interval soils. In other, discrete samples (not composited samples) from the courtyard, the highest levels of PCB contamination were detected in the 0-5 foot interval soils. At a minimum, the 0-3 to 0-5 foot interval soils from this area (based on current grade) will be re-used on-Site, because they tend to contain relatively less petroleum contamination that could be the source of LNAPL observed at depth.

As described in Section 5.2 of the Application, the grossly contaminated soils will be shipped either to ENPRO Services of Maine, Inc. in South Portland, Maine or to Waste Management of Norridgewolk, Maine. Soils will be shipped to ENPRO Services of Maine, Inc., which is approved to receive <50 mg/kg PCBs wastes, unless disposal criteria testing for an area indicate PCB levels less than 10 mg/kg PCBs. Waste Management of Norridgewolk, Maine is approved to accept non-RCRA wastes, non-hazardous waste, <50 mg/kg PCB waste and asbestos containing materials. Waste Management is an alternate receiving facility, so long as the soils are not considered RCRA hazardous waste.

b. If PCB concentrations are regulated for cleanup and disposal under 40 CFR Part 761, the regulations require that *in situ* representative samples be collected to support off-site disposal decisions. Based on the information provided, no such data appears to have been collected. Not only were composite samples collected, the samples comprising the composite appear to have been collected over 5-foot sampling intervals. Both of these type of sampling procedures could have resulted in dilution of PCB concentrations. Given this, additional PCB samples would need to be collected across the horizontal/vertical proposed excavation area to support off-site disposal requirements, as applicable (e.g., insufficient on-site capacity within soil repositories, etc.)

The presence of both PCBs and asbestos in shallow soils mean these soils are very expensive to transport and dispose off-site, in part because of the rigorous decontamination procedures required when dealing with asbestos contaminated material. Therefore, all effort will be given to placing the PCB / asbestos-contaminated soils in on-Site repositories. As a contingency, in case there is insufficient capacity for placing soils in on-Site repositories and off-Site disposal of PCB contaminated soils is required, *in situ* disposal criteria testing of 0-3 and/or 1-3 foot interval soils will be conducted before restarting the excavation program. This testing will be conducted at the same time that additional investigations are conducted at boring B-18. The results of both the disposal criteria testing and B-18 sampling program will be sent to both the EPA Region I PCB Coordinator and the MassDEP.

18. Figure 6 does not show all PCB concentrations/areas discussed on pages 40/41. This figure should include all PCB data relevant to existing site conditions.

Refer to Attachment 6 for a copy of Figure 6 that includes all PCB data relevant to existing site conditions.

19. Page 42. Section 4.4. For B-11, it is indicated that soils were excavated to 1.5 feet below grade.

    a. If 1.5 feet of soil was removed within the B-11 area, post-excavation samples should have been collected at deeper than 1.5 feet below grade. However, Table 1 indicates that post-excavation bottom samples were collected at 1-1.5 feet.

        The soils that were excavated from around B-11 were to a depth of approximately 12-16" (1.00 to 1.33 feet) below surface grade (the surface grade was not level prior to excavation activities). Soil samples were collected from the bottom of the excavation to a depth of approximately 6" below the excavation; therefore the samples were collected between 1.0 to 1.5 feet, and 1.33 to 1.83 feet.

    b. Please clarify how the sidewall samples were collected given the sample depth description (i.e., 0-1').

        The sidewall samples were collected along the sidewall of the excavation; i.e. 0-16" of exposed soil was sampled in five discrete locations across the sidewall trying to collect a sample from the top (0") to the bottom (12-16") of the sidewall in roughly the same sample size, then homogenized to create the composite sample.

    c. Please clarify how the verification sampling complied with requirements under 40 CFR Part 761 Subpart O.

        The verification sampling did not strictly comply with Subpart O; at that time it was assumed that the pre-1978 release did not trigger TSCA regulations.

20. Pages 42 and 43. Coal Chute. Please clarify how the debris and metal remnants removed from the coat chute were managed and/or if these wastes remain onsite.

    The debris and metal remnants removed from the coal chute were handled by the demolition sub-contractor, and were pulled from the coal chute into the first floor of the Boiler House, where they remain. The MassDEP has deemed the Boiler House to be contaminated with asbestos, and required it to be boarded up. Therefore, the Boiler House is inaccessible.

21. Page 44. EPA does not understand the cost discussion provided in the stockpile.

    a. As previously indicated, clarification on what PCBs are being addressed under the PCB plan is requested. (see Specific Comment 3).

        Refer to Specific Comment 3.

    b. The cost estimate provided for management of the 300-400 yd^3 stockpile for off-site disposal is approximately $150,000 versus that for on-site disposal approximately $20,000. However, EPA was unable to locate the ENPRO cost estimate in the document. Please provide ENPRO cost estimate. In addition, please provide the estimated cost for the current selected remedial alternative. This estimated cost should also account for on-site capacity exceedances of the soil repositories.

        Refer to Attachment 7 for NRC's (previously ENPRO's) cost estimate. This cost estimate covers both options, i.e., off-site disposal and on-Site disposal.

c. It is indicated that disposition of the stockpiled soil is limited to hazardous waste facility that can accept those soils and Waste Management of Norridgewock, Maine was identified as the potential receiving facility. EPA does not believe that this facility is a RCRA hazardous waste disposal facility. Please clarify.

Page 44 should have read "ENPRO Services Inc. (ENPRO), who developed the cost estimates, identified ENPRO Services of Maine, Inc. (EMI) in South Portland, Maine as a potential receiving facility." Waste Management of Norridgewock, Maine may be an acceptable receiving facility for the petroleum-contaminated soils located below the PCB and/or asbestos-contaminated soils (i.e., soils located more than three feet below original grade and that contain <50 mg/kg PCBs).

22. Pages 49-50. Remedial Alternatives and Appendix O

a. Item 1. It is indicated that PCB-contaminated soil from the 0-3 foot interval would be sent to an appropriate facility that can receive > 10 ppm to 50 ppm PCB-contaminated soil if necessary due to capacity exceedances onsite. Clarification on this statement is required. For disposal in a state-permitted facility, the PCB concentration would have to be < 50 ppm. As written it appears to indicate less than or equal to ("≤") 50 ppm.

The statement should read…10 ppm to < 50 ppm PCBs.

b. Item 2. EPA does not understand the 10 ppm PCB concentration for petroleum-contaminated soil. Please clarify what the 10 ppm limit means for this soil.

The limit should actually read 10 to <50 mg/kg PCBs. As described in Section 5.2 of the Application, petroleum-contaminated soils will be shipped to either EMI of South Portland, Maine or Waste Management of Norridgewock, Maine. Both facilities are approved to accept wastes containing 10 to <50 mg/kg PCBs.

c. Appendix O. Generally under a risk-based request, detailed costs associated with achieving the prescriptive standards as specified under 40 CFR § 761.61(a) should be provided. Given that the courtyard is proposed to be used as open space for residents or other building users, the courtyard would likely be classified as a *high occupancy area* as defined under 40 CFR § 761.3. The PCB cleanup requirements for such an area are either < 1 ppm without further restriction or ≤ 10 ppm with a compliance cap (see 761.61(a)(7)). Both the 1 ppm and 10 ppm are standards not to exceed and cannot be achieved by "averaging" of PCB results under 40 CFR § 761.61(a). Based on the information provided, it appears that removal of the top 3 feet of soil would achieve a < 10 ppm PCB standard.

Based on the analytical data available to GEC, we agree that the removal of the top 3 feet of soil would achieve < 10 ppm PCBs.

The requirements for a risk-based request are provided at 40 CFR § 761.61(c), which is relevant if sampling, cleanup or disposal of PCB remediation waste is by a method other than that described in 40 CFR § 761.61(a) or (b). This application provides Site-specific clean-up standards, where the clean-up standards are (1) less than or equal to 10 ppm using the 95th percentile upper confidence limit on the mean; and (2) no PCB concentration equal to or greater than 50 ppm. Soils in the top 0-3 foot interval (which has a 95th percentile upper confidence limit on the

mean of 14 ppm PCBs) will be disposed in subsurface on-Site repositories then covered with a 3-foot soil cap. The soils that will remain *in situ* (i.e., the 3-6 and 6-15 foot interval soils (other than the petroleum contaminated soils) have 95th percentile upper confidence limit on the mean values of 4.1 and 0.90 ppm PCBs, respectively. These soils will be located beneath a 3-foot soil cap, but do not need to be in on-Site repositories.

In Appendix O, the cost estimated to achieve the < 10 ppm PCB cleanup standard with off-site disposal and installation of a protective barrier with AUL would be approximately $600,000. However, it is not clear what type of protective barrier is covered under the cost estimate. If this barrier would not meet the requirements as specified under 761.61(a)(7), please provide the estimated cost with installation of a TSCA-compliant cap.

The planned cap for this remedial alternative is the same as for the selected remedy. The cap would be placed over the PCB-contaminated soils located more than three feet below original grade, after excavating the top three feet of soils and transporting them off-site for disposal onsite for reuse. The cap would be constructed of three feet of compacted soil underlain with a synthetic marker barrier, as depicted in Attachment 1 Appendix R. This cap would exceed the minimum compacted soil thickness requirement of 10 inches, specified under 761.61(a)(7). The construction of the cap would met the technical requirements for a landfill cap specified at 40 CFR § 761.75(b)(1). The *in situ* soils located ten to twenty feet below grade are composed of silt and silt/clay, and likely meet the technical requirements of 761.75(b)(1), i.e., (1) *in situ* thickness of 4 feet; (2) permeability equal to or less than 1E-07 cm/sec; (3) at least 30 percent soil passing no. 200 sieve; (4) liquid limit >30; and (5) plasticity index >15. The cost of this cap was included in the $600,000 estimate.

23. Page 51. According to previous information in the text as well as Table 1, the sand sample from the top of the FO-1 bunker did not contain detectable PCB concentrations. The sand was removed and placed into SP-3. A sample collected from SP-3 was reported to contain PCBs at 2.6 ppm. There was no discussion of why the PCB concentration found in SP-3 (which contained reportedly only the sand contents) was thus different from the sand PCB concentration reported as ND (FO-1(3')).

    The FO-1 sample was a discrete sample from one *in situ* location and the SP-3 sample was collected via an 8-point composite methodology, i.e. 8 discrete sample locations on the stockpile at >/= 6" into the stockpile, homogenized and sent to the lab for analysis. It is possible that some overburden material was placed in the stockpile with the sand as it was being generated.

24. Table 1. For the sampling locations where it is indicated that the specific location was "excavated and stockpiled," it should also be denoted in that description which stockpile said location was placed in (e.g., SP-1, SP-2, SP-3, etc.). With respect to those locations placed into drywells, if known, the specific drywell should be identified. The same comment applies to any other repository that is not clear identified.

    Refer to Attachment 8 for an updated copy of Table 1.

25. Pages 53 and 54. Summary of planned remedial activities.

a. At a minimum, it appears that any PCB-contaminated soil > 1 ppm will be disposed of beneath a minimum of 3 feet of clean material. In addition, utilities will be installed in a clean utility corridor which will house the storm water system. Please provide information on the clean utility corridor as no information was provided on how it will be installed, including depth and soil required to be excavated, etc.

   According to the final grading and utility plan C-4 and the site details C-5 provided in Attachment 11, the storm water system will include drain manholes (DMH) and various associated piping. The depth of the clean utility corridor will range from approximately 1.40 to 5.10 feet from final grade (or the clean utility corridor will be within the 3-foot clean soil cover or 2.10 feet below the 3-foot clean soil cover), and the width will range from approximately 2.66 to 3.00 feet. DMHs will be installed to a depth of approximately 3.96 to 4.52 feet from final grade. Clean soil will be placed at least one foot below the base of the DMH and at least two feet around the DMH walls. The clean corridor around the piping, located below the three feet of clean soil, will be at least six inches to one foot below the bottom of the pipe and at least one foot to either side of the pipe. The bottoms and sidewalls around the DMH and piping will be lined with a marker barrier before backfilling with clean material. Please refer to a cross-section of the clean utility corridor provided in Attachment 11.

b. With respect to the off-site treatment or disposal of petroleum-contaminated soil, clarification on "treatment" is requested. If the petroleum-contaminated soil contains PCBs regulated for cleanup and disposal under 40 CFR Part 761, the petroleum/PCB-contaminated soil would have to be disposed in accordance with both state and federal requirements. Please clarify.

   The soils will likely be disposed. The soils will only be treated, likely by asphalt batching, if they do not contain PCBs.

c. PCB remediation activity #6 (page 53) states: "backfilling this area with soils that were excavated but did not contain visible evidence of contamination." EPA assumes this refers to the FO-1 area, but requests confirmation. With respect to visible evidence of contamination, EPA assumes this refers to visible evidence of petroleum-related contamination, such as stained or discolored soil. Please confirm.

   Yes, this refers to FO-1 area. The visual evidence of petroleum contaminated soils refers to petroleum-related contamination, such as stained or discolored soil.

d. Currently, it is proposed to dispose off-site visibly petroleum-impacted soil and any ≥ 50 ppm PCB soil that may be identified at B-18. However, it is unclear from the discussion if there is sufficient capacity within the soil repositories based on the current information known. Thus, based on the proposed described activities, including the possibility that removal of the top 3 feet of the repositories' walls will need to be removed to accommodate landscaping, please estimate how much PCB-contaminated soil, if any, may need to be disposed off-site due to insufficient disposal capacity within the soil repositories.

   At the current time the volume estimates for the petroleum-impacted soils that are slated for off-site disposal are approximately equal to or greater than the volume estimates for the PCB-impacted soils. However, some of the less contaminated

petroleum-impacted soils may be transported off-site for disposal, to allow for more room in the FO-1 soil repository for on-Site disposal of the PCB and possibly asbestos soils.

e. Based on the alternative cap cross-section shown in Appendix R, it appears that PCB-soil will remain in-place outside the soil repositories. Please confirm that regardless of the PCB-contamination at the Site, that the entire courtyard area from the utility vault to the retaining wall on the east side of the courtyard will be covered by a minimum 3-foot clean cap and that all repositories will have a 4-inch concrete cover prior to construction of the final clean cap.

The entire courtyard area from the utility vault to the retaining wall on the east side of the courtyard will be covered with a minimum of 3-foot clean cap and that the repositories with a concrete or brick wall will be covered with a 4-inch concrete cap. FO-1 repository will be "capped" with a distinctive marker barrier, but not a concrete cap.

26. Page 58-59. EPA notes that following excavation of the petroleum-impacted soil, EPH, PAHs, and TPH samples will be collected but not PCBs. As PCBs were identified within the some of the petroleum-contaminated soil areas for the record, EPA would recommend some amount of PCB sampling within the petroleum-soil excavation areas to confirm PCB concentrations that may remain exterior to the soil repositories.

PCB testing will be added to the confirmatory sampling program per EPA's recommendation.

27. Page 63. Section 5.2. Item 3. For any soil repositories where PCB Waste > 1 ppm was temporarily stored, any wastes generated from dismantling of those structures could be contaminated with PCBs not just asbestos.

Noted, the brick and/or concrete will be presumed to be contaminated with both PCBs and asbestos, and will be disposed (reused on-site) as asbestos containing material and PCB Waste > 1ppm.

28. Page 65. It is indicated that if PCB concentration exceed 50 ppm at B-18 these soils will be excavated. EPA believes this should state greater than or equal ("≥") to 50 ppm.

Noted, the PCB concentrations equal to or greater than 50 ppm will be excavated and transported off-Site to a facility approved to accept PCB wastes equal to or greater than 50 ppm.

29. Page 65. With respect to the proposed PCB cleanup standard for this Site, clarification on how this performance standard will be attained is requested. In Appendix N, it appears to indicate that at depths greater than 3 feet that PCB concentrations are < 10 ppm, with exception perhaps of area B-18 where additional sampling will be performed. The top 3-feet of soil will ultimately be disposed of in on-site soil repositories under the current recommended approach. In the discussion of cleanup, there is reference to the 95th percentile upper confidence limit on the mean and 10 ppm as well as reference to "a single soil sample maximum total PCB standard of 50 ppm." Thus, it is unclear what is proposed and if this is only for the B-18 area since PCB concentrations > 10 ppm but < 50 ppm also were located at B-9 that remain on-site. Please also be aware that EPA expects

that any PCB concentration at ≥ 50 ppm, not just greater than > 50 ppm, will have to be removed and disposed off-site in accordance with 40 CFR Part 76.1.

The ≥ 50 ppm PCB standard applies to all soils, regardless of depth interval. The 0-3, 3-6 and 6-15 foot interval soils contained maximum PCB concentrations of 42, 29 and 6.2 mg/kg, respectively. The 0-1 foot interval soil sample with a PCB concentration of 42 mg/kg was collected at boring B-9. Six additional soil samples collected at B-9 at the 1-3 foot interval and within 5-foot radius surrounding B-9 contained lower levels of PCBs. Therefore, with the exception of B-18, sufficient evidence exists that soils remaining on the property contain < 50 ppm PCBs. For B-18, as described in the Application, additional investigations will be conducted to determine if soils are < 50 ppm. If they are not, these soils will be removed and disposed off-site in accordance with 40 CFR Part 76.1.

The second standard (95th percentile upper confidence limit on the mean of 10 mg/kg) is used to determine which soils must be placed in on-Site soil repositories. The 95th percentile upper confidence limit on the mean for the 0-3, 3-6 and 6-15 foot interval soils are 14 mg/kg, 4.1 mg/kg and 0.90 mg/kg PCBs, respectively. Therefore, the 0-3 foot interval soils must be placed in the on-Site soil repositories, or, if sufficient room does not exist in the FO-1 repository, transported off-site to one of the two identified facilities that can accept soils containing 10 to <50 ppm PCBs. The remaining soils, which have 95th percentile upper confidence limit on the mean less than 10 mg/kg, will be covered with a TSCA-compliant cap (as will be the repositories).

Once available, the additional analytical data for B-18 will be evaluated to determine if any of the B-18 soils should be transported off-site, disposed within an on-Site repository or only need to be placed beneath the TSCA-compliant cap.

30. Page 67. Section 5.4. It is indicated that EPA determined that Site conditions are subject to the PCB regulations within TSCA. For clarification, EPA determined that information submitted to the agency was **insufficient** to support that PCBs at the Site were not regulated for cleanup and disposal under 40 CFR Part 761. This was primarily due to the fact that PCB concentrations ≥ 50 ppm were identified at the Site and the fact that various activities had occurred which would have resulted in the spread and/or dilution of regulated PCB concentrations at the Site.

    With respect to the coordinated approval under 40 CFR § 761.77, EPA cannot determine if the MassDEP approval (dated December 7, 2016) meets the requirements under 40 CFR § 761.77(c) for issuance of said coordinated approval. Specially, under 40 CFR § 761.77(c), EPA may issue a coordinated approval under TSCA if the EPA Regional Administrator determines that the activity will not pose an unreasonable risk of injury to health or the environment and when a State has issued a decision document for conducting PCB remediation activities under a State program that has been approved by EPA. Please confirm if the MassDEP approval meets this requirement so that EPA can then consider the coordinated approval under 40 CFR § 761.77 versus § 761.61 (c)

    Refer to General Comments 4.

31. Figure. Several figures show the term "calculated area" in the legend. Please clarify what this refers to and/or means.

    The term "calculated area" refers to the area of the courtyard (typically outlined in blue). For the purpose of estimating soil volumes the area was "calculated" based off of the ANR

plan recorded with the Lowell planning board, using the AutoCAD programing to determine distances and square footage.

32. Figure 6. Please revise the legend for SP-1 and SP-2 for accuracy. As noted on other figures, SP-1 was transported off-site and SP-2 was placed in the coal chute as of October 1, 2016.

    Refer to Attachment 6 for Figure 6.

Please contact the undersigned at (781) 356-9140 with any questions or comments. We look forward to hearing from you so that we can begin response actions as soon as possible.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

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Prepared by:

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Neil F. Inglis, TURP, CHMM
EHS Manager

Approved by:

Brian T. Butler

Brian T. Butler, LSP
Senior Vice President, Operations

cc: Jon Rudzinski

Attachments:
Attachment 1 - Color Copies of Figures 1 through 12
Attachment 2 - Appendix G and Appendices R through U
Attachment 3 - Terracon's Pre-renovation Asbestos and Hazardous Building Materials Survey
Attachment 4 - Alpha Analytical Laboratory Report
Attachment 5 - Table showing PCB results for Soils within the 300-400 yd^3 Stockpile
Attachment 6 - D-size Drawing of Figure 6
Attachment 7 - ENPRO Cost Estimate
Attachment 8 - Table 1: Updated
Attachment 9 - Table 10: Summary of Soil Analytical Data: Composite Soil Samples, Lowell, MA
Attachment 10 - Tradebe Transfer Facility Permit
Attachment 11 - Utility Corridor Information

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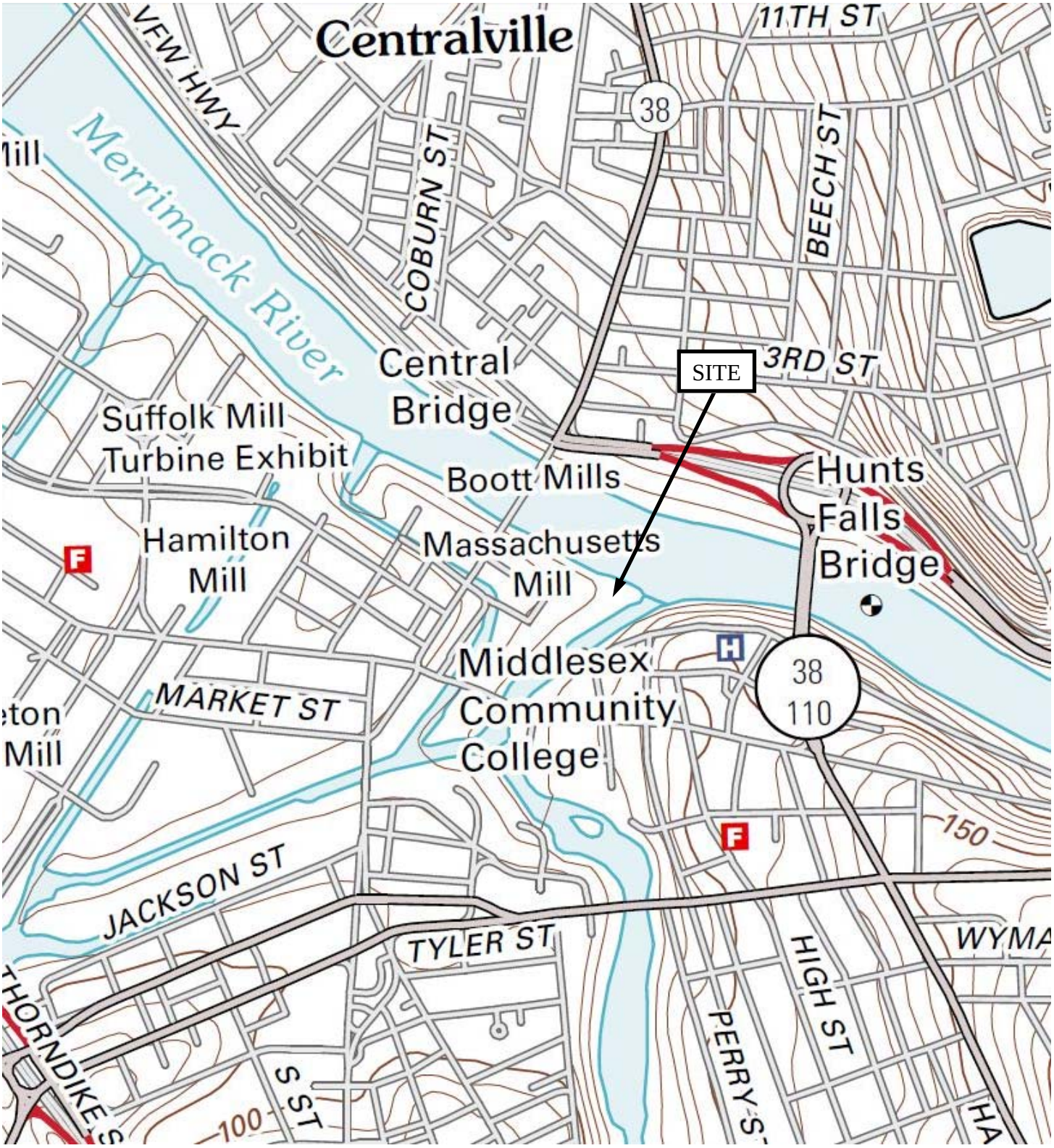
ATTACHMENT 1

Color Copies or Figures 1 through 13



USGS 7.5 Minute Topographic, dated 2012

Lowell
Massachusetts Quadrangle

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SITE LOCUS

169.2 Bridge Street
(150 Massmills Drive)
Lowell, Massachusetts

GEC Project #: 1785-6090

Figure 1

Scale:
1 : 24,000

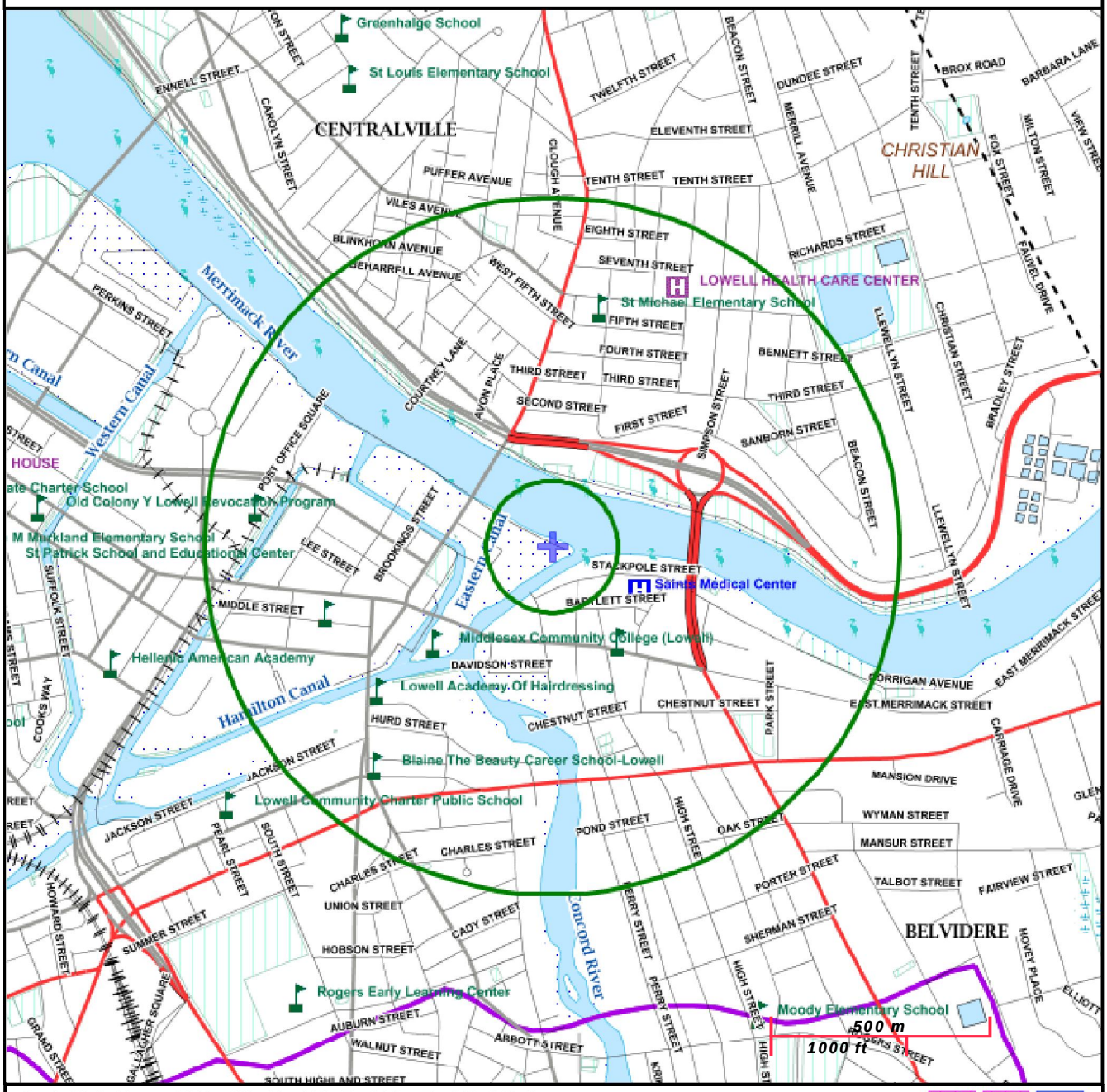
MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
LOWELL, MA
NAD83 UTM Meters:
5258339mN , -7937440mE (Zone: 18)
August 15, 2016

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major,PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg.,Non-Com.

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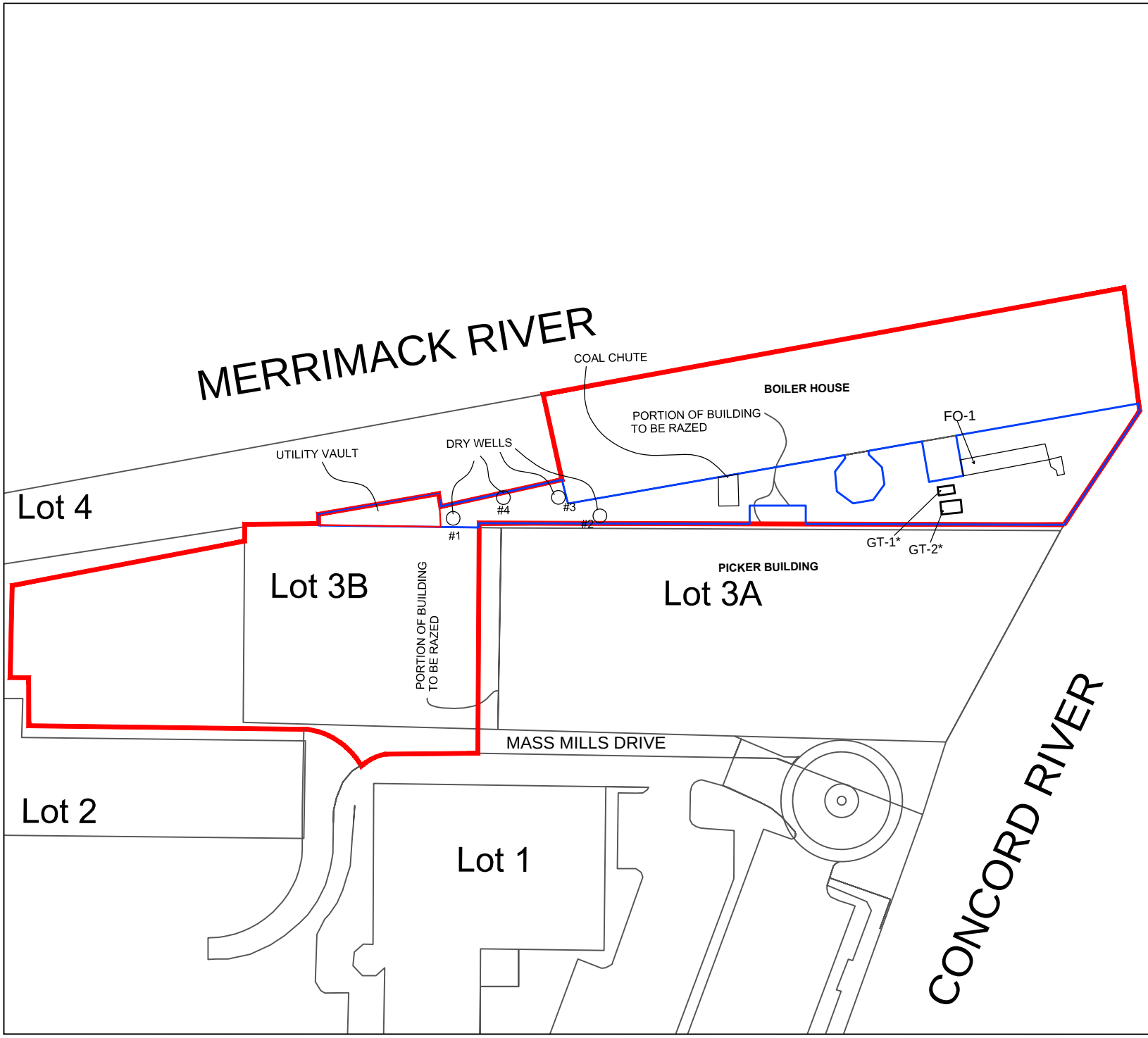

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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Site Plan

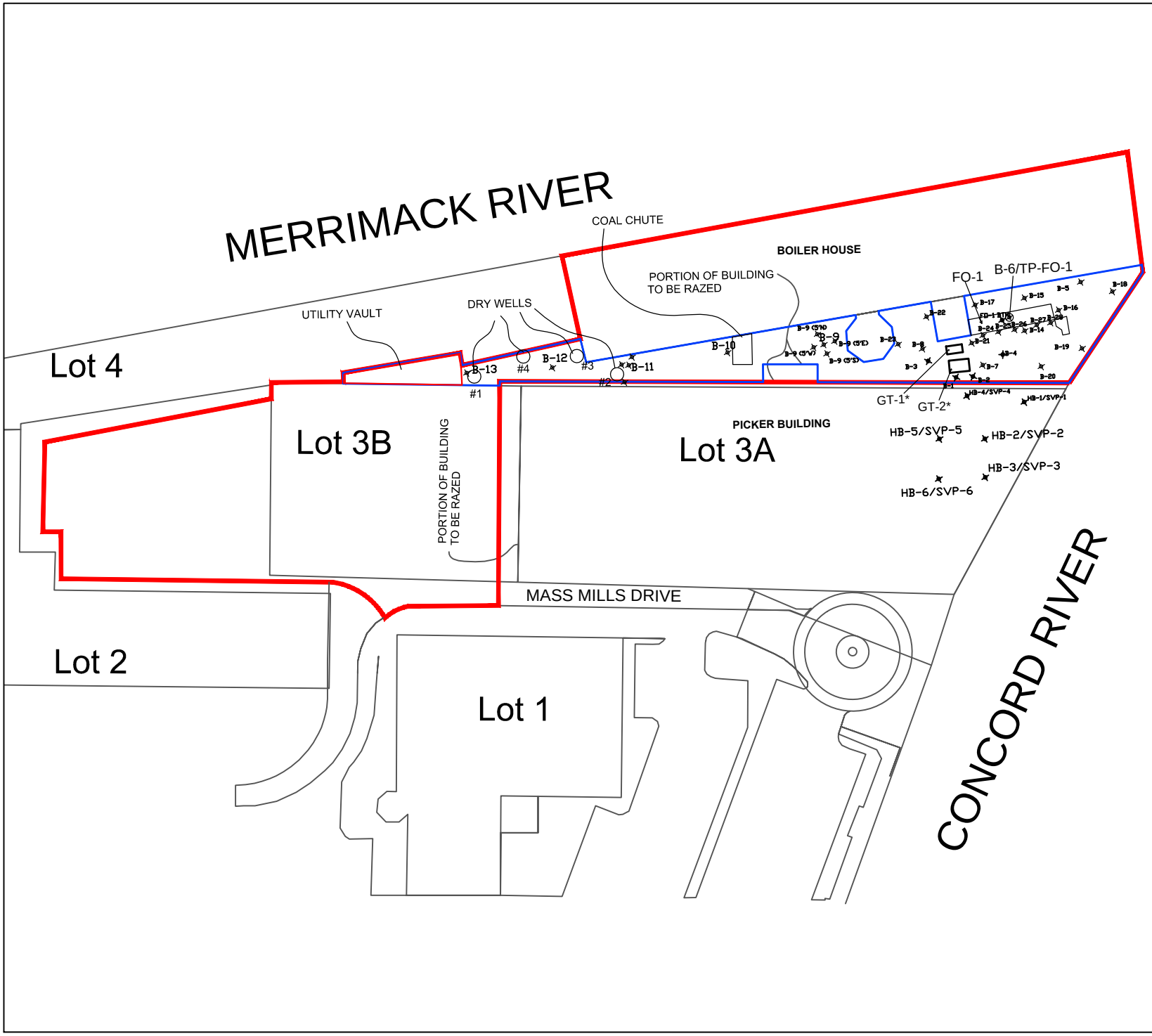
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 3

SCALE
0 25 50

N



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring

Site Plan- Showing Test Pit and Boring Locations

Massachusetts Mills
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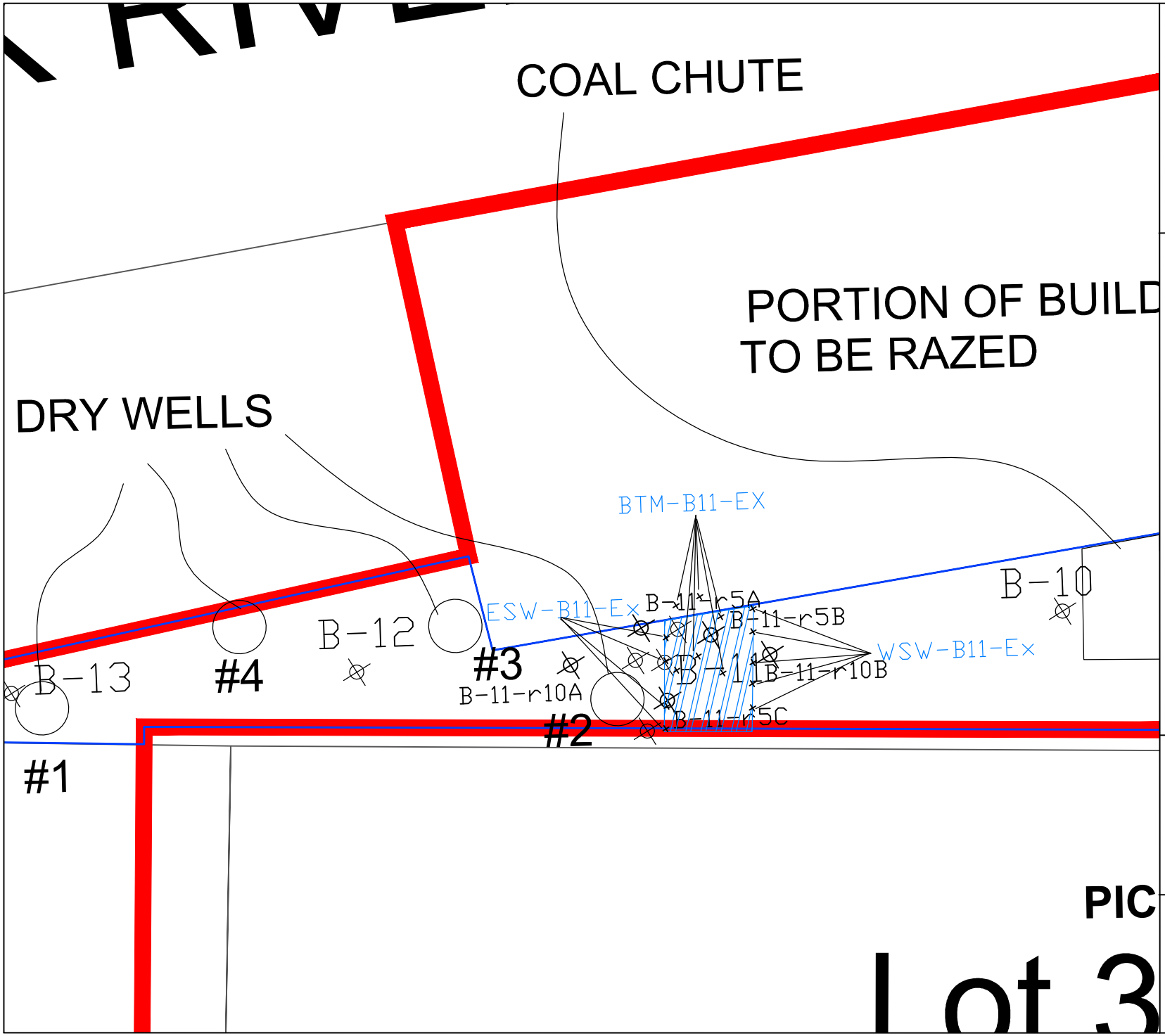
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 4

SCALE
0 25 50

N



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring
- PCB Excavation Limit

Courtyard Area Showing B-11 PCB Hot Spot

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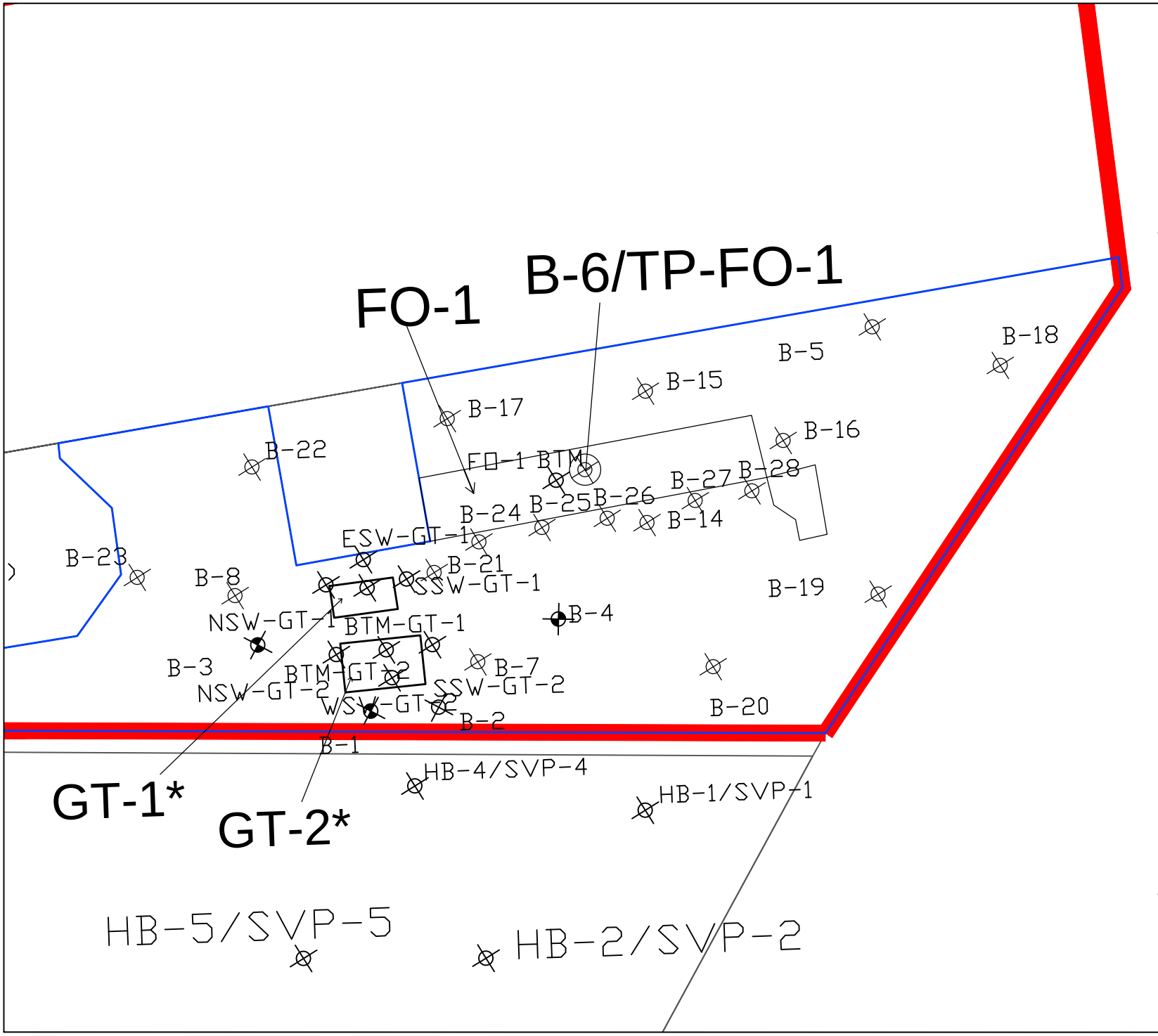
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 4A

APPROX. SCALE
0 7.5 15
N



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring

Courtyard Area Showing Gasoline UST and Fuel Oil Bunker

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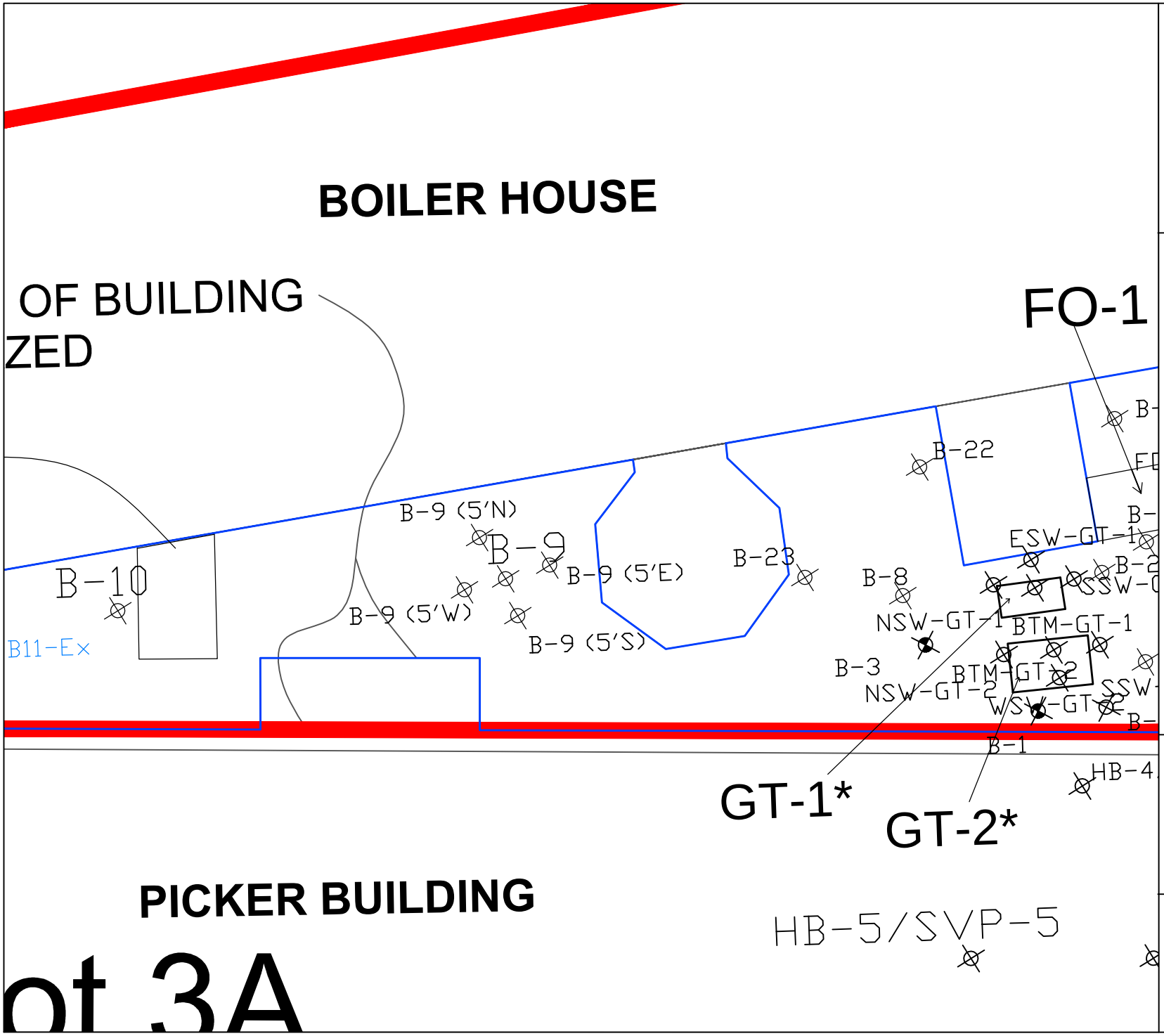
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 4B

APPROX. SCALE
0 7.5 15
N



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring

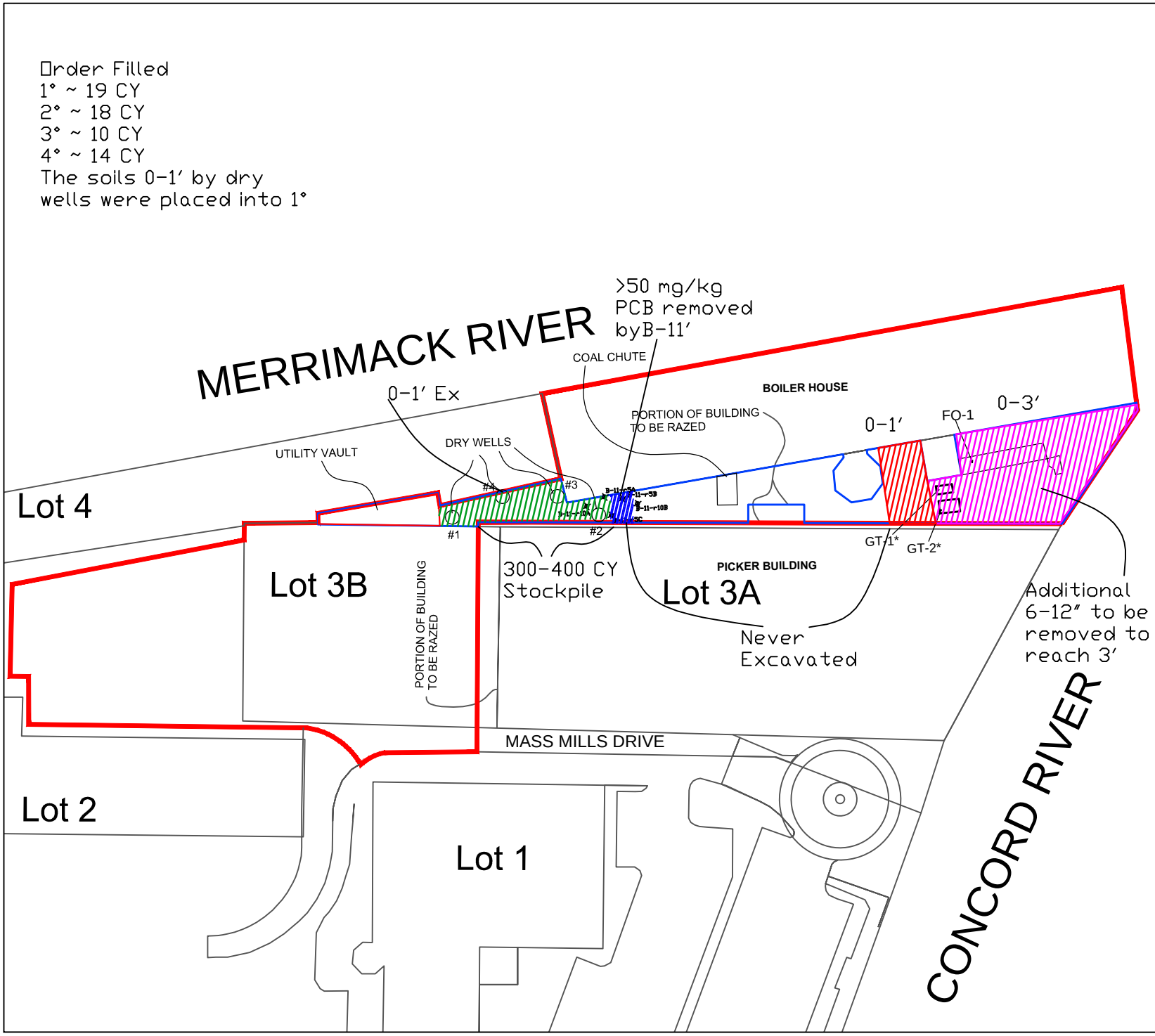
Courtyard Area Showing B-9

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 4C

APPROX. SCALE
0 7.5 15



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

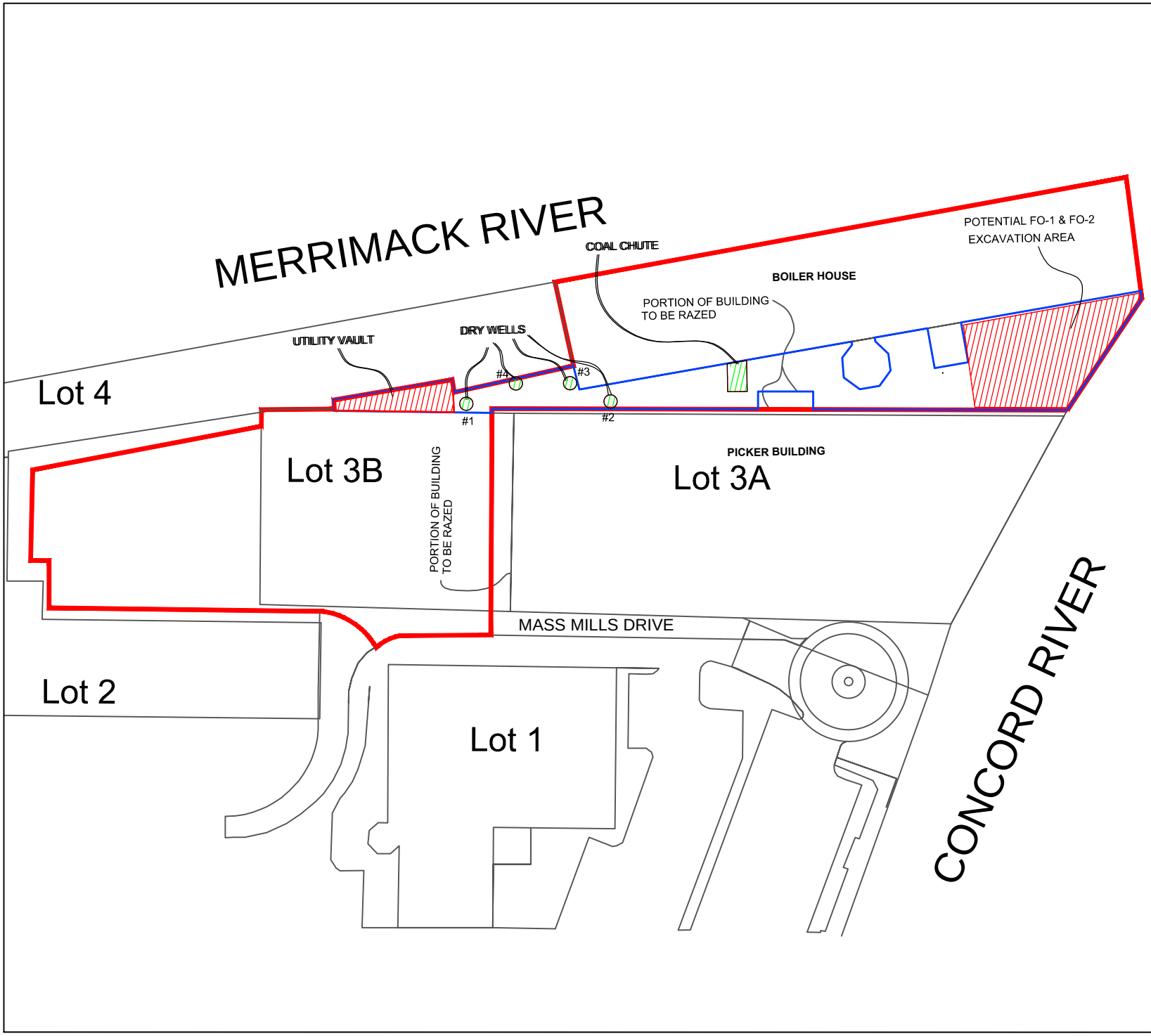
Site Plan Showing Current Condition of Courtyard (10/1/2016)

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 5

SCALE
0 25 50



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Legend

- Lot 3B
- Calculated Area
- Area of potential PCB repositories
- PCB Repositories Used

Site Plan- Showing Areas of Proposed & Used PCB Soil Repositories

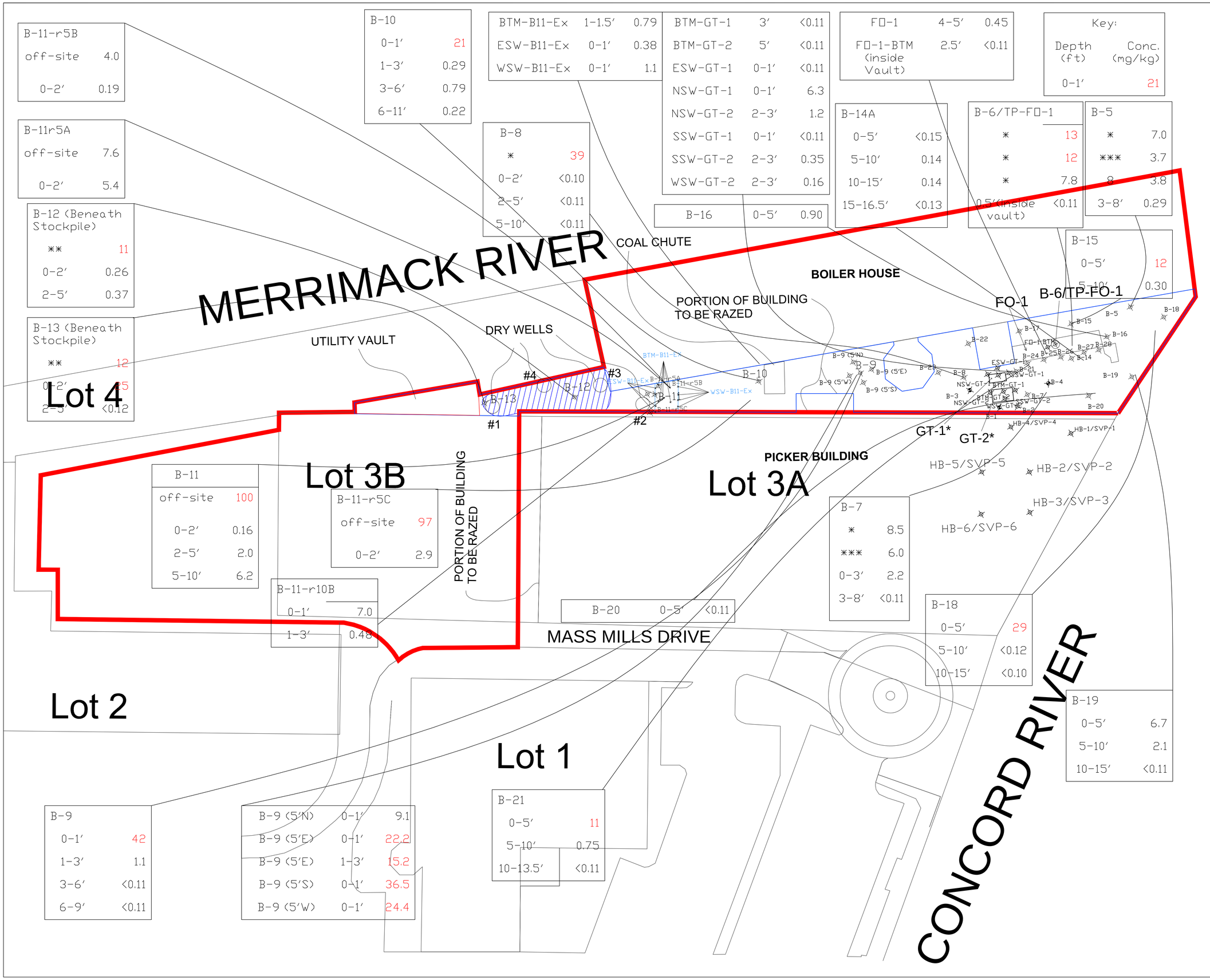
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

Figure 5A

SCALE
0 25 50

N

GEC Project Number 1785-6090



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring
- Current Stockpile of 300 - 400 CY of 1-3' Soils from Eastern Portion of Courtyard

Stockpile SP-1: Shipped to Michigan

Stockpile SP-2: Placed in Coal Chute Repository

Stockpile SP-3: Returned to Fuel Oil Bunker

PCB Exceedances >10mg/kg shown in Red

* Soils moved to coal chute

* * Soils moved to dry well no. 1

* ** Soils moved to stockpile or dry wells no. 2 to 4

Site Plan - Distribution of PCBs in Soil (Based on Conditions 10/1/2016)

Masscahusetts Mills
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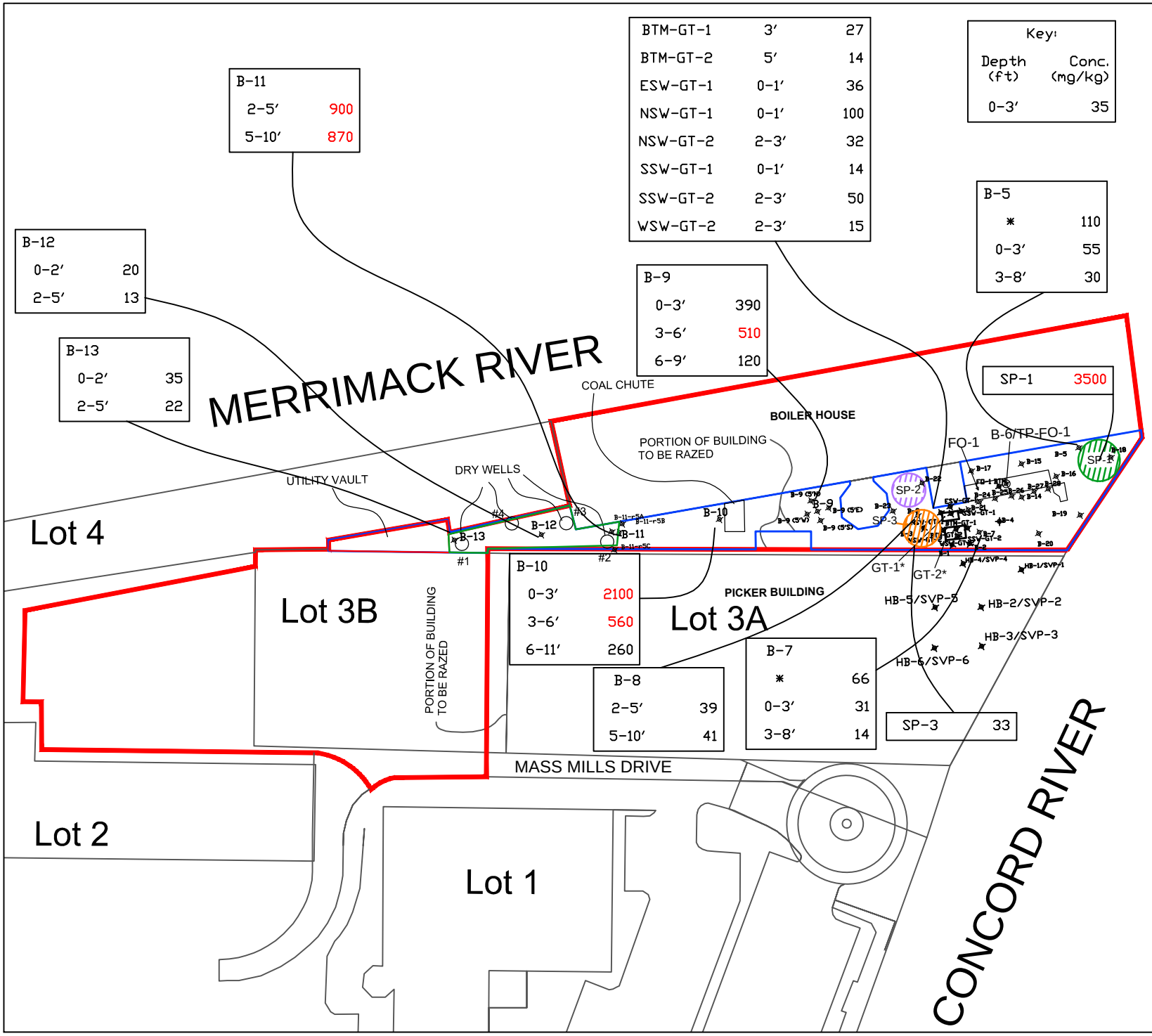
Lowell, Massachusetts

GEC Project Number: 1785-6090
GEC File Number: 02082017

FIGURE 6

SCALE

0 30 60
FEET



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring
- Stockpile SP-1 (transported off site)
- Stockpile SP-2 (placed in coal chute)
- Stockpile SP-3 (SP-3 Soils were returned to No. 6 Fuel Oil Vault FO-1)

Vanadium Exceedances >400mg/kg shown in Red

*Excavated and placed in stockpile in west side of courtyard or in coal chute or dry well

Site Plan-Distribution of Vanadium in Soil (based on grade on 10/1/2016)

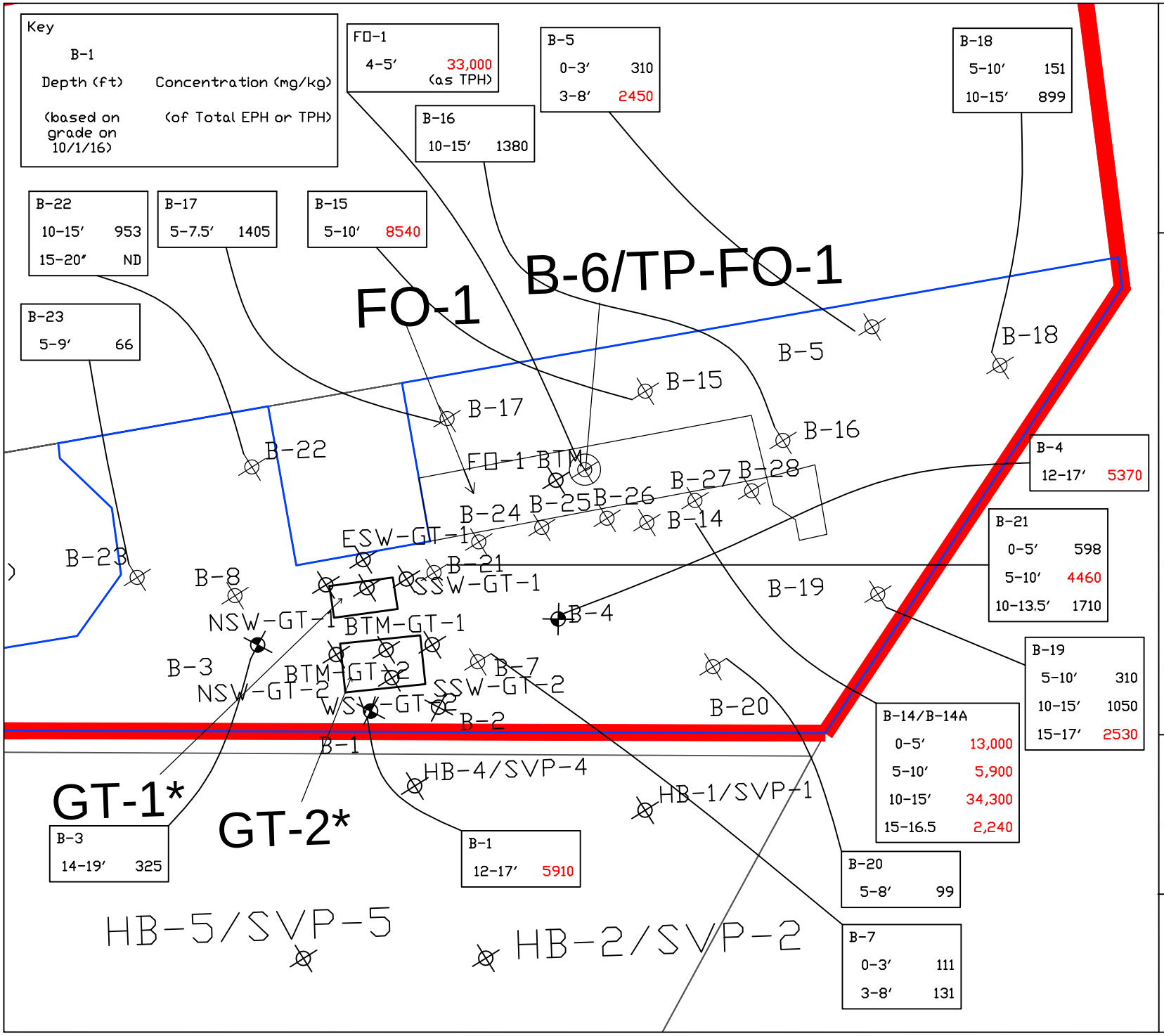
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

Figure 7

SCALE
0 25 50

N

GEC Project Number 1785-6090



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring

Total EPH (mg/kg)

ND = None Detected

Red = > 2,000 mg/kg

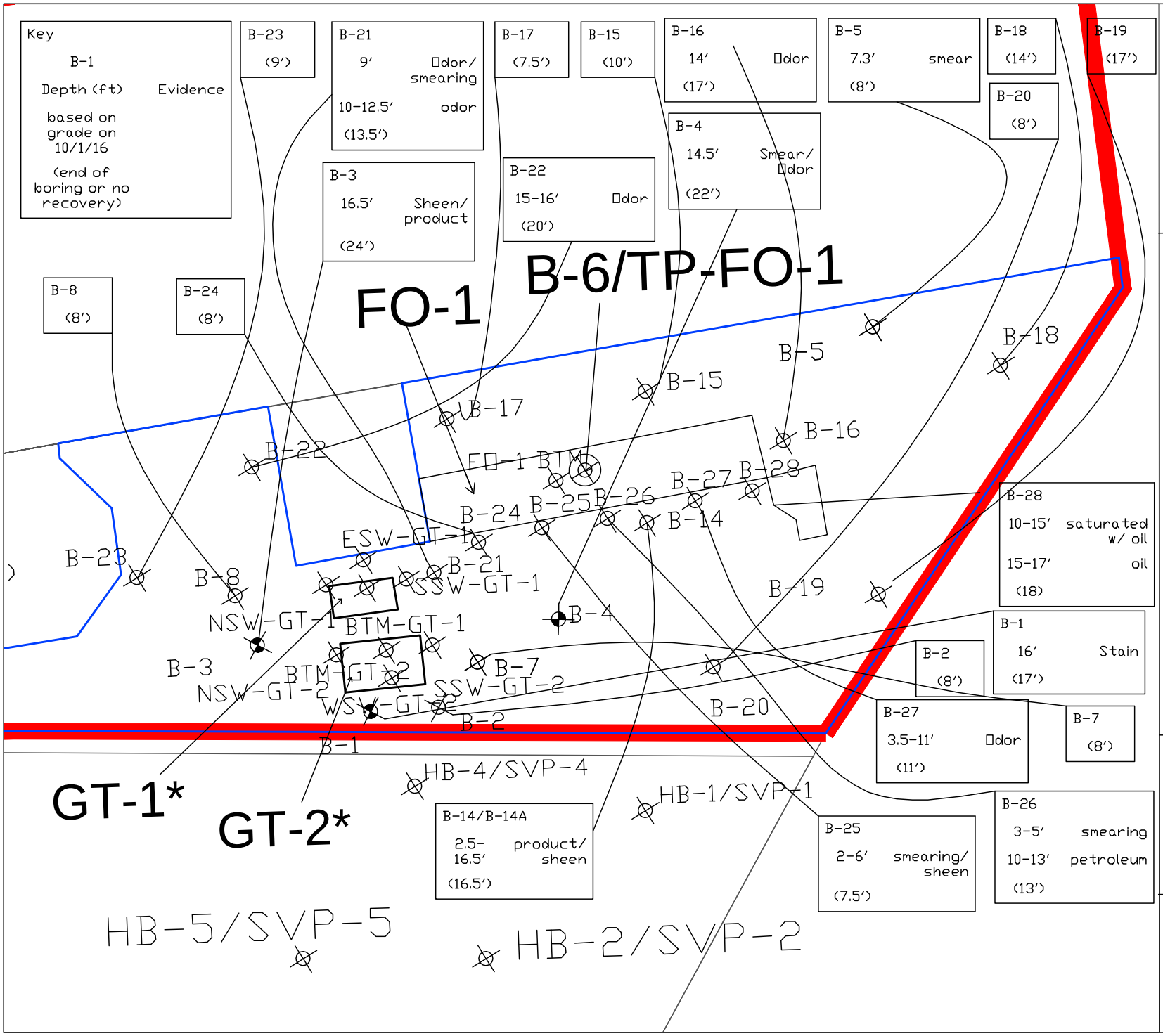
Site Plan Showing Distribution of Petroleum Contamination

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

Figure 8

APPROX. SCALE
0 7.5 15

GEC Project Number 1785-6090



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring

Site Plan Showing Distribution of Olfactory/Visible Evidence of Petroleum Contamination

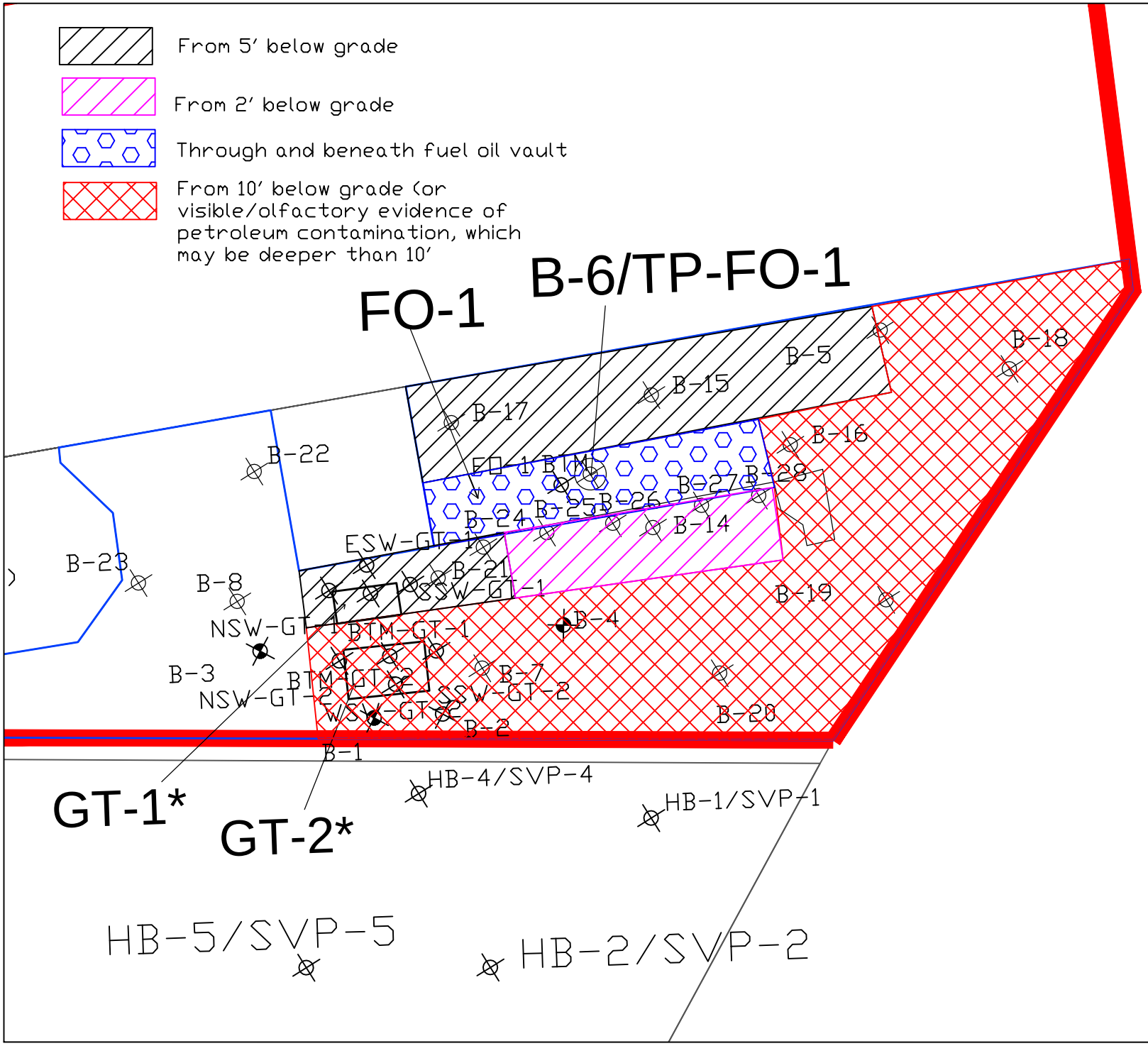
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

Figure 8A

APPROX. SCALE
0 7.5 15

N

GEC Project Number: 1785-6090
GEC File Number: 02082017



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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring

Excavation from current grade* through smear zone spanning water table (10/1/2016)

*Grade prior to planned removal of asbestos contaminated soils

Courtyard Area - Planned Excavation Area for Petroleum Contaminated Soils

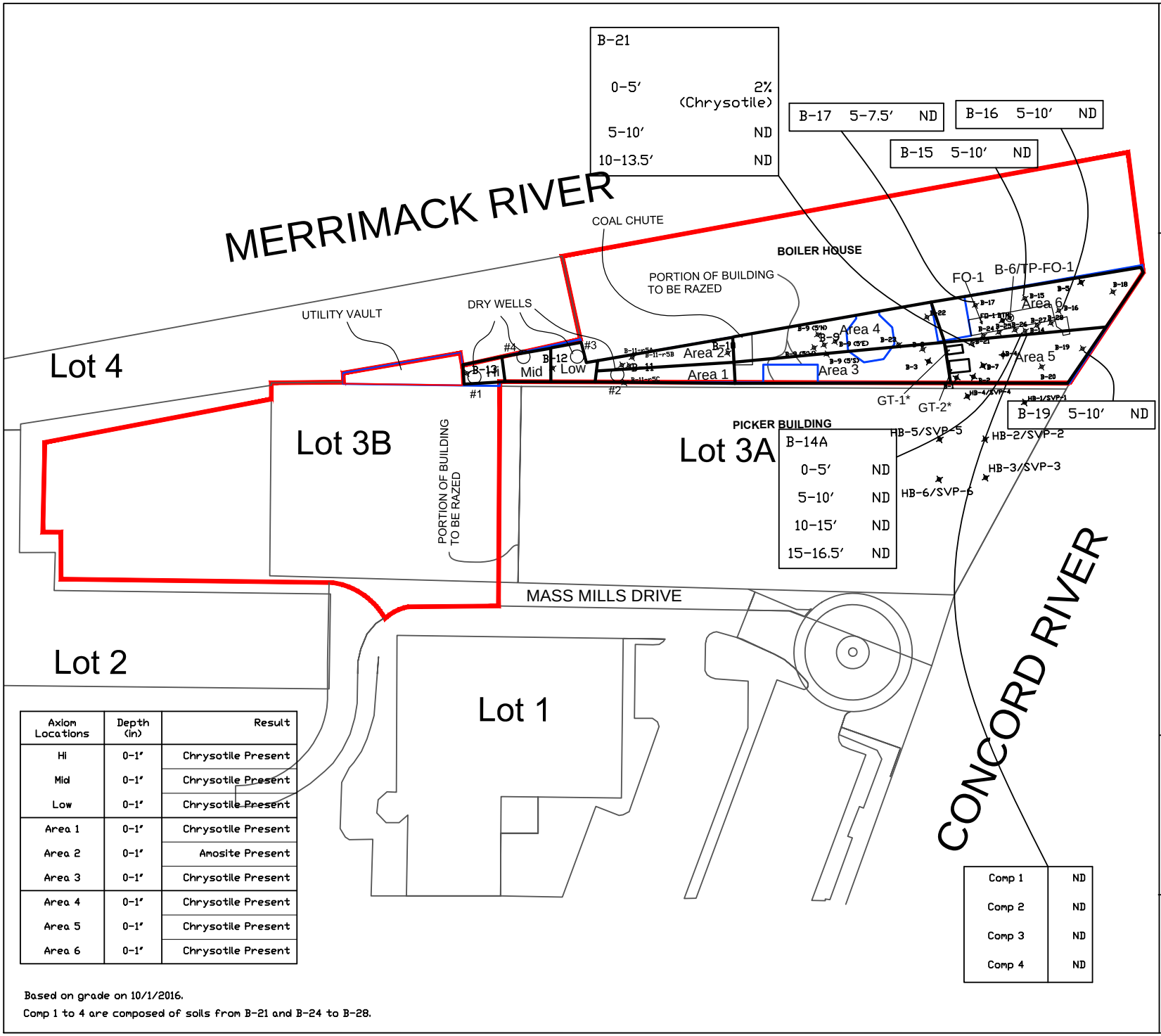
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 8B

APPROX. SCALE
0 7.5 15

N



Axiom Locations	Depth (in)	Result
Hi	0-1′	Chrysotile Present
Mid	0-1′	Chrysotile Present
Low	0-1′	Chrysotile Present
Area 1	0-1′	Chrysotile Present
Area 2	0-1′	Amosite Present
Area 3	0-1′	Chrysotile Present
Area 4	0-1′	Chrysotile Present
Area 5	0-1′	Chrysotile Present
Area 6	0-1′	Chrysotile Present

Comp 1	ND
Comp 2	ND
Comp 3	ND
Comp 4	ND

Based on grade on 10/1/2016.

Comp 1 to 4 are composed of soils from B-21 and B-24 to B-28.

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Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring
- Axiom Location

ND = None Detected

Site Plan- Showing Distribution of Asbestos in Soils

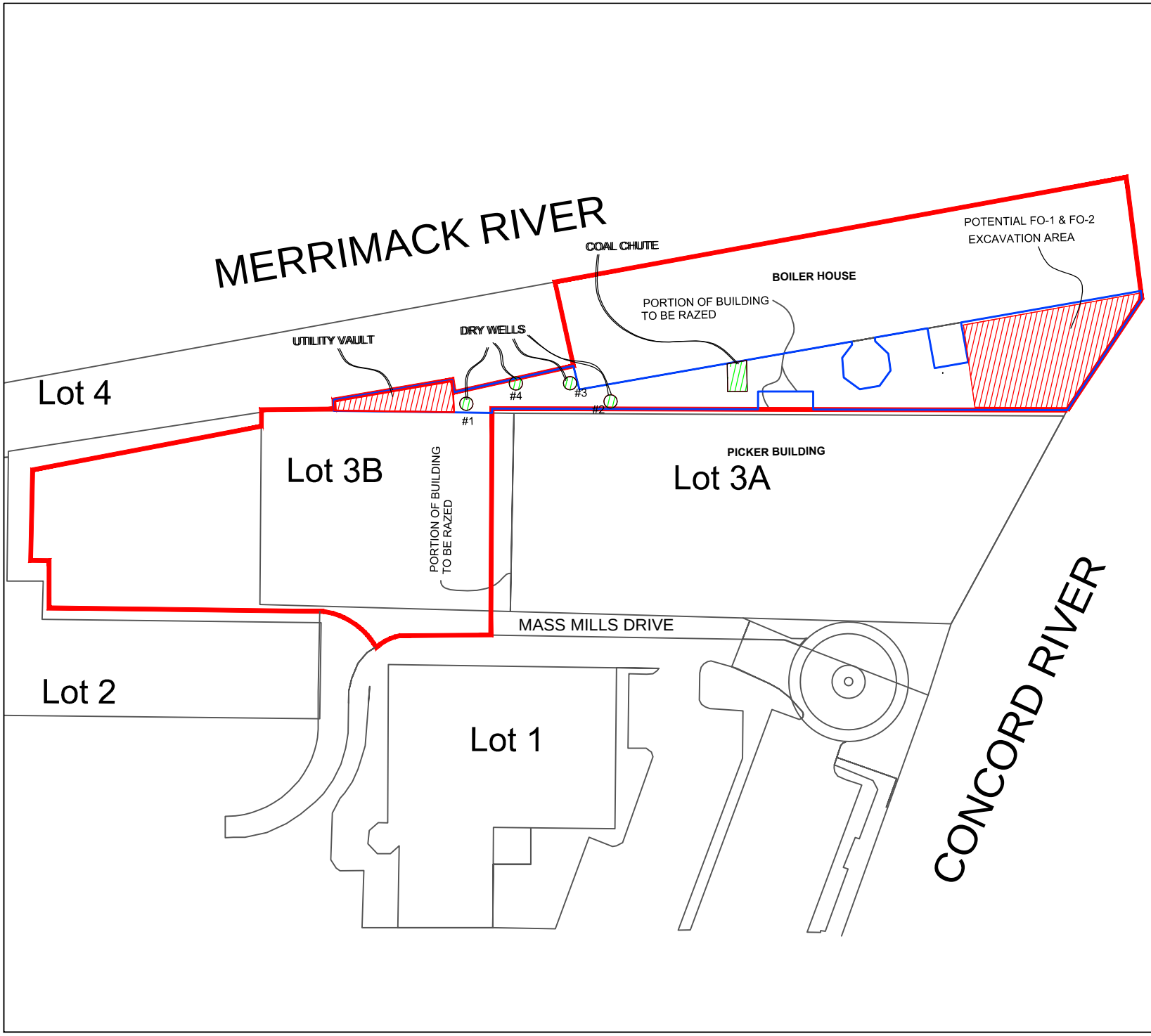
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 9

SCALE
0 25 50

N



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Legend

- Lot 3B
- Calculated Area
- Area of potential PCB repositories
- PCB Repositoies Used

Site Plan- Showing Areas of Proposed PCB Soil Repository

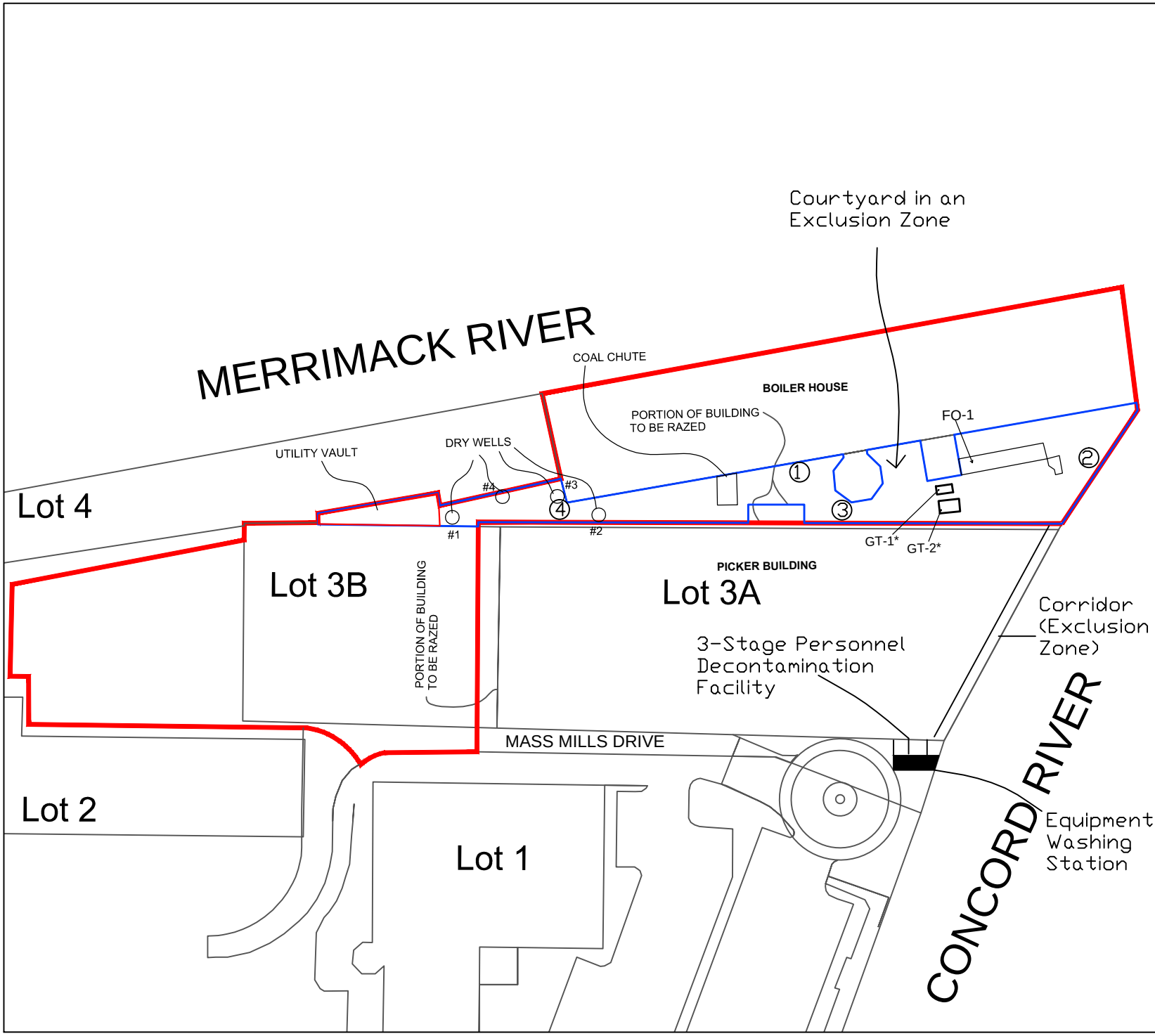
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 10

SCALE
0 25 50

N



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Legend

Lot 3B

Disposal Site Boundaries

Asbestos Air Monitoring Station

* Both Gasoline USTs are removed

Decontamination and Air Monitoring

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

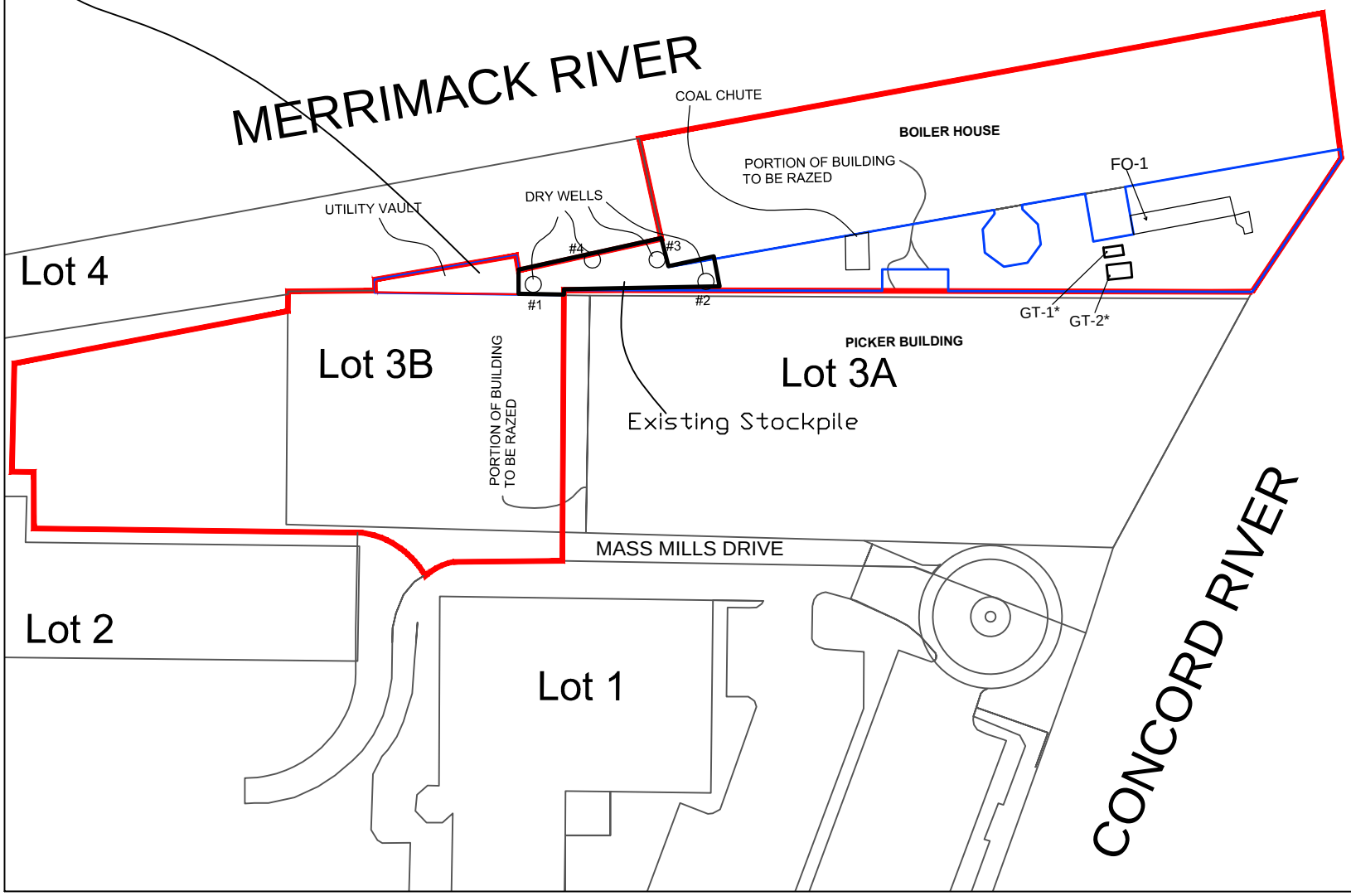
GEC Project Number 1785-6090

Figure 10A

SCALE
0 25 50

N

1. Knock down walls of utility vault to 3 feet below grade.
2. Prepare clean utility corridor (approximately 4 feet wide) around live sewer line, inside utility vault.
3. Move approximately 125 cubic yards of PCB/Asbestos-contaminated soils from the existing stockpile to the repository portion of the utility vault.
4. Cover with distinctively colored geotextile fabric overlain with 3 inches of gravel and temporarily cover geotextile fabric and gravel with clean poly covered with plywood.
5. Survey the location and elevation of utility vault repository and clean utility corridor.



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 1: Utility Vault

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

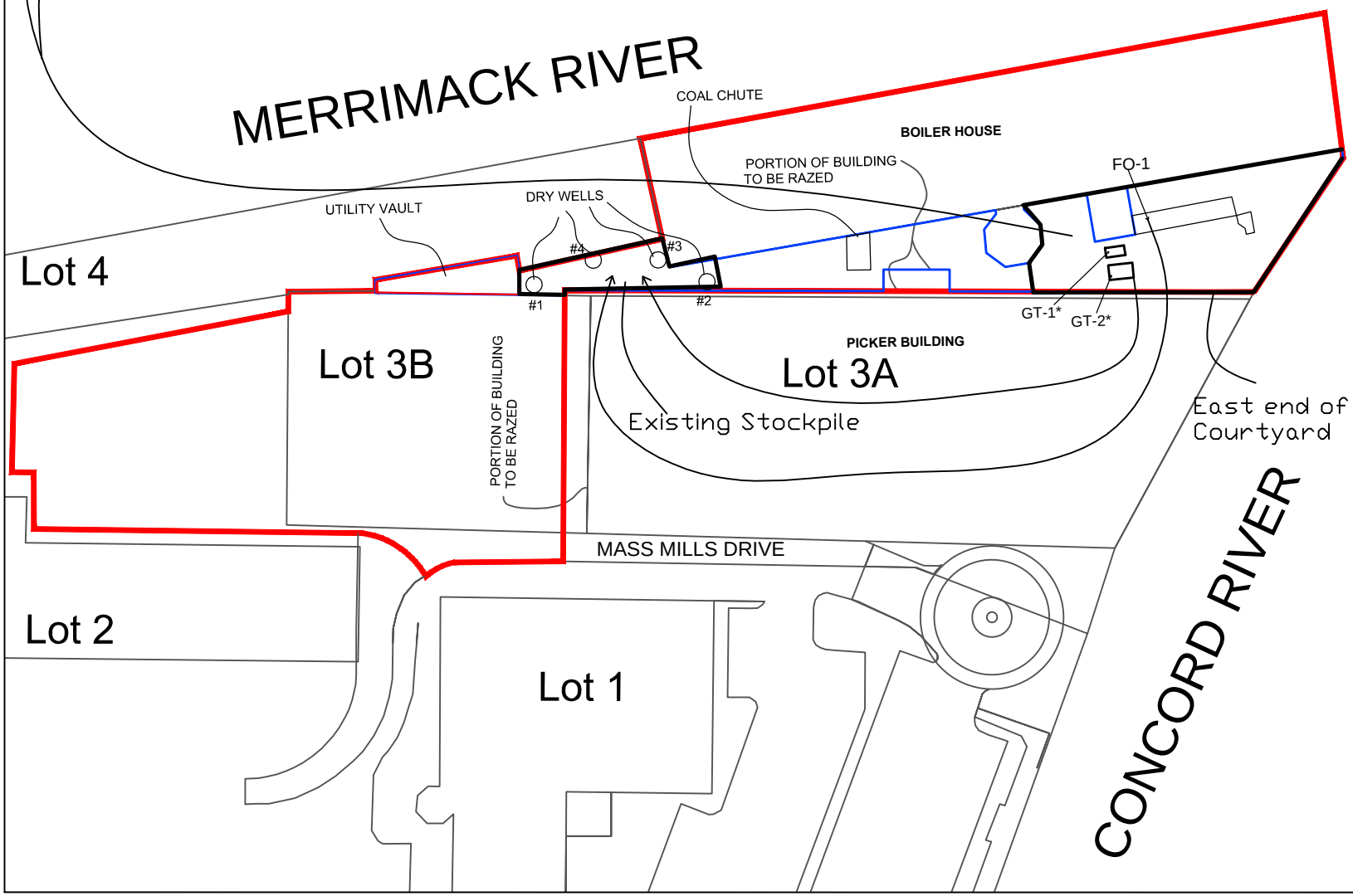
Figure 10B

SCALE
0 25 50

N

1. Remove SP-3 soils* from FO-1, place on existing stockpile
2. Remove backfill from GT-1 and GT-2 tank graves*, place on existing stockpile
3. Remove 1 foot of soils from remaining portion of east end of courtyard, and place on existing stockpile
4. Asbestos project manager to divide east end into sections and collect composite samples for analysis of asbestos
5. Cover eastern courtyard soils with clean 6-mil polyethylene sheeting, pending asbestos results
6. Repeat steps 3, 4, & 5 as needed, for a specific section until no asbestos detected

*These soils were placed on top of poly



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 2:
Asbestos Soil Excavation A

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

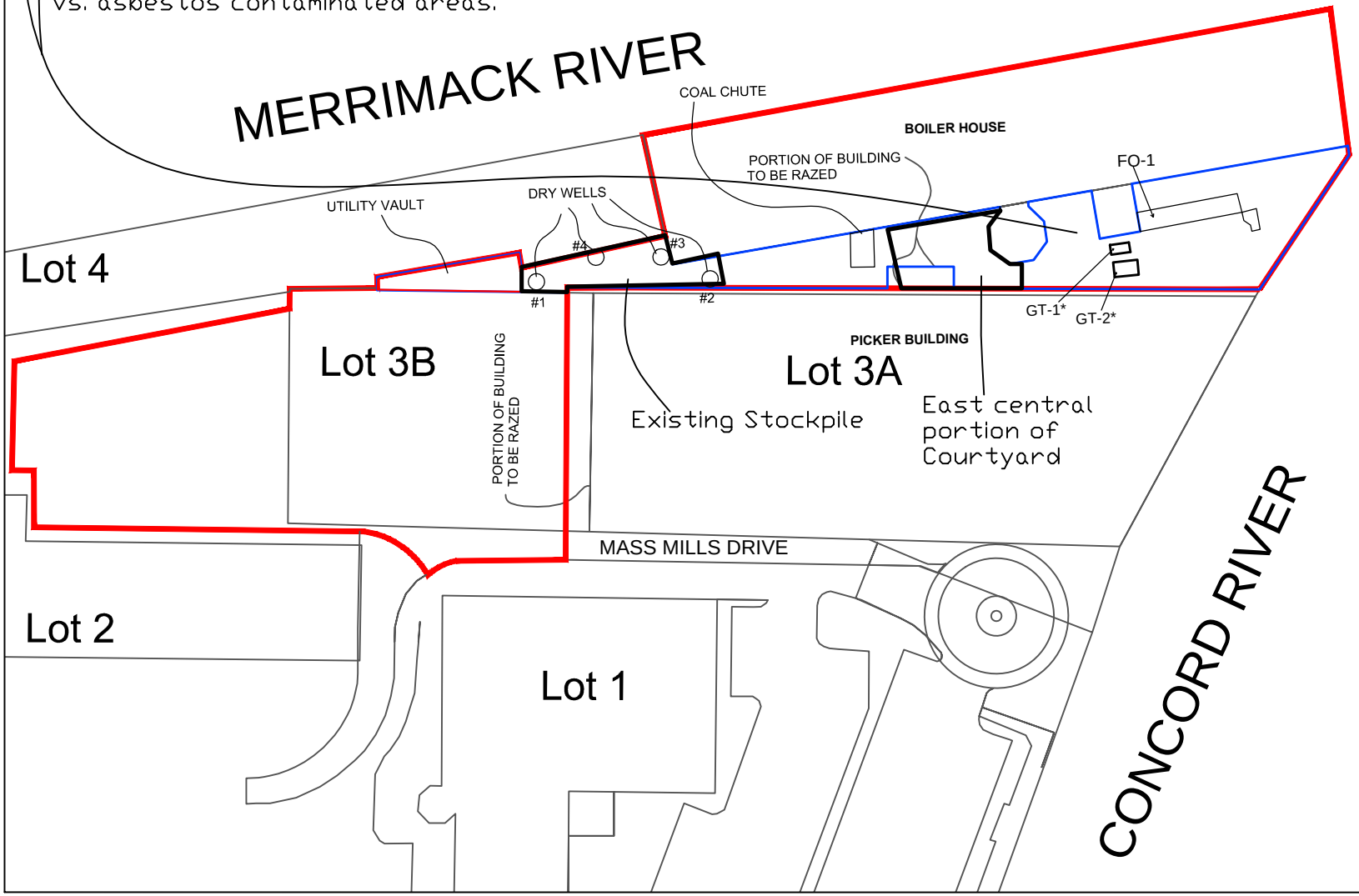
GEC Project Number 1785-6090

Figure 10C

SCALE
0 25 50

N

1. Remove 1 foot of soils from east central portion of courtyard, and place on existing stockpile.
2. Asbestos project manager to divide east central portion of courtyard into sections and collect composite samples for analysis.
3. Cover east central portion of courtyard soils with clean 6-mil polyethylene sheeting, pending asbestos results.
4. Repeat steps 1, 2, & 3 as needed, for a specific section until no asbestos detected or until 3 feet below final grade is reached (whichever occurs first).
5. Following excavation of soils from east end and east central portion of courtyard, all stockpiled soils, filled soil respositories and west half of courtyard soils must be covered with 6-mil poly and an orange snow fence erected to divide the courtyard into asbestos remediated vs. asbestos contaminated areas.



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 3:
Asbestos Soil Excavation B

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

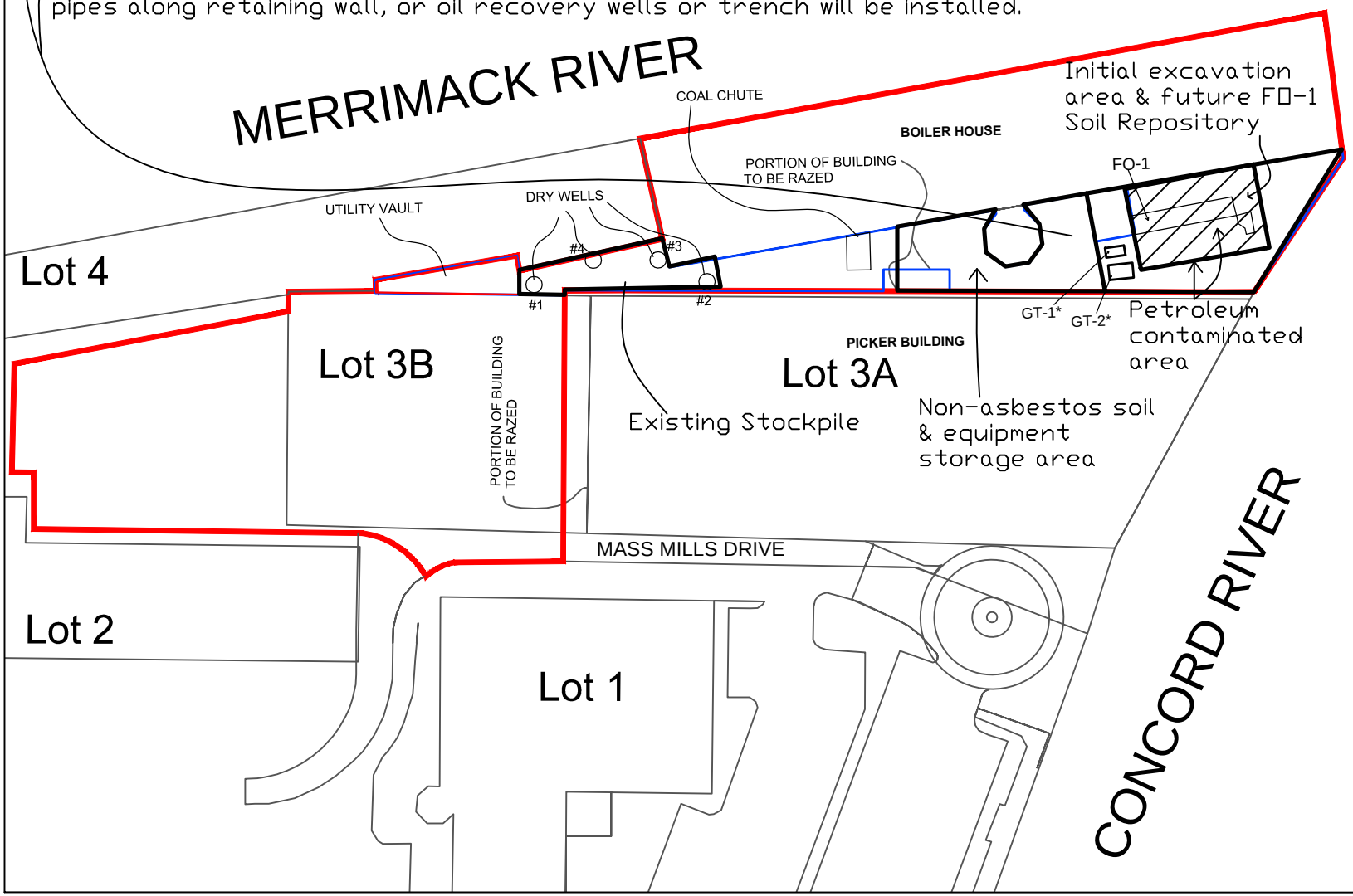
GEC Project Number 1785-6090

Figure 10D

SCALE
0 25 50

1. Excavate soils from initial excavation area, from existing top of grade to smear zone straddling water table. Separate grossly contaminated soils from soils with no visible sign of petroleum contamination.
2. Store soils with no visible sign of petroleum contamination in non-asbestos soil storage area, pending re-use of soils as backfill.
3. If permitted by receiving facility, grossly petroleum-contaminated soils will be excavated and liveloaded for off-site disposition. Otherwise, soils will be stockpiled in the non-asbestos soils area pending results of disposal criteria testing.
4. FO-1 Soil Repository will be created after petroleum soil excavation is complete.

*FO-1 Soil Repository cannot extend to areas where storm drainage system, PVC drainage pipes along retaining wall, or oil recovery wells or trench will be installed.



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 4:
Petroleum Soil Excavation A

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

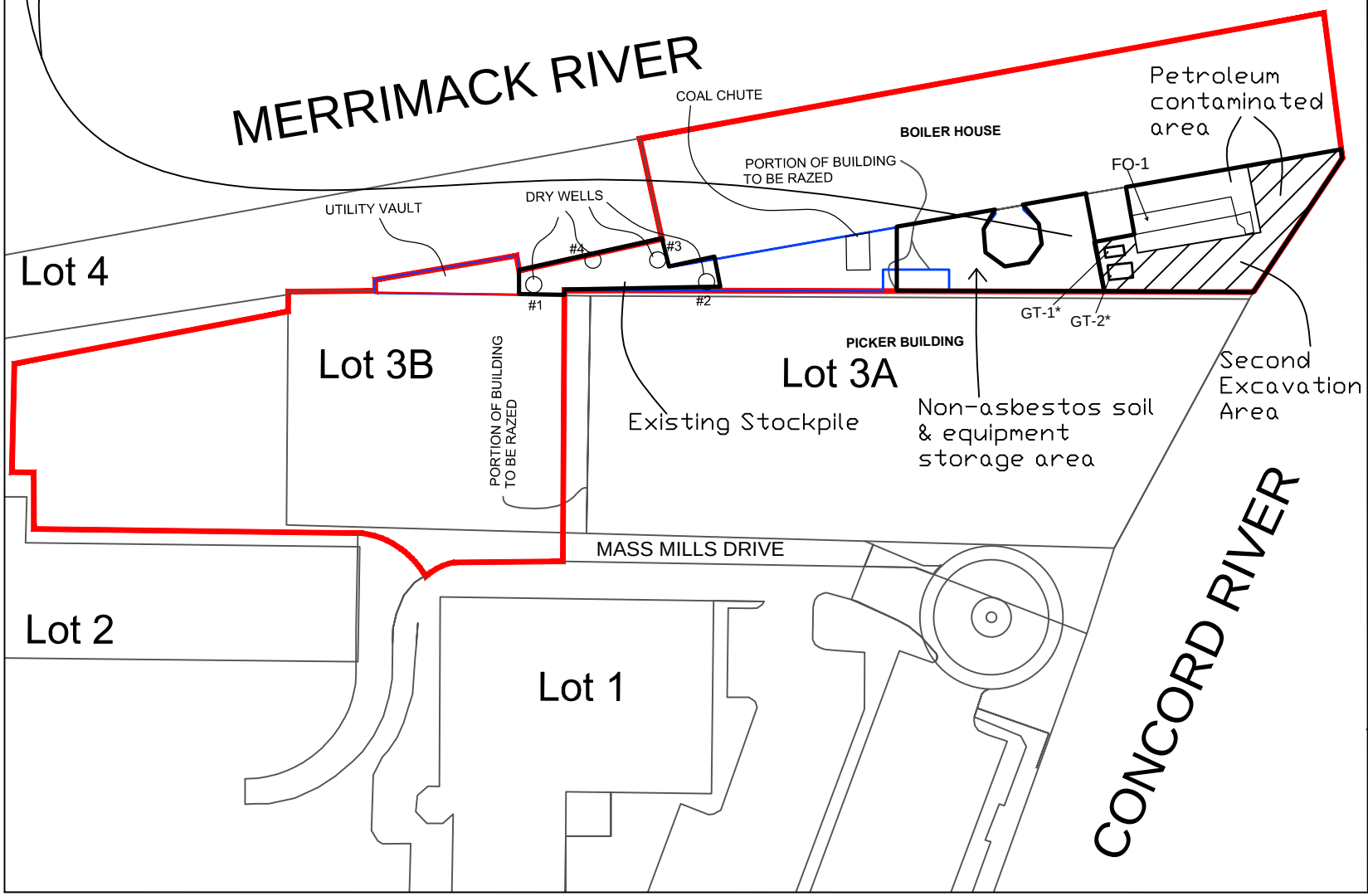
GEC Project Number 1785-6090

Figure 10E

SCALE
0 25 50

N

1. Excavate soils from second excavation area, from existing top of grade to where visible evidence of petroleum contamination is encountered. Place those soils that are not visibly contaminated in stockpile in non-asbestos soil area and/or temporarily in initial excavation area. These soils can also be placed in areas of the excavation where petroleum-contaminated soils are already excavated to the extent feasible.
2. If permitted by receiving facility, grossly petroleum contaminated soils will be excavated and live loaded for off-site disposition. Otherwise, soils will be stockpiled in the non-asbestos soil area pending results of disposal criteria testing.



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 5:

Petroleum Soil Excavation B

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

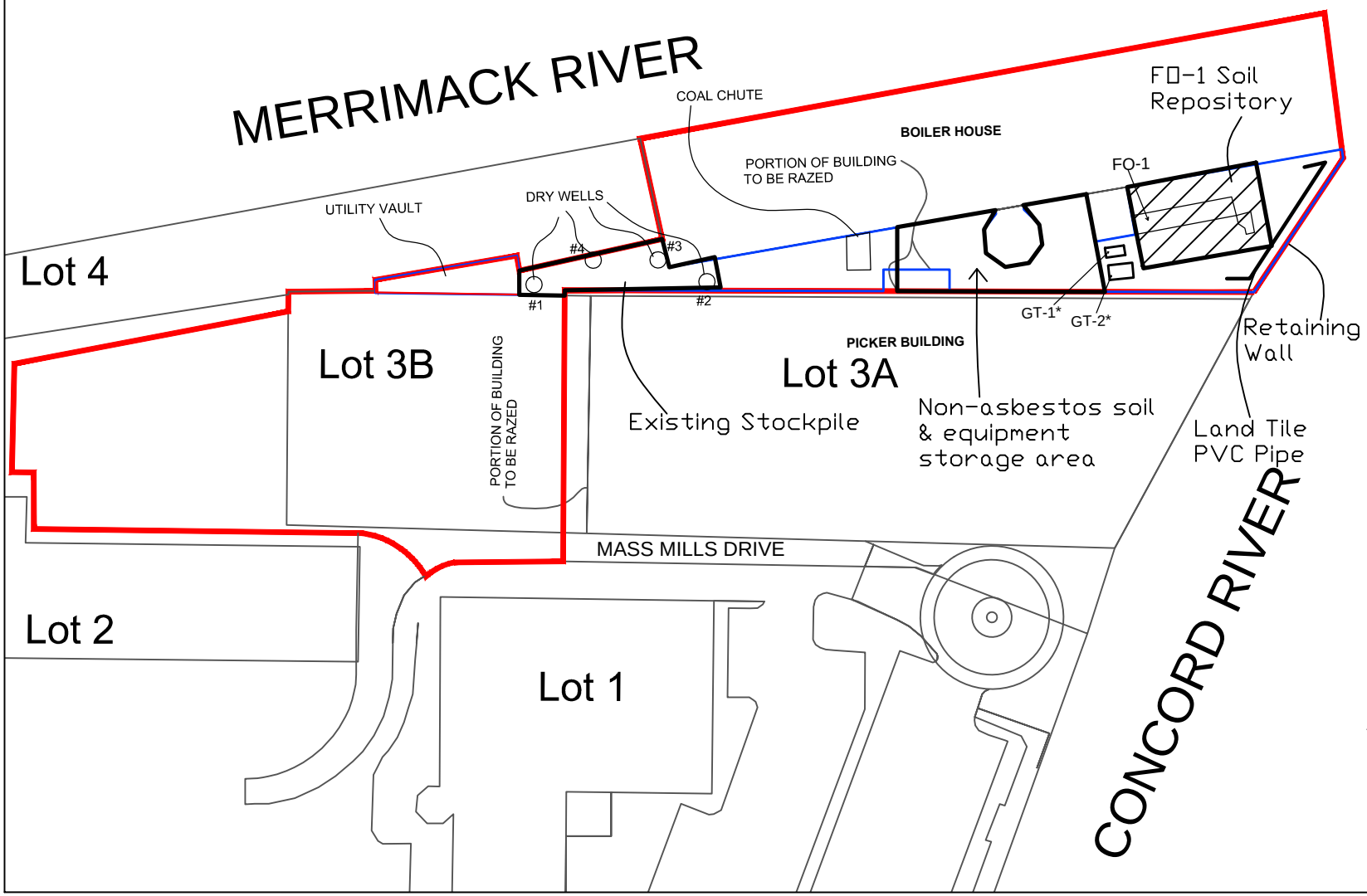
GEC Project Number 1785-6090

Figure 10F

SCALE
0 25 50

N

1. Install Land Tile PVC pipe along retaining wall at elevations based on field determination (optional), above the spray on Gunite application to the retaining wall or the concrete/bentonite slurry wall to be installed along portions of the bottom of the retaining wall..
2. Install 8-inch recovery wells in this area prior to backfilling (if feasible).
3. Backfill area outside of FO-1 Soil Repository with soils stored on non-asbestos soil storage area and/or soils temporarily stored in the initial soil excavation area.
4. Create FO-1 Soil Repository, which should be located 3 feet below final grade, and extend to two feet above historic smear zone, and should be at least 60 feet long and 40 feet wide.



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 6:
Petroleum Soil Excavation B

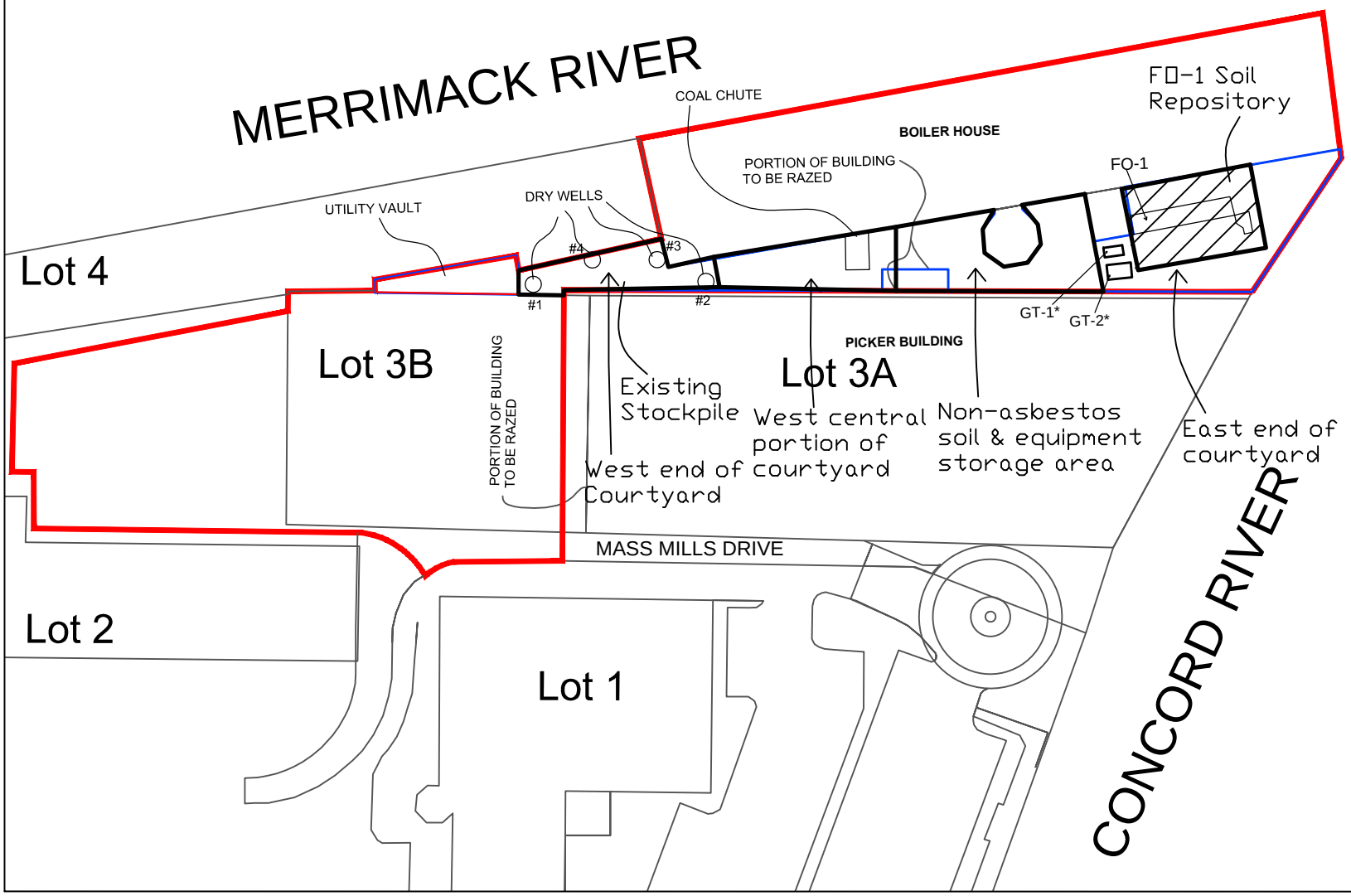
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 10G

SCALE
0 25 50

1. Soils from the existing stockpile will be placed in FO-1 repository.
2. Soils will be removed from the top 3 feet of each dry well and placed in FO-1 soil repository.
3. Soils at the west end of the courtyard will be excavated an additional 2 feet.
4. Brick around each dry well will be removed until top of each dry well is 3' below final grade. The top of each dry well will be sealed with concrete.
5. An asbestos project manager will collect soil samples for asbestos analysis.
6. The west end soils will be covered with clean 6-mil poly pending results of asbestos testing.
7. If asbestos is present, steps 3, 5, and 6 will be repeated until no asbestos is detected, or to three feet below final grade (whichever occurs first).



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 7:
Asbestos Soil Excavation C

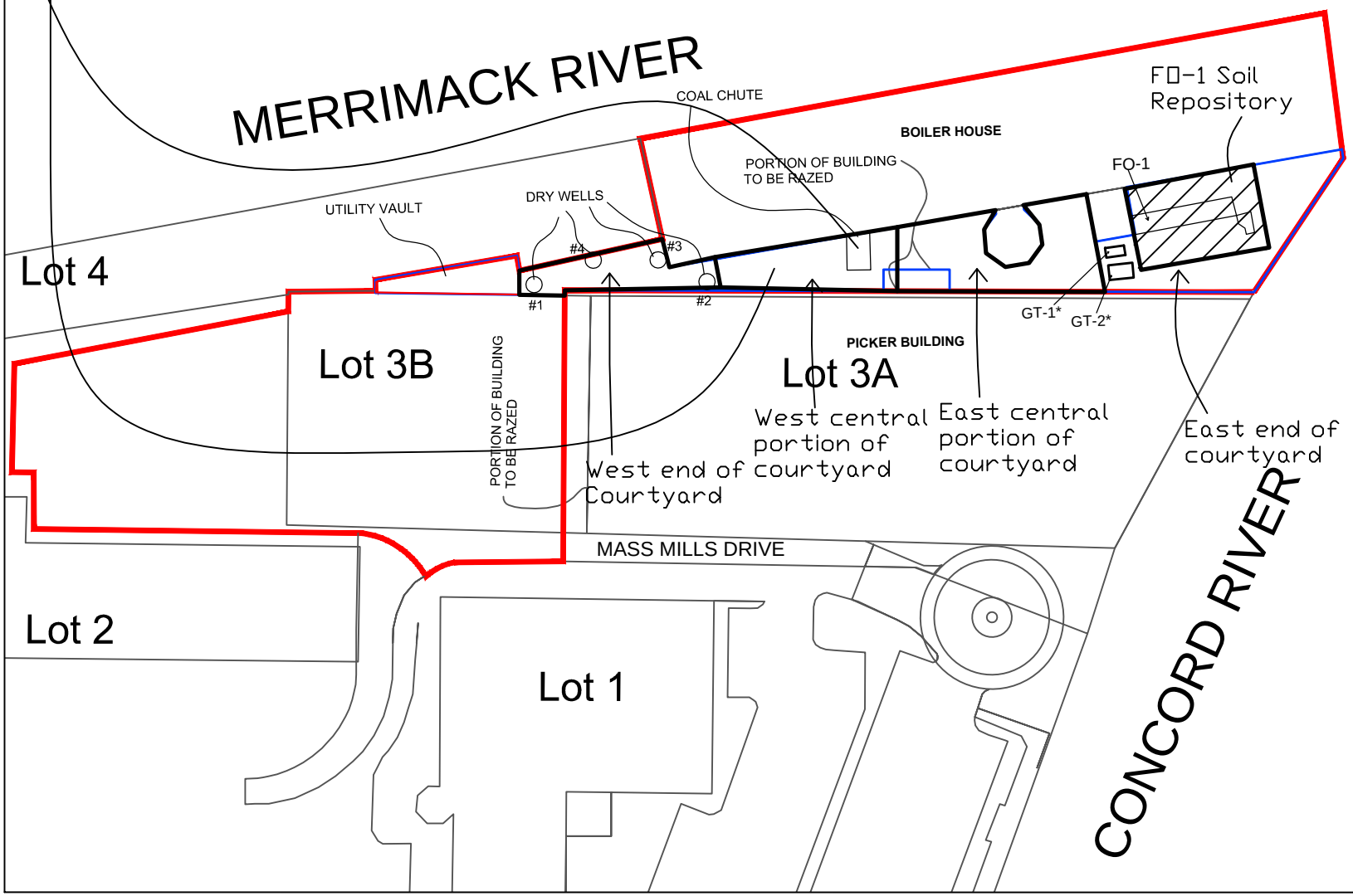
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 10H

SCALE
0 25 50

1. Soils from top 3 feet of coal chute will be excavated and moved to FO-1 Soil Repository, so that top of coal chute can be lowered to 3 feet below final grade. Top of coal chute soil repository will be sealed with concrete.
2. The top one foot of soil from the west central portion of the courtyard will be excavated and placed in the FO-1 Soil Repository.
3. An asbestos project manager will collect composite soil samples from this area for analysis of asbestos.
4. Clean 6-mil poly sheeting will be placed over the soils of west central courtyard, pending the results of the asbestos testing.
5. If asbestos is present, steps 2 to 4 will be repeated until no asbestos is detected, or to three feet below final grade (whichever is reached first).



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 8:
Asbestos Soil Excavation D

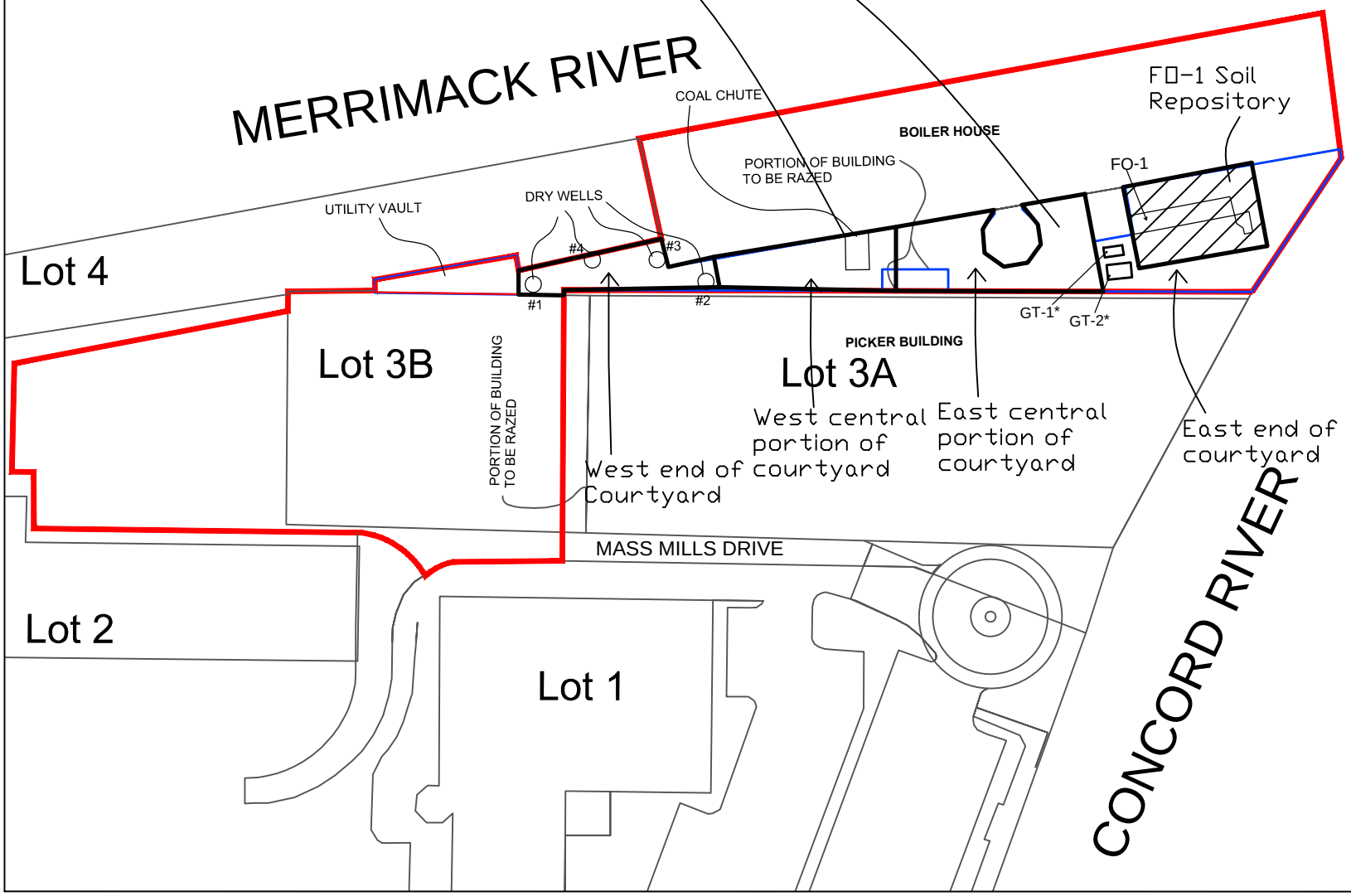
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 10I

SCALE
0 25 50

1.The remainder (if any following asbestos soil excavation) of the soils from the east central, west central and west end portions of the courtyard will be excavated to three feet below final grade and placed in the FO-1 Soil Repository, if space permits.
2. The FO-1 Soil Repository will be covered with a distinctive geotextile membrane and covered with 3 inches of gravel.
3. The locations and elevations of the utility vault, dry wells and coal chute will be surveyed.
4. A clean utility corridor will be installed along the south side of the courtyard to house the storm drainage system. It will be lined and covered with a distinctive geotextile membrane. Its location and elevation will be surveyed.



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

Remediation Step 9: Remainder of PCB Excavation

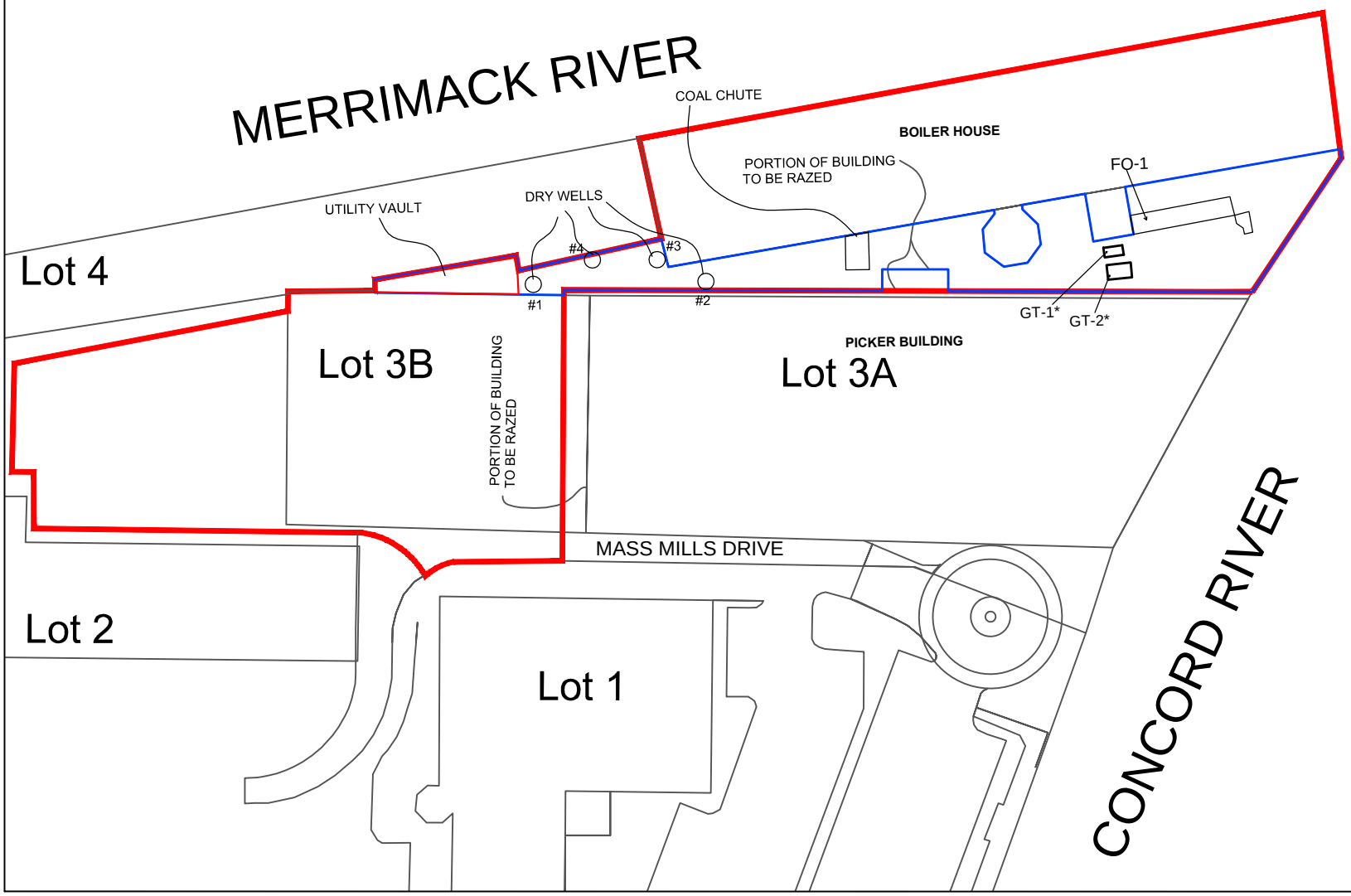
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 10J

SCALE
0 25 50

1. A geotextile membrane (unique from those of the utility vault and FO-1 soil repositories and from that of the clean utility corridors in the utility vault and the south side of the courtyard) will be installed over the soils located 3 feet below final grade.
2. Three feet of clean fill will be placed over the geotextile membrane.
3. No trees or bushes with root structures extending more than 2.5 feet below grade when mature may be planted in these soils. Trees and bushes many be planted in containers separate from the soils of the protective barrier.
4. Permanent markers must be placed in the courtyard so that the locations of clean utility corridors can be identified.



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Legend

Lot 3B

Disposal Site Boundaries

* Both Gasoline USTs are removed

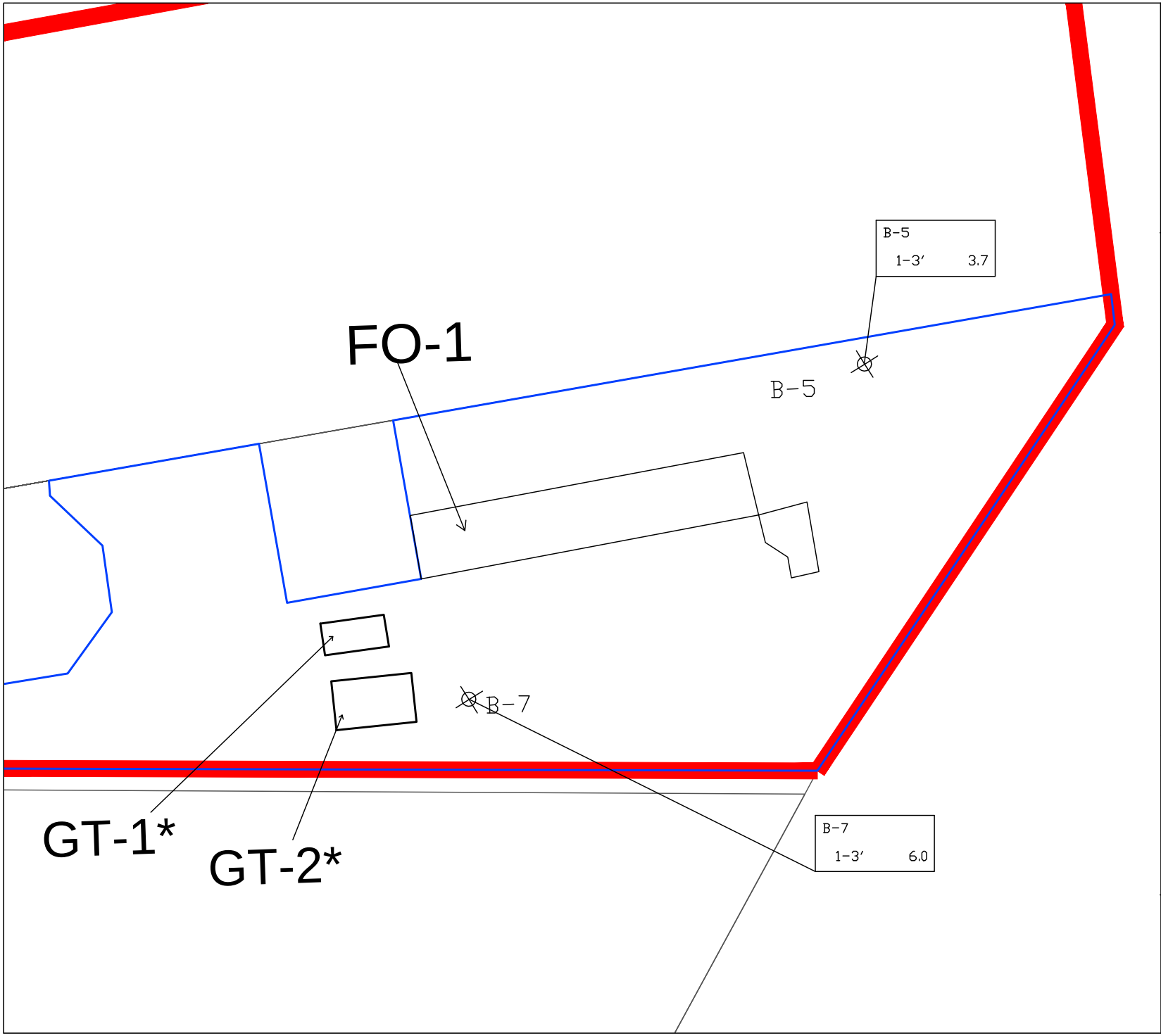
Remediation Step 10: Installation of Protective Cover

Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number 1785-6090

Figure 10K

SCALE
0 25 50



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Legend

Lot 3B

Calculated Area

Hand Boring

B-5
1-3' 3.7

Sample ID
Depth (ft) Conc. (mg/Kg)

PCB Samples Located in 300-400 CY Stockpile

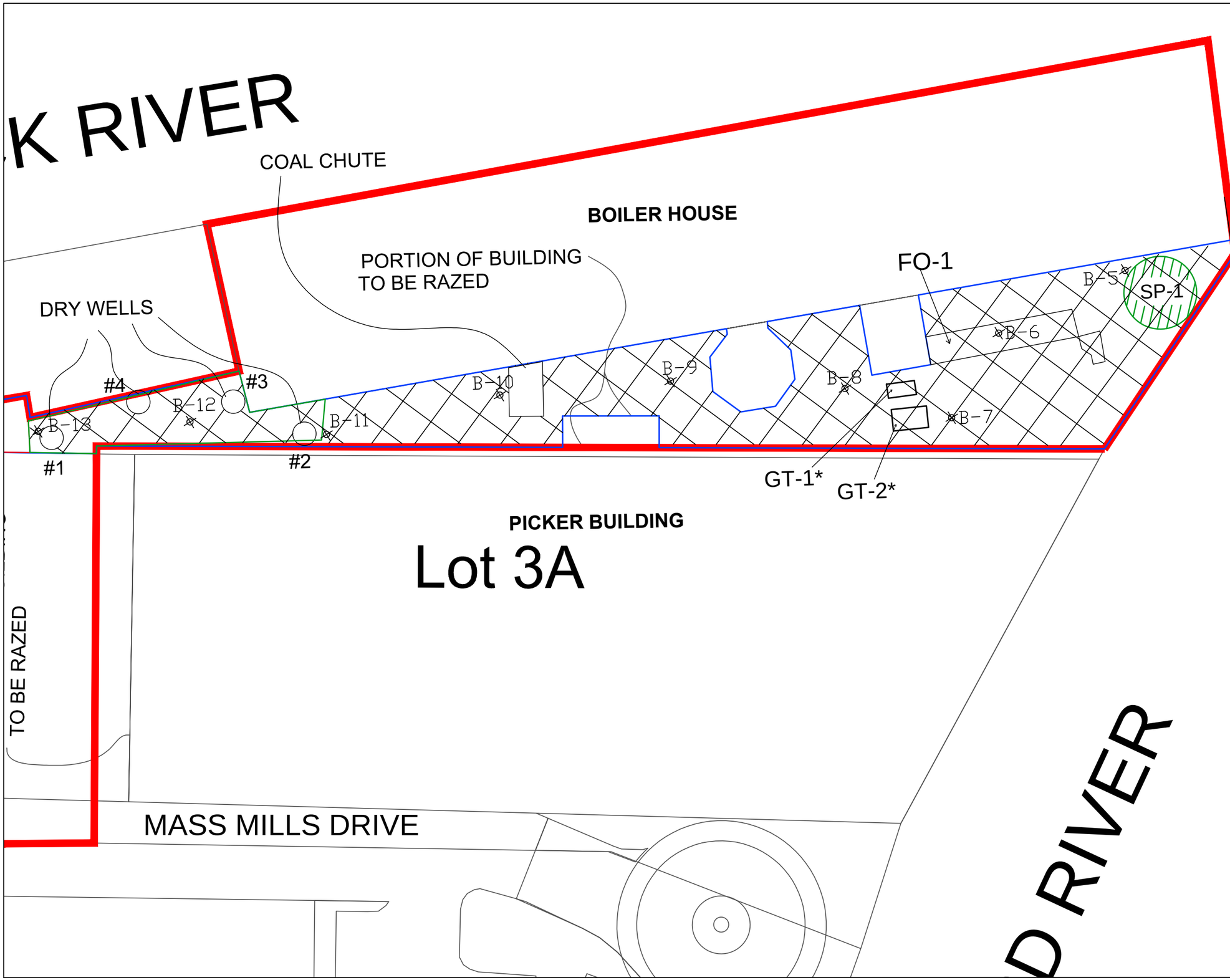
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number: 1785-6090
GEC File Number: 02082017

Figure 11

APPROX. SCALE
0 7.5 15

N



GEC

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Legend

Lot 3B

Boring

3 Meter Grid

EPA Grid with Boring Locations
March 2016

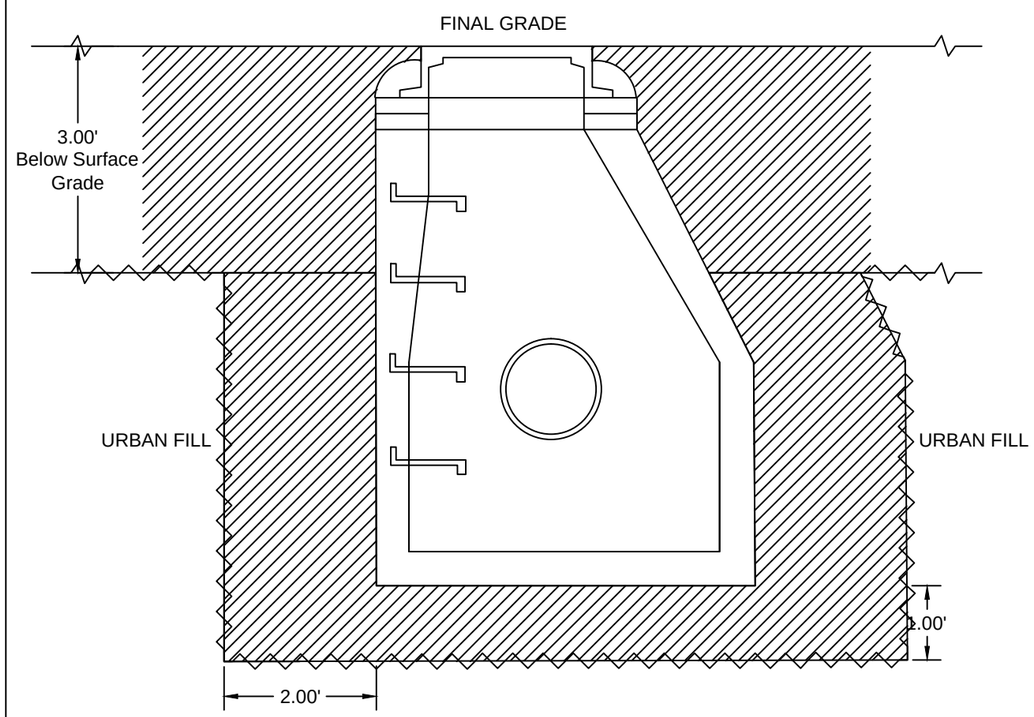
Massachusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

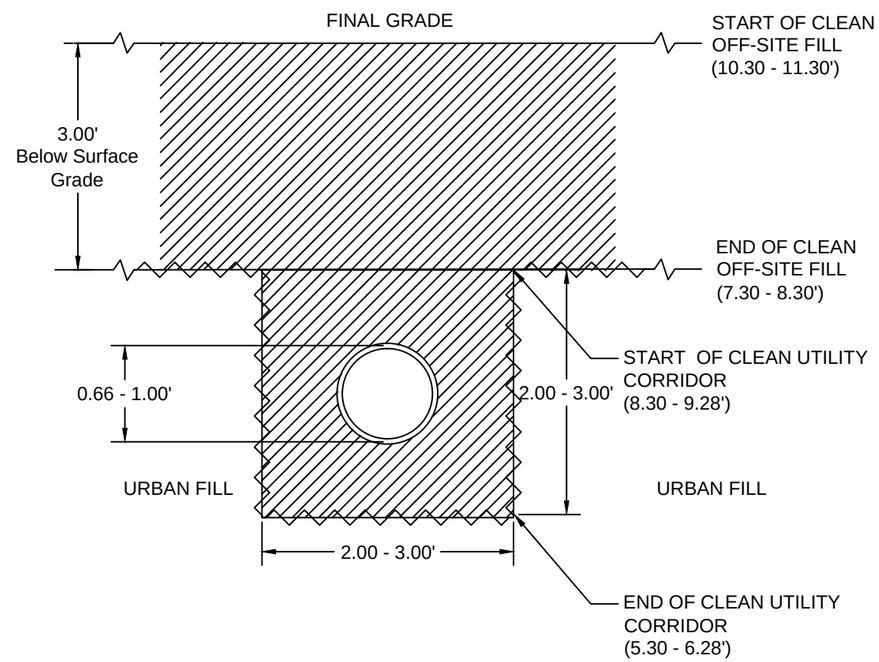
GEC Project Number: 1785-6080
GEC File Number: 02082017

Figure 12

SCALE
0 15 30
FEET

N





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Legend

CLEAN OFF-SITE FILL

(10.30 - 11.30') ELEVATION RANGE - LOWELL CITY BASE (LCB)*

MARKER BARRIER/ LINER

*ALL ELEVATIONS PROVIDED BY HWMOORE ASSOCIATES, INC.'S SITE PLAN

Clean Utility Corridor Cross-Section

Mass Mills III
169.2 Bridge Street
Lowell, Massachusetts

1785-6070

Figure 13

SCALE

0 2 4

IN FEET

P:\Projects\1785-R-M Developer, LLC\Drawings

ATTACHMENT 2

Appendix G and Appendices R through U

APPENDIX G:

Standard Operating Procedures

Standard Operating Procedure
Boring/Well Installation

This protocol is designed to insure that proper techniques are used, safety is considered, and quality assurance maintained during soil boring and well installation.

DIGSAFE, municipalities and the owner are contacted prior to any soil boring or well installation to minimize chances of damaging underground utilities (DIGSAFE contacts utility companies to mark the location of utilities to the site). The Geologist or Inspector surveys the site visually for markings delineating the location of underground utilities. If warranted, the inspector modifies the drilling program to compensate for field conditions.

GEC personnel continuously monitors all drilling activities and is responsible for maintaining independent field notes, well logs and ensuring that proper procedures are followed.

Samples will be collected in ½, 1, 2, 3, or 5 foot sampling intervals depending on the goal of the sampling.

When samples are opened GEC will immediately collect a sample for headspace analysis. This sample is collected in a glass jar with an aluminum bladder below the lid. Sample will be warmed, if possible. Warming of the sample will typically take place inside the cab of vehicle. After warming for approximately 5-10 minutes the jar will be screened with the appropriate PID.

After collecting a headspace sample GEC will characterize soil, noting texture, color, moisture content, change in strata, any odors and the presence of staining or free product.

Samples will be collected according to a prescribed sampling plan or by field observation of obvious contamination.

All cuttings from drilling remain on the subject property and may be used as backfill in borings not completed as a monitoring wells. Or unless otherwise specified by a Soil Management Plan.

Monitoring well screens are set to depths adequate for the required sampling. In periods of high water table, well screens should extend one to two feet above groundwater. In periods of low water table, well screens should extend five to eight feet above groundwater. It is important to ensure that the screen is set above the seasonally high water table. Monitoring wells are typically constructed with a silica sand filter surrounding and extending to one to two feet above the screen. A solid PVC riser pipe extends from the top of the screen to ground level, has a one to two foot bentonite pellet seal above the screened interval and clean fill extending from the bentonite seal to within one food of ground surface. Above the clean fill is a cement seal and protective cover at the surface. No glues or solvents are employed in the well construction.

Soil Logs are to be maintained by the Geologist and should contain the following:

- Date and Location of boring/well
- Drilling contractor
- Job number
- Depth of sampling
- Boring number
- Depth to well point.
- Soil description includes; soil colors, grain size from greatest percentage to lowest, rock fragments, obvious fill constituents, staining, and odor if obvious.
- Changes in soil strata and elevation of the water table are also noted.

Standard Operating Procedure
Soil Sampling via Test Boring

Soil samples collected during the performance of test borings will, in most cases, either involve collection of "undisturbed" samples with an appropriate sampler or “grab” samples directly from the auger flights. Clearly, soil samples can be most easily recovered directly from the auger flights as the soil cuttings are brought to the surface, however, this technique does not provide an “undisturbed” sample and the actual depth from which the sample is collected is not known. The preferable method of sample collection for most purposes utilizes a GeoProbe or split barrel core (or split spoon) sampler. Either sampler can obtain samples of unconsolidated material from discrete depths with reasonable accuracy. Such samples may be referred to as “discrete interval” samples.

Note: The top few inches of either a GeoProbe or split spoon sample may include displaced material from above the sample interval,. Field personnel should be aware of this and exclude this portion of the sampler contents from the collected sample.

Auger Samples:

1. Samples are collected off the auger flight using the actual sample container or a clean instrument such as a spoon or spatula. Care must be taken when collecting the sample from the augers to avoid material, which is obviously not from the sampling horizon of interest (i.e. pavement in soil zones which are definitely not fill). Standard Operating Procedures which may be specific to the sample containers and the intended purpose of the sample (i.e. chemical analyses, PID screening) should be followed. Collect at least one sample in a clean 8 oz. glass jar (half filled) for PID screening and should be sealed and treated in an appropriate manner. Collect a second sample off the auger insuring that both samples are as close to identical in content samples as possible. This second sample should be used in describing the sediment characteristics.

2. Make a note of the appropriate depth of the augers in order to approximate depth of sample. With a sharp writing instrument, or permanent marker record the project number, boring number, sample number, estimated depth of sample and sample method (e.g. AUG for auger samples) on the top of the jar first jar. This jar should then be stored in a safe container (cooler or cardboard box) for later transport or set aside for PID screening.

3. Carefully examine the contents of the second jar to determine the lithology, i.e. the mineralogy, texture, sorting, moisture and color characteristics of the sediment sample. A complete and accurate description of the sediment sample should be recorded on the Test Boring Report, including the sediment characteristics, depth from which sample was recovered, collection method, and any notable features associated with the sample. Include the results of PID screening on the Test Boring Report.

4. Once a complete and accurate record of the sediment characteristics has been recorded on the Test Boring Report, the second soil sample may be discarded and the glass jar rinsed with water and dried. This glass jar may be reused to contain subsequent samples for sample characterization. Glass jars used for any purpose other than sediment description should not be reused.

Discrete Interval Samples:

Note: Discrete interval samples should be retrieved from the boring and/or opened only upon the direction of the GEC site rep. This is especially important for samples being collected for VOC analyses.

1. Upon retrieving the discrete interval sampler, examine the lower end or tip of the sampler; ensuring that any material collected in the tip of the sampler is not discarded. Examine the spoon to determine if any up-hole material was inadvertently collected in the sampler and remove these materials if possible. Using a clean spoon or spatula, prepare a head-space sample by half filling a clean 8 oz. “drillers” glass jar with three to five sub-samples which represent the spoon contents. Quickly cover the top of the jar with one or two sheets of clean aluminum foil and subsequently apply the screw cap to tightly seal the jar.

2. After opening the sampler and preparing a head-space sample, scrape away a path of material with a clean spoon, spatula or knife before examining the spoon contents for visually notable features (i.e. lithology, mineralogy, texture, sorting, packing, stratigraphic horizons, color changes, staining). In a field book accurately describe the soil sample in accordance with GEC's soil description and boring log protocol. Make note of visually notable features in field notes along with the boring number and sample depth.

3. With a sharp writing instrument, or permanent marker record the project number, boring number, sample number, estimated depth of sample, estimated recovery, and sample method (e.g. SS for split spoon) on the top of the jar first jar. This same information, as well as the depth of penetration, sample recovery and blow counts per six inches, should be recorded on the Test Boring Report. After describing the soil sample thoroughly, where necessary decontaminate the sampler to ensure that potential contaminants do not remain on the spoon prior to being reassembled and returned to the driller.

3. Soil descriptions should include such things as lithologic intervals, mineralogy, texture, sorting, and packing (if possible) characteristics of the sediment sample. A complete and accurate description of the sediment sample should be recorded on the Test Boring Report, including the sediment characteristics, depth from which sample was recovered, collection method, and any notable features associated with the sample.

4. Once a complete and accurate record of the sediment characteristics has been recorded on the Test Boring Report, the second soil may be discarded and the glass jar rinsed with water and dried. This glass jar may be reused to contain subsequent samples for sample characterization. Glass jars used for any purpose other than sediment description should not be reused.

Upon completion of test boring, samples should be packed in a cooler or cardboard box, or other appropriate container, for transport. Prior to transportation, care should be taken to insure that the glass jars are tightly sealed, to prevent spillage of contents, and that the jars will not be broken during the transportation. The box should be labeled on either of the end with the project number, location, date, boring numbers, and the name of the inspector.
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Standard Operating Procedure
Head Space Screening of Soil Samples
with a Photoionization Detector (PID)

Volatile organic compounds (VOCs) adsorbed to soil volatilize from the soil particles into the static headspace created within a container and the soil in direct proportion to the concentration of VOCs adsorbed to the soil. The concentration of VOCs in the headspace can be determined with a photoionization detector (PID), thus providing a relative indication of the concentration of VOCs in the soil.

Screening of soil samples for VOCs via the static headspace method involves seven steps, outlined below.

1) Collect two soil samples and place each in a separate, 8 ounce jar. One jar will be used as a duplicate for quality assurance purposes.

2) Place a layer of aluminum foil over the jar openings to form a seal. Screw the lids onto the jars, covering the aluminum foil.

3) Shake the jars for approximately 15 seconds and then allow the jar to equilibrate to room temperature (60°C to 70°C).

4) Prepare the PID for operation in accordance with the applicable standard operating procedure.

5) Remove the metal lid from the jar, puncture the aluminum foil and record the highest reading recorded by the PID.

6) Compare the results of the screening for the sample and the duplicate. A difference of up to 20% between the sample and duplicate is acceptable.

Depending on the situation and applicable criteria, the screening procedure outlined above may indicate that further analysis is warranted for a given sample. If so, collect soil samples in accordance with the applicable standard operating procedures.

Standard Operating Procedure
Boring/Well Installation

This protocol is designed to insure that proper techniques are used, safety is considered, and quality assurance maintained during soil boring and well installation.

DIGSAFE, municipalities and the owner are contacted prior to any soil boring or well installation to minimize chances of damaging underground utilities (DIGSAFE contacts utility companies to mark the location of utilities to the site). The Geologist or Inspector surveys the site visually for markings delineating the location of underground utilities. If warranted, the inspector modifies the drilling program to compensate for field conditions.

GEC personnel continuously monitors all drilling activities and is responsible for maintaining independent field notes, well logs and ensuring that proper procedures are followed.

Samples will be collected in ½, 1, 2, 3, or 5 foot sampling intervals depending on the goal of the sampling.

When samples are opened GEC will immediately collect a sample for headspace analysis. This sample is collected in a glass jar with an aluminum bladder below the lid. Sample will be warmed, if possible. Warming of the sample will typically take place inside the cab of vehicle. After warming for approximately 5-10 minutes the jar will be screened with the appropriate PID.

After collecting a headspace sample GEC will characterize soil, noting texture, color, moisture content, change in strata, any odors and the presence of staining or free product.

Samples will be collected according to a prescribed sampling plan or by field observation of obvious contamination.

All cuttings from drilling remain on the subject property and may be used as backfill in borings not completed as a monitoring wells. Or unless otherwise specified by a Soil Management Plan.

Monitoring well screens are set to depths adequate for the required sampling. In periods of high water table, well screens should extend one to two feet above groundwater. In periods of low water table, well screens should extend five to eight feet above groundwater. It is important to ensure that the screen is set above the seasonally high water table. Monitoring wells are typically constructed with a silica sand filter surrounding and extending to one to two feet above the screen. A solid PVC riser pipe extends from the top of the screen to ground level, has a one to two foot bentonite pellet seal above the screened interval and clean fill extending from the bentonite seal to within one food of ground surface. Above the clean fill is a cement seal and protective cover at the surface. No glues or solvents are employed in the well construction.

Soil Logs are to be maintained by the Geologist and should contain the following:

- Date and Location of boring/well
- Drilling contractor
- Job number
- Depth of sampling
- Boring number
- Depth to well point.
- Soil description includes; soil colors, grain size from greatest percentage to lowest, rock fragments, obvious fill constituents, staining, and odor if obvious.
- Changes in soil strata and elevation of the water table are also noted.

Standard Operating Procedure
Observation Well Sampling
Using a Low Flow Sampler

This protocol is designed to ensure that proper techniques are used, safety is considered, and quality assurance maintained during the performance of observation well sampling using low-flow techniques. A GEC representative is assigned to oversee and/or perform all observation well sampling for the project. The duties of the representative are to ensure that the scope of work is followed.

Sampling of groundwater observation wells using low-flow techniques is the primary means by which the chemical characteristics of groundwater can be determined in an accurate, representative, and repeatable manner. Therefore, it is imperative that care be taken in the development and subsequent sampling of observation wells.

Procedures for performance of groundwater observation well evacuation and sampling using low-flow techniques are outlined in the following paragraphs:

Well Evacuation and Sampling:

1) Prior to initiating any work the Health and Safety Plan, developed for the specific site activities, should be reviewed by all field personnel. The indicated measures on the Plan should be enacted prior to initiation of the sampling activities. Any concerns not addressed in the Plan are to be brought immediately to the attention of the Health and Safety Officer. Personnel participating in the sampling will dress with protective equipment appropriate for the anticipated conditions.

2) Decontaminate all equipment to be used in the performance of the activities in accordance with the protocol for decontamination. Decontamination should at least be performed by alternately rinsing all equipment with methanol and water and scrubbing the equipment with a paper towel.

3) To the extent that contamination may be known at a given site, observation wells should be sampled in an order from "least contaminated" to "most contaminated".

4) Test the well for accumulation of non-aqueous phase product (NAPL) using a pre-cleaned interface probe or transparent disposable bailer. If present, collect a sample of the NAPL and place in an appropriate sample container. This sample should be kept away from other samples.

5) Measure and record the depth to NAPL(if present) and depth to water. If NAPL is present, sampling for dissolved-phase contaminants should generally not be performed. In addition, if sampling is to be performed, appropriate measures should be taken to assure that any water removed from a contaminated well is disposed appropriately.

6) Historic measurements should be utilized to determine the total depths of wells. If a historic measurement is not available, total depth of the well should be gauged to determine the appropriate placement of the variable-speed low-flow sampling pump (pump). Gently lower the pump into the well to a point approximately half way between the top of the measured water elevation and the bottom of the well. If the water level in the well is situated above the top of the screened interval then the pump should be located half way between the top and the bottom of the screened interval. Tie the pump off at the appropriate depth to eliminate further disturbance of the water column.

7) Begin pumping the well at a rate no greater than 0.5 liters per minute (roughly 0.13 gallons or approximately two cups per minute). Provided there is ample room to measure depth to water after placement of the pump down the well, water levels should be monitored on a continuous basis. Drawdown of the water column should not exceed 0.1 meters. The pumping rate should be adjusted accordingly, based on water column drawdown. If the water level drops more than 0.1 meters, the pumping rate should be decreased.

8) Continuously monitor groundwater parameters including pH, temperature, specific conductance and dissolved oxygen (DO). In some situations it may also be appropriate to monitor turbidity. Record geochemical parameters at the onset of purging, five minutes into purging, and at roughly one-minute intervals thereafter.

In some cases longer intervals may be appropriate.

9) Purging should continue until geochemical parameters have stabilized. Stabilization shall be considered to have occurred when three consecutive measurements do not vary more than approximately 20% and visual and olfactory characteristics of the purged water do not change appreciably.

10) Record final geochemical parameters.

Well Sampling:

1) Samples at any given well will be collected in order of decreasing order of sensitivity to volatilization (i.e. VOC, total organic carbon, semi-volatile organics (BNA), ammonia, PCBs, pesticides, oil and grease, phenols, cyanide, sulfate and chloride, nitrate and ammonia, metals, and radionuclides)

2) Carefully fill sample containers directly from the pump discharge to the appropriately preserved, pre-labeled containers. Check that the sample containers seal properly and that the cap is sealed tightly. Record applicable information in the field logbook and complete all chain-of-custody documents.

Standard Operating Procedure
Sample Preservation and Chain of Custody

This protocol is designed to ensure that proper techniques are employed in the preservation and chain-of custody of samples collected for laboratory analyses or for screening. This Protocol is intended to be consistent with Massachusetts Publication #WSC-310-91 (Standard References for Monitoring Wells), and 40 CFR 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants).

The results of screening and/or laboratory analysis of solid, liquid or gaseous media constitute the basis of evaluation of the majority of the disposal sites under investigation. It is therefore imperative that the preservation of the samples be appropriate to the media being analyzed as well as the analysis which is being performed. In addition, the integrity of the sample is dependent upon the premise that a clear chain of responsibility for the sample integrity has been maintained. Without this "Chain-of-Custody", the integrity of the laboratory results may inevitably come into question.

The preservation and Chain-of-Custody (COC) protocols outlined in the following paragraphs are not intended to be all inclusive, and this protocol is written with the understanding that the sampling of certain media or analyses may require specific sample preservation. This protocol is, however, intended to cover the majority of the media and analyses performed as well as the COC procedures employed at the majority of waste disposal sites.

A COC program must be followed during sampling and handling activities from the field through laboratory operations. This program is designed to assure that each sample is accounted for at all times. Field data sheets, COC records, and sample labels must also be completed by the appropriate sampling and laboratory personnel for each sample. The objective of the sample custody identification and control system is to assure, to the extent practical, that:

- all samples are uniquely identified;
- the correct samples are analyzed for the correct parameters and are traceable through their records;
- important sample characteristics are preserved;
- samples are protected from damage or loss;
- any processing of samples (e.g., filtration, preservation) is documented; and
- client confidentially is maintained.

A sample is considered under a COC if it meets all of the following criteria:

- the sample is in your custody,
- the sample is in your view, after being in your possession,
- the sample is in your possession and then you locked it up to prevent tampering, and
- the sample is in a designated, secured area.

The following paragraphs outline GEC's preservation and COC protocol.

1) Prior to initiating any work, the Health and Safety Plan developed for the specific site activities, should be reviewed by all field personnel. The indicated measures on the Plan should be enacted prior to initiation of any sampling activities. Any concerns not addressed in the Plan are to be brought immediately to the attention of the Health and Safety Officer. Personnel participating in the excavations will dress with protective equipment appropriate for the anticipated conditions.

2) Sample integrity is assured by use of containers appropriate to both the matrix to be sampled and the analytes of interest. Sample containers must be prepared in the laboratory in a manner consistent with USEPA protocols. Unless the proper sample bottle preparation and sample preservation measures are taken in the field, sample composition can be altered by contamination, degradation, biological transformation, chemical interaction, and other factors during the time between sample collection and analysis. Prior to sampling GEC personnel will ensure that the sample containers obtained from either a laboratory or a commercial supplier have been prepared in accordance with DEP and EPA protocols. Sample containers are to be used once and discarded. Under no circumstance should a soil, water or

Standard Operating Procedure
Field Sampling Protocols
Quality Assurance/Quality Control

The purpose of the GEC QA/QC program is to generate analytical data that is of known and defensible quality. These procedures apply to all projects in which sampling is involved. QA/QC from one project is not transferable to another.

Decontamination

1) Decontamination should be performed on all reusable field sampling equipment and protective gear. Sampling equipment should be decontaminated before the collection of a sample and after sampling has been completed. Protective gear should be decontaminated after the collection of a sample.

2) It is necessary to use the following decontamination solutions in the field:

- Non-phosphate detergent plus tap water wash.
- Distilled/ deionized water rinse.
- 10% Nitric Acid rinse.*
- Methanol rinse, when sampling volatiles only.
- Acetone then hexane rinse.**
- Second distilled/ deionized water rinse. **

* Only if sample is to be analyzed for metals.
** Only if sample is to be analyzed for semi-volatile organics, PCBs or pesticides.

3) Sample bottles and sampling equipment should not be stored near gasoline, solvents, or other potential sources of contamination. If storage near gasoline, etc. is unavoidable, bottles and equipment should be sealed in containers or plastic.

4) Heavy equipment, including hand tools, should be cleaned by steam cleaning or manual scrubbing prior and subsequent to use in hazardous waste investigations.

Measures or Quality Control/Quality Assurance

1) Trip Blanks

- Trip blanks are used in order to detect additional sources of contamination that might affect analytical results. The following are potential sources of additional contamination:

  a. Sample containers,
  b. Contamination during shipment to and from the site,
  c. Ambient air contact with analytical instrumentation at the laboratory during analysis, or
  d. Laboratory reagent used in analytical procedures.

- One trip blank is required for every set of samples sent to the lab regardless of job size. Generally, the trip blank should be for VOCs. If, however, VOCs are not a parameter of the sampling round, consult the laboratory as to which parameter should have an associated trip blank.

- Trip blanks are to be kept with containers used in the sampling round at all times. More specifically, they should accompany the site-specific sampling containers from the time the containers leave the laboratory until they are returned for analysis.

- Obtain containers and trip blanks prepared specifically for each job from the laboratory. Return unused containers to the laboratory upon completion of a project.

2) Field Blanks

- Field blanks are used to indicate potential contamination contracted from ambient air or from sampling equipment. It also serves as a QA/QC for decontamination procedures.

- Collect one set of field blanks for every 20 samples per project. It is not necessary to take a field blank for jobs in which less than 10 samples are collected.

- Procedure

  a. Collect two sets of sample containers to cover all sampling parameters. One set will be full of analyte free water (obtain extra analyte free water to fill two VOA vials). The other set is empty.
  b. Go to the most contaminated area and run the water from the full containers, through the decontaminated sampling equipment and into the associated empty containers.
  c. Send to the lab for analysis.

- Use containers and field blanks prepared specifically for job.

3) Duplicate Samples

- Duplicate samples are collected in order to serve as a laboratory check. Therefore, it is important that the lab does not know which samples are to serve for this purpose.

- Frequency

  a. Obtain one (1) duplicate sample for every 10 samples of each matrix. If less than ten samples are collected of a given matrix, a duplicate must be collected anyway.
  b. If a total of less than 10 samples are collected, collect one (1) duplicate of the majority medium.
  c. If a total of less than five (5) samples are collected, it is not necessary to collect a duplicate sample.

* Note that the frequency as outlined here pertains to the number of samples collected per project, not per location of a given project.

- Procedures

The idea behind the duplicate sample is to collect two samples as close to identical as possible.

a. For Water:

Alternately fill containers for the same parameter with equal amounts of liquid per bailer. Fill duplicate VOC vials from the same bailer of liquid.

b. For Soil:

- VOC samples must be taken from the discreet sampling locations.
- For all other samples, mix the applicable soil in a decontaminated stainless steel or polyethylene bowl or tray. Then fill sample containers with the soil mix.
- When confronted with the option of collecting a water sample or a soil sample, choose the water sample.

- Labeling for the laboratory

  a. Label the containers normally and give the duplicate samples different reference numbers.
  b. Indicate the quantity of duplicates in the "special instructions" or "remarks" portion of the chain of custody and laboratory services sheet, however, do not indicate the reference numbers of the duplicates.
  c. Upon receipt of analytical results, contact the laboratory and convey all data pertaining to the duplicates for their QA/QC.

4) Background samples

- Background samples are taken only if it is required for comparison of site conditions to the surrounding environment. This is to be dictated by client needs on a site to site basis.

5) Performance Evaluation Samples

- The project manger should consider the use of the following performance evaluation samples on a periodic basis. Typically, these will be reserved for larger jobs:

  a. Laboratory performance evaluation samples

  - Collect duplicate samples and send to two different laboratories for comparison. Avoid using soil samples for this procedure.
  - Send a sample of known quantity and quality to the laboratory in order to determine laboratory performance. Such samples can be prepared by any laboratory.

  b. Gas chromatograph (GC) performance evaluation samples

  - Acquire a sample of known quantity and quality from a laboratory. Analyze the sample with the gas chromatograph in order to determine the integrity of GC results.

Field Sampling QA/QC

1) When sampling a well, collect VOA samples first and samples for other analytes last.

2) Start sampling at the presumed least contaminated areas, proceeding to the more contaminated areas.

3) Preservatives

- Consult the laboratory in order to determine which sampling parameters require preservatives. The laboratory will provide sampling containers specific for each job.
- It is necessary to fill the sample container when using preserved bottles; preservative is added with this assumption
- If samples are not collected correctly, they will not pass GEC QA/QC.

4) A chain-of-custody must accompany each set of samples from the job site to the laboratory. Be sure to identify the presence of trip blanks on the chain-of-custody sheets.

5) If possible, use the numbering system outlined on the attached sheet for identifying samples.

Ordering Sample Containers

1) Pre-plan sampling strategy to determine the sample parameters, the number of sample points including QA/QC samples, and the matrix of the given sample points.

2) Call laboratory and tell them:

   - Sample parameters,
   - Number of samples to be collected,
   - The number of container sets needed for trip blanks, field blanks, and duplicates, and
   - The matrix of each sample to be collected.

3) Sample containers should be ordered specifically for each job. Any sample containers unusedat the end of the job should be sent back to the laboratory.

Conclusions

1) Pre-planning is crucial.

2) Keep open communication with the laboratory on all matters.

3) If you make a mistake in sampling collection, accept it, and retake the necessary samples.

Standard Operating Procedure
Sampling with a Spade or Scoop

The simplest, most direct method of collecting soil samples for subsequent laboratory analysis, or field screening, is with the use of a spade and scoop. A normal lawn or garden spade is utilized to remove the top cover of soil to the required depth and then a smaller stainless steel scoop is used to collect the sample.

This method can be used in most soil types but is limited somewhat to sampling near the surface. Samples from depths greater than 0.5 meters become labor intensive in most soil types. Very accurate, representative samples can be collected using these procedures depending on the care and precision demonstrated by the technician. The use of a flat, pointed mason trowel to cut a block of the desired soil will be of aid when undisturbed profiles are required. A stainless scoop or lab spoon will suffice in most other applications. Care should be exercised to avoid the use of devices plated with chrome or other materials. Plating is particularly common with garden implements such as potting trowels.

Procedures:

1) Prior to initiating any work, the Health and Safety Plan developed for the specific site activities should be reviewed by the Field Technician. Any prerequisite activities identified by the Plan should be enacted prior to initiating of the sampling activities. Any concerns not addressed in the Health and Safety Plan document are to be brought immediately to the attention of the Health and Safety Officer.

2) Carefully remove the top layer of soil to the desired sample depth with a precleaned spade.

3) Using a precleaned stainless steel scoop or trowel, remove and discard a thin layer of soil from the area which comes in contact with the shovel.

4) Transfer sample into an appropriate sample bottle with a clean stainless steel lab spoon or equivalent.

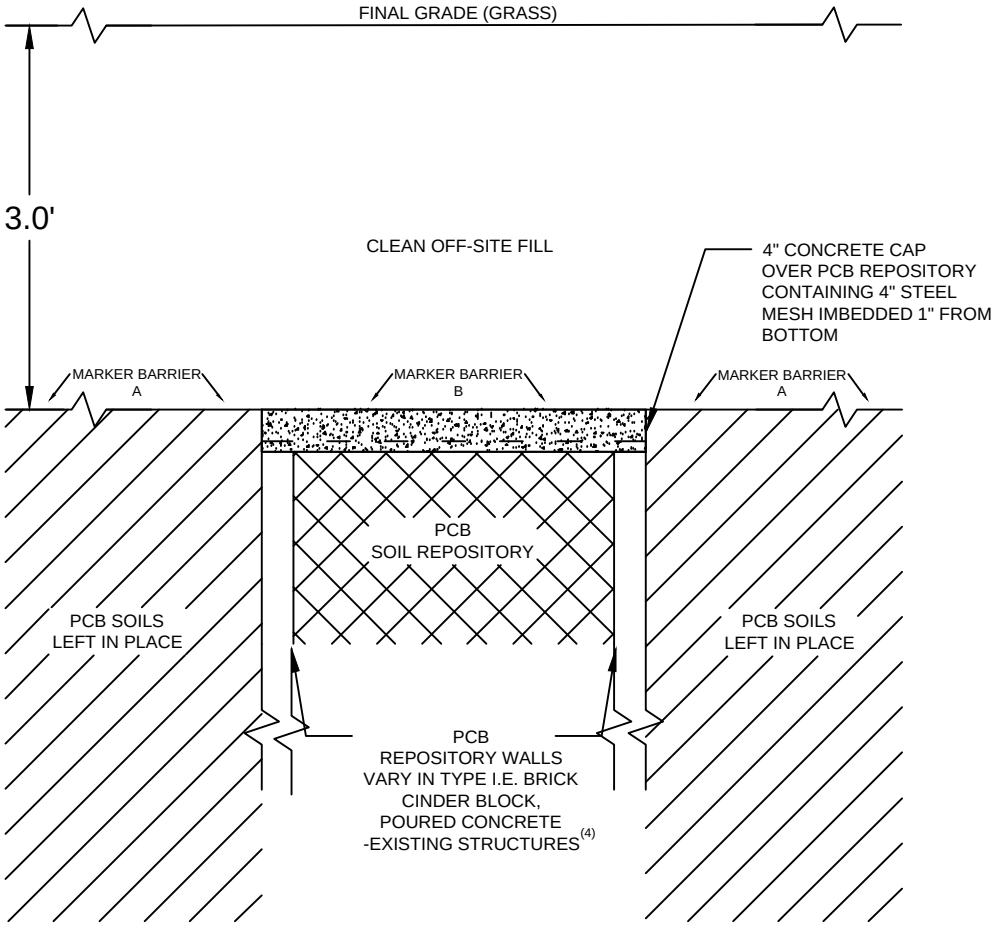
5) Check that a Teflon liner is present in the cap of the sample container. Secure the cap tightly. The chemical preservation of solids is generally not recommended. Refrigeration is usually the best approach, supplemented by a minimal holding time. For specific containerization and preservation requirements consult the laboratory prior to sample collection.

6) Label the sample bottle with the appropriate sample tag. Be sure to label the tag carefully and clearly, addressing all the categories or parameters. Complete all chain-of-custody documents and record in the field logbook.

7) Decontaminate equipment after use and between sample locations.

APPENDIX R:

Cross-Section of Cap Alternative



NOTES:

1. MARKER BARRIER A = A GEOTEXTILE MEMBRANE UNIQUE FROM THOSE OF THE SOIL REPOSITORY AND CLEAN UTILITY CORRIDORS
2. MARKER BARRIER B = A DISTINCTIVELY COLORED GEOTEXTILE MEMBRANE
3. THIS DRAWING IS A GRAPHICAL REPRESENTATION ONLY AND SHOULD NOT BE USED AS A SURVEY
4. EXISTING STRUCTURES (DRY WELL AND COAL CHUTE) WILL HAVE WALLS AND CONCRETE CAP. PROPOSED SOIL REPOSITORIES WILL NOT HAVE WALLS OR A CONCRETE CAP. THE UTILITY VAULT WILL NOT HAVE A CONCRETE CAP.

Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

- PCB SOIL
- PCB SOIL REPOSITORY
- CONCRETE CAP
- MESH

Alternative Cap Cross-Section

Mass Mills III
169.2 Bridge Street
Lowell, Massachusetts

1785-6070

APPENDIX R

SCALE

0 1 2

IN FEET

P:\Projects\1785-R-M Developer, LLC\Drawings

APPENDIX S:

B-18 Sampling Plan

Appendix S
B-18 Sampling Plan

Boring Identification (note 4)	**Location Relative to B-18**	**Sample Depth (feet)**	**PCB Analysis (EPA Method 8082 with Soxhlet Extraction)** (note 1)	**Disposal Criteria Analysis, including Asbestos Analysis** (note 2)
B-18A	Immediately adjacent to B-18	0-2	X	Composite
		2-4	X	Composite
		4-6	X	
B-18-5N	5 feet north of B-18	0-2	X	Composite
		2-4	X	Composite
		4-6	X	
B-18-5S	5 feet south of B-18	0-2	X	Composite
		2-4	X	Composite
		4-6	X	
B-18-5E	5 feet east of B-18	0-2	X	Composite
		2-4	X	Composite
		4-6	X	
B-18-5W	5 feet west of B-18	0-2	X	Composite
		2-4	X	Composite
		4-6	X	
B-18-10N (note 3)	10 feet north of B-18	0-2	Hold pending results of 5-foot radius samples	
		2-4	Hold pending results of 5-foot radius samples	
		4-6	Hold pending results of 5-foot radius samples	
B-18-10S (note 3)	10 feet south of B-18	0-2	Hold pending results of 5-foot radius samples	
		2-4	Hold pending results of 5-foot radius samples	
		4-6	Hold pending results of 5-foot radius samples	
B-18-10E (note 3)	10 feet east of B-18	0-2	Hold pending results of 5-foot radius samples	
		2-4	Hold pending results of 5-foot radius samples	
		4-6	Hold pending results of 5-foot radius samples	
B-18-10W (note 3)	10 feet west of B-18	0-2	Hold pending results of 5-foot radius samples	
		2-4	Hold pending results of 5-foot radius samples	
		4-6	Hold pending results of 5-foot radius samples	

Notes:

1 For samples collected for PCB analysis, place soil samples in 8-ounce amber bottles with screen caps and cool to 4 ^{o}C; submit samples to Con-Test Analytical Laboratory of East Longmeadow, MA under chain-of-custody for analysis of PCBs via EPA Method 8082 with Soxhlet extraction. Specify on the chain of custody, the need to achieve S-1 detection limits.

2 Submit to Con-Test one composite sample comprised of 0-2 and 2-4 foot intervals of B-18A and 5-foot radius borings, for disposal criteria testing and asbestos testing. Check with Wayne Disposal Inc., of Belleville, MI, and Waste Management of Norridgewolk, Maine, for their required analyses. Submit sample on separate chain of from the PCB soil samples. If insufficient soils are available to create the composite sample, then additional borings should be advance in the immediate vicinity of B-18, to a depth of 4 feet below grade to collect additional soils for the composite sample.

3 Submit the 10-foot radius samples to Con-Test at the same time as, but under a separate chain of custody as the B-18A and 5-foot radius samples. Instruct the laboratory to hold these samples **without** extraction. The LSP and Risk Assessor will determine if one or more of the 10-foot radius samples require extraction and analysis.

4 THIS SAMPLING PROGRAM MUST BE CONDUCTED AS SOON AS FEASIBLE, AND BEFORE FURTHER EXCAVATION IN THIS AREA OF THE COURTYARD.

APPENDIX T:

Conditional Approval of IRA Plan for RTN 3-33101, 3-33793, and 3-33853

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

November 22, 2016

Massachusetts Mill III LP
31 Saint James Ave.
Boston, MA 02116-0000

RE: Lowell
169.2 Bridge Street
RTNs: 3-0033101, 3-0033793
3-0033853

Attention: Joseph Mullins

Immediate Response Action Conditional Approval; M.G.L. c. 21E & 310 CMR 40.0000

Dear Mr. Mullins:

On November 2, 2016 the Massachusetts Department of Environmental Protection (MassDEP) received a combined Immediate Response Action (IRA) Plan and Modified IRA Plan from you for approval pursuant to 310 CMR 40.0420 of the Massachusetts Contingency Plan (MCP). The combined document was submitted to address multiple environmental conditions identified on the site during the course of redevelopment activities, including the presence of free phase petroleum in groundwater [Release Tracking Number (RTN) 3-0033101], polychlorinated biphenyls (PCBs), heavy metals and pesticides in soil (RTN 3-0033474), asbestos in soil (RTN 3-0033853) and a petroleum sheen in the adjacent Concord River (RTN 3-0033793). The IRA Plan and Modified Plan were developed by Brian Butler, a Licensed Site Professional (LSP# 5736) with Goldman Environmental Consultants Inc. The purpose of this correspondence is to: (a) inform you that the proposed Immediate Response Action has been conditionally approved pursuant to 310 CMR 40.0420 and (b) specify the conditions under which this IRA Plan is granted approval.

Immediate Response Actions are a class of remedial actions taken in an expeditious manner to address sudden releases, Imminent Hazards and other time-critical releases or site conditions. IRAs are taken when timely actions are required to assess, eliminate, abate or mitigate adverse site conditions.

Immediate Response Action

The IRA Plan, as prepared by Mr. Butler, requests approval of the following actions:

1) Reuse of contaminated soils containing metals, PCBs and asbestos previously excavated under RTN 3-0033101 to fill a utility vault along the Northwestern edge of the Picker Building on site. As part of the reuse strategy, a 4 foot wide clean utility corridor will be placed around the existing sewer line to protect future utility workers. An estimated 125 cubic yards (yd^3) will be placed as part of the reuse.

2) Excavate the top asbestos/PCB containing soils from the eastern portion of the courtyard. Soils will be removed in 1 foot lifts and 5 point composite samples collected to confirm all asbestos-containing soils are removed from the courtyard areas. Should the results indicate asbestos is still present, the above procedure will be repeated until no further asbestos is identified. All removed soils will be stockpiled on property and properly covered for future reuse. It is estimated that up to 2,000 yd^3 may be stockpiled.

3) During the excavation of contaminated soils on site, dust and asbestos monitoring will be conducted using 2 real time monitors. Dust monitoring limits proposed are 180 micrograms per cubic meter ($\mu g/m^3$) in areas with elevated PCBs, and 300 $\mu g/m^3$ in all other areas.

4) Petroleum-contaminated soils (based on visual evidence) excavated in the eastern portion of the courtyard will be disposed offsite. Soils will be removed in the area of the former fuel oil bunker to the water table. If additional soils below the water table can be removed, dewatering will occur to allow the removal of those soils. Up to 2,000 gallons of water may be collected in a frac tank for characterization and proper disposal, and approximately 2,000 yd^3 of soil may be removed for proper recycling/disposal. Post-excavation sampling for Extractable Petroleum Hydrocarbons with target compounds will be conducted to document conditions.

5) Dewater the caissons that were installed to control oil migration into the Concord River in order to apply Gunite to the wall to eliminate migration pathways. All water pumped from the caissons will be collected in a frac tank for testing and proper disposal.

6) Excavate soils from behind the retaining wall to its base (estimated to be 18-20 feet deep) and apply a similar Gunite spray to the inside wall or installation of a concrete/bentonite slurry wall to further reduce the likelihood of petroleum migration. If deemed necessary, a petroleum interceptor pipe and/or recovery wells will be installed prior to backfilling.

7) Excavation of soils across the remainder of the courtyard to a depth of 3 feet for deposition in the petroleum excavation area for reuse. As part of the reuse, a temporary road previously installed over contaminated soils will also be added to the contaminated soil repository. Finally, previously filled soil repositories (4 drywells, the utility vault & coal chute) will be dismantled to 3 feet below grade and any soils removed will be added to the repository in the eastern courtyard. The soil repositories will then be capped with concrete.

8) Placement of a marker barrier across the entire courtyard, to be followed by 3 feet of clean fill.

MassDEP's approval of the activities described above is contingent upon your adherence to the following conditions of approval, and to the provisions of all applicable MassDEP regulations governing response actions. Your initiation of the approved activities will constitute your understanding and acceptance of these conditions of approval.

I. Site Specific Conditions

1) Based on a review of the documents submitted to date, MassDEP has received no remedial proposal to address contaminants reported under RTN 3-0033474 (PCBs, heavy metals). Although these contaminants have been referenced under Modified IRA Plans for RTN 3-0033101, you are reminded that pursuant to 310 CMR 40.0404(2), all RPs and other persons conducting response actions must submit all required plans prior to initiating response actions. To this end, a Release Abatement Measure Plan must be submitted for RTN 3-0033474 prior to initiation of response actions that involve any contaminants for which that notification to MassDEP was provided.

2) All remedial work involving asbestos-contaminated soils shall not be conducted until the appropriate documents have been submitted to MassDEP's Bureau of Air and Waste (BAW) and approval is received pursuant to the provisions of 310 CMR 7.00. Should there be any discrepancy between response actions approved in this letter and those required by BAW, BAW's requirements are to be followed and any discrepancy(ies) noted in the next appropriate Status Report.

3) Based on a telephone call from LSP Butler on November 21, 2016, MassDEP understands that the sealing of the retaining wall from the river side will not be conducted due to water management issues. The sealing of the wall can reportedly be conducted from the inside, as proposed in Item 6 above under the existing approved Notice of Intent issued by the Lowell Conservation Commission. Prior to conducting the proposed sealing actions, a copy of the approved Notice of Intent must be submitted to the Bureau of Waste Site Cleanup to document all approvals are in order.

4) Notwithstanding the requirements of Item 1 above, no soil excavation containing detectable levels of PCBs may occur on site until a determination of TSCA applicability is received from the US EPA and transmitted to MassDEP. If The US EPA indicates some or all soils are subject to TSCA and requires assessment and/or remedial response actions that differ significantly from those proposed in this submittal, then a Modified IRA Plan for RTNs 3-0033101 and 3-0033853 must be submitted. Such document, if required, may be submitted concurrently with documentation required pursuant to Item 3 above.

5) The dust action levels proposed in Appendix F of the document are to be modified to a maximum of 150 ug/m^3 for all excavation work.

II. General Conditions

1) This response action must be performed in a manner and to a degree which ensures the protection of human health, safety, public welfare and the environment;

2) This response action must be conducted under the direct supervision of a competent professional with specific experience in site remediation/environmental engineering practices, using good engineering procedures and accepted construction practices, and must be managed, supervised, actually performed or periodically reviewed by a Licensed Site Professional;

3) The Immediate Response Action Plan must be conducted in compliance with all applicable public involvement provisions specified in 310 CMR 40.0428. You are specifically reminded of the obligation to provide the appropriate notification to both property owners and Affected Individuals, and copies of any sampling results to property owners pursuant to the requirements of 310 CMR 40.1403(10) and/or 40.1403(11), as applicable; and

4) Pursuant to 310 CMR 40.0427(1), this IRA will not be considered complete until all site conditions which give rise to the need for the Immediate Response Action, as described in 310 CMR 40.0412, have been assessed and, where necessary, remediated in a manner and to a degree that will assure, at a minimum, both: (a) the accomplishment of any necessary stabilization of site conditions; (b) the elimination or control of any Imminent Hazards to health, safety, public welfare and the environment, without the continued operation and maintenance of Active Remedial Systems or Active Exposure Pathway Mitigation Measures, or the incorporation of ongoing response actions to eliminate or control the Imminent Hazard into the Phase IV Remedy Implementation Plan for the disposal site; and (c) the completion of time-critical measures addressing the elimination, prevention or mitigation of Critical Exposure Pathways(s), as documented with an LSP Opinion.

III. Required Submittals

1) Pursuant to the provisions of 310 CMR 40.0425, an Immediate Response Action Status Report must be submitted to MassDEP within 120 days of the date you first communicated the need to conduct an IRA. Subsequent Immediate Response Action Status Reports must be submitted to MassDEP every 6 months thereafter for the duration of the IRA, or on an annual basis for actions that solely involve the use of Active Exposure Pathway Mitigation Measures for conditions that pose a Critical Exposure Pathway that does not pose an Imminent Hazard, provided the conditions of 310 CMR 40.0425(5) have been met.

2) For disposal sites where Active Operation and Maintenance of a remedial action is being conducted, a Remedial Monitoring Report shall be submitted on a schedule described in 310 CMR 40.0425(7).

3) Within 60 days of the date of completion, an Immediate Response Action Completion Statement and a completion report as specified in 310 CMR 40.0427 must be submitted to MassDEP.

If you have any questions relative to this matter, please contact Kyle MacAfee at the letterhead address or (978) 694-3393. All future communications regarding this release must reference the Release Tracking Numbers (RTNs 3-0033101, 3-0033793 & 3-0033853) contained in the subject block of this letter.

Sincerely,

Kyle MacAfee
Environmental Engineer
Risk Reduction

Iris W. Davis
Section Chief
Risk Reduction and Enforcement

cc: Mayor Edward Kennedy, City of Lowell, cgettings@lowellma.gov
Lowell Health Department, Kerrran Vigroux, Director, kvigroux@lowellma.gov
Kimberly Tisa, PCB Coordinator, US EPA, Tisa.Kimberly@epa.gov
Brian Butler, LSP-of-Record, bbutler@goldmanenvironmental.com
MassDEP Data Entry/File (IRA/APWRIT)

APPENDIX U:

Public Involvement Letters

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60 Brooks Drive
Braintree, MA 02184

781-356-9140
Fax 781-356-9147
www.goldmanenvironmental.com

November 30, 2016

Mr. Edward J. Kennedy, Jr., Mayor
City of Lowell
375 Merrimack St., 2nd Floor, Room 50
Lowell, MA 01852

Certified U.S. Mail, Return Receipt Requested

Re: Release Abatement Measure
169.2 Bridge St., Lowell, MA
MassDEP Release Tracking Number (RTN) 3-33474

Dear Mayor Kennedy,

On behalf of Massachusetts Mills III Limited Partnership, owner, and R-M Developer, LLC, agent for owner of Lot 3B, located at 169.2 Bridge St. in Lowell, Massachusetts, Goldman Environmental Consultants, Inc. (GEC) is notifying you, in accordance with 310 CMR 40.1403(3)(d), of the purpose, nature and planned duration of a Release Abatement Measure (RAM).

The courtyard of 169.2 Bridge Street contains soils contaminated with polychlorinated biphenyls (PCBs), lead and other oils and hazardous wastes. The purpose of RAM is to isolate soils to minimize the potential for contact to the contaminated soils by nearby residents and workers. The RAM entails moving the contaminated surface soils to subsurface locations within the courtyard, then to cover the courtyard with a protective barrier, comprised of a marker layer and three feet of clean soils. Clean utility corridors will also be created to minimize the potential for contact to contaminated soils by future utility repair workers.

A copy of the RAM Plan may be obtained by contacting R-M Developer, LLC, c/o Rees-Larkin Development, LLC, 179 Boylston St., Building P, Jamaica Plain, MA 02130 or from MassDEP's Sites Database [http://public.dep.state.ma.us/SearchableSites2/Search.aspx].

Should you have any questions regarding this matter, please do not hesitate to contact Brian Butler of GEC at (781) 356-9140.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Brian T. Butler, L.S.P.
Sr. V.P., Operations

cc: MassDEP Northeast Region

Goldman
Environmental
Consultants, Inc.

60 Brooks Drive
Braintree, MA 02184

781-356-9140
Fax 781-356-9147
www.goldmanenvironmental.com

November 30, 2016

Mr. Frank Singleton, Director
City of Lowell Health Department
341 Pine Street
Lowell, MA 01851

Certified Mail, Receipt Requested

Re: Release Abatement Measure
169.2 Bridge St., Lowell, MA
MassDEP Release Tracking Number (RTN) 3-33474

Dear Mr. Singleton,

On behalf of Massachusetts Mills III Limited Partnership, owner, and R-M Developer, LLC, agent for owner of Lot 3B, located at 169.2 Bridge St. in Lowell, Massachusetts, Goldman Environmental Consultants, Inc. (GEC) is notifying you, in accordance with 310 CMR 40.1403(3)(d), of the purpose, nature and planned duration of a Release Abatement Measure (RAM).

The courtyard of 169.2 Bridge Street contains soils contaminated with polychlorinated biphenyls (PCBs), lead and other oils and hazardous wastes. The purpose of RAM is to isolate soils to minimize the potential for contact to the contaminated soils by nearby residents and workers. The RAM entails moving the contaminated surface soils to subsurface locations within the courtyard, then to cover the courtyard with a protective barrier, comprised of a marker layer and three feet of clean soils. Clean utility corridors will also be created to minimize the potential for contact to contaminated soils by future utility repair workers.

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Should you have any questions regarding this matter, please do not hesitate to contact Brian Butler of GEC at (781) 356-9140.

Respectfully submitted,
Goldman Environmental Consultants, Inc.

Brian T. Butler, L.S.P.
Sr. V.P., Operations

cc: MassDEP Northeast Region

ATTACHMENT 3

Terracon's Pre-renovation Asbestos and Hazardous Building Materials Survey

Pre-renovation Asbestos and Hazardous Building Materials Survey

Massachusetts Mills – Building #3 (Picker Building)
Formerly 95 Bridge Street, Lowell, Massachusetts

May 19, 2014

Terracon Project Nos. J1147122/J1147126

Prepared for:
Rees-Larkin Development
Jamaica Plain, Massachusetts

Prepared by:
Terracon Consultants, Inc.
Manchester, New Hampshire

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PRE-RENOVATION ASBESTOS AND HAZARDOUS BUILDING MATERIALS SURVEY MASSACHUSETTS MILLS – BUILDING #3 (PICKER BUILDING) LOWELL, MASSACHUSETTS

Terracon Project J1147122/J1147126

May 19, 2104

1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) conducted a pre-renovation asbestos and hazardous building materials survey (Survey) at 150 Mass Mills Drive (formerly 95 Bridge Street) currently known as the Picker Building, located in Lowell, Massachusetts (the "Site"). Besides the services listed in our proposals (Nos. PJ1140043 and PJ1140059), at client request aditional evaluations were performed. (see Project Objective). All the field activities described in this report were performed in accordance with Federal and State regulatory agencies requirements. A regulatory oveview is provided in Section 4 of this report.

1.1 Project Objective

Terracon understands the Survey was requested to identify and quantify Asbestos Containing Materials (ACM), Lead Based Paint (LBPs), Polychlorinated Biphenyls (PCBs), and provide an inventory of other potentially hazardous materials (mercury (Hg) chlorofluorocarbons (CFCs), and polychlorinated biphenyls (PCBs)) that may be contained in fixtures and equipment such as fluorescent, sodium, high intensity, and mercury vapor lamps, thermostats, electrical switches, light ballasts, and refrigeration equipment. Additionally, per client request, Terracon performed sampling for PCBs in window caulking and other constrution materials as well as sampling for RCRA 8 metals.

Building areas, systems, structural components, or surfaces which could not be observed because a space was unsafe or impractical to access, disassemble, or remove, or because a person could not physically enter or observe the area or component, were not surveyed.

The inaccessible areas include, but they are not limited to, the following:

- Elevator equipment oils (motors/capacitors) and associated brake pads for 3 of the 4 existing elevators located at the northeast corner, and center of the building respectively, which were not accessible at the time of our survey (these materials are assumed to be ACM);
- Basement level walk-in cooler; and;

- Subsurface damp-proofing on exterior foundation walls, underground asbestos-cement water/sewer piping, or underground insulated steam piping that may exist at the Site.

2.0 BUILDING DESCRIPTION

The site is located at 150 Mass Mills Drive (formerly 95 Bridge Street) in the Town of Lowell, Middlesex County, Massachusetts. The site consists of multiple mill buildings, most of which have been redeveloped to residential apartments. Building number 3 (Site project building) was constructed circa 1900. The approximately 192,000-square foot building is 5 stories with a basement; and is of brick construction/façade, with wood ceiling decking and beams. The building is located in the northeast corner of the site, adjacent to Bridge Street surrounded by water, and is scheduled for renovation at a later date. If any of the information above is inaccurate please notify us at your convenience.

3.0 FIELD ACTIVITIES

Mr. Ryan Rouillard conducted a walkthrough of Building on April 1, 2014 immediately preceding the survey. The purpose of the walkthrough was to become familiar with the layout of the Site building to be sampled, determine the homogenous materials and establish an appropriate sampling plan. Access to the building and areas of interest was provided by the Client.

3.1 Asbestos Survey

The asbestos survey was conducted by Terracon representatives, Mr. Ryan D. Rouillard and Mr. Richard Hanes, as well as Mr. Ronald Jacobs of LBP Solutions, LLC; all Massachusetts Department of Labor Standards (DLS) licensed asbestos inspectors. The asbestos survey was conducted in general accordance with the sample collection protocols established in United State Environmental Protection Agency (USEPA) regulation 40 CFR 763-and Massachusetts Department of Environmental Protection (DEP) and by the Massachusetts Department of Labor and Workforce Development (DLWD) under 453 CMR 6.00. A summary of the asbestos survey activities is provided below.

In accordance with the Federal and State regulations the materials present in the inaccessible area must be assumed as ACM until access is provided and by additional sampling and laboratory analysis such materials can be proven Non-ACM.

3.1.1 Visual Assessment

The asbestos survey activities began with visual observation of the interior and exterior of the Site building to identify homogeneous areas of suspect ACM, in addition to areas identified during the initial walkthrough. A homogeneous area consists of building materials that appear similar in terms of color, texture, and date of application (age).

3.1.2 Physical Assessment

A physical assessment of the materials to be tested was conducted to assess the friability and condition of the materials. A friable material is defined by the USEPA as a material which can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Friability was assessed by physically touching suspect ACM.

3.1.3 Sample Collection

Based on results of the visual observation, bulk samples of suspect ACM building materials were collected in general accordance with USEPA protocols. Random samples of suspect ACM were collected in each homogeneous area. Bulk asbestos samples were collected using wet methods as applicable to reduce the potential for fiber release. Asbestos samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

Type of Suspect Material	Minimum Sampling Criteria
Surfacing	Statistically random criteria (3 to 7 samples per each homogeneous material)
Thermal Insulation	3 or more samples per homogeneous area of suspect material
Miscellaneous	2 or more samples per homogeneous area of suspect material.

During the survey Terracon collected 387 bulk samples of suspect ACM. Field Sketches and an associated drawing illustrating the asbestos sampling locations can be found in Appendix D; a summary of ACM is provided in Section 5 tables 1-7.

Materials Sampled for ACM included the following:

Interior (Basement Level to 5th Floor):

- Floor tile/linoleum sheet flooring and associated backing with mastics/adhesives
- Textured and smooth ceiling and wall surfacing materials
- Carpet mastic
- Floor levelers
- Gypsum board and joint compound materials
- Cement board associated with electrical equipment

- Cove base and associated adhesive (various types, sizes, and colors)
- Ceramic floor/wall tile grouts/adhesives (various types, sizes, and colors)
- Textured floor/wall/ceiling paints
- Pipe fitting insulation (various types, sizes, and colors)
- Residual linoleum sheet flooring/backing/adhesive
- Exhaust breeching insulation
- Pipe thread caulk materials
- Paper beneath hardwood floor systems (various types and colors)

Exterior/Roof:

- Bricks and mortar
- Metal and wood window/door frame caulk/glazing (various types and colors)
- Masonry joint caulk (various types and colors)
- Textured wall paint
- Asphalt shingle siding
- Asphalt tar and gravel roofing (2 types) and associated edge/penetration mastics

3.1.4 Asbestos Sample Analysis

Asbestos bulk samples were submitted under chain of custody (COC) to EMSL Analytical, Inc. (EMSL) in Woburn MA for analysis by polarized light microscopy (PLM) with dispersion staining techniques per USEPA's Method for the Determination of Asbestos in Bulk Building Materials (600/R-93-116) and analysis using transmission electron microscopy (TEM) for trace (less than 1 percent asbestos) non-friable samples results. The laboratory was instructed to analyze samples from each homogeneous area until the first sample containing asbestos was identified (i.e., stop positive protocol). EMSL is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP Accreditation No. 200700-0). The percentage of asbestos, where present, was determined by microscopic visual estimation. EMSL separated out multiple layers from some of the materials submitted and used the "stop at first positive" protocol; consequently, a total of 354 samples were analyzed.

3.2 PCB Survey

As mentioned above, on April 1, 2014 Terracon performed a reconnaissance survey followed at a later date by a limited testing for PCB building materials of interior/exterior components, including paints, oil-staining, and caulk/sealant materials. In our opinion, these limited materials/locations tested provide a sample set that generally represents the building overall, however, additional testing is required for confirmation. As part of this initial reconnaissance, Terracon inspected **accessible** building materials including window and door caulk/glazing respectively, oil-stained hardwood/plank flooring and concrete footings (basement level), roofing materials and joint sealant between masonry building sections. A total of total of 13 locations

(not including QA/QC samples) for sampling the above-mentioned materials were identified during the reconnaissance. Descriptions of the materials sampled are presented on the respective COCs (per floor) presented in Appendix B.

3.2.1 PCB Sample Collection

Sample locations were selected within the Site building based on Terracon's reconnaissance survey. Samples of caulk, roofing, oil-stained building materials, and sealants were collected by cutting the sealant material from the joint with a razor knife equipped with disposable razor blades, or scraping the material with a metal scraper equipped with disposable blades. If adjacent media (e.g., concrete or wood) was inadvertently removed in the process of sample collection, this media was physically removed (as best possible) before the sample was placed in its container. The material collected was transferred by the sampler wearing dedicated nitrile gloves to clean 4 to 8-oz glass jars provided by the laboratory. Approximately 5 to 10 grams of material was collected for each sample, as required by the laboratory. Dedicated razor blades/scrapers and dedicated nitrile gloves were changed out and disposed of between each sample to prevent cross-contamination.

Each sample was assigned an identification number representative of the location from which it was collected. The material type and location (i.e., window, desk, roof, door frame, etc.) and descriptors of the material sampled were recorded on field data sheets (COCs) during the sampling. In addition, photographs of each building level were taken to provide a visual record of the materials sampled and their locations within the Site building.

3.2.2 PCB Materials Sample Analysis

The samples collected were placed on ice in coolers and submitted to ChemServe, in Milford NH for analysis of PCBs by USEPA method SW-8082A utilizing the Soxhlet extraction methodology (USEPA Method SW-3540C). Copies of the laboratory analytical reports are presented in Appendix B.

3.3 RCRA-8 Metals

ChemServe was utilized to analyze RCRA-8 Metals (arsenic, barium, chromium, cadmium, mercury, selenium, silver, and total lead) in 6 of the 13 PCB samples collected. Analysis were performed in accordance with USEPA Method SW-6010B/7471A (Metals). The Laboratory reports can be found in Appendix B.

3.4 Lead Paint XRF Survey

LBP Solutions, LLC conducted an OSHA Lead Based Paint Determination on March 13, 2014 of interior components within the basement, with a supplemental determination on April 17 and 18,

2014 of the interior components within levels 1 through 5, and exterior components of the building. Mr. Jeffery W. Harris conducted the on-site investigations.

Lead in paint sampling of representative interior building surfaces was conducted to assist with contractor compliance with the United States Department of Labor (US DOL) Occupational Safety and Health Administration (OSHA) Lead Exposure in Construction Standard (29 CFR 1926.62) and USEPA Hazardous Waste Disposal Regulations (40 CFR Parts 260 through 271).

The information contained in this report, found in Appendix D, summarizes the sampling and analytical methodologies, site description, materials found to contain lead based paint, X-Ray Fluorescence Analyzer (XRF) testing results and qualifications of personnel.

Testing Methodology

Representative surfaces from selected accessible areas of the building were analyzed using an XRF. The XRF used was a RMD, LPA-1 Lead Paint XRF Analyzer, Serial Number 2730, which is a complete lead paint analysis system that quickly, accurately, and non-destructively measures the concentration of LBP on surfaces. Please refer to Appendix D for specific sampling methodologies associated with the XRF.

The XRF abatement level Detection Limit (DL) was set to 0.4 milligram of lead per square centimeter (mg/cm^2) as per manufacturer's specifications. The XRF unit is designed to take a measurement with a 95% confidence down to a level of 0.2 mg/cm^2. XRF readings below 0.2 mg/cm^2 cannot be used conclusively to determine the presence/absence of lead in paint. Further analysis of samples via laboratory analysis is recommended for clarification of the presence or absence of lead if results are below 0.2 mg/cm^2. If no lead is detected by laboratory analysis then the OSHA Lead in Construction Standard does not apply to that particular surface. Surfaces with XRF readings below 0.2 mg/cm^2, with no paint chip sampling and laboratory analysis conducted should be assumed to contain lead.

XRF field screening results and locations are noted on the table included within the LBP Solutions, LLC XRF report under Section 5. The table contains the type of component tested, the condition of the paint ("Intact", "Fair" or "Poor"), the type of substrate (such as wood, metal, etc.) and the color of the component. The locations of the individual tests are listed by location as well as the corresponding lead results in (mg/cm2) as reported by the XRF. The detailed report represents all XRF readings of coated surfaces tested.

3.5 Other Hazardous Materials Assessment

At the time of the Site survey, Terracon made visual observations of the Site building to obtain information on the potential presence of hazardous materials that require removal and disposal

prior to renovation. Hazardous materials may include fluorescent lamps, fluorescent lamp ballasts, fire extinguishers, suspect PCB containing electrical components such as light ballasts/transformers/capacitors/switchgear, miscellaneous equipment oils, mercury switches, emergency exit signs/lights batteries, chemical storage drums, above ground storage tanks (ASTs), refrigerants which may contain chlorofluorocarbons (CFCs), and various containerized wastes. For these materials, the only methodology utilized to assess the presence of hazardous materials was visual observation; no laboratory testing was conducted.

Terracon performed a visual assessment of the fluorescent light fixtures inside the buildings for the presence of PCBs and di (2-ethyhexyl) phthalate (DEHP) containing ballasts. Nearly all ballasts manufactured prior to 1979 contain PCBs. All ballasts manufactured after July 1, 1978, which do not contain PCBs, are required to be clearly marked "No PCBs." Ballasts not possessing a "No PCBs" label are generally assumed to contain PCBs, however, not necessarily in concentrations greater than 50 parts per million (ppm).

4.0 REGULATORY OVERVIEW

4.1 Asbestos

USEPA regulation 40 CFR 61, Subpart M, NESHAP regulates asbestos fiber emissions during renovation or demolition activities and asbestos waste disposal practices. It also requires the identification and classification of existing building materials prior to demolition or renovation activity. Under NESHAP, asbestos-containing building materials are classified as either friable, Category I non-friable or Category II non-friable ACM. Friable materials are those that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure. Category I non-friable ACM includes packings, gaskets, resilient floor coverings and asphalt roofing products containing more than 1% asbestos. Category II non-friable ACM are any materials other than Category I materials that contain more than 1% asbestos.

Friable ACM, along with Category I and Category II non-friable ACM which is in poor condition and has become friable or which will be subjected to drilling, sanding, grinding, cutting or abrading and which could be crushed or pulverized during anticipated renovation or demolition activities are considered regulated ACM (RACM).

In the Commonwealth of Massachusetts, asbestos activities are regulated by the DEP and by the DLWD under 453 CMR 6.00. Massachusetts regulations require that any asbestos-related activity conducted in the Commonwealth be performed by personnel licensed by the DLS. Asbestos abatement must be performed by Massachusetts-licensed asbestos abatement contractors in accordance with a project design prepared by a DLS licensed Project Designer. Third-party air monitoring must be conducted at the completion of abatement activities.

Management plans developed for the in-place management of asbestos-containing materials must be developed by a DLS licensed Management Planner.

RACM must be removed and properly disposed of prior to demolition activities. The owner or operator of a facility must provide DEP with written notification of planned removal activities at least 10 working days prior to the commencement of asbestos abatement activities.

The United States Occupational Safety and Health (OSHA) asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos fibers be maintained at or below 0.1 asbestos fibers per cubic centimeter of air (0.1 f/cc) as an eight hour time weighted average (TWA) and not exceed 1.0 fibers per cubic centimeter of air (1.0 f/cc) over a 30 minute time period known as an excursion limit (EL). The TWA and EL are known as OSHA's permissible exposure limits (PELs). The OSHA standard classifies construction and maintenance activities which could disturb ACM, and specifies work practices and precautions which employers must follow when engaging in each class of regulated work. States which administer their own federally-approved state OSHA programs may require additional precautions.

4.2 PCB Containing Building Materials

The United States Environmental Protection Agency (USEPA) has issued a number of fact sheets indicating that PCBs may be present in caulk and other sealant materials used in buildings constructed in the period from 1950 through approximately 1980. PCBs were a common additive to caulk because of their water and chemical resistance, durability, and elasticity. PCBs were added as a plasticizer in caulking used to seal joints between masonry units and around windows. PCBs were used in building materials such as paints, caulks, adhesives, mastics, sealants, and specialty coatings. PCBs are known to leach into existing building substrate materials (existing brick and concrete) adjacent to suspect PCB materials sampled. If suspect building materials sampled are less than 1 part per million (ppm), substrate sampling is not necessary. Disposal of substrate materials containing PCBs at concentrations of 1 to 50 ppm will require disposal at an approved solid waste landfill; concentrations above 50 ppm will require disposal at a USEPA TSCA-approved landfill.

4.3 RCRA-8 Metals

Appendix B demonstrates that the concentration and types of constituents detected on the coated brick, wood, metal, and concrete materials associated with the Site building that will need to be managed under the DEP Solid Waste Management Regulations (310 CMR 19.00).

The contractor is responsible for complying with all federal and state regulations that pertain to RCRA-8 Metals within building materials. These regulations include, but are not limited to, the

Code of Federal Regulations (CFRs) chapters 29 and 40, compliance with MA DEP and OSHA regulations, and the Steel Structures Painting Council (SSPC) regulations and/or Renovation, Repair and Painting Regulations (RRP) in Massachusetts, as applicable.

4.4 Lead Based Paint

The United States Department of Housing and Urban Development (HUD) issued *Guidelines for the Evaluation and Control of Lead Based Paint Hazard in Housing* pursuant to the Housing and Community Development Act of 1992. The USEPA/HUD action level for lead-based painted surfaces is mg/cm^2 using the XRF method or 0.5% dry weight using the atomic absorption analytical method. The HUD/USEPA definition of lead-based paint is directed at protecting the general population from exposure to lead in the residential setting.

Lead is regulated by the USEPA and the OSHA. The USEPA regulates lead use, removal, and disposal, and OSHA regulates worker exposure to lead. The USEPA defines LBP as paint, varnish, stain or other applied coating that contains lead equal to or greater than 1.0 mg/cm^2, 5,000 milligrams per kilogram (mg/kg), or 0.5% by dry weight as determined by laboratory analysis. For the purpose of the OSHA lead standard, lead includes metallic lead, all inorganic lead compounds, and organic lead soaps. The federal OSHA standard does not define the amount of lead in paint that constitutes lead-based paint.

The OSHA Lead Standard for Construction (29 Code of Federal Regulations (CFR) 1926.62) applies to all construction work where an employee may be occupationally exposed to lead. All work related to construction, alteration or repair (including painting and decorating) is included. The lead-in-construction standard applies to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions. Under this standard, construction includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present
- Removal or encapsulation of materials containing lead
- New construction, alteration, repair, or renovation of structures, substrates, or portions containing lead, or materials containing lead
- Installation of products containing lead
- Lead contamination/emergency clean-up
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed
- Maintenance operations associated with construction activities described above

Employers must assure that no employee will be exposed to lead at concentrations greater than the permissible exposure limit of 50 micrograms per cubic meter (mg/m^3) averaged over an eight-hour period without adequate protection. The OSHA standard also establishes an action level of 30 mg/m^3, which if exceeded, triggers certain requirements, including periodic exposure monitoring and medical monitoring.

USEPA regulates disposal of hazardous materials. The USEPA has stated that components removed with intact LBP that is not delaminating from the substrate may be disposed as general demolition debris. If the LBP is stripped from components, or if it is delaminating from the substrate, the waste may be subject to hazardous waste rules [i.e., Toxicity Characteristics Leaching Procedure (TCLP)].

4.5 Other Hazardous Materials

Massachusetts solid waste regulations prohibit the disposal of PCB-containing ballasts in regular or solid waste landfills. These ballasts must be disposed of at an incineration/recycling facility. Approximately 25 percent of ballasts manufactured after 1979 contain DEHP, a regulated substance under the USEPA Superfund regulations. DEHP-contaminated ballasts must be disposed of in the same manner as PCB-contaminated ballasts. Fluorescent light tubes, which contain mercury, are prohibited from disposal at in-state landfills due to their mercury content. The preferred option is for the removal and recycling of the bulbs at an approved recycling facility.

5.0 FINDINGS AND RECOMMENDATIONS

5.1 Asbestos Survey

The materials listed in the tables below have been sampled and determined to contain asbestos in concentrations greater than 1% ("trace" results – materials less than 1% asbestos - bulleted following tables). When disturbed, various federal, state and local regulations may apply. These materials should be monitored for damage over time and repaired as necessary by appropriately trained personnel. Removal may be necessary before renovations and in most cases before a demolition.

ACM were identified in the following areas:

Table 1 ACM – Basement

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity[1]
004A	Off-White Debris	Floor Throughout Basement	ACM	25	42,000 SF[2]
005A	White Pipe Insulation	On 20" Pipe	ACM	30	100 LF[3]
007A	Off-White Window Glazing	Windows on Basement Floor	ACM	5	7 Windows[4]
013A	Brown 2" Pipe Insulation	Throughout	ACM	35	200LF
014A	Brown 4" Pipe Insulation	Throughout	ACM	50	250LF
015A	Brown 6" Pipe Insulation	Throughout	ACM	60	225LF
016A	White 10" Pipe Insulation	Throughout	ACM	45	300LF
017A	White 12" Pipe Insulation	Throughout	ACM	40	200LF[5]
022A	Gray Cement Board	Electrical Board near ductwork	ACM	85	20SF[6]

Notes: SF = Square Feet; LF = Linear Feet; ~ means Approximate

[1] Estimated quantities are based on a cursory field evaluation, and actual quantities may vary significantly, especially if asbestos containing materials are present in hidden and/or inaccessible areas not evaluated as part of this survey.
[2] Materials discovered on all building levels (overall quantity equals ~252,000 SF);
[3] 20-inch pipe insulation may also be associated with the sub-grade water turbine and have contaminated the water surrounding the turbine, as well as adjacent soils associated with the basement level floor.
[4] Wood windows associated with Site building are approximately 12-feet by 16-feet in size and equate to approximately 250 LF of asbestos glazing per opening.
[5] 12-inch pipe insulation is also located on the 2nd floor and appears to be homogeneous with this basement level sample (i.e., quantity of 2nd floor equals ~200 LF), totaling an overall LF of 12-inch insulation equaling ~400 LF).
[6] Gray asbestos-cement board was discovered on other levels of the Site building and found to be associated with electrical switch-panels. Overall approximate quantity of asbestos-cement board is 400 square feet.

Trace (less than 1%) concentrations of asbestos were identified in the following:

- Plaster base/skim coats on metal and wood lathe (ceiling hung) throughout this level

Note 1: DEP regulations specify that non-friable materials with a "trace" result, require the material to be disposed of as asbestos. If the material is friable (i.e., materials that may be easily reduced to a powder by applying hand pressure such as pipe/fitting insulation, plaster coats, etc.) during disturbance/abatement, the USEPA, under the asbestos NESHAP regulation, requires the material(s) be abated in accordance with the asbestos removal regulations (work to be performed in a controlled environment/containment).

Note 2: Some plaster coats (skim and base) and pipe insulation (various sizes/types) remaining on substrate surfaces, however, much of the material is deteriorated and has fallen to the floor (thus becoming debris and contaminating the floor throughout).

Note 3: Asbestos window glazing determined to be asbestos-containing has fallen to the ground from the respective window cavities above, as well as other known hazardous materials, and appear to have comingled with soils located at the rear of the Site building (side adjacent to the boiler/power house buildings), as well as infiltrated into broken window/door cavities at basement level.

Table 2 ACM - First Floor

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity
037A	White Window Glazing	Interior Wood Windows	ACM	2	42 Windows[7]

[7] Wood Windows associated with Site building are approximately 12-foot x 16-foot in size and equate to approximately 250 LF of asbestos glazing per opening. Site building has approximately 42 wood-framed windows per floor, which appears to be homogeneous throughout the Site building, thus an overall estimated total of approximately 200 wood-framed windows (~50,000 LF of asbestos glazing).

Note: Ceiling plaster coats (center bays respectively), 2" pipe insulation (additional quantities may exist, but have deteriorated and fallen to the floor), and metal (wire-mesh) window glazing (10-foot x 8-foot opening) tested on other levels have been found to be asbestos-containing; these materials also exist on this level.

Table 3 ACM - Second Floor

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity
049A	Beige Caulk	Conveyor belt unit to brick wall (front/west wall)	ACM	2	3 LF
061A	White 2" Pipe Insulation	Throughout 2nd floor (vertical and horizontal)	ACM	65	235 LF
062A	White 4" Pipe Fitting Insulation	Throughout 2nd Floor	ACM	35	25 Fittings

Notes: SF = Square Feet; LF = Linear Feet; ~ means Approximate

Trace (less than 1%) concentrations of asbestos were identified in the following:

- White glazing on wire-mesh (metal frame) windows on north end of building

Note 1: Pipe insulation (various sizes/types totaling approximately 800 LF) and wood window glazing (two types) tested on other levels have been found to be asbestos-containing; these materials also exist on this level. Flaking lead paint (various colors) and bird guano is also present. Some material remains on substrate surfaces, however, significant amounts of these materials have deteriorated and fallen to the floor (thus becoming debris and contaminating the hardwood floors throughout).

Note 2: The Site building has approximately 6 metal-framed windows per floor and equate to approximately 168 LF of window glazing ("trace" results for asbestos) per window, and are assumed to be homogeneous throughout the Site building, thus an overall estimated total of 30 metal-framed (wire-mesh) windows (~5,040 LF of glazing) to be disposed of as asbestos. Flaking lead paint (various colors) and bird guano are also present. Some of the materials remain on substrate surfaces, however, significant amounts of these materials have deteriorated and fallen to the floor (thus becoming debris and contaminating the hardwood floors throughout). Soils exist in the center and northern bays respectively and are also comingled with asbestos debris and flaking lead paint.

Table 4 ACM - Third Floor

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity
068A	Brown Mottle 9” x 9” Floor Tile	Office Area	ACM	12	650 SF
070A	Brown 9” x 9” Floor Tile	Small Bathroom in Office Area	ACM	12	24 SF
078A	Tan Window Glazing	Interior building Office Area Wood Window (2’ x 4’ opening)	ACM	3	3 Windows
081A/B	Gray Cementitious Floor Painted Red	Women’s Bathroom	ACM	3 and 4 respectively	250 SF

Notes: SF = Square Feet; LF = Linear Feet; ~ means Approximate

Note: Pipe insulation (various sizes/types totaling approximately 200 LF) and wood/metal (wire-mesh) window glazing (two types/sizes) tested on other levels have been found to be asbestos-containing; these materials also exist on this level. Flaking lead paint (various colors) and bird guano is also present. Some of these materials remain on substrate surfaces, however, significant amounts of the material has deteriorated and fallen to the floor (thus becoming debris and contaminating the hardwood floors throughout).

Table 5 ACM - Fourth Floor

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity
084A	Beige 12” x 12” Mottle Floor Tile	Center/South Ends Office Area	ACM	2	3,300 SF
086A	Brown Glue Daubs	South End Office Area behind White Wood Wall Paneling	ACM	8	560 SF
087A	Light Brown Glue Daubs	Center/North Ends of Office Area behind Brown Wood Wall Paneling	ACM	5	2,000 SF
088A	Tan 9” x 9” Floor Tile	North End Office Area (beneath Carpet	ACM	10	1,500 SF
089A	Black Mastic associated with Tan 9” x 9” Floor Tile	North End Office Area (beneath Carpet)	ACM	10	1,500 SF

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity
093A	White Wood Window Glazing	On perimeter wall wood window sills/sashes	ACM	4	42 Windows
094A	Salmon 9” x 9” Floor Tile	Common Area at Penthouse Entry - South End Office Area	ACM	2	50 SF
095A	Black Mastic associated with Salmon 9” x 9” Floor Tile	Common Area at Penthouse Entry - South End of Office Area	ACM	5	50 SF
098A	Light Green 12” x 12” Mottle Floor Tile	Women’s Bathroom former Foyer (along East Perimeter Wall near heater banisters) and in Office beneath carpet/Tan 9” x 9” Floor Tile/Mastic	ACM	2	1,950 SF

Notes: SF = Square Feet; LF = Linear Feet; ~ means Approximate

Note: Pipe insulation (various sizes/types totaling approximately 250 LF) and wood/metal (wire mesh) window glazing (two types/sizes) tested on other levels have been confirmed to be asbestos-containing; these materials also exist on this level. Flaking lead paint (various colors) and bird guano is also present. Some of the material remains on substrate surfaces, however, significant amounts of the material has deteriorated and fallen to the floor (thus becoming debris and contaminating the hardwood floors throughout).

Table 6 ACM - Fifth Floor

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity
121A	Yellow Mastic associated with Marble 12” x 12” Floor Tile	Common Area north of Office Area (atop Cream Diamond-Shaped Linoleum Sheet Floor)	ACM	2	1,500 SF
0122A	Cream Diamond-Shaped Linoleum Sheet Flooring (12”x12” Pattern)	Common Area north of Office Area	ACM	2	1,500 SF

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity
129A	Black Asphalt Cement Baseboard	Office Area	ACM	2	100 SF

Notes: SF = Square Feet; LF = Linear Feet; ~ means Approximate

Note: Plaster coats, pipe insulation (various sizes/types totaling approximately 310 LF) and window glazing (two types/sizes) tested on other levels have resulted asbestos-containing; these materials also exist on this level. Flaking lead paint (various colors) and bird guano is also present. Some of the material remains on substrate surfaces, however, significant amounts of the materials have deteriorated and fallen to the floor (thus becoming debris and contaminating the hardwood floors throughout).

Table 7 ACM - Exterior/Roofs

Sample ID	Sample Description	Sample Location	Classification	Analytical Result (%)	~Quantity
136A	Green Asphalt Shingle Siding	Around doorway of front building access (main level)	ACM	10	16 SF
140A	Gray Sealant	Roof Edge and on front (west wall) exterior Building Façade (30 SF)	ACM	20	2,530 SF
151A	Black Roof Mastic	Roof Penetrations (i.e., Vent Pipes; 4-feet per location)	ACM	20	14 pipes

Notes: SF = Square Feet; LF = Linear Feet; ~ means Approximate

Assumed asbestos materials inaccessible for testing during the Site survey include the following:

- Elevator Brake Pads (located in penthouse and other building elevator motor locations);
- Electrical (black) equipment boards (i.e., electrical switchboards, ceiling hung bus bars, and interior of transformers and fuse boxes);
- Water in subgrade pits (i.e., water turbine and elevator locations); and
- Interior diodes of small and large motors.

As stated in Section 1.0, additional ACMs may be discovered during renovation activities, which will need to be sampled prior to disturbance to determine if they contain asbestos, in addition to

suspect ACMs that might be present in inaccessible areas such as wall cavities or elevator shafts.

Based on the results of our visual survey and the results of the ACM testing, Terracon provides the following conclusions and recommendations:

- Based on the survey findings, a licensed Massachusetts Asbestos Project Designer should prepare bid documents and asbestos and hazardous materials abatement technical specifications for obtaining competitive bids for the removal of identified asbestos-containing materials that will be impacted by proposed renovation activities.
- Prior to conducting renovation activities that will impact confirmed or assumed ACM at the Site, a Massachusetts-licensed asbestos abatement contractor must be retained to remove the ACM anticipated to be impacted by such activities. Demolition of the boilers and disposal of all ACM-contaminated materials shall also be conducted by a Massachusetts-licensed asbestos abatement contractor.

5.2 PCB Building Materials Survey

Thirteen samples were collected from the Site buildings and sent to ChemServe of Milford, New Hampshire for analysis of PCBs (analytical method 8082). PCBs were reported below regulatory levels in the 13 samples collected. The laboratory reported PCB concentrations from <0.093 ppm to 0.620 ppm (mg/kg), which is equal to 620 ppb (ug/kg). Refer to Appendix B for PCB laboratory reports for building materials tested.

Due to the survey and testing identifying low concentrations of PCBs in some tested materials within the Site building (i.e., reported to be below 1.0 and 50 ppm respectively), the materials are not subject to the regulation for reporting, cleanup and disposal for "PCB-containing materials" as outlined in Title 40 to the Code of Federal Regulations under Part 761; the Toxic Substances Control Act (TSCA).

If additional materials are discovered during renovation/selective demolition activities that were not tested as part of this survey, those materials will need to be characterized prior to removal/disposal.

Terracon recommends additional PCB sampling and testing of the building materials (and associated substrates, as needed) at the site in order to obtain a more representative understanding of potential PCB contamination.

Based on the results of our visual survey and the results of the PCB testing, Terracon provides the following conclusions and recommendations:

- Oil-stained surfaces that include mechanical equipment concrete footings and adjacent hardwood/plank-deck flooring were observed throughout the Site building during Terracon's assessment. Sampling of stained components and caulks/other sealants was conducted at different locations within the Site building. However, additional areas/materials were also discovered and not tested as part of this Site survey. Prior to conducting renovation or selective interior demolition activities within the Site building, additional testing of oil-stained building materials and other caulk/sealant materials that were observed throughout the Site building should be conducted to be more representative of the overall structure.

5.3 RCRA-8 Metals

Six samples were analyzed including paints on wood ceiling decks/associated wood ceiling beams, paint on brick walls, paint on metal pipe and columns, areas of oil stained hardwood flooring/associated decking, paint on exterior wood/metal windows and doors/trim observed throughout the Site building.

Compound	White Paint on Interior Wood Beams/Ceiling Deck		White Paint on Interior Metal Pipe and Columns		White Paint on Interior Brick Walls	
	14040300-001		14040300-002		14040300-003	
	5/2/2014		5/2/2014		5/2/2014	
	Result	Limit[2]	Result	Limit[2]	Result	Limit[2]
Arsenic	3.20	2.50	9.01	2.50	15.5	2.50
Barium	62.4	2.50	99.2	2.50	1800	2.50
Cadmium	5.37	0.25	22.1	0.25	3.36	0.25
Chromium	10.01	0.25	30.2	0.25	38.7	0.25
Mercury	0.046	0.02	0.048	0.02	0.586	0.02
Lead	200	2.50	20000	2.50	2100	2.50
Selenium	<2.50	2.50	<2.50	2.50	<5	2.50
Silver	<0.25	0.25	<0.25	0.25	<0.5	0.25
TPH[1]	<33000	RDL[3] = 33000	8300000	RDL = 330000	4200000	RDL = 33000

Compound	Oil-Stained Hardwood Flooring		Green Paint on Exterior wood & Metal window/doors		White Paint on Interior Brick Walls/Wood Ceiling Deck/Beams and Columns	
	14040300-004		14040300-007		14040300-009	
	5/2/2014		5/2/2014		5/2/2014	
	Result	Limit[2]	Result	Limit[2]	Result	Limit[2]
Arsenic	<3.32	2.50	16.5	2.50	<5.0	2.50
Barium	600	2.50	1090	2.50	467	2.50
Cadmium	1.96	0.25	5.50	0.25	56.7	0.25
Chromium	6.46	0.25	4230	0.25	351	0.25
Mercury	0.258	0.02	0.069	0.02	0.049	0.02
Lead	930	2.50	84000	2.50	5200	2.50
Selenium	<3.32	2.50	<2.50	2.50	<5.0	2.50
Silver	<0.332	0.25	<0.25	0.25	<0.5	0.25
TPH[1]	33000	RDL = 33000	16000000	RDL= 330000	---	---

Test results are reported in mg/kg. Arsenic, barium, cadmium, chromium, lead, selenium, and silver tested by EPA methos 6010B, mercury tested by EPA method 7471A, TPH tested by EPA methods 9071B/1664A

[1]THP = Total Petroleum Hydrocarbons
[2]MDL = Method Detection Limit (mg/kg) = Maximum Concentration of Contaminants for Toxicity Characteristic

5.4 Lead Paint Survey

As mentioned above, the screening assessment was performed with the use of an XRF analyzer to detect the presence of lead. The assessment included the testing of representative painted surfaces in selected interior and exterior areas of the Site building. More specifically, Two hundred and three (203) total XRF readings were taken. Twelve (12) were calibration readings and One hundred twenty three (123) were found to have painted surfaces with lead levels greater than 0.4mg/cm^2. Refer to Appendix D for the Pre-Renovation Lead Based Paint Determination Report. In accordance with Massachusetts and HUD housing standards, a material is considered lead-containing if the material exceeds 1.0 mg/cm^2.

Based on the results of the XRF survey, Terracon provides the following conclusions and recommendations:

- As stated in Section 4.2, LBP waste from renovation or demolition activities, such as debris, paint chips, dust, and sludges that fail TCLP analysis must be managed and disposed as hazardous waste under RCRA, with the exception of whole-building demolition debris. Any disturbance of lead-containing paint would be subject to the OSHA Lead in Construction Standard, 29 CFR 1926.62.

5.5 Other Hazardous Materials Inventory

Terracon made visual observations for universal wastes within the Site building at the time of the Site survey. This allowed Terracon to obtain information on the potential presence of hazardous materials that require removal and disposal prior to renovation/demolition. Hazardous materials observed during the survey include miscellaneous equipment oils/lubricants, various solvent containers, mercury switches, emergency exit sign/ light batteries (lead-acid batteries), fluorescent tubes/ballasts, high intensity discharge lights, fire extinguishers, wall and ceiling-mounted heater units, air conditioning units, refrigeration units which may contain CFCs, and various containerized wastes. HVAC units were also observed at the Site. An area-by-area quantification estimate of hazardous materials is provided below for a listing of the locations and estimated quantities of the suspect universal wastes.

Other Hazardous Materials

Material Description	Material Location	Hazard	Estimated Quantity	
Basement				
Turbine in Water	North Bay	Oils	1	Each
Paints and Containerized Wastes	Throughout Basement	Oils	300	Units
Small Motors/Capacitors	Bldg. Bay North of Elevator/Stairwell	Oils	20	Each
Large Motors/Capacitors	Bldg. Bay South of Elevator/Stairwell	Oils	45	Each
Fluorescent Light Ballasts	South Two Bays	PCBs/DEHP	18	Each
Contaminated Concrete Building Footings	Throughout Basement	Hydraulic Oil	12	Each
Elevator Motors/Capacitors	Basement	Hydraulic Oil	3	Each

Material Description	Material Location	Hazard	Estimated Quantity	
Elevator Hydraulic Tanks/Pits (w/contaminated water)	South Side of Building - 4 Separate Elevator Locations throughout Basement	Hydraulic Oil	4	Each
Walk-In Cooler Refrigerant System	South Bay – Rear Wall	CFCs	1	Each
Walk-In Cooler Motor Capacitors	South Bay – Rear Wall	Oils	1	Each
Walk-In Cooler Compressors	South Bay – Rear Wall	Compressor Oils	1	Each
Walk-In Cooler Compressor Motor Capacitor	South Bay – Rear Wall	Oils	1	Each
Fluorescent Light Ballasts	North Bay	PCBs/DEHP	40	Each
Floor Jack	By East Elevator Shaft	Hydraulic Oil	2	Each
Misc. Electrical Boxes/Gear	Throughout Basement	Oils	10	Each
Transformers	Triangular Bay by Back Stairs	Oils	1	Each
First Floor				
Modine Ceiling-Mounted Heater Blower Motors/Capacitors	Near East Elevator and North of Stairwell	Oils	2	Each
4' Fluorescent Light Bulbs	Throughout Floor	Mercury	7	Bulbs
8' Fluorescent Light Bulbs	Throughout Floor	Mercury	87	Bulbs
Fluorescent Light Ballasts	Throughout Floor	PCBs/DEHP	121	Ballasts
Misc. Electrical Boxes/Gear	Throughout Floor	Oils	19	Each
Televisions	North Bay	Lead	3	Each
Fan Motors/Capacitors	East End	Oils	1	Unit
Second Floor				
Small Motors/Capacitors	Adj. to East Elevator	Oils	1	Each
Fluorescent Light Ballasts	Throughout Floor	PCBs/DEHP	34	Ballasts

Material Description	Material Location	Hazard	Estimated Quantity	
Wall-Mounted Air Conditioning Unit	South End Building - Rear Wall	CFCs/Refrigerant	1	Each
Batteries	West End, Center	Lead	~15	Each
Misc. Electrical Boxes/Gear	Throughout Floor	Oils		Each
Third Floor				
Large Motors/Capacitors	By East Elevator Shaft and North Wall of Stairwell Bay	Oils	2	Each
Small Motors/Capacitors	West End, Center	Oils	2	Each
Washer Machine Motor/Capacitor	North Bay	Oils	1	Each
Tires	North Bay and South Bay	General Disposal	2	Each
Modine Ceiling-Mounted Heater Blower Motors/Capacitors	Stairwell Bay	Oils	1	Each
Fluorescent Light Ballasts	Throughout Floor	PCBs/DEHP	43	Each
Misc. Electrical Boxes/Gear	Throughout Floor	Oils	14	Each
8' Fluorescent Light Bulbs	Throughout Floor	Mercury	9	Bulbs
Fourth Floor				
Large Motors/Capacitors (ceiling mounted)	West End, Center	Oils	6	Each
Small Motors/Capacitors	West End, Center	Oils	2	Each
4' Fluorescent Light Bulbs	Throughout Floor	Mercury	5	Bulbs
8' Fluorescent Light Bulbs	Throughout Floor	Mercury	6	Bulbs
Fluorescent Light Ballasts	Throughout Floor	PCBs/DEHP	98	Ballasts
Modine Ceiling-Mounted Heater Blower Motors/Capacitors	Center, West of Main Stairwell	Oils	1	Each
Misc. Electrical Boxes/Gear	Throughout Floor	Oils	21	Each
Lanrapr Film Machine with small motor	Adjacent to Office Area	Oils	1	Each

Material Description	Material Location	Hazard	Estimated Quantity	
Refrigerators	North Side, Office by Secondary Stairwell	CFCs/Refrigerant	1	Each
Fifth Floor				
Modine Ceiling-Mounted Heater Blower Motors/Capacitors	East End	Oils	1	Each
8' Fluorescent Light Bulbs	Throughout Floor	Mercury	10	Bulbs
Fluorescent Light Ballasts	Throughout Floor	PCBs/DEHP	25	Ballasts
Misc. Electrical Boxes/Gear	Throughout Floor	Oils	10	Each
Small Motors/Capacitors	West End, Center	Oils	2	Each
Large Motors/Capacitors (ceiling mounted)	West End, North Side	Oils	1	Each
Hot Water Heater	Above East Lavatory	Fiberglass	1	Each
Exterior				
Transformers	South Side, East End, Fifth Floor	Oil	1	Each
Roof/Penthouse				
McLauthlin Company Elevator Motor	Penthouse Landing	Oils	1	Each
Bull Armature Motor/capacitor	Penthouse Landing	Oils	1	Each

Note 1: The equipment suspect of containing oils should be properly characterized by a qualified removal contractor prior to handling and disposal to an approved recycling facility in compliance with State and Federal regulations.

5.5.1 PCB Electrical Equipment

As part of the OHM visual evaluation, Terracon performed an assessment of PCB oil-containing equipment of the Site building for the possible presence of PCB-containing fluids. No sampling of transformers or electrical equipment was conducted during this survey. Suspect PCB oil-containing hydraulic doorstops and capacitors were observed within the Site building. See the Table within section 5.5 below for a listing of the locations and estimated quantities of the suspect PCB-containing electrical equipment.

Based on the results of our visual OHM survey, Terracon provides the following conclusions and recommendations:

- Prior to conducting selective interior demolition activities during renovations that will impact the identified building-related hazardous materials, and other systems identified herein; retain a qualified contractor to properly characterize, remove and dispose of the identified hazardous materials.

- If the PCB materials (less than 50 ppm) were to be sent for recycling instead of disposal, Terracon recommends that the materials be removed from the building material and disposed separately to remove the material from the environment and limit potential human contact and exposures during handling and recycling operations. The MA DEP also considers it prudent to conduct wipe samples of the materials after separation to ensure the complete removal of residual PCBs from the bulk material (i.e., <10 ug/100cm^2) however this action is not required by regulation. Although materials containing PCBs at concentrations at less than 50 ppm are not required to be removed, if left in place, the US EPA recommends that owners and managers of buildings take steps to reduce exposures, (e.g., to isolate areas to reduce potential exposures), cleaning frequently with disposable damp mops or rags to reduce formation of dust residues from dried materials, and materials/areas with tape or other sealant to prevent direct exposures.

No other environmental sampling was conducted during this survey.

6.0 GENERAL COMMENTS

The Survey was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions, and recommendations expressed in this Survey are based on conditions observed during the Survey. The information contained in this Survey is relevant to the dates on which the Survey was performed, and should not be relied upon to represent conditions at a later date. This Survey has been prepared on behalf of and exclusively for use by Rees-Larkin Development for specific application to the Project.

This Survey is not a bidding document. Contractors or consultants reviewing this Survey must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information which may have been used in the preparation of this Survey. No warranty, express or implied is made.

Appendix A
Asbestos Analytical Laboratory Reports

EMSL Analytical, Inc.
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EMSL Order:	131400828
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Attn: **Richard Haines**
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Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	03/11/14 9:40 AM
Analysis Date:	3/13/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
001 *131400828-0001*	50' of West of East Wall - Pipe Insulation; Pre-Formed	Gray Fibrous Homogeneous			35%	Non-fibrous (other)	**65%**	**Chrysotile**
002 *131400828-0002*	50' of West of East Wall - Pipe Insulation; Pre-Formed						**Stop Positive (Not Analyzed)**	
003 *131400828-0003*	50' of West of East Wall - Pipe Insulation; Pre-Formed						**Stop Positive (Not Analyzed)**	
004 *131400828-0004*	Floor Debris; 50' of W. of East Wall - Pipe Insulation Debris; Corrugated	Brown Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**	
005 *131400828-0005*	Floor Debris; 50' of W. of East Wall - Pipe Insulation Debris; Corrugated	Brown Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**	
006 *131400828-0006*	Floor Debris; 50' of W. of East Wall - Pipe Insulation Debris; Corrugated	Brown Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**	
007 *131400828-0007*	50' of West of Burned Out Stairwell - Pipe Insulation; Pre-Form	Gray Fibrous Homogeneous			65%	Non-fibrous (other)	**35%**	**Amosite**

Analyst(s)

Fievel Lam (20)
Steve Grise (14)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 03/13/2014 17:25:34

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Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	03/11/14 9:40 AM
Analysis Date:	3/13/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
008 *131400828-0008*	50' of West of Burned Out Stairwell - Pipe Insulation; Pre-Form						**Stop Positive (Not Analyzed)**
009 *131400828-0009*	50' of West of Burned Out Stairwell - Pipe Insulation; Pre-Form						**Stop Positive (Not Analyzed)**
010 *131400828-0010*	50' of W. of Burned Out Stairwell Debris Pile - Pipe Insulation Debris; Paper	Tan Fibrous Homogeneous			35%	Non-fibrous (other)	**65% Chrysotile**
011 *131400828-0011*	Bsmt; 50' of W. of Burned Out Stairwell - Pipe Insulation Debris; Paper						**Stop Positive (Not Analyzed)**
012 *131400828-0012*	Bsmt; 50' of W. of Burned Out Stairwell - Pipe Insulation Debris; Paper						**Stop Positive (Not Analyzed)**
013 *131400828-0013*	Bsmt; 15' of W. of Burned Out Stairwell - Floor Debris	Brown Fibrous Homogeneous	45% 25%	Cellulose Synthetic	30%	Non-fibrous (other)	**None Detected**

Analyst(s)

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Steve Grise, Laboratory Manager
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Fax:	(603) 647-4432
Received:	03/11/14 9:40 AM
Analysis Date:	3/13/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
014 *131400828-0014*	Bsmt; 15' of W. of Burned Out Stairwell - Floor Debris	Brown Fibrous Homogeneous	45% 25%	Cellulose Synthetic	30%	Non-fibrous (other)		**None Detected**
015 *131400828-0015*	Bsmt; 15' of W. of Burned Out Stairwell - Floor Debris	Brown/Gray Fibrous Heterogeneous	10% 10%	Cellulose Hair	80%	Non-fibrous (other)		**None Detected**
016 *131400828-0016*	Bsmt near Burned Out Stairwell - Corrugated Cement Board	Gray Fibrous Homogeneous			60%	Non-fibrous (other)	**40%**	**Chrysotile**
017 *131400828-0017*	Bsmt near Burned Out Stairwell - Corrugated Cement Board							**Stop Positive (Not Analyzed)**
018 *131400828-0018*	Bsmt near Burned Out Stairwell - Corrugated Cement Board							**Stop Positive (Not Analyzed)**
019 *131400828-0019*	Bsmt 30' E. of Burned Out Stairwell - Pipe Insulation; Pre-Formed	White Fibrous Homogeneous			15%	Non-fibrous (other)	**85%**	**Chrysotile**
020 *131400828-0020*	Bsmt 30' E. of Burned Out Stairwell - Pipe Insulation; Pre-Formed							**Stop Positive (Not Analyzed)**

Analyst(s)

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or other approved signatory

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Received:	03/11/14 9:40 AM
Analysis Date:	3/13/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
021 *131400828-0021*	Bsmt 30' E. of Burned Out Stairwell - Pipe Insulation; Pre-Formed				**Stop Positive (Not Analyzed)**
022 *131400828-0022*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound	Black Non-Fibrous Homogeneous	Possible contamination	100% Non-fibrous (other)	**<1% Chrysotile** **<1% Crocidolite**
023 *131400828-0023*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound	Black Non-Fibrous Homogeneous	Possible contamination	100% Non-fibrous (other)	**<1% Chrysotile** **<1% Crocidolite**
024 *131400828-0024*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound	Black Non-Fibrous Homogeneous	Possible contamination	100% Non-fibrous (other)	**<1% Chrysotile** **<1% Crocidolite**
025 *131400828-0025*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	**2% Chrysotile**
026 *131400828-0026*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound				**Stop Positive (Not Analyzed)**

Analyst(s)

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Analysis Date:	3/13/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
027 *131400828-0027*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound						**Stop Positive (Not Analyzed)**	
028 *131400828-0028*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Plaster Ceiling	Gray Fibrous Homogeneous	5%	Hair	95%	Non-fibrous (other)	**<1%**	**Chrysotile**
029 *131400828-0029*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Plaster Ceiling	Gray Fibrous Homogeneous	5%	Hair	95%	Non-fibrous (other)	**<1%**	**Chrysotile**
030 *131400828-0030*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Plaster Ceiling	Gray Fibrous Homogeneous	5%	Hair	95%	Non-fibrous (other)	**<1%**	**Chrysotile**
031 *131400828-0031*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Ceiling Plaster	Gray Fibrous Homogeneous	5%	Hair	95%	Non-fibrous (other)	**<1%**	**Chrysotile**
032 *131400828-0032*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Ceiling Plaster	White Non-Fibrous Homogeneous	<1%	Hair	100%	Non-fibrous (other)	**<1%**	**Chrysotile**

Analyst(s)

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Steve Grise, Laboratory Manager
or other approved signatory

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Fax:	(603) 647-4432
Received:	03/11/14 9:40 AM
Analysis Date:	3/13/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
033 *131400828-0033*	Bsmt 50-75' E. of Burned Out Stairwell - Plaster	Gray Fibrous Homogeneous	5%	Hair	95%	Non-fibrous (other)	**None Detected**
034 *131400828-0034*	Bsmt 50-75' E. of Burned Out Stairwell - Plaster	Gray Fibrous Homogeneous	5%	Hair	95%	Non-fibrous (other)	**None Detected**
035 *131400828-0035*	Bsmt 50-75' E. of Burned Out Stairwell - Plaster	Gray Fibrous Homogeneous	5%	Hair	95%	Non-fibrous (other)	**None Detected**
036 *131400828-0036*	Bsmt 50-75' E. of Burned Out Stairwell - Plaster	Gray Fibrous Homogeneous	5%	Hair	95%	Non-fibrous (other)	**None Detected**
037 *131400828-0037*	Bsmt 50-75' E. of Burned Out Stairwell - Plaster	Gray Fibrous Homogeneous	2%	Hair	98%	Non-fibrous (other)	**None Detected**
038 *131400828-0038*	Bsmt; Column by Bsmt Access - Floor Debris	Gray Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
039 *131400828-0039*	Bsmt; Column by Bsmt Access - Floor Debris	Gray Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
040 *131400828-0040*	Bsmt; Column by Bsmt Access - Floor Debris	Gray Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**

Analyst(s)

Fievel Lam (20)
Steve Grise (14)

Steve Grise, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 03/13/2014 17:25:34

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131400828
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Richard Haines**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	03/11/14 9:40 AM
Analysis Date:	3/13/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
041 *131400828-0041*	Bsmt; 100' E. of Burned Out Stairwell - Plaster	Gray Non-Fibrous Homogeneous	<1%	Hair	100%	Non-fibrous (other)	**None Detected**
042 *131400828-0042*	Bsmt; 100' E. of Burned Out Stairwell - Plaster	Gray Non-Fibrous Homogeneous	<1%	Hair	100%	Non-fibrous (other)	**None Detected**
043 *131400828-0043*	Bsmt; 100' E. of Burned Out Stairwell - Plaster	Gray Non-Fibrous Homogeneous	<1%	Hair	100%	Non-fibrous (other)	**None Detected**
044 *131400828-0044*	Bsmt; 100' E. of Burned Out Stairwell - Plaster	Gray Non-Fibrous Homogeneous	<1%	Hair	100%	Non-fibrous (other)	**None Detected**
045 *131400828-0045*	Bsmt; 100' E. of Burned Out Stairwell - Plaster	Gray Non-Fibrous Homogeneous	<1%	Hair	100%	Non-fibrous (other)	**None Detected**
046 *131400828-0046*	Bsmt; Metal Sash at Bsmt Access - Glazing Compound	Gray Non-Fibrous Homogeneous			98%	Non-fibrous (other)	**2% Chrysotile**
047 *131400828-0047*	Bsmt; Metal Sash at Bsmt Access - Glazing Compound						**Stop Positive (Not Analyzed)**
048 *131400828-0048*	Bsmt; Metal Sash at Bsmt Access - Glazing Compound						**Stop Positive (Not Analyzed)**

Analyst(s)

Fievel Lam (20)
Steve Grise (14)

Steve Grise, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 03/13/2014 17:25:34

THIS IS THE LAST PAGE OF THE REPORT.

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131400828
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Richard Haines**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	03/11/14 9:40 AM
Analysis Date:	3/18/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
022 *131400828-0022*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
023 *131400828-0023*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound	Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected
024 *131400828-0024*	Bsmt 30' E. of Burned Out Stairwell - Glazing Compound	Black Non-Fibrous Heterogeneous	100	None	No Asbestos Detected

Analyst(s)

Steve Grise (3)

Steve Grise, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.
Samples analyzed by EMSL Analytical, Inc. Woburn, MA

Initial report from 03/18/2014 12:31:49

THIS IS THE LAST PAGE OF THE REPORT.

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
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http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131400828
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Richard Haines**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	03/11/14 9:40 AM
Analysis Date:	3/19/2014
Collected:	

Project: **J1147122 / Rees Larkin; Picker Bldg Basement; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy. Quantitation using 400 Point Count Procedure

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
028 *131400828-0028*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Plaster Ceiling	Gray Fibrous Homogeneous	5.00% Hair	95.00% Non-fibrous (other)	**<0.25% Chrysotile**
029 *131400828-0029*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Plaster Ceiling	Gray Non-Fibrous Homogeneous	2.00% Hair	98.00% Non-fibrous (other)	**<0.25% Chrysotile**
030 *131400828-0030*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Plaster Ceiling	Gray Non-Fibrous Homogeneous	2.00% Hair	98.00% Non-fibrous (other)	**<0.25% Chrysotile**
031 *131400828-0031*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Ceiling Plaster	Gray Non-Fibrous Homogeneous	2.00% Hair	98.00% Non-fibrous (other)	**<0.25% Chrysotile**
032 *131400828-0032*	Bsmt 40' E. of Burned Out Stairwell @ Doorway - Ceiling Plaster	Gray Non-Fibrous Homogeneous	<1% Hair	100.00% Non-fibrous (other)	**<0.25% Chrysotile**

Analyst(s)

Steve Grise (5)

Steve Grise, Laboratory Manager
or other approved signatory

Disclaimer:Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. The limit of detection as stated in the method is 0.25%. EMSL Analytical Inc suggests that samples reported as <0.25% or none detected undergo additional analysis via TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval of EMSL Analytical Inc. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government. EMSL Analytical Inc., bears no responsibility for sample collection activities, analytical method limitations, or the accuracy of results when requested to separate layered samples. EMSL Analytical Inc., liability is limited to the cost of sample analysis.The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 03/19/2014 10:45:02

THIS IS THE LAST PAGE OF THE REPORT.

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Chain of Custody

EMSL Order Number *(Lab Use Only)*:

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: TERRACON CONSULTANTS	EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party
Street: 77 SUNDIAL AVE., SUITE 401 W	
City: MANCHESTER State/~~Province~~: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RICHARD HAINES	Fax #: 603.647.4432
Telephone #: 603.361.9510	Email Address: REHAINES@TERRACON.COM
Project Name/Number: REES LARKIN / J1147122	
Please Provide Results: ☐ Fax ☒ Email	Purchase Order: U.S. State Samples Taken: MA

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☒ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☒ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** STOP AT 1ST POSITIVE PER H.A. #

Client Sample #'s	001 – 048	Total # of Samples: 48
Relinquished (Client): R. Haines	Date: 3/10/14	Time: 14:00
Received (Lab):	Date:	Time:

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

5-story + bsmt
BRICK/WOOD FRAME
FLAT ROOF

ASBESTOS BULK SAMPLING LOG

Inspector: R. HAINES
Client / Project Name: REES-LARKIN
Project Number: J1147122
Building Number/Address: PICKER BLDG
Building Name / Description: BASEMENT MILL BLDG

150 Massmills Dr.
Lowell, MA

145' - burned Stair to W. end.

4/7/30

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
01	001	PIPE INSUL. PRE-FORMED	WHT	50' WEST OF EAST WALL 10" pipe BSMT	20 LF	TSI	SD
	002						
	003						
02	004	PIPE INSULATION DEBRIS - CORRUGATED	BRN	~~DEB~~ FLOOR DEBRIS, 50' W. OF EAST WALL	2 CF	TSI	SD
	005						
	006						
03	007	PIPE INSULATION PRE-FORM	WHT	50' WEST OF BURNED OUT STAIR-WELL ~12" PIPE	25 LF	TSI	SD
	008						
	009						
04	010	PIPE INSULATION DEBRIS - PAPER	WHT	50' W. OF BURNED OUT STAIRWELL debris pile	1 CF	TSI	SD

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

ASBESTOS BULK SAMPLING LOG

Inspector: REH
Client / Project Name: Rhees - Larkin
Project Number: J1147122
Building Number/Address: PICKLER BLDG BSMT
Building Name / Description:

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
04	011	PIPE INSULATION DEBRIS - PAPER	WHT	BSMT: 50' W. OF BURNED OUT STAIRWELL		TSI	SD
↓	012	↓	↓	↓		↓	↓
05	013	FLOOR DEBRIS	BRN	15' W. OF BURNED OUT STAIR-WELL	3 CF	debris	SD
↓	014	↓		↓			
↓	015	↓		↓			
6	016	CORRUGATED CEMENT BOARD	GRAY	NEAR BURNED OUT STAIRWELL	30 SF		D
↓	017	↓	↓	↓			
↓	018	↓	↓	↓			
07	019	PIPE INSULATION PRE-FORMED	WHT	30' E. OF BURNED OUT STAIRWELL	50 LF	TSI	SD
↓	020	↓	↓	↓			

Terracon
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Manchester, NH 03103
Phone: (603) 647-9700
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ASBESTOS BULK SAMPLING LOG

Inspector: R. HAINES
Client / Project Name:
Project Number: J1147122
Building Number/Address:
Building Name / Description: PICKER BLDG (BSMT)

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
07	021	PIPE INSULATION PRE FORMED	WHT	BSMT 30' E. OF BURNED OUT STAIR-WELL			
08	022	GLAZING COMPOUND	BLK	30' E. OF BURNED OUT STAIRWELL	3 UNITS	CAT I NF ~~AIS~~	D
	023						
	024						
09	025		WHT				
	026						
	027						
10	028	PLASTER (CEILING)	WHT	40' E. OF BURNED OUT STAIRWELL, @ DOORWAY	5000 SF	Surf.	SD
	029						
	030						

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Manchester, NH 03103
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Fax: (603) 647-4432

ASBESTOS BULK SAMPLING LOG

Inspector: R. HAINES
Client / Project Name:
Project Number: J1147122
Building Number/Address:
Building Name / Description: PICKER BLDG

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
10	031	CEILING PLASTER	WHT	BSMT, 40' E. OF BURNED OUT STAIRWELL, NEAR DOORWAY			SD
↓	032	↓	↓	↓			
11	033	PLASTER	WHT	50-75' E. OF BURNED OUT STAIRWELL	5000 SF	Surf	SD
↓	034	↓	↓	↓			
↓	035	↓	↓	↓			
↓	036	↓	↓	↓			
↓	037	↓	↓	↓			
12	038	FLOOR DEBRIS	GRAY	COLUMN BY BSMT. ACCESS	6 SF	MISC	D
↓	039	↓	↓	↓			
↓	040	↓	↓	↓			

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ASBESTOS BULK SAMPLING LOG

Inspector: R. HAINES
Client / Project Name:
Project Number: J1147122
Building Number/Address:
Building Name / Description: PICKER BLDG

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
13	041	PLASTER	WHT	BSMT: 100' E. OF BURNED OUT STAIRWELL	4500 SF	SURF	SD
	042						
	043						
	044						
	045						
14	046	GLAZING COMPOUND	GRAY	METAL SASH AT BSMT ACCESS	2 units est 1 SF		D
	047						
	048						

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
Phone/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415380
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/23/14 10:47 AM
Analysis Date:	4/26/2014
Collected:	4/21/2014

Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 1ST FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
030A *031415380-0001*	PAINT CHIP/ WHITE/ BLACK/ TEXTURE PAINT/ ON COLUMN	Various Non-Fibrous Homogeneous	15%	Cellulose	5% 80%	Ca Carbonate Non-fibrous (other)	**None Detected**
030B *031415380-0002*	PAINT CHIP/ WHITE/ BLACK/ TEXTURE PAINT/ ON COLUMN	Gray Non-Fibrous Homogeneous			35% 65%	Matrix Non-fibrous (other)	**None Detected**
031A *031415380-0003*	PAPER/ BROWN/ PAER UNDER HARDWOOD FLOORS/ NEAR - HATCH AREA	Brown Fibrous Homogeneous	100%	Cellulose	0%	Non-fibrous (other)	**None Detected**
031B *031415380-0004*	PAPER/ BROWN/ PAER UNDER HARDWOOD FLOORS/ NEAR - HATCH AREA	Brown Fibrous Homogeneous	90%	Cellulose	10%	Non-fibrous (other)	**None Detected**
032A *031415380-0005*	PAPER/ BLACK/ PAPER UNDER HARDWOOD FLOORS/ - BACKING MATERIALS	Brown Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**

Analyst(s)

Henry Akintunde (11)
Noel Anderson (14)

James Hall, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Initial report from 04/26/2014 15:05:43

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
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http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415380
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/23/14 10:47 AM
Analysis Date:	4/26/2014
Collected:	4/21/2014

Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 1ST FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
032B *031415380-0006*	PAPER/ BLACK/ PAPER UNDER HARDWOOD FLOORS/ - BACKING MATERIALS	Brown Fibrous Homogeneous	98%	Cellulose	2%	Non-fibrous (other)	**None Detected**
033A *031415380-0007*	PAPER/ TAN/ BLACK/ FELT PAPER/ UNDER HARDWOOD - FLOORS	Brown Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**
033B *031415380-0008*	PAPER/ TAN/ BLACK/ FELT PAPER/ UNDER HARDWOOD - FLOORS	Brown Fibrous Homogeneous	92%	Cellulose	8%	Non-fibrous (other)	**None Detected**
034A *031415380-0009*	MORTAR/ GRAY/ MORTAR DEBRIS/ ON FLOOR	Gray Non-Fibrous Homogeneous			85% 15%	Quartz Non-fibrous (other)	**None Detected**
035B *031415380-0010*	MORTAR/ GRAY/ MORTAR DEBRIS/ ON FLOOR	Gray Non-Fibrous Homogeneous			46% 54%	Quartz Non-fibrous (other)	**None Detected**
036A *031415380-0011*	PLASTER/ WHITE/ PLASTER CEILING/ BASE COAT	Gray Non-Fibrous Homogeneous	5%	Cellulose	10% 30% 55%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**

Analyst(s)

Henry Akintunde (11)
Noel Anderson (14)

James Hall, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Initial report from 04/26/2014 15:05:43

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
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http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415380
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 1ST FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
036B *031415380-0012*	PLASTER/ WHITE/ PLASTER CEILING/ BASE COAT	Gray Non-Fibrous Homogeneous			45% 55%	Quartz Non-fibrous (other)		**None Detected**
037A *031415380-0013*	WINDOW GLAZING/ OFF WHITE/ WINDOW GLAZING	Gray Non-Fibrous Homogeneous			13% 65% 20%	Quartz Ca Carbonate Non-fibrous (other)	**2%**	**Chrysotile**
037B *031415380-0014*	WINDOW GLAZING/ OFF WHITE/ WINDOW GLAZING							**Stop Positive (Not Analyzed)**
038A *031415380-0015*	WINDOW CAULK/ WHITE/ WINDOW CAULKING	White Non-Fibrous Homogeneous			20% 80%	Ca Carbonate Non-fibrous (other)		**None Detected**
038B *031415380-0016*	WINDOW CAULK/ WHITE/ WINDOW CAULKING	Gray/White Non-Fibrous Homogeneous			35% 65%	Ca Carbonate Non-fibrous (other)		**None Detected**
036C *031415380-0017*	PLASTER/ WHITE/ PLASTER CEILING/ BASE COAT	Gray Non-Fibrous Homogeneous	3%	Cellulose	25% 72%	Ca Carbonate Non-fibrous (other)		**None Detected**

Analyst(s)

Henry Akintunde (11)
Noel Anderson (14)

James Hall, Laboratory Manager
or other approved signatory

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 1ST FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
036D *031415380-0018*	PLASTER/ WHITE/ PLASTER CEILING/ BASE COAT	Gray Non-Fibrous Homogeneous	4%	Cellulose	46% 50%	Quartz Non-fibrous (other)	**None Detected**
036E *031415380-0019*	PLASTER/ WHITE/ PLASTER CEILING/ BASE COAT	Gray Non-Fibrous Homogeneous	5%	Cellulose	10% 45% 40%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
039A *031415380-0020*	PLASTER/ WHITE/ SKIM COAT	White Non-Fibrous Homogeneous			40% 30% 30%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
039B *031415380-0021*	PLASTER/ WHITE/ SKIM COAT	Gray/Tan Non-Fibrous Homogeneous			52% 48%	Quartz Non-fibrous (other)	**None Detected**
039C *031415380-0022*	PLASTER/ WHITE/ SKIM COAT	White Non-Fibrous Homogeneous			45% 35% 20%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
039D *031415380-0023*	PLASTER/ WHITE/ SKIM COAT	Gray Non-Fibrous Homogeneous	3% 2%	Cellulose Hair	45% 50%	Quartz Non-fibrous (other)	**None Detected**

Analyst(s)

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Noel Anderson (14)

James Hall, Laboratory Manager
or other approved signatory

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 1ST FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
039E *031415380-0024*	PLASTER/ WHITE/ SKIM COAT	Gray Non-Fibrous Homogeneous			40% 8% 25% 27%	Quartz Mica Ca Carbonate Non-fibrous (other)	**None Detected**
040A *031415380-0025*	GYPSUM/ OFF WHITE/ GYPSUM CEILING/ IN BATHROOMS	Tan/White Non-Fibrous Homogeneous	15%	Cellulose	65% 20%	Gypsum Non-fibrous (other)	**None Detected**
040B *031415380-0026*	GYPSUM/ OFF WHITE/ GYPSUM CEILING/ IN BATHROOMS	Brown/Gray Fibrous Homogeneous	15% 2%	Cellulose Glass	62% 21%	Gypsum Non-fibrous (other)	**None Detected**

Analyst(s)

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Noel Anderson (14)

James Hall, Laboratory Manager
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Initial report from 04/26/2014 15:05:43

THIS IS THE LAST PAGE OF THE REPORT.

OrderID: 031415380

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Chain of Custody

EMSL Order Number (*Lab Use Only*): 031415380

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: TERRACON CONSULTANTS, INC.	EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party
Street: 77 SUNDIAL AVE., SUITE 401 W	
City: MANCHESTER State/Province: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RYAN D. ROUILLARD	Fax #: 603.647.4432
Telephone #: 1-781-603-5375	Email Address: RDROUILLARD@TERRACON.COM
Project Name/Number: J1147126 / MASS MILLS / 1ST FLOOR	
Please Provide Results: ☐ Fax ☒ Email	Purchase Order: U.S. State Samples Taken: MA

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☒ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☒ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** STOP AT 1ST POSITIVE PER H.A.

Client Sample #'s	- 030A → 040B	Total # of Samples:	26
Relinquished (Client): R. Haines	Date: 4/21/14	Time: 16:00	
Received (Lab): HERNAN HERR	Date: 4-23-14	Time: 10:47AM	

RECEIVED APR 22 2014 By SIR 9:45

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

Controlled Document-OneChain-R2-1/12/2010

F/A-798

UPS 1Z0702072218698254

031415380

26

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

1st Floor

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	030A	Paint Chip	white Black	Texture Paint on Column			
	030B	Paint Chip	"	" "			
	031A	Paper	Brown	Paper under hardwood Floors near Hatch AREA			
	031B	"	"	" "			
	032A	Paper	Black	Paper under hardwood Floors (Backing Material)			
	032B	"	"	" "			
	033A	Paper	Tan/ Black	Felt Paper under hardwood Floors			
	033B	"		" "			
	034A	Mortar	gray	Mortar Debris on floors			
	035B	"	"	" "			

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OrderID: 031415380

031415380

ASBESTOS BULK SAMPLING LOG

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1st Floor

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Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	036A	Plaster	White	Plaster Ceiling Base Coat			
	036B	"	"	"			
	037A	Window Glazing	Off-White	Window Glazing			
	037B	"		" "			
	038A	Window Caulk	White	Window Caulking			
	038B	"	"	" "			
	036C	Plaster	White	Plaster Ceiling Base Coat			
	036D	↓	↓				
	036E	↓	↓				
	039A	Plaster	White	Skim Coat			

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ASBESTOS BULK SAMPLING LOG

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Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	039B	Plaster	white	Skim Coat			
	039C	↓	↓	↓			
	039D	↓	↓	↓			
	039E	↓	↓	↓			
	040A	Gypsum	off white	Gypsum Ceiling in Bathrooms			
	040B	"	"	" "			

RECEIVED
APR 22 2014
By

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307 West 38th Street, New York, NY 10018
Phone/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415389
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Attn: **Ryan Rouillard**
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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
041A *031415389-0001*	GLAZING/ WHITE/ WINDOW GLAZING/ ON WIRE MESH/ - PANED GLASS	Brown/White Non-Fibrous Homogeneous			65% 35%	Ca Carbonate Non-fibrous (other)		**None Detected**
041B *031415389-0002*	GLAZING/ WHITE/ WINDOW GLAZING/ ON WIRE MESH/ - PANED GLASS	Gray/White Non-Fibrous Homogeneous			45% 55%	Ca Carbonate Non-fibrous (other)	**<1%**	**Chrysotile**
042A *031415389-0003*	PAPER/ TAN/ FELT PAPER/ UNDER HARDWOOD FLOORS	Brown/Black Fibrous Homogeneous	65% 20%	Cellulose Synthetic	15%	Non-fibrous (other)		**None Detected**
042B *031415389-0004*	PAPER/ TAN/ FELT PAPER/ UNDER HARDWOOD FLOORS	Brown Fibrous Homogeneous	55%	Cellulose	45%	Non-fibrous (other)		**None Detected**
043A *031415389-0005*	JOINT COMPOUND/ WHITE/ JOINT COMPOUND OVER TAPE - OFFICE AREA	Tan/White Non-Fibrous Homogeneous			10% 80% 10%	Mica Ca Carbonate Non-fibrous (other)		**None Detected**

Inseparable paint / coating layer included in analysis

Analyst(s)

Henry Akintunde (21)
Shahrakur Mahmud (25)

James Hall, Laboratory Manager
or other approved signatory

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
043B *031415389-0006*	JOINT COMPOUND/ WHITE/ JOINT COMPOUND OVER TAPE - OFFICE AREA	Tan/White Non-Fibrous Homogeneous			15% 70% 15%	Mica Ca Carbonate Non-fibrous (other)	**None Detected**
			Inseparable paint / coating layer included in analysis				
043C *031415389-0007*	JOINT COMPOUND/ WHITE/ JOINT COMPOUND OVER TAPE - OFFICE AREA	White Non-Fibrous Homogeneous			5% 65% 30%	Mica Ca Carbonate Non-fibrous (other)	**None Detected**
044A *031415389-0008*	GYPSUM/ GRAY/ GYPSUM BOARD/ WALL/ OFFICE AREA	Brown/Gray Non-Fibrous Homogeneous	8%	Cellulose	65% 27%	Gypsum Non-fibrous (other)	**None Detected**
044B *031415389-0009*	GYPSUM/ GRAY/ GYPSUM BOARD/ WALL/ OFFICE AREA	Gray Fibrous Homogeneous	5% 3%	Cellulose Glass	62% 30%	Gypsum Non-fibrous (other)	**None Detected**
045A *031415389-0010*	TAPE/ OFF WHITE/ TAPE ASSOCIATED WITH GYPSUM 044 - OFFICE AREA	Beige Fibrous Homogeneous	97%	Cellulose	3%	Non-fibrous (other)	**None Detected**

Analyst(s)

Henry Akintunde (21)
Shahrakur Mahmud (25)

James Hall, Laboratory Manager
or other approved signatory

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Initial report from 04/26/2014 11:50:18

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Received:	04/23/14 10:37 AM
Analysis Date:	4/26/2014
Collected:	4/21/2014

Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 2ND FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
045B *031415389-0011*	TAPE/ OFF WHITE/ TAPE ASSOCIATED WITH GYPSUM 044	Gray Fibrous Homogeneous	98%	Cellulose	2%	Non-fibrous (other)	**None Detected**
046A *031415389-0012*	GROUT/ BEIGE/ GROUT/ FOR CERAMIC TILES/ IN - BATHROOMS	Beige Non-Fibrous Homogeneous			45% 55%	Ca Carbonate Non-fibrous (other)	**None Detected**
046B *031415389-0013*	GROUT/ BEIGE/ GROUT/ FOR CERAMIC TILES/ IN - BATHROOMS	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
047A *031415389-0014*	ADHESSIVE/ WHITE/ ADHESSIVE ASSOCIATED WITH - CERAMIC TILES/ IN BATHROOMS	Gray/White Non-Fibrous Homogeneous			40% 60%	Quartz Non-fibrous (other)	**None Detected**
047B *031415389-0015*	ADHESSIVE/ WHITE/ ADHESSIVE ASSOCIATED WITH - CERAMIC TILES/ IN BATHROOMS	Gray Non-Fibrous Homogeneous			45% 55%	Ca Carbonate Non-fibrous (other)	**None Detected**

Analyst(s)

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or other approved signatory

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 2ND FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
048A *031415389-0016*	SEALANT/ BROWN/ CONVEYOUR AREA/ SEALANT AROUND	Gray Non-Fibrous Homogeneous			35% 65%	Quartz Non-fibrous (other)		**None Detected**
048B *031415389-0017*	SEALANT/ BROWN/ CONVEYOUR AREA/ SEALANT AROUND	Brown Non-Fibrous Homogeneous			55% 45%	Matrix Non-fibrous (other)		**None Detected**
049A *031415389-0018*	CAULKING/ BEIGE/ CONVEYOUR AREA	Gray/Beige Non-Fibrous Homogeneous	5%	Fibrous (other)	35% 58%	Ca Carbonate Non-fibrous (other)	**2%**	**Anthophyllite**
049B *031415389-0019*	CAULKING/ BEIGE/ CONVEYOUR AREA							**Stop Positive (Not Analyzed)**
050A *031415389-0020*	WIRING/ GRAY/ WIRE COATING	Gray Non-Fibrous Homogeneous	5%	Cellulose	55% 40%	Ca Carbonate Non-fibrous (other)		**None Detected**
050B *031415389-0021*	WIRING/ GRAY/ WIRE COATING	Gray/Black Non-Fibrous Homogeneous	15%	Cellulose	25% 60%	Ca Carbonate Non-fibrous (other)		**None Detected**
051A *031415389-0022*	WIRING/ BLACK/ LARGE WIRE/ COATING	Brown/Black Fibrous Homogeneous	40%	Cellulose	35% 25%	Ca Carbonate Non-fibrous (other)		**None Detected**

Analyst(s)

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 2ND FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
051B *031415389-0023*	WIRING/ BLACK/ LARGE WIRE/ COATING	Black Non-Fibrous Homogeneous			55% 45%	Matrix Non-fibrous (other)	**None Detected**
052A *031415389-0024*	INSULATION/ PINK/ INSULATION/ BEHIND METAL PANELS	Yellow Fibrous Homogeneous	75% 15%	Glass Min. Wool	10%	Non-fibrous (other)	**None Detected**
052B *031415389-0025*	INSULATION/ PINK/ INSULATION/ BEHIND METAL PANELS	Brown/Yellow Fibrous Homogeneous	90%	Glass	10%	Non-fibrous (other)	**None Detected**
053A *031415389-0026*	MASTIC/ TAN/ CARPET MASTIC/ OFFICE AREA	Tan Non-Fibrous Homogeneous			45% 55%	Ca Carbonate Non-fibrous (other)	**None Detected**
053B *031415389-0027*	MASTIC/ TAN/ CARPET MASTIC/ OFFICE AREA	Brown Non-Fibrous Homogeneous			33% 67%	Matrix Non-fibrous (other)	**None Detected**
054A *031415389-0028*	INSULATION/ BROWN/ INSULATION/ BEHIND LOWER - SECTION OF METAL PANELS	Brown/Gray Fibrous Homogeneous	55%	Cellulose	45%	Non-fibrous (other)	**None Detected**

Analyst(s)

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or other approved signatory

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 2ND FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
054B *031415389-0029*	INSULATION/ BROWN/ INSULATION/ BEHIND LOWER - SECTION OF METAL PANELS	Brown Fibrous Homogeneous	45%	Cellulose	33% 22%	Perlite Non-fibrous (other)	**None Detected**
055A *031415389-0030*	ADHESSIVE/ MASONITE PANELS/ ADHESSIVE	Tan Non-Fibrous Homogeneous			30% 70%	Ca Carbonate Non-fibrous (other)	**None Detected**
055B *031415389-0031*	ADHESSIVE/ MASONITE PANELS/ ADHESSIVE	Brown Non-Fibrous Homogeneous	45%	Cellulose	55%	Non-fibrous (other)	**None Detected**
056A *031415389-0032*	ADHESSIVE/ BROWN/ ADHESSIVE/ ON METAL PANELING	Brown/Black Non-Fibrous Homogeneous			35% 65%	Ca Carbonate Non-fibrous (other)	**None Detected**
056B *031415389-0033*	ADHESSIVE/ BROWN/ ADHESSIVE/ ON METAL PANELING	Brown/Gray Non-Fibrous Homogeneous			55% 45%	Matrix Non-fibrous (other)	**None Detected**
057A *031415389-0034*	LINOLEUM/ PAPER/ STONE/ STONE PATERN/ LINOLEUM	Brown/Gray Fibrous Homogeneous	20%	Cellulose	45% 35%	Ca Carbonate Non-fibrous (other)	**None Detected**

Analyst(s)

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James Hall, Laboratory Manager
or other approved signatory

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 2ND FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
057B *031415389-0035*	LINOLEUM/ PAPER/ STONE/ STONE PATERN/ LINOLEUM	Black Fibrous Homogeneous	35%	Cellulose	25% 40%	Matrix Non-fibrous (other)	**None Detected**
058A *031415389-0036*	GROUT/ BEIGE/ GROUT/ ON TILE FLOOR/ BATHROOM	Tan/White Non-Fibrous Homogeneous			45% 55%	Ca Carbonate Non-fibrous (other)	**None Detected**
058B *031415389-0037*	GROUT/ BEIGE/ GROUT/ ON TILE FLOOR/ BATHROOM	Gray/White Non-Fibrous Homogeneous			25% 75%	Ca Carbonate Non-fibrous (other)	**None Detected**
059A *031415389-0038*	ADHESSIVE/ OFF WHITE/ ADHESSIVE/ FOR TILE FLOOR - BATHROOM	Gray/White Non-Fibrous Homogeneous	3%	Fibrous (other)	35% 30% 32%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
059B *031415389-0039*	ADHESSIVE/ OFF WHITE/ ADHESSIVE/ FOR TILE FLOOR - BATHROOM	Gray/White Non-Fibrous Homogeneous			55% 15% 30%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
060A *031415389-0040*	BOARD/ BROWN/ FIBER BOARD/ WITH PAPER ON FLOOR - OVER HARDWOOD	Brown Fibrous Homogeneous	85%	Cellulose	15%	Non-fibrous (other)	**None Detected**

Analyst(s)

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 2ND FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
060B *031415389-0041*	BOARD/ BROWN/ FIBER BOARD/ WITH PAPER ON FLOOR - OVER HARDWOOD	Brown Fibrous Homogeneous	90%	Cellulose	10%	Non-fibrous (other)		**None Detected**
061A *031415389-0042*	INSULATION/ WHITE/ INSULATION/ ON 2" PIPE	White Fibrous Homogeneous			32%	Non-fibrous (other)	**65%** **3%**	**Chrysotile** **Crocidolite**
061B *031415389-0043*	INSULATION/ WHITE/ INSULATION/ ON 2" PIPE							**Stop Positive (Not Analyzed)**
061C *031415389-0044*	INSULATION/ WHITE/ INSULATION/ ON 2" PIPE							**Stop Positive (Not Analyzed)**
062A *031415389-0045*	PIPE FITTINGS/ GRAY/ PIPE FITTINGS/ ON 4" PIPE	Gray/White Fibrous Homogeneous			65%	Non-fibrous (other)	**35%**	**Chrysotile**
062B *031415389-0046*	PIPE FITTINGS/ GRAY/ PIPE FITTINGS/ ON 4" PIPE							**Stop Positive (Not Analyzed)**
062C *031415389-0047*	PIPE FITTINGS/ GRAY/ PIPE FITTINGS/ ON 4" PIPE							**Stop Positive (Not Analyzed)**

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 2ND FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
063A *031415389-0048*	FLOOR LEVELING/ RED/ TOP COAT/ OF FLOOR LEVELING	Gray Non-Fibrous Homogeneous			55% 45%	Quartz Non-fibrous (other)	**None Detected**
063B *031415389-0049*	FLOOR LEVELING/ RED/ TOP COAT/ OF FLOOR LEVELING	Gray/Red Non-Fibrous Homogeneous			55% 45%	Quartz Non-fibrous (other)	**None Detected**
064A *031415389-0050*	FLOOR LEVELING/ GRAY/ BOTTOM COAT/ OF FLOOR - LEVELING	Gray/Red Non-Fibrous Homogeneous			65% 35%	Quartz Non-fibrous (other)	**None Detected**
064B *031415389-0051*	FLOOR LEVELING/ GRAY/ BOTTOM COAT/ OF FLOOR - LEVELING	Gray/Red Non-Fibrous Homogeneous			45% 55%	Quartz Non-fibrous (other)	**None Detected**

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Project: **J1147126/ MASS MILLS/ 150 MASS MILLS DR/ 2ND FLOOR/ VACANT**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
041B *031415389-0002*	GLAZING/ WHITE/ WINDOW GLAZING/ ON WIRE MESH/ - PANED GLASS	White Non-Fibrous Homogeneous	99.4	None	0.64% Chrysotile

Analyst(s)

Venisha Lazarus-Barnes (1)

James Hall, Laboratory Manager
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This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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Report Amended: 04/30/2014 08:32:51 Replaces the Inital Report . Reason Code: Client-Additional Analysis

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OrderID: 031415380

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Chain of Custody

EMSL Order Number (*Lab Use Only*): 031415389

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: TERRACON CONSULTANTS, INC.	EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party
Street: 77 SUNDIAL AVE., SUITE 401 W	
City: MANCHESTER State/Province: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RYAN D. ROUILLARD	Fax #: 603.647.4432
Telephone #: 1-781-603-5375	Email Address: RDROUILLARD@TERRACON.COM
Project Name/Number: J1147126 / MASS MILLS / 2ND FLOOR	
Please Provide Results: ☐ Fax ☒ Email	Purchase Order: U.S. State Samples Taken: MA

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☒ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☒ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** STOP AT 1ST POSITIVE PER H.A.

Client Sample #'s	- 041A → 064B	Total # of Samples:	51
Relinquished (Client): RE Haines	Date: 4/21/14	Time: 16:00	
Received (Lab): HERNAN MEZA	Date: 4-23-14	Time: 10:37 Am	

RECEIVED APR 28 2014 By SCR 9:45

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide
Controlled Document-OneChain-R2-1/12/2010

F/X- 79[illegible]

UPS 1Z070 2G7 22 [illegible]

031415389

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

2nd Floor

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 1 of 6

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	041A	Glazing	white	Window Glazing on wire mesh paned glass			
	041B	Glazing	"	" "			
	042A	Paper	Tan	Felt paper under hardwood Floors			
	042B	Paper	"	" "			
	043A	Joint Compound	white	Joint Compound over tape Office Area			
	043B	↓	↓	↓			
	043C	↓	↓	↓			
	044A	Gypsum	gray	Gypsum Board (WALL) Office AREA			
	044B	"	"	" "			
	045A	Tape	off white	Tape associated with Gypsum 044 Office AREA			

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Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 2 of 6

2nd Floor

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	045 B	Tape	off white	Tape associated with Gypsum 044			
	046A	Grout	Beige	Grout for Ceramic Tiles in Bathrooms			
	046B	"	"	" "			
	047A	Adhessive	white	Adhessive Associated with Ceramic Tiles in Bathrooms			
	047B	"	"	" "			
	048A	Sealant	Brown	Conveyour Area Sealant around			
	048B	"	"				
	049A	Caulking	Beige	Conveyour Area			
	049B	"	"	"			
	050A	Wiring	gray	Wire Coating			

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Building Name / Description: VACANT

p. 3 of 6

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	050B	Wiring	gray	wire coating			
	051A	Wiring	Black	large wire coating			
	051B	"	"	" "			
	052A	Insulation	pink	Insulation behind Metal panels			
	052B	"	"	" "			
	053A	Mastic	Tan	Carpet mastic Office Area			
	053B	"	"	" "			
	054A	Insulation	Brown	Insulation behind lower section of metal panels			
	054B	"	"				
	055A	Adhessive		Masonite panels - Adhessive -			

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Project Number: J1147126
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Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	055B	Adhessive	—	Masonite Paneling - Adhessive-			
	056A	Adhessive	Brown	Adhessive on metal Paneling			
	056B	"	"	" "			
	057A	linoleum/paper	stone	stone Patern linoleum			
	057B	"	"	" "			
	058A	Grout	Beige	Grout on Tile Floor Bathroom			
	058B	"	"	" "			
	059A	Adhessive	off white	Adhessive for Tile floor Bathroom			
	059B	"	"	" "			
	060A	Board	Brown	Fiber board with Paper on Floor / over hardwood			

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Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	060B	Board	Brown	Fiber board with paper over hardwood Floor			
	061A	Insulation	white	Insulation on 2" pipe			
	061B	↓	↓	↓			
	061C	↓	↓	↓			
	062A	pipe fittings	gray	pipe fittings on 4" pipe			
	062B	↓	↓	↓			
	062C	↓	↓	↓			
	063A	Floor leveling	red	Top Coat of Floor leveling			
	063B	"	"	" "			
	064A	Floor leveling	gray	bottom Coat of Floor leveling			

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Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 6 of 6

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	064B	Floor leveling	gray	bottom Coat of Floor leveling			

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528 Mineola Avenue, Carle Place, NY 11514
Phone/Fax: (516) 997-7251 / (516) 997-7528
http://www.EMSL.com carleplacelab@emsl.com

EMSL Order:	061404827
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/22/14 9:45 AM
Analysis Date:	4/23/2014
Collected:	

Project: **J1147126/MASS MILLS/3RD FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
065A *061404827-0001*	Gypsum-White-Gypsum Board Office/Bathroom Wall	Tan/White Fibrous Heterogeneous	17%	Cellulose	83%	Non-fibrous (other)	**None Detected**
065B *061404827-0002*	Gypsum-White-Gypsum Board Office/Bathroom Wall	Tan/White Fibrous Heterogeneous	15%	Cellulose	85%	Non-fibrous (other)	**None Detected**
066A *061404827-0003*	Paper-Brown-Paper Backing on Fiberglass Insulation - Bathroom	Brown/Black Fibrous Heterogeneous	35% 20%	Cellulose Min. Wool	45%	Non-fibrous (other)	**None Detected**
066B *061404827-0004*	Paper-Brown-Paper Backing on Fiberglass Insulation - Bathroom	Brown/Black Fibrous Heterogeneous	30% 25%	Cellulose Min. Wool	45%	Non-fibrous (other)	**None Detected**
067A *061404827-0005*	Paper Flooring-Black-Paper on Top of 9x9 Tiles-in - small Bathroom	Gray Fibrous Heterogeneous	15% 5%	Cellulose Synthetic	80%	Non-fibrous (other)	**None Detected**
067B *061404827-0006*	Paper Flooring-Black-Paper on Top of 9x9 Tiles-in - small Bathroom	Gray Fibrous Heterogeneous	15% 4%	Cellulose Synthetic	81%	Non-fibrous (other)	**None Detected**

Analyst(s)
Pedro Calderon (31)

Michelle McGowan, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from 04/23/2014 17:29:43

EMSL Analytical, Inc.
528 Mineola Avenue, Carle Place, NY 11514
Phone/Fax: (516) 997-7251 / (516) 997-7528
http://www.EMSL.com carleplacelab@emsl.com

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Manchester, NH 03103

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Fax:	(603) 647-4432
Received:	04/22/14 9:45 AM
Analysis Date:	4/23/2014
Collected:	

Project: **J1147126/MASS MILLS/3RD FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
068A *061404827-0007*	VAT Flooring-Marble Brown-9x9 Floor Tile in Office	Brown Non-Fibrous Homogeneous			35% 55%	Ca Carbonate Non-fibrous (other)	**10%**	**Chrysotile**
068B *061404827-0008*	VAT Flooring-Marble Brown-9x9 Floor Tile in Office	Brown Non-Fibrous Homogeneous			35% 53%	Ca Carbonate Non-fibrous (other)	**12%**	**Chrysotile**
069A *061404827-0009*	Mastic-Black-Mastic Associated with 9x9 Tile in - Office 068 A/B	Black Non-Fibrous Homogeneous	3%	Cellulose	97%	Non-fibrous (other)		**None Detected**
069B *061404827-0010*	Mastic-Black-Mastic Associated with 9x9 Tile in - Office 068 A/B	Black Non-Fibrous Homogeneous	3%	Cellulose	97%	Non-fibrous (other)		**None Detected**
070A *061404827-0011*	VAT Flooring-Brown-9x9 Floor Tile in Small Bathroo	Brown Non-Fibrous Homogeneous			30% 58%	Ca Carbonate Non-fibrous (other)	**12%**	**Chrysotile**
070B *061404827-0012*	VAT Flooring-Brown-9x9 Floor Tile in Small Bathroo	Brown Non-Fibrous Homogeneous			25% 63%	Ca Carbonate Non-fibrous (other)	**12%**	**Chrysotile**
071A *061404827-0013*	Mastic-Black-Associated Mastic 070 A/B	Black Non-Fibrous Homogeneous	5%	Cellulose	95%	Non-fibrous (other)		**None Detected**
071B *061404827-0014*	Mastic-Black-Associated Mastic 070 A/B							**Insufficient Material**

Analyst(s)
Pedro Calderon (31)

Michelle McGowan, Laboratory Manager
or other approved signatory

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Manchester, NH 03103

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Collected:	

Project: **J1147126/MASS MILLS/3RD FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
072A *061404827-0015*	Flooring-Brown-Burlap Flooring Office Area	Brown/Tan Fibrous Heterogeneous	15% 25%	Cellulose Fibrous (other)	60%	Non-fibrous (other)	**None Detected**
072B *061404827-0016*	Flooring-Brown-Burlap Flooring Office Area	Brown/Tan Fibrous Heterogeneous	15% 27%	Cellulose Fibrous (other)	58%	Non-fibrous (other)	**None Detected**
073A *061404827-0017*	Caulking-Beige-Caulking on Brick Between - Wood Stairwell Frame	Gray Non-Fibrous Heterogeneous			25% 15% 60%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
			Cementitious material.				
073B *061404827-0018*	Caulking-Beige-Caulking on Brick Between - Wood Stairwell Frame	Gray Non-Fibrous Heterogeneous			20% 15% 65%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
			Cementitious material.				
074A *061404827-0019*	Wiring-White-Large White Wire Casing	Beige Fibrous Heterogeneous	65%	Cellulose	35%	Non-fibrous (other)	**None Detected**
075B *061404827-0020*	Wiring-White-Large White Wire Casing	Beige Fibrous Heterogeneous	60%	Cellulose	40%	Non-fibrous (other)	**None Detected**
076A *061404827-0021*	Asphalt Flooring-Black-Asphalt Flooring over - Hardwoods by Windows	Gray/Black Fibrous Heterogeneous	12% 3%	Cellulose Synthetic	85%	Non-fibrous (other)	**None Detected**

Analyst(s)
Pedro Calderon (31)

Michelle McGowan, Laboratory Manager
or other approved signatory

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Project: **J1147126/MASS MILLS/3RD FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
076B *061404827-0022*	Asphalt Flooring-Black-Asphalt Flooring over - Hardwoods by Windows	Gray/Black Fibrous Heterogeneous	10% 3%	Cellulose Synthetic	87%	Non-fibrous (other)		**None Detected**
077A *061404827-0023*	Paint Chip-White-White Paint on brick wall - in office	White/Red Non-Fibrous Heterogeneous			10% 90%	Ca Carbonate Non-fibrous (other)		**None Detected**
077B *061404827-0024*	Paint Chip-White-White Paint on brick wall - in office	White/Red Non-Fibrous Heterogeneous			10% 90%	Ca Carbonate Non-fibrous (other)		**None Detected**
078A *061404827-0025*	Glazing-Beige-Interior Window Glazing Office Area	Tan Non-Fibrous Homogeneous			60% 37%	Ca Carbonate Non-fibrous (other)	**3%**	**Chrysotile**
078B *061404827-0026*	Glazing-Beige-Interior Window Glazing Office Area	Tan Non-Fibrous Homogeneous			35% 62%	Ca Carbonate Non-fibrous (other)	**3%**	**Chrysotile**
079A *061404827-0027*	Top Coat Flooring-Beige-Paper Coating over Cement - Floor in Bath	Gray/Red Fibrous Heterogeneous	15% 5%	Cellulose Synthetic	80%	Non-fibrous (other)		**None Detected**

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Collected:	

Project: **J1147126/MASS MILLS/3RD FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
079B *061404827-0028*	Top Coat Flooring-Beige-Paper Coating over Cement - Floor in Bath	Gray/Red Fibrous Heterogeneous	12% 5%	Cellulose Synthetic	83%	Non-fibrous (other)		**None Detected**
080A *061404827-0029*	Paper-Black-Bottom Coating Black Vapor Paper - under Bath Floor	Black Fibrous Heterogeneous	35%	Cellulose	65%	Non-fibrous (other)		**None Detected**
080B *061404827-0030*	Paper-Black-Bottom Coating Black Vapor Paper - under Bath Floor	Black Fibrous Heterogeneous	37%	Cellulose	63%	Non-fibrous (other)		**None Detected**
081A *061404827-0031*	Flooring-Gray-Troweled on floor in Bath over - chicken wire	Red Fibrous Heterogeneous	7%	Fibrous (other)	10% 79%	Quartz Non-fibrous (other)	**4%**	**Chrysotile**
081B *061404827-0032*	Flooring-Gray-Troweled on floor in Bath over - chicken wire	Red Fibrous Heterogeneous	8%	Fibrous (other)	12% 77%	Quartz Non-fibrous (other)	**3%**	**Chrysotile**

Analyst(s)
Pedro Calderon (31)

Michelle McGowan, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from 04/23/2014 17:29:43

THIS IS THE LAST PAGE OF THE REPORT.

OrderID: 031415380

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Chain of Custody

EMSL Order Number (*Lab Use Only*): 061404827

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: TERRACON CONSULTANTS, INC.	EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party
Street: 77 SUNDIAL AVE., SUITE 401 W	
City: MANCHESTER State/Province: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RYAN D. ROUILLARD	Fax #: 603.647.4432
Telephone #: 1-781-603-5375	Email Address: RDROUILLARD@TERRACON.COM
Project Name/Number: J1147126 / MASS MILLS / 3RD FLOOR	
Please Provide Results: ☐ Fax ☒ Email Purchase Order:	U.S. State Samples Taken: MA

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☒ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☒ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** STOP AT 1ST POSITIVE PER H.A.

Client Sample #'s	070A → 081B	Total # of Samples:	32
Relinquished (Client):	Date: 4/21/14	Time: 16:00	
Received (Lab):	Date: 4/23/14	Time: 10:15am	

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Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

Controlled Document-OneChain-R2-1/12/2010

UPS 1Z070 20722 1864 8259

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

ASBESTOS BULK SAMPLING LOG

061404827

3rd Floor

Inspector: RICHARD HAINES/RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

PR 1
p. 1 of 4

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	065A	Gypsum	White	Gypsum Board Office/Bathroom WAll			
	065B	"	"	" "			
	066A	Paper	Brown	Paper Backing on Fiberglass Insulation Bathroom			
	066B	"	"	" "			
	067B	Paper Flooring	Black	Paper on top of 9X9 Tiles in Small Bathroom			
	067B	"	"	" "			
	068A	VAT Flooring	Marble Brown	9x9 floor Tile in office			
	068B	"	"	" "			
	069A	Mastic	Black	Mastic Associated with 9x9 Tile in Office 068A/B			
	069B	"	"	" "			

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3rd Floor

ASBESTOS BULK SAMPLING LOG

061404827

RR 3 of 4

Inspector: R. ROUILLARD
Client / Project Name: MA MILLS
Project Number: J1147126
Building Number/Address:
Building Name / Description: 3RD FLR.

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	070A	VAT Flooring	Brown	9X9 Floor Tile in Small Bathroom			
	070B	"	"	" "			
	071A	Mastic	Black	Associated Mastic 070A/B			
	071B	"	"	" "			
	072A	Flooring	Brown	Burlap Flooring Office AREA			
	072B	"	"	" "			
	073A	Caulking	Beige	Caulking on Brick between wood Stairwell Frame			
	073B	"	"	" "			
	074 A	Wiring	white	large white wire casing			
	075B	"	"	↓ ↓			

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Fax: (603) 647-4432

3rd Floor

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 3 of 4

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	076A	Asphalt Flooring	Black	Asphalt Flooring over hardwoods by windows.			
	076B	"	"	" "			
	077A	Paint Chip	white	White Paint on brick wall in office			
	077B	"	"	" "			
	078A	glazing	Beige	Interior Window Glazing office AREA			
	078B	"	"	" "			
	079A	Top Coat Flooring	Beige	Paper coating over cement Floor in BATH			
	079B	"	"	" "			
	080A	Paper	Black	Bottom Coating Black Vapor Paper Under BATH floor			
	080B	"	"	" "			

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Fax: (603) 647-4432

ASBESTOS BULK SAMPLING LOG

06140487

3rd Floor

Inspector: _____
Client / Project Name: _____
Project Number: _____
Building Number/Address: _____
Building Name / Description: _____

4/4

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	081A	Flooring	gray	troweled on floor in BATH over chicken wire			
	081B	"	"	" "			

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http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415328
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/23/14 10:50 AM
Analysis Date:	4/25/2014
Collected:	4/21/2014

Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
082A *031415328-0001*	GYPSUM/ SHEETROCK BEHIND PANEL WALLS/ OFFICE AREA	Brown/White Fibrous Heterogeneous	20%	Cellulose	60% 20%	Gypsum Non-fibrous (other)		**None Detected**
082B *031415328-0002*	GYPSUM/ SHEETROCK BEHIND PANEL WALLS/ OFFICE AREA	Brown/White Non-Fibrous Homogeneous	14%	Cellulose	54% 32%	Gypsum Non-fibrous (other)		**None Detected**
083A *031415328-0003*	FLOOR LEVELER/ GRAY/ UNDER 12X12 TILE/ BEIGE - MARBLE/ OFFICE AREA	Red Non-Fibrous Homogeneous			40% 60%	Quartz Non-fibrous (other)		**None Detected**
083B *031415328-0004*	FLOOR LEVELER/ GRAY/ UNDER 12X12 TILE/ BEIGE - MARBLE/ OFFICE AREA	Brown Non-Fibrous Homogeneous			35% 65%	Quartz Non-fibrous (other)		**None Detected**
084A *031415328-0005*	FLOORING TILE/ MARBLE BEIGE/ 12X12 TILE/ OFFICE - AREA	Gray Non-Fibrous Homogeneous			50% 48%	Ca Carbonate Non-fibrous (other)	**2%**	**Chrysotile**
084B *031415328-0006*	FLOORING TILE/ MARBLE BEIGE/ 12X12 TILE/ OFFICE - AREA							**Stop Positive (Not Analyzed)**

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Initial report from 04/25/2014 16:31:38

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
Phone/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com manhattanlab@emsl.com

EMSL Order: 031415328
CustomerID: JAWO50
CustomerPO:
ProjectID:

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone: (603) 647-9700
Fax: (603) 647-4432
Received: 04/23/14 10:50 AM
Analysis Date: 4/25/2014
Collected: 4/21/2014

Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
085A *031415328-0007*	MASTIC/ YELLOW/ ASSOCIATED AMSTIC 12X12 TILE	Yellow Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
085B *031415328-0008*	MASTIC/ YELLOW/ ASSOCIATED AMSTIC 12X12 TILE	Brown Non-Fibrous Homogeneous	6%	Cellulose	94%	Non-fibrous (other)		**None Detected**
086A *031415328-0009*	GLUE DOUBS/ BROWN/ BEHIND WHITE WOOD PANELING - OFFICE	Brown Non-Fibrous Homogeneous			92%	Non-fibrous (other)	**8%**	**Chrysotile**
086B *031415328-0010*	GLUE DOUBS/ BROWN/ BEHIND WHITE WOOD PANELING - OFFICE							**Stop Positive (Not Analyzed)**
087A *031415328-0011*	GLUE DOUBS/ BROWN/ BEHIND WOOD PANELING/ BROWN	Brown Non-Fibrous Homogeneous			95%	Non-fibrous (other)	**5%**	**Chrysotile**
087B *031415328-0012*	GLUE DOUBS/ BROWN/ BEHIND WOOD PANELING/ BROWN							**Stop Positive (Not Analyzed)**
088A *031415328-0013*	FLOOR TILE/ TAN/ 9X9 FLOOR TILE	Tan Non-Fibrous Homogeneous			90%	Non-fibrous (other)	**10%**	**Chrysotile**

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CustomerID: JAWO50
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Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone: (603) 647-9700
Fax: (603) 647-4432
Received: 04/23/14 10:50 AM
Analysis Date: 4/25/2014
Collected: 4/21/2014

Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
088B *031415328-0014*	FLOOR TILE/ TAN/ 9X9 FLOOR TILE						**Stop Positive (Not Analyzed)**	
089A *031415328-0015*	MASTIC/ BLACK/ ASSOCIATED MASTIC/ 088/ FLOOR TILE	Black Non-Fibrous Homogeneous			90%	Non-fibrous (other)	**10%**	**Chrysotile**
089B *031415328-0016*	MASTIC/ BLACK/ ASSOCIATED MASTIC/ 088/ FLOOR TILE						**Stop Positive (Not Analyzed)**	
090A *031415328-0017*	FLOORING/ GREEN/ FLOORING UNDER 9X9/ 88	Green Non-Fibrous Homogeneous	20%	Cellulose	80%	Non-fibrous (other)	**None Detected**	
090B *031415328-0018*	FLOORING/ GREEN/ FLOORING UNDER 9X9/ 88	Black/Green Fibrous Heterogeneous	15%	Cellulose	10% 75%	Ca Carbonate Non-fibrous (other)	**None Detected**	
091A *031415328-0019*	PAPER/ BLACK/ UNDER SAMPLE 090	Black Fibrous Homogeneous	40% 10%	Cellulose Hair	50%	Non-fibrous (other)	**None Detected**	
091B *031415328-0020*	PAPER/ BLACK/ UNDER SAMPLE 090	Brown/Black Fibrous Homogeneous	45% 10% 10%	Cellulose Hair Synthetic	35%	Non-fibrous (other)	**None Detected**	
092A *031415328-0021*	PAPER/ BROWN/ ON HARDWOOD FLOOR/ BENEATH GREEN - FLOORING/ 090						**Not Submitted**	

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http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415328
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/23/14 10:50 AM
Analysis Date:	4/25/2014
Collected:	4/21/2014

Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
092B *031415328-0022*	PAPER/ BROWN/ ON HARDWOOD FLOOR/ BENEATH GREEN - FLOORING/ 090							**Not Submitted**
093A *031415328-0023*	GLAZING/ WHITE/ BETWEEN SASHES AND SILLS/ ON WHITE - WOOD WINDOWS	White Non-Fibrous Homogeneous			65% 31%	Ca Carbonate Non-fibrous (other)	**4%**	**Chrysotile**
093B *031415328-0024*	GLAZING/ WHITE/ BETWEEN SASHES AND SILLS/ ON WHITE - WOOD WINDOWS							**Stop Positive (Not Analyzed)**
094A *031415328-0025*	FLOOR TILE/ SALMON/ 9X9 FLOOR TILE	Pink Non-Fibrous Homogeneous	2%	Fibrous (other)	96%	Non-fibrous (other)	**2%**	**Chrysotile**
094B *031415328-0026*	FLOOR TILE/ SALMON/ 9X9 FLOOR TILE							**Stop Positive (Not Analyzed)**
095A *031415328-0027*	MASTIC/ BLACK/ASSOCIATED MASTIC 094	Black Non-Fibrous Homogeneous			95%	Non-fibrous (other)	**5%**	**Chrysotile**
095B *031415328-0028*	MASTIC/ BLACK/ASSOCIATED MASTIC 094							**Stop Positive (Not Analyzed)**

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Manchester, NH 03103

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Fax: (603) 647-4432
Received: 04/23/14 10:50 AM
Analysis Date: 4/25/2014
Collected: 4/21/2014

Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
096A *031415328-0029*	PAPER/ BLACK/ PAPER/ UNDER SALMON 9X9/ FLOOR TILE - 094	Black Fibrous Homogeneous	50%	Cellulose	50%	Non-fibrous (other)		**None Detected**
096B *031415328-0030*	PAPER/ BLACK/ PAPER/ UNDER SALMON 9X9/ FLOOR TILE - 094	Brown/Black Fibrous Homogeneous	65%	Cellulose	35%	Non-fibrous (other)		**None Detected**
097A *031415328-0031*	GYPSUM/ OFF WHITE/ GYPSUM BOARD/ FALLING DOWN - IN BATHROOMS	Brown/Gray Fibrous Heterogeneous	15%	Cellulose	60% 25%	Gypsum Non-fibrous (other)		**None Detected**
097B *031415328-0032*	GYPSUM/ OFF WHITE/ GYPSUM BOARD/ FALLING DOWN - IN BATHROOMS	Brown/Gray/White Non-Fibrous Homogeneous	16%	Cellulose	60% 24%	Gypsum Non-fibrous (other)		**None Detected**
098A *031415328-0033*	FLOOR TILE/ GREEN/ 12X12 FLOOR TILE/ IN BATH/ - & ALONG HEATER/ OUTSIDE BATH	Gray Non-Fibrous Homogeneous			98%	Non-fibrous (other)	**2%**	**Chrysotile**
098B *031415328-0034*	FLOOR TILE/ GREEN/ 12X12 FLOOR TILE/ IN BATH/ - & ALONG HEATER/ OUTSIDE BATH							**Stop Positive (Not Analyzed)**

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

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Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
099A *031415328-0035*	MASTIC/ YELLOW/ ASSOCIATED MASTIC/ 098	Brown Non-Fibrous Homogeneous	2%	Cellulose	98%	Non-fibrous (other)	**None Detected**
099B *031415328-0036*	MASTIC/ YELLOW/ ASSOCIATED MASTIC/ 098	Brown Non-Fibrous Homogeneous	3%	Cellulose	97%	Non-fibrous (other)	**None Detected**
100A *031415328-0037*	FLOOIRNG/ BROWN/ FIBER BOARD/ UNDER 12X12/ 098	Fibrous Homogeneous	5%	Hair	20% 75%	Ca Carbonate Non-fibrous (other)	**None Detected**
100B *031415328-0038*	FLOOIRNG/ BROWN/ FIBER BOARD/ UNDER 12X12/ 098	Brown/Black Fibrous Heterogeneous	70%	Cellulose	30%	Non-fibrous (other)	**None Detected**
101A *031415328-0039*	FLOORING/ GREEN/ ASSOCIATED PAINT/ PAPER/ UNDER - 12X12/ 098	Gray/Red/Yellow Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
101B *031415328-0040*	FLOORING/ GREEN/ ASSOCIATED PAINT/ PAPER/ UNDER - 12X12/ 098	Brown/Gray/Red Non-Fibrous Heterogeneous	2%	Cellulose	98%	Non-fibrous (other)	**None Detected**
102A *031415328-0041*	FLOORING/ BLACK/ BROWN/ BOTTOM LAYER OF FLOORING - ASSOCIATED WITH SAMPLE/ 098	Brown Fibrous Homogeneous	50%	Cellulose	50%	Non-fibrous (other)	**None Detected**

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Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
102B *031415328-0042*	FLOORING/ BLACK/ BROWN/ BOTTOM LAYER OF FLOORING - ASSOCIATED WITH SAMPLE/ 098	Brown Non-Fibrous Homogeneous	3%	Cellulose	48% 49%	Quartz Non-fibrous (other)	**None Detected**
103A *031415328-0043*	FLOORING/ BROWN/ BLACK/ PAPER/ ON TOP OF HARDWOODS	Black Fibrous Heterogeneous	40% 10%	Cellulose Hair	50%	Non-fibrous (other)	**None Detected**
103B *031415328-0044*	FLOORING/ BROWN/ BLACK/ PAPER/ ON TOP OF HARDWOODS	Brown/Black Fibrous Homogeneous	48% 15% 12%	Cellulose Hair Synthetic	25%	Non-fibrous (other)	**None Detected**
104A *031415328-0045*	FLOORING/ GREEN/ BATHROOM/ PAINTED COATING	Red/Green Fibrous Heterogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**
104B *031415328-0046*	FLOORING/ GREEN/ BATHROOM/ PAINTED COATING	Brown/Gray/Red Non-Fibrous Heterogeneous	4% 4%	Cellulose Hair	92%	Non-fibrous (other)	**None Detected**
105A *031415328-0047*	FLOORING/ BROWN/ ASSOCIATED WITH SAMPLE/ 104 - PAPER	Brown/Black Fibrous Heterogeneous	50% 10%	Cellulose Hair	40%	Non-fibrous (other)	**None Detected**
105B *031415328-0048*	FLOORING/ BROWN/ ASSOCIATED WITH SAMPLE/ 104 - PAPER	Brown Fibrous Heterogeneous	68%	Cellulose	32%	Non-fibrous (other)	**None Detected**

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Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
106A *031415328-0049*	ADHESSIVE/ SILVER/ YELLOW/ DUCTWORK/ SILVER TAPE - ADHESSIVE ON BACK	Silver/Yellow Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
106B *031415328-0050*	ADHESSIVE/ SILVER/ YELLOW/ DUCTWORK/ SILVER TAPE - ADHESSIVE ON BACK	Brown/Yellow Non-Fibrous Homogeneous	5% 10%	Cellulose Synthetic	85%	Non-fibrous (other)	**None Detected**
107A *031415328-0051*	COVEBASE/ BRON/ SMALL OFFICE	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
107B *031415328-0052*	COVEBASE/ BRON/ SMALL OFFICE	Brown Non-Fibrous Homogeneous			11% 89%	Ca Carbonate Non-fibrous (other)	**None Detected**
108A *031415328-0053*	ADHESSIVE/ BROWN/ ASSOCIATED WITH/ 107	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
108B *031415328-0054*	ADHESSIVE/ BROWN/ ASSOCIATED WITH/ 107	Brown Non-Fibrous Homogeneous	3%	Cellulose	97%	Non-fibrous (other)	**None Detected**
109A *031415328-0055*	PAPER/ BROWN/ PAPER/ ON FOAM INSULATION/ DEBRIS	Black Fibrous Homogeneous	60%	Cellulose	40%	Non-fibrous (other)	**None Detected**

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Project: **J1147126/ 150 MASS MILLS DRIVE MASS MILLS/ VACANT/ 4TH FLOOR**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
109B *031415328-0056*	PAPER/ BROWN/ PAPER/ ON FOAM INSULATION/ DEBRIS	Gray Fibrous Homogeneous	58% 15%	Cellulose Glass	27%	Non-fibrous (other)	**None Detected**
110A *031415328-0057*	ADHESSIVE/ BROWN/ PINK/ ADHESSIVE/ ON PINK FOAM - INSULATION THROUGH FLOOR/ DEBRIS	Yellow Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
110B *031415328-0058*	ADHESSIVE/ BROWN/ PINK/ ADHESSIVE/ ON PINK FOAM - INSULATION THROUGH FLOOR/ DEBRIS	Yellow Non-Fibrous Homogeneous	2%	Cellulose	98%	Non-fibrous (other)	**None Detected**
111A *031415328-0059*	INSULATION/ WHITE PAINT/ ON BROWN INSUL/ FIBER - BOARD INSULATION/ PAINTED WHITE/ WALLS	Brown Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**
111B *031415328-0060*	INSULATION/ WHITE PAINT/ ON BROWN INSUL/ FIBER - BOARD INSULATION/ PAINTED WHITE/ WALLS	Brown/White Fibrous Heterogeneous	88%	Cellulose	12%	Non-fibrous (other)	**None Detected**

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
112A *031415328-0061*	FLOORING/ BLACK/ BLACK PAPER/ UNDER METAL/ ROLLED - FLOORING PANELS	Brown Fibrous Homogeneous	30%	Cellulose	70%	Non-fibrous (other)	**None Detected**
112B *031415328-0062*	FLOORING/ BLACK/ BLACK PAPER/ UNDER METAL/ ROLLED - FLOORING PANELS	Brown/Black Fibrous Heterogeneous	40% 12%	Cellulose Synthetic	48%	Non-fibrous (other)	**None Detected**
113A *031415328-0063*	PIPE DOPE/ OFF WHITE/ DRAIN PIPE/ AT JOINT	Grayish Non-Fibrous Heterogeneous			30% 70%	Ca Carbonate Non-fibrous (other)	**None Detected**
113B *031415328-0064*	PIPE DOPE/ OFF WHITE/ DRAIN PIPE/ AT JOINT	Gray/Tan/Blue Non-Fibrous Heterogeneous	3%	Cellulose	40% 57%	Ca Carbonate Non-fibrous (other)	**None Detected**
114A *031415328-0065*	PIPE FITTINGS/ INSUL/ GRAY/ FITTINGS/ ON 2" PIPE	Brown Fibrous Heterogeneous	40%	Cellulose	60%	Non-fibrous (other)	**None Detected**
114B *031415328-0066*	PIPE FITTINGS/ INSUL/ GRAY/ FITTINGS/ ON 2" PIPE	Brown Fibrous Heterogeneous	50%	Cellulose	50%	Non-fibrous (other)	**None Detected**
114C *031415328-0067*	PIPE FITTINGS/ INSUL/ GRAY/ FITTINGS/ ON 2" PIPE	Brown/Gray/Blue Fibrous Heterogeneous	40% 15%	Cellulose Synthetic	10% 35%	Ca Carbonate Non-fibrous (other)	**None Detected**

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
115A *031415328-0068*	ADHESSIVE/ BROWN/ BROWN ADHESSIVE/ ON OFF WHITE - PANELING	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
115B *031415328-0069*	ADHESSIVE/ BROWN/ BROWN ADHESSIVE/ ON OFF WHITE - PANELING	Brown Non-Fibrous Homogeneous	5%	Cellulose	95%	Non-fibrous (other)	**None Detected**
116A *031415328-0070*	TAPE/ BLACK/ CLOTH TAPE/ AT BOTTOM OF COLUMNS - BETWEEN FLOORS	Brown/Black Fibrous Heterogeneous	60%	Cellulose	40%	Non-fibrous (other)	**None Detected**
116B *031415328-0071*	TAPE/ BLACK/ CLOTH TAPE/ AT BOTTOM OF COLUMNS - BETWEEN FLOORS	Brown/Black Fibrous Heterogeneous	65%	Cellulose	35%	Non-fibrous (other)	**None Detected**
117A *031415328-0072*	TAPE/ YELLOW/ CLOTH TAPE/ AT BOTTOM OF COLUMNS - BETWEEN FLOORS	Tan Fibrous Homogeneous	85%	Cellulose	15%	Non-fibrous (other)	**None Detected**
117B *031415328-0073*	TAPE/ YELLOW/ CLOTH TAPE/ AT BOTTOM OF COLUMNS - BETWEEN FLOORS	Tan/Yellow Fibrous Heterogeneous	75%	Cellulose	25%	Non-fibrous (other)	**None Detected**

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
118A *031415328-0074*	TAPE/ GRAY/ CLOTH TAPE/ AT BOTTOM OF COLUMNS - BETWEEN FLOORS	Gray Fibrous Homogeneous	90%	Cellulose	10%	Non-fibrous (other)	**None Detected**
118B *031415328-0075*	TAPE/ GRAY/ CLOTH TAPE/ AT BOTTOM OF COLUMNS - BETWEEN FLOORS	Gray Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**
119A *031415328-0076*	PITCH/ BLACK/ PITCH BETWEEN DRAIN PIPE/ BLACK - SEEMS/ SECTIONS	Brown Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
119B *031415328-0077*	PITCH/ BLACK/ PITCH BETWEEN DRAIN PIPE/ BLACK - SEEMS/ SECTIONS	Brown/Black Non-Fibrous Heterogeneous	5%	Cellulose	95%	Non-fibrous (other)	**None Detected**

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The samples in this report were submitted to EMSL for analysis by Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy. The reference number for these samples is the EMSL Order ID above. Please use this reference number when calling about these samples.

Report Comments:

Sample Receipt Date::	4/23/2014	Sample Receipt Time:	10:50 AM
Analysis Completed Date:	4/25/2014	Analysis Completed Time:	4:13 PM

Analyst(s):

Jon Williams PLM (29)

Sean Scales PLM (37)

Samples reviewed and approved by:

James Hall, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Initial report from 04/25/2014 16:31:38

THIS IS THE LAST PAGE OF THE REPORT.

OrderID: 031415380

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Chain of Custody

EMSL Order Number (*Lab Use Only*): 031415328

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: TERRACON CONSULTANTS, INC.	EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party
Street: 77 SUNDIAL AVE., SUITE 401 W	
City: MANCHESTER State/Province: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RYAN D. ROUILLARD	Fax #: 603.647.4432
Telephone #: 1-781-603-5375	Email Address: RDROUILLARD@TERRACON.COM
Project Name/Number: J1147126 / MASS MILLS / 4TH FLOOR	
Please Provide Results: ☐ Fax ☒ Email Purchase Order:	U.S. State Samples Taken: MA

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☒ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☒ PLM EPA 600/R-93/116 SJS 04/24
☐ PLM EPA NOB (<1%) 4/25/14
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** STOP AT 1ST POSITIVE PER H.A.

Client Sample #'s	- 082A → 119B	Total # of Samples:	38 SAMPLES
Relinquished (Client): RDRouillard	Date: 4/21/14	Time: 16:00	
Received (Lab): Hernan Mejia	Date: 4-23-14	Time: 10:50 AM	

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Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide
Controlled Document-OneChain-R2-1/12/2010

F/d - 798 [illegible] UPS 1Z070207221869825 4

031415328

77

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	082A	Gypsum		Sheetrock behind panel walls office area			
	082B	"					
	083A	Floor leveler	gray	Under 12x12 Tile Biege/Marble office AREA			
	083B	"	"	" "			
	084A	Flooring Tile	Marble Beige	12x12 Tile office AREA			
	084B	"	"	" "			
	085A	Mastic	yellow	Associated Mastic 12x12 Tile			
	085B	"	"	" "			
	086A	Glue Doubs	Brown	Behind white wood paneling office			
	086B	"	"	"			

4/25/14

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OrderID: 031415380

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ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	087A	Glue Doubs	Brown	Behind wood paneling brown			
	087B	"	"	" "			
	088A	Floor Tile	Tan	9x9 Floor Tile			
	088B	"	"	"			
	089A	Mastic	Black	Associated Mastic (088) Floor Tile			
	089B	"	"	" "			
	090A	Flooring	Green ~~Beige~~	Flooring under 9x9 (088)			
	090B	"	"	" "			
	091A	Paper	Black	~~Between samples 088~~ Under Sample 090			
	091B	"	"	"			

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Terracon
77 Sundial Avenue
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Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor

Inspector: Richard Haines / Ryan Rouillard
Client / Project Name: Mass Mills
Project Number: J1147126
Building Number/Address: 150 Mass Mills Dr.
Building Name / Description: Vacant

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	092A	Paper	Brown	on hardwood floor beneath green flooring (090)			
	092B	"	"	" "			
	093A	Glazing	White	between sashes and sills on white wood windows			
	093B	"	"	" "			
	094A	Floor Tile	Salmon	9x9 Floor Tile			
	094B	"	"	" "			
	095A	Mastic	Black	Associated Mastic 9x9 (094)			
	095B	"	"				
	096A	Paper	Black	Paper under Salmon 9x9 Floor Tile (094)			
	096B	"	"				

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~~031418~~ 031415328

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Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

P. 4 of 8

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	097A	Gypsum	offwhite	Gypsum board falling down in Bathrooms			
	097B	"	"	" "			
	098A	Floor Tile	Green	12x12 Floor Tile in Bath & along heater outside Bath			
	098B	"	"	" "			
	099A	Mastic	yellow	Associated Mastic (098)			
	099B	"	"	" "			
	100A	Flooring	Brown	Fiber board under 12x12 (098)			
	100B	"	"	" "			
	101A	Flooring	Green	Associated Paint/Paper under 12x12 (098)			
	101B	"	"	" "	J	4/25/14	

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Terracon
77 Sundial Avenue
Suite 401W
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Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor

Inspector: R. Rouillard
Client / Project Name: Mass Mills
Project Number: J1147126
Building Number/Address: 150 Mass Mills
Building Name / Description: VACANT

5 of 8

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	102A	Flooring	Black/Brown	Bottom Layer of Flooring Associated with ~~sample~~ sample (098)			
	102B	"	"	" "			
	103A	Flooring	Brown/Black	Paper on top of Hardwoods			
	103B	"	"	" "			
	104A	Flooring	Green	Bathroom Painted Coating			
	104B	"	"	" "			
	105A	Flooring	Brown	Associated with sample (104) Paper			
	105B	"	"	" "			
	106A	Adhessive	Silver/Yellow	Ductwork, silver tape adhessive on back			
	106B	"	"	" "			

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6 of 8

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor

Inspector: R. Rouillard
Client / Project Name: MASS Mills
Project Number:
Building Number/Address:
Building Name / Description:

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	107A	Covebase	Brown	small office			
	107B	"	"	" "			
	108A	Adhessive	Brown	Associated with (107)			
	108B	"	"	" "			
	109A	Paper	Brown	Paper on Foam insulation – Debris			
	109B	"	"	" "			
	110A	Adhessive	Brown / Pink	Adhessive on Pink Foam Insulation Through floor – Debris			
	110B	"	"	" "			
	111A	Insulation	white / Brown	fiber board Insulation Painted white ~ walls			
	111B	"	"	" "			

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~~031415 038~~
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Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Inspector: R. Rouillard
Client / Project Name: MASS Mills
Project Number:
Building Number/Address:
Building Name / Description:

4th Floor

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	112A	Flooring	Black	Black Paper under metal rolled Flooring Panels			
	112B	"	"	" "			
	113A	Pipe Dope	offwhite	Drain Pipe at Joint			
	113B	"	"	" "			
	114A	Pipe Fittings Insul.	gray	Fittings on 2" pipe			
	114B	"	"				
	114C	"					
	115A	Adhessive	Brown	Brown Adhessive on offwhite paneling			
	115B	"	"	"			
	116A	Tape	Black	Cloth Tape around bottom of Columns between floors			

4/25/14

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OrderID: 031415328

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ASBESTOS BULK SAMPLING LOG

8 of 8

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor

Inspector: R. Rouillard
Client / Project Name: MASS Mills
Project Number:
Building Number/Address:
Building Name / Description:

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	116B	Tape	Black	Cloth Tape at bottom of Columns between Floors			
	117A	Tape	yellow				
	117B	"	"				
	118A	Tape	Gray				
	118B	"	"				
	119A	Pitch	Black	Pitch between drain pipe (Black) seems/sections			
	119B	"	"	" "			
						4/25/14	

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EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401559
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **J1147126 / Mass Mills; Bldg 3**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
130A *131401559-0001*	4th Floor on Fume Hood - Grey Fabric	White/Blue Fibrous Homogeneous	90%	Cellulose	10%	Non-fibrous (other)	**None Detected**
130B *131401559-0002*	4th Floor on Fume Hood - Grey Fabric	White/Blue Fibrous Homogeneous	90%	Cellulose	10%	Non-fibrous (other)	**None Detected**
131A *131401559-0003*	4th Floor Duct Work under Fiberglass Insulation - Brown Adhesive	Yellow Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
131B *131401559-0004*	4th Floor Duct Work under Fiberglass Insulation - Brown Adhesive	Yellow Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
132A *131401559-0005*	4th Floor Chemical Wash Sink - Grey Sink	Green Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
132B *131401559-0006*	4th Floor Chemical Wash Sink - Grey Sink	Green Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**

Analyst(s)
Kevin Pine (6)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 13:34:01

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131401559

(50) 4/29/14

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor (ADDT'L Samples)

Inspector: R. Jacobs / R. Rouillard
Client / Project Name: Mass Mills
Project Number: J147126
Building Number/Address: Bldg. 3
Building Name / Description: Former Mill

	H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
1		130A	Fabric	Gray	Fabric on Fume Hood			
2		130B	"	"	" "			
3		131A	Adhessive	Brown	Ductwork Adhessive under fiberglass Insulation			
4		131B	"	"	" "			
5		132A	sink	gray	chemical wash sink			
6		132B	"	"	" "			

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OrderID: 031415380

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7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401557
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **Massmills; 150 Massmills Dr. Lowell, MA**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
01A *131401557-0001*	4th Floor under Hardwood Floors - Brown Paper	Black Fibrous Homogeneous	80%	Cellulose	20%	Non-fibrous (other)	**None Detected**
01B *131401557-0002*	4th Floor under Hardwood Floors - Brown Paper	Black Fibrous Homogeneous	80%	Cellulose	20%	Non-fibrous (other)	**None Detected**

Analyst(s)
Kevin Pine (2)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 13:32:50

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131401557

(SA) 4/29/14

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

4th Floor

Inspector: RON R. JACOBS
Client / Project Name: Massmills
Project Number:
Building Number/Address: 150 Massmills Dr
Building Name / Description: Lowell, MA

Contact: Ryan Raulliard
781-603-5375

	H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
1		01A	Paper	Brown	Paper under hardwood floors 4th Floor			
2		01B	Paper	Brown	" "			

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OrderID: 031415380

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
Phone/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415397
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/23/14 10:34 AM
Analysis Date:	4/26/2014
Collected:	4/21/2014

Project: **J11471226/ MASS MILLS/ 150 MASS MILLS DR/ 5TH FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
120A *031415397-0001*	FLOORING/ MARBLE/ 12X12 FLOOR TILE	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
120B *031415397-0002*	FLOORING/ MARBLE/ 12X12 FLOOR TILE	Gray Non-Fibrous Homogeneous			45% 55%	Ca Carbonate Non-fibrous (other)		**None Detected**
121A *031415397-0003*	MASTIC/ YELLOW/ ASSOCIATED MASTIC/ 120/ 12X12	Tan Non-Fibrous Homogeneous	10%	Cellulose	88%	Non-fibrous (other)	**2%**	**Chrysotile**
121B *031415397-0004*	MASTIC/ YELLOW/ ASSOCIATED MASTIC/ 120/ 12X12							**Stop Positive (Not Analyzed)**
122A *031415397-0005*	FLOORING/ CREAM/ DIAMOND SHAPED/ SHEET FLOORING - UNDER 12X12/ 2ND LAYER/ DIAMOND/ 120	Tan Non-Fibrous Homogeneous			98%	Non-fibrous (other)	**2%**	**Chrysotile**

Analyst(s)

Henry Akintunde (7)
Noel Anderson (11)

James Hall, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Initial report from 04/26/2014 15:01:54

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
Phone/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415397
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/23/14 10:34 AM
Analysis Date:	4/26/2014
Collected:	4/21/2014

Project: **J11471226/ MASS MILLS/ 150 MASS MILLS DR/ 5TH FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
122B *031415397-0006*	FLOORING/ CREAM/ DIAMOND SHAPED/ SHEET FLOORING - UNDER 12X12/ 2ND LAYER/ DIAMOND/ 120						**Stop Positive (Not Analyzed)**
123A *031415397-0007*	FLOORING/ BLACK/ ASPHALT PAPER/ UNDER BOTTOM LAYER - 120	Brown Non-Fibrous Homogeneous	40%	Cellulose	60%	Non-fibrous (other)	**None Detected**
123B *031415397-0008*	FLOORING/ BLACK/ ASPHALT PAPER/ UNDER BOTTOM LAYER - 120	Black Fibrous Homogeneous	55% 15%	Cellulose Synthetic	30%	Non-fibrous (other)	**None Detected**
124A *031415397-0009*	GYPSUM/ UNPAINTED/ GYPSUM BOARD	Tan/White Non-Fibrous Homogeneous	5% 2%	Cellulose Glass	70% 23%	Gypsum Non-fibrous (other)	**None Detected**
124B *031415397-0010*	GYPSUM/ UNPAINTED/ GYPSUM BOARD	Brown/Gray Fibrous Homogeneous	17% 3%	Cellulose Glass	62% 18%	Gypsum Non-fibrous (other)	**None Detected**

Analyst(s)

Henry Akintunde (7)
Noel Anderson (11)

James Hall, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Initial report from 04/26/2014 15:01:54

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
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EMSL Order:	031415397
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/23/14 10:34 AM
Analysis Date:	4/26/2014
Collected:	4/21/2014

Project: **J11471226/ MASS MILLS/ 150 MASS MILLS DR/ 5TH FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
125A *031415397-0011*	WATER PROOFING/ BROWN/ WATER PROOFING/ ON RAMP TO - BACK ROOM	Brown Non-Fibrous Homogeneous			10% 90%	Quartz Non-fibrous (other)	**None Detected**
125B *031415397-0012*	WATER PROOFING/ BROWN/ WATER PROOFING/ ON RAMP TO - BACK ROOM	Tan Non-Fibrous Homogeneous			65% 35%	Matrix Non-fibrous (other)	**None Detected**
126A *031415397-0013*	FLOORING/ BLACK/ FELT PAPER MATERIAL/ ON CONCRETE - FLOOR	Gray/Black Non-Fibrous Homogeneous	10%	Cellulose	10% 80%	Quartz Non-fibrous (other)	**None Detected**
126B *031415397-0014*	FLOORING/ BLACK/ FELT PAPER MATERIAL/ ON CONCRETE - FLOOR	Gray/Black Non-Fibrous Homogeneous	25%	Cellulose	33% 42%	Matrix Non-fibrous (other)	**None Detected**
127A *031415397-0015*	PLASTER/ BLUE/ WHITE/ PLASTER WALL	Gray/Red Non-Fibrous Homogeneous			60% 10% 30%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**

Analyst(s)

Henry Akintunde (7)
Noel Anderson (11)

James Hall, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Initial report from 04/26/2014 15:01:54

EMSL Analytical, Inc.
307 West 38th Street, New York, NY 10018
Phone/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com manhattanlab@emsl.com

EMSL Order:	031415397
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/23/14 10:34 AM
Analysis Date:	4/26/2014
Collected:	4/21/2014

Project: **J11471226/ MASS MILLS/ 150 MASS MILLS DR/ 5TH FLOOR/ VACANT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
127B *031415397-0016*	PLASTER/ BLUE/ WHITE/ PLASTER WALL	Gray/Red Non-Fibrous Homogeneous			55% 20% 25%	Quartz Ca Carbonate Non-fibrous (other)		**None Detected**
127C *031415397-0017*	PLASTER/ BLUE/ WHITE/ PLASTER WALL	Gray Non-Fibrous Homogeneous			46% 33% 21%	Quartz Gypsum Non-fibrous (other)		**None Detected**
128A *031415397-0018*	FLOORING/ BLACK/ ASPHALT FLOORING	Black Non-Fibrous Homogeneous			50% 50%	Quartz Non-fibrous (other)		**None Detected**
128B *031415397-0019*	FLOORING/ BLACK/ ASPHALT FLOORING	Black Non-Fibrous Homogeneous	3%	Synthetic	35% 62%	Matrix Non-fibrous (other)		**None Detected**
129A *031415397-0020*	BASEBOARD/ BLACK/ ASPHALT/ CEMENT BOARD	Black Non-Fibrous Homogeneous			40% 58%	Quartz Non-fibrous (other)	**2%**	**Chrysotile**
129B *031415397-0021*	BASEBOARD/ BLACK/ ASPHALT/ CEMENT BOARD							**Stop Positive (Not Analyzed)**

Analyst(s)

Henry Akintunde (7)
Noel Anderson (11)

James Hall, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Initial report from 04/26/2014 15:01:54

THIS IS THE LAST PAGE OF THE REPORT.

OrderID: 031415380

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Chain of Custody

EMSL Order Number *(Lab Use Only)*: 031415397

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: TERRACON CONSULTANTS, INC.	EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party
Street: 77 SUNDIAL AVE., SUITE 401 W	
City: MANCHESTER State/Province: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RYAN D. ROUILLARD	Fax #: 603.647.4432
Telephone #: 1-781-603-5375	Email Address: RDROUILLARD@TERRACON.COM
Project Name/Number: J1147126 / MASS MILLS / 5TH FLOOR	
Please Provide Results: ☐ Fax ☒ Email Purchase Order:	U.S. State Samples Taken: MA

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☒ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☒ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** STOP AT 1ST POSITIVE PER H.A.

Client Sample #'s	- 120A → 129 B	Total # of Samples:	2
Relinquished (Client): R Haines	Date: 4/21/14	Time: 16:00	
Received (Lab): Hernan Mora	Date: 4-23-14	Time: 10:34 AM	

RECEIVED APR 22 2014 By SLR 9:45

Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide
Controlled Document-OneChain-R2-1/12/2010

F/L-79 ... 120702072218648254

031415397

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

5th Floor

Inspector: RYAN ROUILLARD / RON JACOBS
Client / Project Name:
Project Number: J1147126
Building Number/Address:
Building Name / Description: 5TH FLOOR

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	120A	Flooring	Marble	12x12 Floor Tile			
	120B	"	"	" "			
	121A	Mastic	yellow	Associated Mastic (120) 12x12			
	121B	"	"	" "			
	122A	Flooring	cream diamond shaped	sheet flooring under 12x12 2nd layer diamond (120)			
	122B	"		" "			
	123A	Flooring	Black	Asphalt Paper under Bottom layer (120)			
	123B	"	"	" "			
	124A	Gypsum	–	Unpainted Gypsum Board			
	124B	"	–	" "			

RECEIVED
APR 22 2014
By SLR 9:45

OrderID: 031415380

031415392

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

ASBESTOS BULK SAMPLING LOG

5th Floor

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

P. ___ of ___

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	125 A	Water Proofing	Brown	WATER Proofing on ramp to back room			
	125 B	"	"	" "			
	126 A	Flooring	Black	felt paper material on concrete FLOOR			
	126 B	"	"	" "			
	127 A	plaster	Blue/white	plaster wall			
	127 B	↓	↓				
	127 C						
	128 A	Flooring	Black	Asphalt Flooring			
	128 B	"	"	"			
	129 A	Base board	Black	Asphalt / Cement Board			
	129 B	"	"	" "			

RECEIVED
APR 22 2014
By SLR 9:45

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401558
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **J1147126 / Massmills; Bldg 3**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
152A *131401558-0001*	5th Floor Work Bench by Stairs to Roof - Maroon Cloth	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
152B *131401558-0002*	5th Floor Work Bench by Stairs to Roof - Maroon Cloth	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
153A *131401558-0003*	5th Floor Work Bench by Stairs to Roof - Maroon Backing	Gray Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**
153B *131401558-0004*	5th Floor Work Bench by Stairs to Roof - Maroon Backing	Gray Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**

Analyst(s)
Kevin Pine (4)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 13:33:35

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131401558

ASBESTOS BULK SAMPLING LOG

(SW 4/29/14)

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

5th flr (ADDT'L Samples)

Inspector: R. Jacobs / R. Rouillard
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: BLDG. 3
Building Name / Description: Former Mill

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
1	152A	Cloth	maroon	Work bench by stairs to Roof			
2	152B	"	↓	↓			
3	153A	Backing	↓	↓			
4	153B	Backing	↓	↓			
				FedEx# 7986 5839 2970			

RECEIVED
APR 28 2014
By SL 0830

OrderID: 031415380

EMSL Analytical, Inc.
528 Mineola Avenue, Carle Place, NY 11514
Phone/Fax: (516) 997-7251 / (516) 997-7528
http://www.EMSL.com carleplacelab@emsl.com

EMSL Order:	061404829
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/22/14 9:45 AM
Analysis Date:	4/23/2014
Collected:	

Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
001A *061404829-0001*	Paint Chip-White-Brick Wall Basement	Gray/White Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
001B *061404829-0002*	Paint Chip-White-Brick Wall Basement	Gray/White Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
002A *061404829-0003*	Paint Chip-White-Former Inexcessible Area Metal - Pipe/Column	Gray/White Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
002B *061404829-0004*	Paint Chip-White-Former Inexcessible Area Metal - Pipe/Column	Gray/White Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
003A *061404829-0005*	Paper Wrap-Brn-Former Inaccesible Area 10" Pipe - Insulation	Tan Fibrous Heterogeneous	75%	Cellulose	25%	Non-fibrous (other)	**None Detected**
003B *061404829-0006*	Paper Wrap-Brn-Former Inaccesible Area 10" Pipe - Insulation	Tan Fibrous Heterogeneous	50%	Cellulose	50%	Non-fibrous (other)	**None Detected**

Analyst(s)

Daniel Clarke (23) *Taylor Becker (28)*
Ellen Russell (8)

Michelle McGowan, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from 04/24/2014 13:59:50

EMSL Analytical, Inc.
528 Mineola Avenue, Carle Place, NY 11514
Phone/Fax: (516) 997-7251 / (516) 997-7528
http://www.EMSL.com carleplacelab@emsl.com

EMSL Order:	061404829
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/22/14 9:45 AM
Analysis Date:	4/23/2014
Collected:	

Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
003C *061404829-0007*	Paper Wrap-Brn-Former Inaccesible Area 10" Pipe - Insulation	Tan Fibrous Heterogeneous	50%	Cellulose	50%	Non-fibrous (other)		**None Detected**
004A *061404829-0008*	Debris-Off-White-Floor Debris Throughout	Gray Fibrous Heterogeneous			75%	Non-fibrous (other)	**25%**	**Chrysotile**
004B *061404829-0009*	Debris-Off-White-Floor Debris Throughout							**Stop Positive (Not Analyzed)**
004C *061404829-0010*	Debris-Off-White-Floor Debris Throughout							**Stop Positive (Not Analyzed)**
005A *061404829-0011*	Pipe Insulation-White-TSI on 20" Pipe	Gray Non-Fibrous Heterogeneous			70%	Non-fibrous (other)	**30%**	**Chrysotile**
005B *061404829-0012*	Pipe Insulation-White-TSI on 20" Pipe							**Stop Positive (Not Analyzed)**
005C *061404829-0013*	Pipe Insulation-White-TSI on 20" Pipe							**Stop Positive (Not Analyzed)**
006A *061404829-0014*	Paper-Brw-Paper Pipe Insulation on 2" Pipe - Former Inaccessible Area	Tan/Black Fibrous Heterogeneous	75%	Cellulose	25%	Non-fibrous (other)		**None Detected**

Analyst(s)

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Ellen Russell (8)

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or other approved signatory

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Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
006B *061404829-0015*	Paper-Brw-Paper Pipe Insulation on 2" Pipe - Former Inaccessible Area	Tan/Black Fibrous Heterogeneous	75%	Cellulose	25%	Non-fibrous (other)		**None Detected**
006C *061404829-0016*	Paper-Brw-Paper Pipe Insulation on 2" Pipe - Former Inaccessible Area	Tan/Black Fibrous Heterogeneous			100%	Non-fibrous (other)	**<1%**	**Chrysotile**
007A *061404829-0017*	Window Glazing-Off-White-Window Glazing from - Windows on Basement Floor	Gray Non-Fibrous Heterogeneous			95%	Non-fibrous (other)	**5%**	**Chrysotile**
007B *061404829-0018*	Window Glazing-Off-White-Window Glazing from - Windows on Basement Floor							**Stop Positive (Not Analyzed)**
008A *061404829-0019*	Plaster-Off-White-Ceiling Plaster-Throughout	Gray Fibrous Heterogeneous	5%	Cellulose	40% 55%	Quartz Non-fibrous (other)		**None Detected**
008B *061404829-0020*	Plaster-Off-White-Ceiling Plaster-Throughout	Gray Fibrous Heterogeneous	5%	Cellulose	35% 60%	Quartz Non-fibrous (other)		**None Detected**
008C *061404829-0021*	Plaster-Off-White-Ceiling Plaster-Throughout	Gray Fibrous Heterogeneous	5%	Cellulose	45% 50%	Quartz Non-fibrous (other)		**None Detected**

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Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
008D *061404829-0022*	Plaster-Off-White-Ceiling Plaster-Throughout	Gray Fibrous Heterogeneous	5%	Cellulose	45% 50%	Quartz Non-fibrous (other)	**None Detected**
008E *061404829-0023*	Plaster-Off-White-Ceiling Plaster-Throughout	Gray Fibrous Heterogeneous	5%	Cellulose	45% 50%	Quartz Non-fibrous (other)	**None Detected**
008F *061404829-0024*	Plaster-Off-White-Ceiling Plaster-Throughout	Gray Fibrous Heterogeneous	5%	Cellulose	45% 50%	Quartz Non-fibrous (other)	**None Detected**
008G *061404829-0025*	Plaster-Off-White-Ceiling Plaster-Throughout	Gray Fibrous Heterogeneous	5%	Cellulose	45% 50%	Quartz Non-fibrous (other)	**None Detected**
009A *061404829-0026*	Flooring-Brown-Top Layer of Troweled Floor - Semintishes floor over concrete	Gray Non-Fibrous Heterogeneous			40% 60%	Quartz Non-fibrous (other)	**None Detected**
009B *061404829-0027*	Flooring-Brown-Top Layer of Troweled Floor - Semintishes floor over concrete	Gray Non-Fibrous Heterogeneous			40% 60%	Quartz Non-fibrous (other)	**None Detected**
009C *061404829-0028*	Flooring-Brown-Top Layer of Troweled Floor - Semintishes floor over concrete	Gray Non-Fibrous Heterogeneous			40% 60%	Quartz Non-fibrous (other)	**None Detected**

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Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
010A *061404829-0029*	Flooring-Off White-2nd layer of troweled Floor - Sementishes Floor over concrete	Tan Non-Fibrous Homogeneous	3%	Cellulose	60% 30% 7%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
010B *061404829-0030*	Flooring-Off White-2nd layer of troweled Floor - Sementishes Floor over concrete	Tan Non-Fibrous Homogeneous	2%	Cellulose	55% 35% 8%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
010C *061404829-0031*	Flooring-Off White-2nd layer of troweled Floor - Sementishes Floor over concrete	Tan Non-Fibrous Homogeneous			60% 30% 10%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
011A *061404829-0032*	Ceiling-White-Concrete Ceiling	Brown Non-Fibrous Homogeneous			35% 45% 20%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
011B *061404829-0033*	Ceiling-White-Concrete Ceiling	White Non-Fibrous Homogeneous			35% 40% 25%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
012A *061404829-0034*	Ceiling Paint-White-Paint Chip on Concrete Ceiling	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**

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Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
012B *061404829-0035*	Ceiling Paint-White-Paint Chip on Concrete Ceiling	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
013A *061404829-0036*	Pipe Insulation-Brown-2" Pipe Insulation - Throughout	Gray Fibrous Homogeneous	40%	Cellulose	25%	Non-fibrous (other)	**35%**	**Chrysotile**
013B *061404829-0037*	Pipe Insulation-Brown-2" Pipe Insulation - Throughout							**Stop Positive (Not Analyzed)**
013C *061404829-0038*	Pipe Insulation-Brown-2" Pipe Insulation - Throughout							**Stop Positive (Not Analyzed)**
014A *061404829-0039*	Pipe Insulation-Brown-4" Pipe Insulation - Throughout	Brown/Gray Fibrous Homogeneous	30%	Cellulose	20%	Non-fibrous (other)	**50%**	**Chrysotile**
014B *061404829-0040*	Pipe Insulation-Brown-4" Pipe Insulation - Throughout							**Stop Positive (Not Analyzed)**
014C *061404829-0041*	Pipe Insulation-Brown-4" Pipe Insulation - Throughout							**Stop Positive (Not Analyzed)**

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**%**	**Type**
015A *061404829-0042*	Pipe Insulation-Brown-6" Pipe Insulation - Throughout	Gray/White Non-Fibrous Homogeneous	20%	Cellulose	20%	Non-fibrous (other)	**60%**	**Chrysotile**
015B *061404829-0043*	Pipe Insulation-Brown-6" Pipe Insulation - Throughout						**Stop Positive (Not Analyzed)**	
015C *061404829-0044*	Pipe Insulation-Brown-6" Pipe Insulation - Throughout						**Stop Positive (Not Analyzed)**	
016A *061404829-0045*	Pipe Insulation-White-10" Pipe Insulation - Throughout	White Fibrous Homogeneous			55%	Non-fibrous (other)	**45%**	**Chrysotile**
016B *061404829-0046*	Pipe Insulation-White-10" Pipe Insulation - Throughout						**Stop Positive (Not Analyzed)**	
016C *061404829-0047*	Pipe Insulation-White-10" Pipe Insulation - Throughout						**Stop Positive (Not Analyzed)**	
017A *061404829-0048*	Pipe Insulation-White-12" Pipe Insulation - Throughout	White Fibrous Homogeneous			60%	Non-fibrous (other)	**40%**	**Chrysotile**

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Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
017B *061404829-0049*	Pipe Insulation-White-12" Pipe Insulation - Throughout				**Stop Positive (Not Analyzed)**
017C *061404829-0050*	Pipe Insulation-White-12" Pipe Insulation - Throughout				**Stop Positive (Not Analyzed)**
018A *061404829-0051*	Sealant-Brown-Duct Sealant to Outside return - (ductwork)	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
018B *061404829-0052*	Sealant-Brown-Duct Sealant to Outside return - (ductwork)	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
019A *061404829-0053*	Semintish Coating Wall-Tan-Coating on Walls to - Cooler Area	Tan Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (other)	**None Detected**
019B *061404829-0054*	Semintish Coating Wall-Tan-Coating on Walls to - Cooler Area	Tan Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (other)	**None Detected**
020A *061404829-0055*	Textured Paint-Tan-Textured Paint on Metal - Work Area	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos	
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**	
020B *061404829-0056*	Textured Paint-Tan-Textured Paint on Metal - Work Area	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)		**None Detected**
021A *061404829-0057*	Flooring-Brown/Black-Floor Covering Asphalt Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)		**None Detected**
021B *061404829-0058*	Flooring-Brown/Black-Floor Covering Asphalt Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)		**None Detected**
022A *061404829-0059*	Transite-Beige-Transite Board-Electrical Board - near ductwork	Gray Fibrous Homogeneous		15% Non-fibrous (other)	**85%**	**Chrysotile**
022B *061404829-0060*	Transite-Beige-Transite Board-Electrical Board - near ductwork					**Stop Positive (Not Analyzed)**
023A *061404829-0061*	Roofing-Black-Asphalt Roofing by Ductwork	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)		**None Detected**
023B *061404829-0062*	Roofing-Black-Asphalt Roofing by Ductwork	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)		**None Detected**

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Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos % Type
024A-white *061404829-0063*	Flue Cement-Off White-Flue Cement	White Non-Fibrous Homogeneous			40% 20% 40%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
024A-brown *061404829-0063A*	Flue Cement-Off White-Flue Cement	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
024B *061404829-0064*	Flue Cement-Off White-Flue Cement	White Fibrous Homogeneous			50% 25% 25%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
025A *061404829-0065*	Paper-Black-Paper between window sash & header	Brown Fibrous Homogeneous	85%	Fibrous (other)	15%	Non-fibrous (other)	**None Detected**
025B *061404829-0066*	Paper-Black-Paper between window sash & header	Brown Non-Fibrous Homogeneous	85%	Fibrous (other)	15%	Non-fibrous (other)	**None Detected**
026A *061404829-0067*	Mortar-Off White-Mortar between Brick	White Non-Fibrous Homogeneous			50% 25% 25%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**
026B *061404829-0068*	Mortar-Off White-Mortar between Brick	White Non-Fibrous Homogeneous			50% 20% 30%	Quartz Ca Carbonate Non-fibrous (other)	**None Detected**

Analyst(s)

Daniel Clarke (23) *Taylor Becker (28)*
Ellen Russell (8)

Michelle McGowan, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from 04/24/2014 13:59:50

EMSL Analytical, Inc.
528 Mineola Avenue, Carle Place, NY 11514
Phone/Fax: (516) 997-7251 / (516) 997-7528
http://www.EMSL.com carleplacelab@emsl.com

EMSL Order:	061404829
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/22/14 9:45 AM
Analysis Date:	4/23/2014
Collected:	

Project: **J1147126/MASS MILLS/BASEMENT**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
027A *061404829-0069*	Mortar-Off White-Mortar between Stone Foundation	Brown Non-Fibrous Homogeneous			40% 60%	Ca Carbonate Non-fibrous (other)	**None Detected**
027B *061404829-0070*	Mortar-Off White-Mortar between Stone Foundation	Brown Non-Fibrous Homogeneous			40% 60%	Ca Carbonate Non-fibrous (other)	**None Detected**
028A *061404829-0071*	Gasket-Brown-Gasket between Flange on Pipe	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
028B *061404829-0072*	Gasket-Brown-Gasket between Flange on Pipe	Brown Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
029A *061404829-0073*	Gasket-Off White-24" Pipe Gasket around lead - inside of Flange	Brown Fibrous Homogeneous	15%	Cellulose	25% 60%	Ca Carbonate Non-fibrous (other)	**None Detected**
029B *061404829-0074*	Gasket-Off White-24" Pipe Gasket around lead - inside of Flange	Brown Fibrous Homogeneous	15%	Cellulose	25% 60%	Ca Carbonate Non-fibrous (other)	**None Detected**

Analyst(s)

Daniel Clarke (23) *Taylor Becker (28)*
Ellen Russell (8)

Michelle McGowan, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from 04/24/2014 13:59:50

THIS IS THE LAST PAGE OF THE REPORT.

OrderID: 031415380

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Chain of Custody

EMSL Order Number (*Lab Use Only*): 061404829

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: TERRACON CONSULTANTS, INC.	EMSL-Bill to: ☒ Same ☐ Different If Bill to is Different note instructions in Comments**
Street: 77 SUNDIAL AVE., SUITE 401 W	Third Party Billing requires written authorization from third party
City: MANCHESTER State/Province: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RYAN D. ROUILLARD	Fax #: 603.647.4432
Telephone #: 1-781-603-5375	Email Address: RDROUILLARD@TERRACON.COM
Project Name/Number: J1147126 / MASS MILLS / BASEMENT	
Please Provide Results: ☐ Fax ☒ Email Purchase Order:	U.S. State Samples Taken: MA

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☒ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For RUSH TAT's Please Call Ahead to Confirm Lab Hours and Availability. Not all TAT options are valid for every test. Materials Science and IAQ TATs are in Business Days rather than Hours (i.e. 24 Hour = End of Next Business Day)*

Asbestos

PCM - Air
☐ NIOSH 7400
☐ w/ 8hr. TWA

TEM– Air ☐ 4-4.5hr TAT (AHERA ONLY)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Water
Fibers ≥10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

PLM - Bulk
☒ PLM EPA 600/R-93/116
☐ PLM EPA NOB (<1%)
☐ NYS 198.1 (friable-NY)
☐ NYS 198.6 (non-friable-NY)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/ Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)

TEM - Dust
☐ Microvac – ASTM D 5755
☐ Wipe-ASTM D6480

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP

Soil/Rock/Vermiculite
☐ PLM CARB 435 – A (0.25% sensitivity)
☐ PLM CARB 435 – B (0.1% sensitivity)
☐ TEM CARB 435 – B (0.1% sensitivity)
☐ EPA Reg. 1 Screening Protocol (Qualitative)

Other:

Lead (Pb)

Flame Atomic Absorption
☐ Chips SW846-7000B or AOAC 974.02
☐ Soil SW846-7000B/7420
☐ Air NIOSH 7082
☐ Wastewater SM3111B or SW846-7000B/7420
☐ ASTM Wipe SW846-7000B/7420
☐ non ASTM Wipe SW846-7000B/7420
☐ TCLP SW846-1311/7420/SM 3111B

ICP
☐ Air NIOSH 7300 Modified
☐ non ASTM Wipe SW846-6010B or C
☐ ASTM Wipe SW846-6010B or C
☐ Soil SW846-6010 B or C
☐ Waste Water SW846-6010B or C
☐ TCLP SW846-6010B or C

Graphite Furnace Atomic Absorption
☐ Soil SW846-7421 ☐ Wastewater EPA 200.9
☐ Air NIOSH 7105 ☐ Drinking Water EPA 200.9

Other: ☐

Materials Science

☐ Common Particle ID (large particles)
☐ Full Particle ID (environmental dust)
☐ Basic Material ID (solids)
☐ Advanced Material ID
☐ Physical Testing (Tensile, Compression)
☐ Combustion-by-products (soot, char, etc.)
☐ X-Ray Fluorescence (elem. analysis)
☐ X-Ray Diffraction (Crystalline Part.)
☐ MMVF's (Fibrous glass, RCF's)
☐ Particle Size (sieve/microscopy/laser)
☐ Combustible Dust
☐ Petrographic Examination
Other: ☐

Microbiology

Wipe and Bulk Samples
☐ Mold & Fungi – Direct Examination
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi Culture (Genus & Species)
☐ Bacterial Count & ID (Up to Three Types)
☐ Bacterial Count & ID (Up to Five Types)
☐ MRSA
☐ *Pseudomonas aeruginosa*

Water Samples
☐ Total Coliform & E.coli (P/A)
☐ Fecal Coliform (SM 9222D)
☐ Sewage Screen
☐ Heterotrophic Plate Count (SM 9215)

Air Samples
☐ Mold & Fungi (Spore Trap)
☐ Mold & Fungi Culture (Genus Only)
☐ Mold & Fungi (Genus & Species)
☐ Bacterial Culture & ID (Up to Three Types)
☐ Bacterial Culture & ID (Up to Five Types)
☐ Endotoxin Testing

Real Time Q-PCR (See Analytical Guide for Code)
Code:

Legionella
☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4

Other: ☐

IAQ

Nuisance Dust NIOSH ☐ 0500 ☐ 0600
Airborne Dust ☐ PM10 ☐ TSP
Silica Analysis: ☐ All Species
Silica Analysis – Single Species
☐ Alpha Quartz ☐ Cristobalite ☐ Tridymite
☐ HVAC Efficiency
☐ Carbon Black
☐ Airborne Oil Mist
Radon Testing: Call for Kit and COC
Other: ☐

****Comments/Special Instructions:** STOP AT 1ST POSITIVE PER H.A.

Client Sample #'s	- 001A → 029B	Total # of Samples:	29 SAMPLES
Relinquished (Client):	Date: 4/21/14	Time:	16:00
Received (Lab):	Date: 4/23/14	Time:	

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Analysis Completed in Accordance with EMSL's Terms and Conditions located in the Analytical Price Guide

Controlled Document-OneChain-R2-1/12/2010

4PS 12070 20222 1864 6254

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

ASBESTOS BULK SAMPLING LOG

74

Basement

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J11471126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	001A	Paint Chip	white	Brick WAll Basement			
	001B	"	"	" "			
	002A	Paint Chip	White	former Inaccessible Area metal Pipe / Column			
	002B	"	white	" "			
	003A	Paper Wrap	Brw	former Inaccesible Area 10" Pipe Insulation			
	003B	"	"	" "			
	003C	"	"	" "			
	004A	Debris	Off-white	Floor Debris throughout			
	004B	"	"	" "			
	004C	"	"	" "			

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OrderID: 031415380

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
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Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Basement

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 2 of 8

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	005 A	Pipe Insulation	white	TSI on 20" Pipe			
	005 B	"	"	" "			
	005 C	"	"	" "			
	006 A	Paper	Brw	Paper Pipe insulation on 2" Pipe Former Inaccessible AREA			
	006 B	"	"	" "			
	006 C	"	"	" "			
	007 A	Window Glazing	off-white	Window Glazing from windows on Basement floor			
	007 B	"	"	" "			
	008 A	Plaster	off-white	Ceiling Plaster ThroughOUT			
	008 B	"	"	" "			

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Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Basement

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 3 of 8

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	008C	Plaster	off-white	Ceiling Plaster Throught			
	008D	↓	↓	↓			
	008E	↓	↓	↓			
	008F	↓	↓	↓			
	008G	↓	↓	↓			
	009A	Flooring	Brown	Top layer of trowled floor Semintishes floor over concrete			
	009B	↓	↓	↓			
	009C	↓	↓	↓			
	010A	Flooring	offwhite	2nd layer of trowled floor Semintishes floor over concrete			
	010B	"	"	" "			

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ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Basement

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 4 of 8

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	010C	Flooring	off-white	2nd layer of seminttishes floor over concrete			
	011A	Ceiling	white	Concrete Ceiling			
	011B	"	"	" "			
	012A	Ceiling Paint	white	Paint Chip on concrete Ceiling			
	012B	"	"	" "			
	013A	Pipe Insulation	Brown	2" pipe Insulation Throughout			
	013B	↓	↓	↓			
	013C	↓	↓	↓			
	014A	Pipe Insulation	Brown	4" Pipe Insulation Throughout			
	014B	"	"	"			

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ASBESTOS BULK SAMPLING LOG

Terracon
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Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Basement

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	014 C	Pipe Insulation	Brown	4" Pipe Insulation Through out			
	015A	Pipe Insulation	Brown	6" Pipe Insulation Throughout			
	015B	↓	↓	↓			
	015C	↓	↓	↓			
	016 A	Pipe Insulation	white	10" Pipe Insulation Throughout			
	016 B	↓	↓	↓			
	016 C	↓	↓	↓			
	017A	Pipe Insulation	white	12" Pipe Insulation Throughout			
	017B	↓	↓	↓			
	017C	↓	↓	↓			

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By

ASBESTOS BULK SAMPLING LOG

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Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Basement

Inspector: RICHARD HAINES/RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 6 of 8

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	018A	Sealant	Brown	Duct sealant to outside return (Ductwork)			
	018B	"	"	" "			
	019A	Semintish Coating WALL	Tan	Coating on walls to Cooler Area			
	019B	"	"	" "			
	020A	Textured Paint	Tan	Textured Paint on metal work AREA			
	020B	"	"	" "			
	021A	Flooring	Brown/Black	Floor Covering Asphalt base			
	021B	"	"	" "			
	022A	Transite	Beige	Transite Board - Electrical Board near Ductwork			
	022B	"	"	" "			

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By SCR 9/45

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ASBESTOS BULK SAMPLING LOG

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Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Basement

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 7 of 8

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	023A	Roofing	Black	Asphalt Roofing By Duckwork			
	023B	Roofing	Black	" "			
	024A	Flue Cement	off white	Flue Cement			
	024B	"	"	" "			
	025A	Paper	Black	Paper between Window Sash & Header			
	025B	"	"	" "			
	026A	Mortar	off-white	Mortar Between Brick			
	026B	"	"	" "			
	027A	Mortar	off-white	Mortar Between Stone Foundation			
	027B	"	"	" "			

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By

ASBESTOS BULK SAMPLING LOG

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77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Basement

Inspector: RICHARD HAINES / RYAN ROUILLARD
Client / Project Name: MASS MILLS
Project Number: J1147126
Building Number/Address: 150 MASS MILLS DR.
Building Name / Description: VACANT

p. 8 of 8

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	628A	Gasket	Brown	Gasket between Flange on Pipe			
	028B	"	"	"			
	029A	Gasket	off white	24" Pipe Gasket around lead inside of Flange			
	029B	"	"	" "			

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By EM 9:45

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401561
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **J1147126 / Mass Mills; Bldg 3**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
133A *131401561-0001*	Exterior; btw Wood Casing and Brick Siding - White Caulking	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
133B *131401561-0002*	Exterior; btw Wood Casing and Brick Siding - White Caulking	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
134A *131401561-0003*	Exterior; btw Stone Sill and Brick Siding - White Caulking	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
134B *131401561-0004*	Exterior; btw Stone Sill and Brick Siding - White Caulking	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
135A *131401561-0005*	Exterior; Wood Pane Windows - Beige Glazing	White Non-Fibrous Homogeneous	<1% Fibrous (other)	100% Non-fibrous (other)	**None Detected**
			TEM analysis is recommended for this sample.		
135B *131401561-0006*	Exterior; Wood Pane Windows - Beige Glazing	White Non-Fibrous Homogeneous	<1% Fibrous (other)	100% Non-fibrous (other)	**None Detected**
			TEM analysis is recommended for this sample.		
136A *131401561-0007*	Exterior; around Doorway - Green/Black Siding	Black/Green Non-Fibrous Homogeneous		90% Non-fibrous (other)	**10% Chrysotile**

Analyst(s)

Kevin Pine (10)
Steve Grise (11)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 14:28:14

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401561
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **J1147126 / Mass Mills; Bldg 3**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
136B *131401561-0008*	Exterior; around Doorway - Green/Black Siding	Black/Green Non-Fibrous Homogeneous			90%	Non-fibrous (other)	**10%**	**Chrysotile**
137A *131401561-0009*	Exterior; behind Asphalt Siding - Brown Insulation	Tan/Black Fibrous Homogeneous	80%	Cellulose	20%	Non-fibrous (other)		**None Detected**
137B *131401561-0010*	Exterior; behind Asphalt Siding - Brown Insulation	Tan/Black Fibrous Homogeneous	80%	Cellulose	20%	Non-fibrous (other)		**None Detected**
146A *131401561-0011*	Exterior; River Side Coating on Wall - Grey Mortar	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
146B *131401561-0012*	Exterior; River Side Coating on Wall - Grey Mortar	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
147A *131401561-0013*	Exterior; Duct Work behind Building - Brown Insulation	Brown Fibrous Homogeneous	95%	Hair	5%	Non-fibrous (other)		**None Detected**
147B *131401561-0014*	Exterior; Duct Work behind Building - Brown Insulation	Brown Fibrous Homogeneous	95%	Hair	5%	Non-fibrous (other)		**None Detected**
147C *131401561-0015*	Exterior; Duct Work behind Building - Brown Insulation	Brown Fibrous Homogeneous	95%	Hair	5%	Non-fibrous (other)		**None Detected**

Analyst(s)

Kevin Pine (10)
Steve Grise (11)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 14:28:14

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401561
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **J1147126 / Mass Mills; Bldg 3**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
148A *131401561-0016*	Exterior; River Side - White Caulking	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
148B *131401561-0017*	Exterior; River Side - White Caulking	Gray/White Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
149A *131401561-0018*	Exterior; against Building - Black Asphalt	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
149B *131401561-0019*	Exterior; against Building - Black Asphalt	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
150A *131401561-0020*	Exterior; Between Brick - Grey Mortar	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
150B *131401561-0021*	Exterior; Between Brick - Grey Mortar	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

Analyst(s)

Kevin Pine (10)
Steve Grise (11)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 14:28:14

THIS IS THE LAST PAGE OF THE REPORT.

131401561

SW 4/29/14

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Exterior

Inspector: R. Jacobs / R. Rouillard
Client / Project Name: MASS Mills
Project Number: J1147126
Building Number/Address: BLDG 3
Building Name / Description: Former Mill

	H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
1		133A	CAULKING	white	Window caulking between wood casing and brick siding			
2		133B	"	"	" "			
3		134A	Caulking	white	caulking between stone sill and brick siding			
4		134B	"	"	" "			
5		135A	Glazing	Beige	Exterior window glazing wood Pane windows			
6		135B	"	Beige	" "			
7		136A	siding	Green Black	Asphalt siding around doorway			
8		136B	"	"	" "			
		137A	Insulation	Brown	Fiber Backing Insulation behind Asphalt siding			
		137B	"	"	" "			

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OrderID: 031415380

131401561

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Exterior

Inspector: R. Jacobs / R. Rouillard
Client / Project Name: Mass Mills
Project Number: J1147126
Building Number/Address: BLDG 3
Building Name / Description: Former Mill

	H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
11		146A	Mortar	gray	Mortar riverside semitishum coating on wall			
12		146B	"	"	" "			
13		147A	Insulation	Brown	Fibous insultion on ductwork behind Building			
14		147B	"	"	↓			
15		147C	↓	↓	↓			
16		148A	Caulking	white	Window Caulking Riverside			
17		148B	"	"	"			
18		149A	Asphalt	Black	Asphalt against building			
		149B	"	"	"			
2		150A	Mortar	Gray	Exterior Mortar - between brick			
2		150B	"	"	"			

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By SU 0830

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EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401560
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **J1147126 / Mass Mills; Bldg 3**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos % Type
144A *131401560-0001*	Roof; Throughout; Top Layer Roof System - Black Asphalt Roof	Black Fibrous Homogeneous	35%	Cellulose	65%	Non-fibrous (other)	**None Detected**
144B *131401560-0002*	Roof; Throughout; Top Layer Roof System - Black Asphalt Roof	Black Fibrous Homogeneous	40%	Cellulose	60%	Non-fibrous (other)	**None Detected**
144C *131401560-0003*	Roof; Throughout; Top Layer Roof System - Black Asphalt Roof	Black Fibrous Homogeneous	40% 5%	Cellulose Glass	55%	Non-fibrous (other)	**None Detected**
144D *131401560-0004*	Roof; Throughout; Top Layer Roof System - Black Asphalt Roof	Black Fibrous Homogeneous	40%	Cellulose	60%	Non-fibrous (other)	**None Detected**
145A *131401560-0005*	Roof; Throughout; Bottom Layer Roof System - Black Asphalt Roof	Black Fibrous Homogeneous	65%	Cellulose	35%	Non-fibrous (other)	**None Detected**
145B *131401560-0006*	Roof; Throughout; Bottom Layer Roof System - Black Asphalt Roof	Black Fibrous Homogeneous	65%	Cellulose	35%	Non-fibrous (other)	**None Detected**
145C *131401560-0007*	Roof; Throughout; Bottom Layer Roof System - Black Asphalt Roof	Black Fibrous Homogeneous	65%	Cellulose	35%	Non-fibrous (other)	**None Detected**

Analyst(s)

Fievel Lam (13)
Kevin Pine (9)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 18:28:02

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401560
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **J1147126 / Mass Mills; Bldg 3**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
145D *131401560-0008*	Roof; Throughout; Bottom Layer Roof System - Black Asphalt Roof	Black Fibrous Homogeneous	60%	Cellulose	40%	Non-fibrous (other)		**None Detected**
151A *131401560-0009*	Roof around Roof Penetrations - Black Roof Cement	Black Fibrous Homogeneous			80%	Non-fibrous (other)	**20%**	**Chrysotile**
151B *131401560-0010*	Roof around Roof Penetrations - Black Roof Cement	Black Non-Fibrous Homogeneous			80%	Non-fibrous (other)	**20%**	**Chrysotile**
151.1A *131401560-0011*	Roof; on Wood Deck - Black Roof Mop Coat	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
151.1B *131401560-0012*	Roof; on Wood Deck - Black Roof Mop Coat	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
138A *131401560-0013*	Roof; Top Coat of Parapet Wall - Grey Mortar	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
138B *131401560-0014*	Roof; Top Coat of Parapet Wall - Grey Mortar	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
139A *131401560-0015*	Roof; Bottom Coat of Parapet Wall - Off White Mortar	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**

Analyst(s)

Fievel Lam (13)
Kevin Pine (9)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 18:28:02

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401560
CustomerID:	JAWO50
CustomerPO:	
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	04/28/14 8:30 AM
Analysis Date:	4/30/2014
Collected:	

Project: **J1147126 / Mass Mills; Bldg 3**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Fibrous %	Non-Fibrous	Asbestos %	Type
139B *131401560-0016*	Roof; Bottom Coat of Parapet Wall - Off White Mortar	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
140A *131401560-0017*	Roof; Top Coat on Flashing; Bottom of Parapet Wall - Grey Sealant	Black Fibrous Homogeneous			80%	Non-fibrous (other)	**20%**	**Chrysotile**
140B *131401560-0018*	Roof; Top Coat on Flashing; Bottom of Parapet Wall - Grey Sealant	Black Non-Fibrous Homogeneous			80%	Non-fibrous (other)	**20%**	**Chrysotile**
141A *131401560-0019*	Roof; Bot Coat on Flashing; Bottom of Parapet Wall - Black Sealant	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
142B *131401560-0020*	Roof; Bot Coat on Flashing; Bottom of Parapet Wall - Black Sealant	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)		**None Detected**
143A *131401560-0021*	Roof; around Roof Access - Black Shingles	Black Fibrous Homogeneous	40%	Cellulose	60%	Non-fibrous (other)		**None Detected**
143B *131401560-0022*	Roof; around Roof Access - Black Shingles	Black Non-Fibrous Homogeneous	30%	Cellulose	70%	Non-fibrous (other)		**None Detected**

Analyst(s)

Fievel Lam (13)
Kevin Pine (9)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 04/30/2014 18:28:02

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131401560

(SU) 4/29/14

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Roof

Inspector: R. JACOBS / R. ROUILLARD
Client / Project Name: MASS MILLS - BLDG 3
Project Number: J1147126
Building Number/Address: BLDG 3
Building Name / Description: FORMER MILL

	H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
1		144A	Asphalt Roof	Black	Asphalt roofing through out Top layer Roof system			
2		144B	↓	↓	↓			
3		144C	↓	↓	↓			
4		144D	↓	↓	↓			
5		145A	Asphalt Roof	Black	Asphalt roofing throughout Bottom layer Roof system			
6		145B	↓	↓	↓			
7		145C	↓	↓	↓			
8		145D	↓	↓	↓			
		151A	Roof Cement	Black	Around Roof penarations			
		151B	"	"	"			

151.1A Roof Mop Coat shiny on wood deck
151.1B

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Page 1 Of 4

OrderID: 031415380

131401560

ASBESTOS BULK SAMPLING LOG

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

Roof

Inspector: R. Jacobs / R. Rouillard
Client / Project Name: Mass Mills
Project Number: J1147126
Building Number/Address: Bldg 3
Building Name / Description: Former Mill

	H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
13		138A	Mortar	gray	Top coat of parapet wall Coarse in texture			
14		138B	"	"	" "			
15		139A	mortar	off-white	bottom coat of parapet wall smooth in texture			
16		139B	"		" "			
17		140A	Sealant	gray	Top coat of Sealant on Flashing at bottom of Parapet Wall			
18		140B	Sealant	"	" "			
19		141A	Sealant	black	Bottom coat of Sealant on Flashing at bottom of Parapet WALL			
20		142B	"	"	" "			
21		143A	Shingles	Black	Asphalt shingles around roof access			
22		143B	"	"	" "			

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Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*:

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

WOBURN, MA
EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974

Company: TERRACON CONSULTANTS, INC.	EMSL-Bill to: ☐ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 77 SUNDIAL AVE., SUITE 401 W	
City: MANCHESTER State/Province: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RYAN D. ROUILLARD	Telephone #: 781-603-5375
Email Address: RDROUILLARD@TERRACON.com	Fax #: 603 647-4432 Purchase Order:
Project Name/Number: J1147126/MASS MILLS	Please Provide Results: ☐ Fax ☒ Email ☐ Mail
U.S. State Samples Taken: MA	Connecticut Samples: ☐ Commercial ☐ Residential

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☒ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

COPY

PCM - Air ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☒ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM CARB 435 - A (0.25% sensitivity)
☐ PLM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - C (0.01% sensitivity)
☐ TEM Qual. via Filtration Technique
☐ TEM Qual. via Drop-Mount Technique

Other:
☐

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** **Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

Samplers Name: RICHARD HAINES RYAN ROUILLARD **Samplers Signature:** Richard E. Haines

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
151.2 ~~201~~ A	Yellow Adhesive ~~GLUE DAUBS~~ - 4th FLOOR EXTERIOR ABOVE WINDOWS	BULK	
↓ B	ON WOOD PANELS ↓ ↓	↓	
71 ~~202 A~~ B	FT MASTIC - 3RD FLOOR LAVATORY ON WOOD ~~PANEL~~ SUBFLOOR	MASTIC ONLY	(To Replace insufficient material)
↓ C ~~B~~	↓ ↓ ↓ ↓	↓	
	STOP AT 1st Positive		

COPY

Client Sample # (s): ~~201A → 202B~~ **Total # of Samples:** 4

Relinquished (Client): R E Haines **Date:** 5/5/14 **Time:** 16:45

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

ADDITIONAL SAMPLES (Exterior + 3RD FLR)

ASBESTOS BULK SAMPLING LOG

Inspector: RDR REH
Client / Project Name: J1147126/MASSMILLS
Project Number: MASS MILLS - BLDG #3
Building Number/Address: LOWELL, MA
Building Name / Description:

p. 1 of 1

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	151.2 ~~201~~ A	Yellow Adhesive ~~GLUE DAUBS~~	GRAY	4th FLOOR WOOD PANELS ABOVE EXTERIOR WINDOWS		Cat 1 NF	D
	151.2 ~~201~~ B	↓	↓	↓			
	71 B ~~202~~ A	FLOOR TILE MASTIC	BLK	3RD FLOOR, LAVATORY, WOOD ~~PANEL SUBSTRATE~~ SUBFLOOR		Cat 1 NF	G
	71 C ~~203~~ B	↓	↓	↓	225 SF		

EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone/Fax: (781) 933-8411 / (781) 933-8412
http://www.EMSL.com bostonlab@emsl.com

EMSL Order:	131401674
CustomerID:	JAWO50
CustomerPO:	J1147126
ProjectID:	

Attn: **Ryan Rouillard**
Terracon Consultants, Inc.
77 Sundial Avenue
Suite 401-W
Manchester, NH 03103

Phone:	(603) 647-9700
Fax:	(603) 647-4432
Received:	05/06/14 9:40 AM
Analysis Date:	5/6/2014
Collected:	

Project: **J1147126 / Mass Mills**

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
151.2A *131401674-0001*	4th Fl Wood Panels above Ext Windows - Yellow Adhesive	Gray/White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
151.2B *131401674-0002*	4th Fl Wood Panels above Ext Windows - Yellow Adhesive	White/Yellow Non-Fibrous Heterogeneous			100%	Non-fibrous (other)	**None Detected**
71A *131401674-0003*	3rd Fl Lavatory Wood Sub Floor - Floor Tile Mastic	Black Non-Fibrous Homogeneous	3%	Cellulose	97%	Non-fibrous (other)	**None Detected**
71C *131401674-0004*	3rd Fl Lavatory Wood Sub Floor - Floor Tile Mastic	Black Non-Fibrous Homogeneous	3%	Cellulose	97%	Non-fibrous (other)	**None Detected**

Analyst(s)

Fievel Lam (2)
Steve Grise (2)

Steve Grise, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Woburn, MA NVLAP Lab Code 101147-0, CT PH-0315, MA AA000188, RI AAL-107T3 and VT AL357102

Initial report from 05/06/2014 17:54:53

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OrderID: 031415380

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*): 131401674

EMSL ANALYTICAL, INC.
200 ROUTE ~~130~~ NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-5974
WOBURN, MA

Company: TERRACON CONSULTANTS, INC.	EMSL-Bill to: ☐ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 77 SUNDIAL AVE., SUITE 401 W	
City: MANCHESTER State/Province: NH	Zip/Postal Code: 03103 Country: USA
Report To (Name): RYAN D. ROUILLARD	Telephone #: 781-603-5375
Email Address: RDROUILLARD@TERRACON.COM	Fax #: 603 647-4432 Purchase Order:
Project Name/Number: J1147126/MASS MILLS	Please Provide Results: ☐ Fax ☒ Email ☐ Mail
U.S. State Samples Taken: MA	Connecticut Samples: ☐ Commercial ☐ Residential

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☒ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

COPY

PCM - Air ☐ Check if samples are from NY
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ TEM Qual. via Filtration Technique
- ☐ TEM Qual. via Drop-Mount Technique

Other:
- ☐

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** | **Filter Pore Size (Air Samples):** ☐ 0.8µm ☐ 0.45µm

Samplers Name: RICHARD HAINES, RYAN ROUILLARD | **Samplers Signature:** Richard E. Haines

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
131.2 201 A	Yellow Adhesive ~~GLUE DAUBS~~ - 4th FLOOR EXTERIOR ON WOOD PANELS ABOVE WINDOWS	BULK	
↓ B	↓ ↓		
~~202 A~~	FT MASTIC - 3RD FLOOR ON WOOD ~~PANEL~~ SubFloor LAVATORY	MASTIC ONLY	(To Replace "insufficient material")
↓ CB	↓ ↓ ↓ ↓	↓	
	STOP AT 1ST Positive		

COPY

Client Sample # (s): ~~201A → 202B~~ | **Total # of Samples:** 4

Relinquished (Client): R E Haines | **Date:** 5/5/14 | **Time:** 16:45

Received (Lab): | **Date:** | **Time:**

Comments/Special Instructions:

Controlled Document – Asbestos COC – R5 – 1/11/2012

Page 1 of 1 pages

131401674

Terracon
77 Sundial Avenue
Suite 401W
Manchester, NH 03103
Phone: (603) 647-9700
Fax: (603) 647-4432

ADDTIONAL SAMPLES (Exterior + 3RD FLR)

ASBESTOS BULK SAMPLING LOG

Inspector: RDR REH
Client / Project Name: J11147126/MASSMILLS
Project Number: MASS MILLS - BLDG #3
Building Number/Address: LOWELL, MA
Building Name / Description:

p. 1 of 1

H.A.	Sample Number	Material Description (BS Code optional)	Color	Sample Location	Quantity	NESHAP Category	Condition (G, D, SD)
	151.2 ~~201~~ A	Yellow Adhesive ~~GLUE DAUBS~~	GRAY	4th FLOOR WOOD PANELS ABOVE EXTERIOR WINDOWS		Cat 1 NF	D
	151.2 ~~201~~ B	↓	↓	↓			
	71 B ~~202~~ A	FLOOR TILE MASTIC	BLK	3RD FLOOR, LAVATORY, WOOD ~~PANEL SUBSTRATE~~ SUBFLOOR		Cat 1 NF	G
	71 C ~~202~~ B	↓	↓	↓	225 SF		

OrderID: 031415380

Appendix B
PCB/RCRA-8 Metals Analytical Laboratory Reports

317 Elm Street
Milford, NH 03055

(603) 673-5440
Fax (603) 673-0366
Sales@chemservelab.com

Friday, May 02, 2014

Ryan Rouillard
Terracon Consultants Inc
77 Sundial Ave Suite 401W
Manchester NH 03103

Project Name: Massachusetts Mills - Bldg 3
Project #: J1147126
Project Location: 150 Mass Millis Dr., Lowell MA
Control #: 96400 & 95736

Lab ID: 14040300
Date Received: 4/25/2014

Dear Ryan Rouillard

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

_____
Jay Chrystal - President/Laboratory Director

Certificate Number 1008

MADEP MCP Analytical Method Report Certification and Case Narrative

Job Name:	Massachusetts Mills – Bldg #3	**Lab Number:**	14040300
Job Number:	J1147126	**Control Number:**	96400,95736
Location:	150 Mass Mills Dr., Lowell	**Client:**	Terracon

Sample Matrix: **(X) Soil** **() Groundwater** **() Drinking Water** **() Combined**

MCP SW-846	8260C ( )	8270D ( )	8082A (X)	8081A ( )	7470/7471(X)	9014 ( )
Methods Used	8151A ( )	EPH ()	VPH ()	6010C (X)	7000 series ( )	7196 ( )

	An Affirmative response to questions A through F are required for "Presumptive Certainty" status	**Yes**	**No**
A	Were all samples received in a condition consistent with those described on the chain of custody including proper preservation, lab and field temperatures plus prepared and analyzed within holding times?	**X**	
B	Were all analytical method(s) and associated QC requirements specified in the selected CAM protocols followed?	**X**	
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	**X**	
D	Does the laboratory report comply with all the reporting requirements specified in CAM VIIA "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	**X**	
E	**EPH & VPH methods only:** Was each method conducted without significant modification(s)?		
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative including all negative responses to questions A-F?	**X**	
	Responses to questions G, H & I are required for "Presumptive Certainty" status		
G	Were all the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols?	**X**	
	Data User Note: Data that achieve "Presumptive Certainty" status may not meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(K) and WSC-07-350		
H	Were all QC performance standards specified in the CAM protocol(s) achieved?		**X**
I	Were results reported for the complete analyte list specified in the selected CAM protocols?	**X**	

Case Narrative Section

Inorganic / Metals Analysis Discussion: N/A

Pesticide / PCB Analysis Discussion: N/A

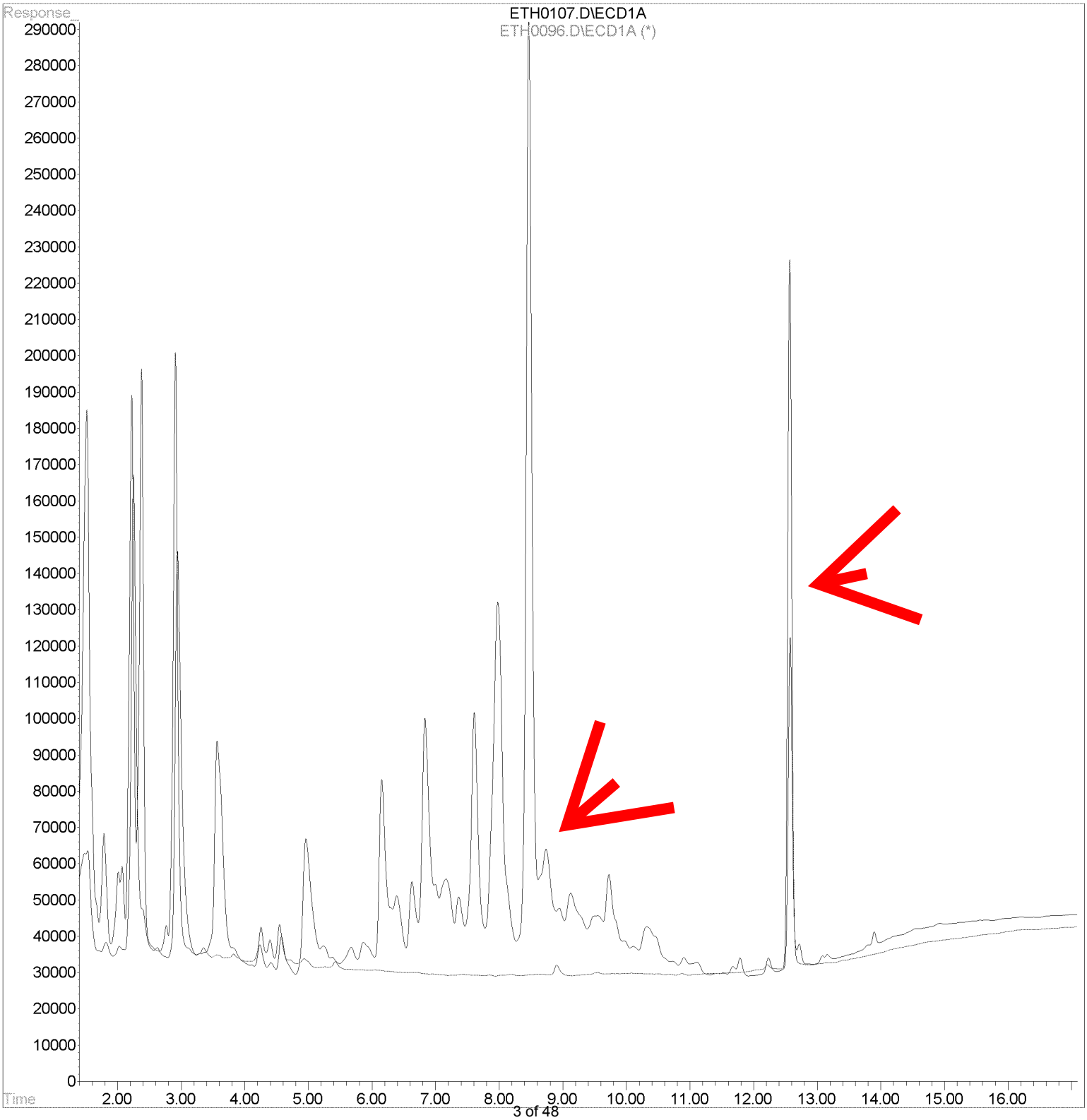
EPH / Semi-volatiles Discussion: Surrogate recovery low due to matrix; relevant chromatogram attached.

VPH / Volatiles Discussion: N/A

2May2014

Jay Chrystal, Laboratory Director ***Date***

File : Y:\3\DATA\2014\050114P\ETH0107.D
Operator :
Acquired : 1 May 2014 6:37 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-001
Misc Info :
Vial Number: 19



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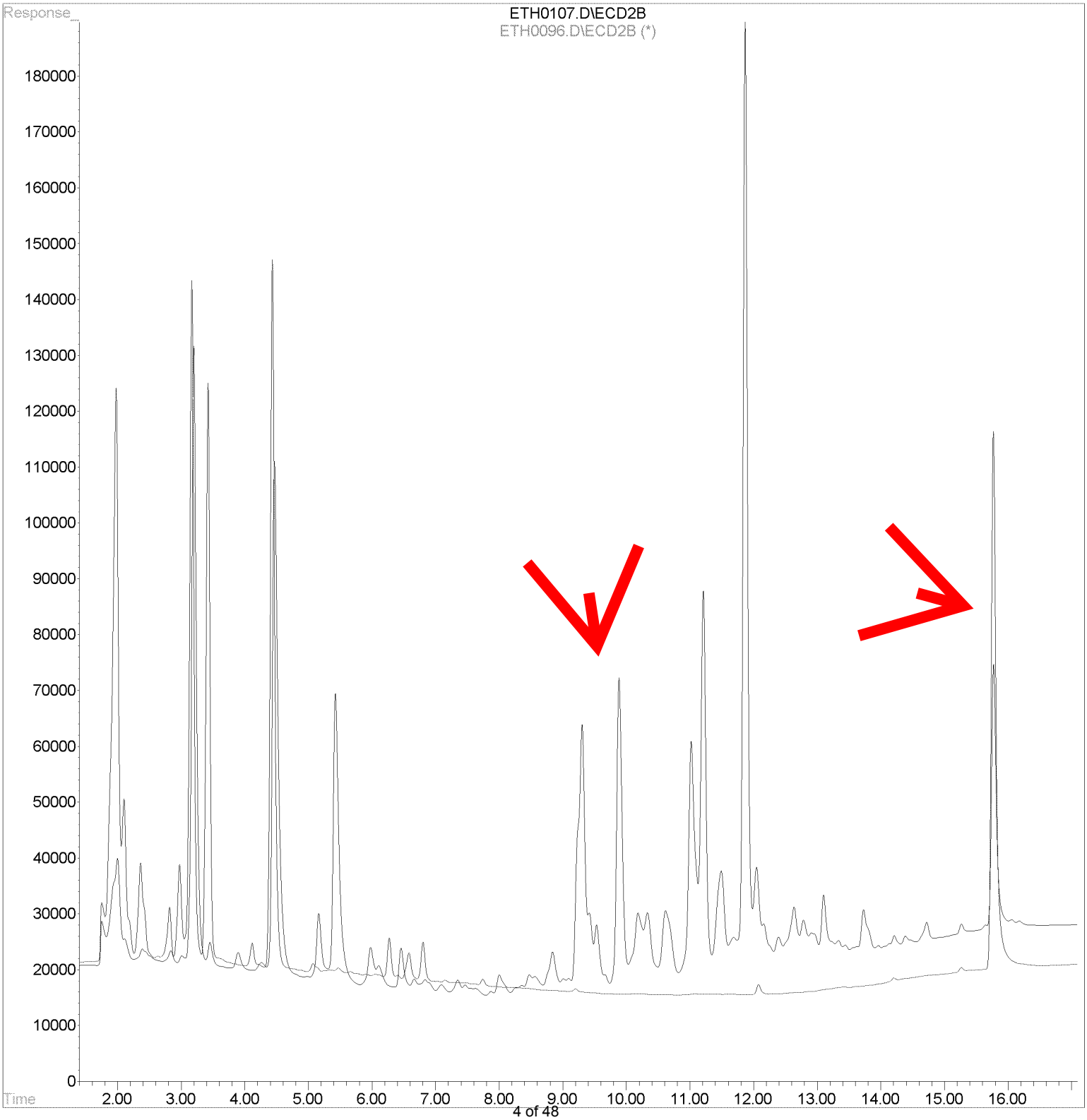
Instrument : GC ECD
Sample Name: 14040300-001
Misc Info :
Vial Number: 19



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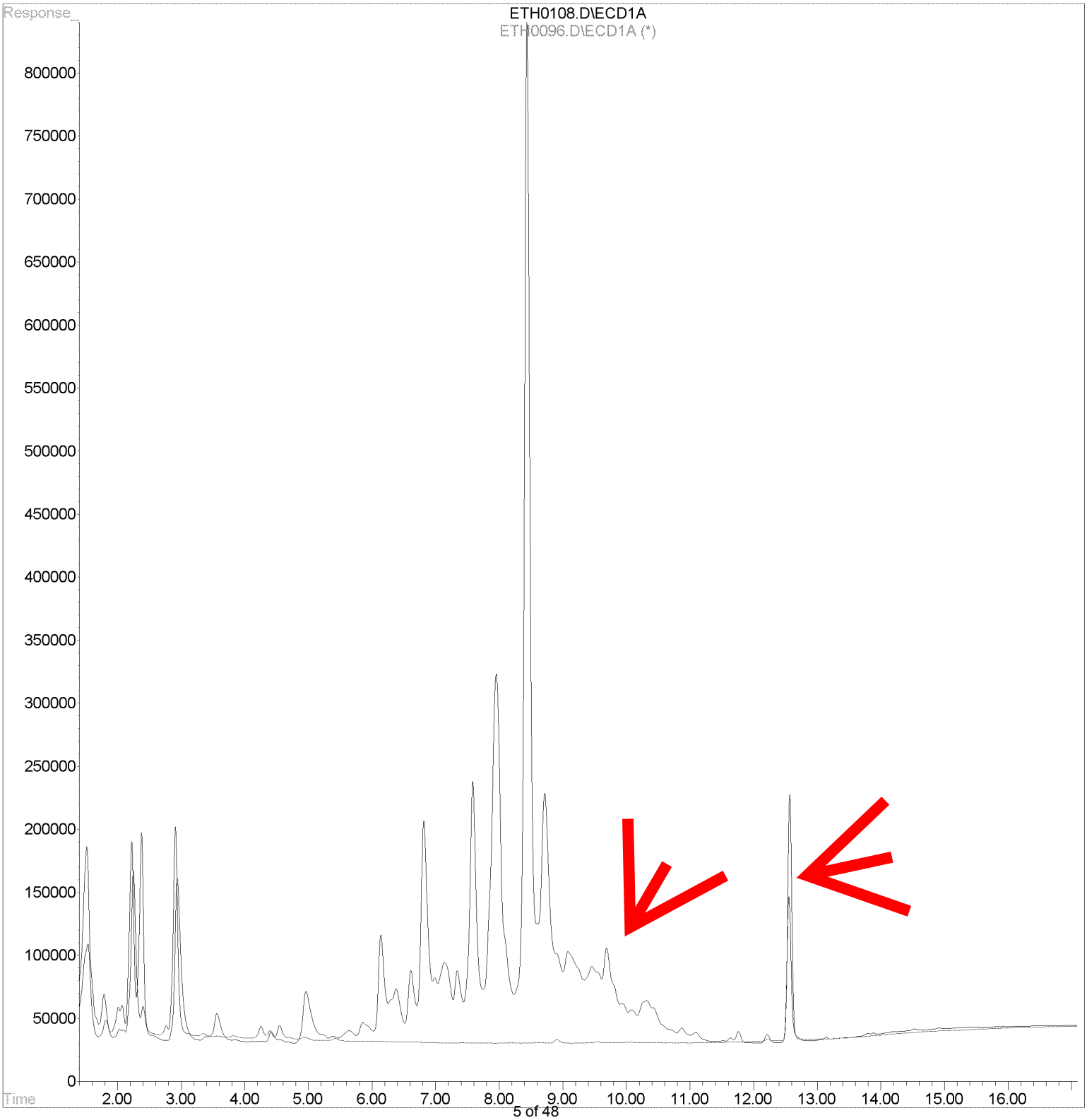
Instrument : GC ECD
Sample Name: 14040300-002
Misc Info :
Vial Number: 20



File : Y:\3\DATA\2014\050114P\ETH0108.D
Operator :
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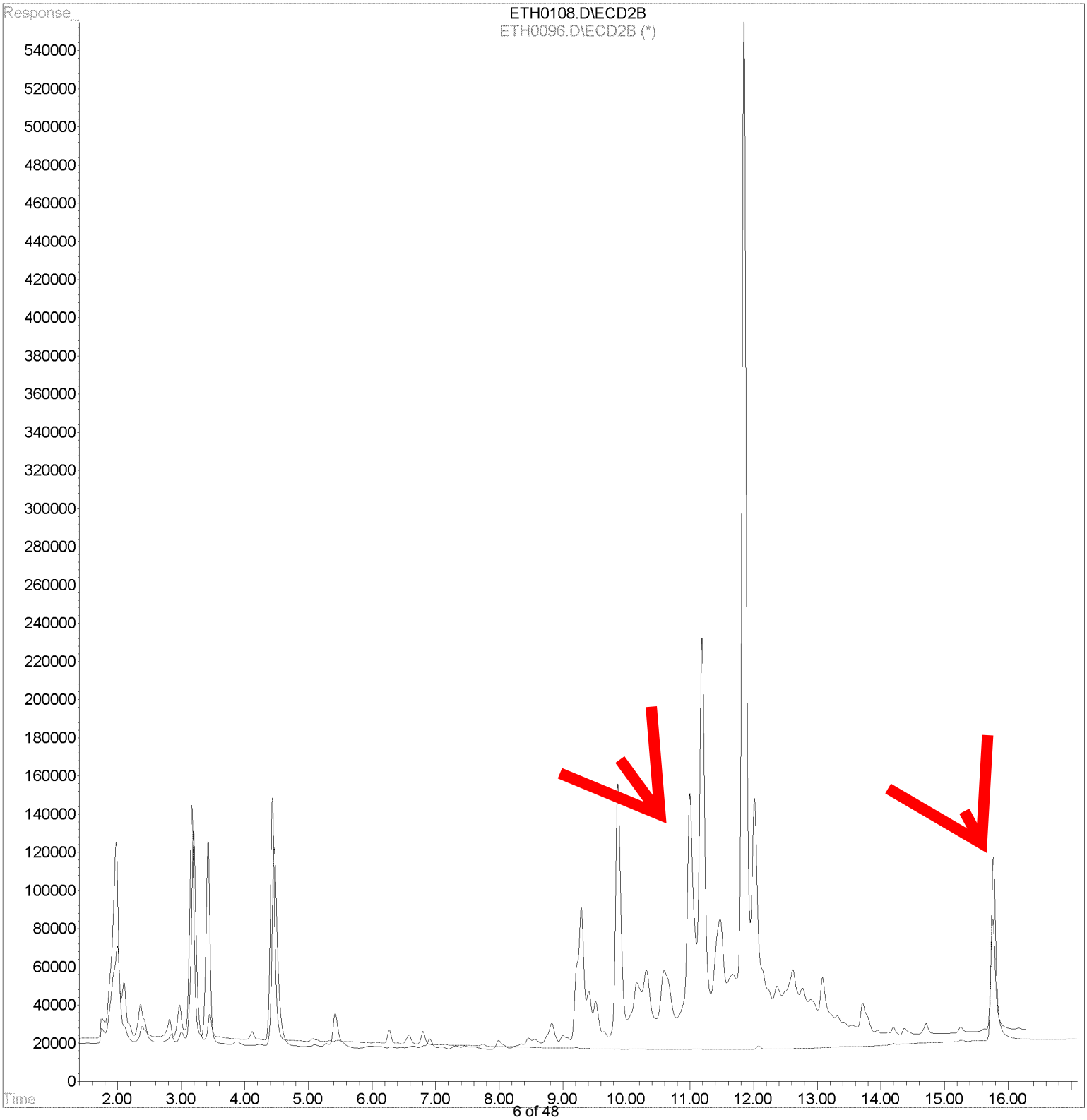
Instrument : GC ECD
Sample Name: 14040300-002
Misc Info :
Vial Number: 20



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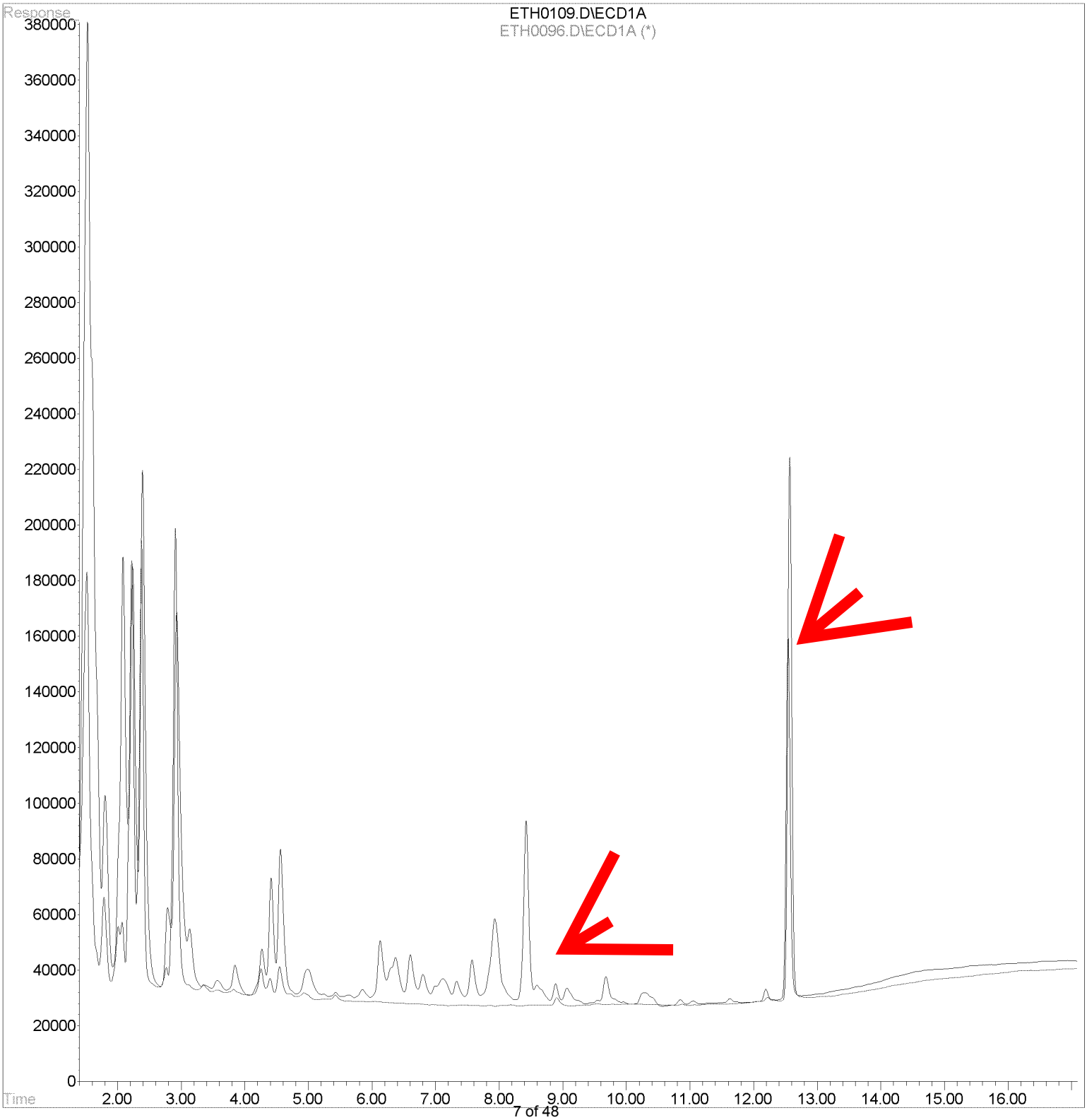
Instrument : GC ECD
Sample Name: 14040300-003
Misc Info :
Vial Number: 21



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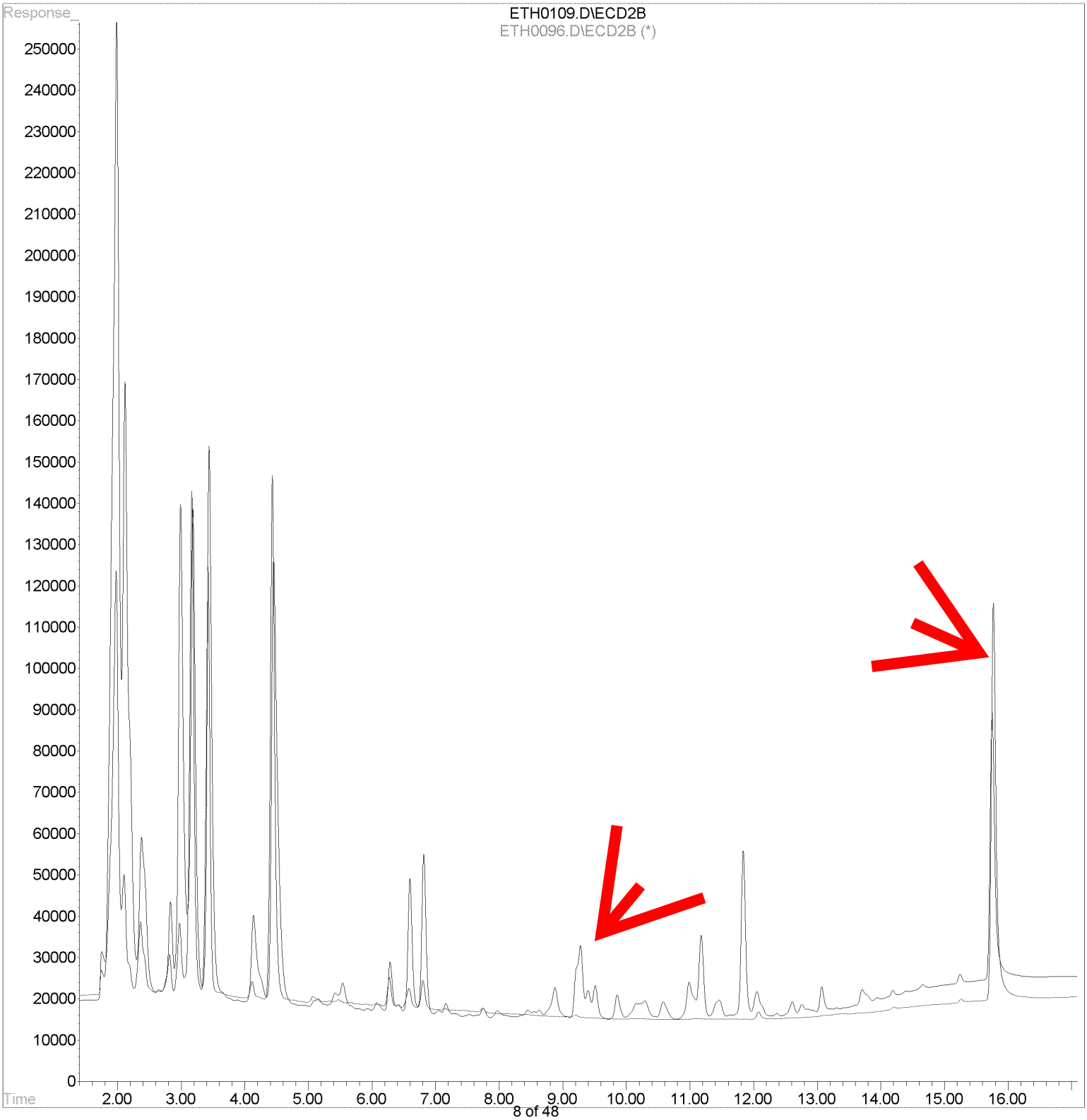
Acquired : 1 May 2014 7:20 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-003
Misc Info :
Vial Number: 21



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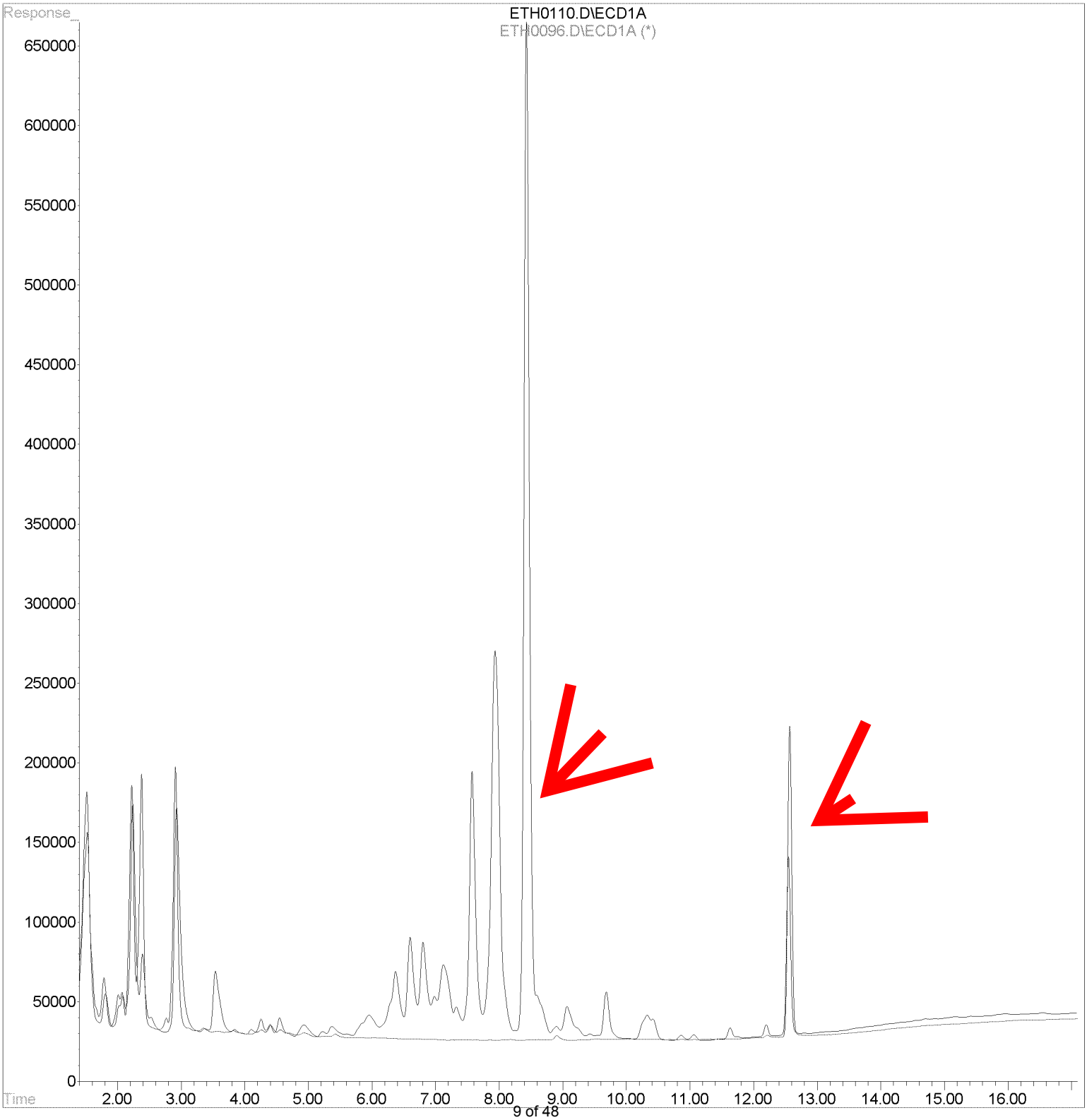
Instrument : GC ECD
Sample Name: 14040300-004
Misc Info :
Vial Number: 22



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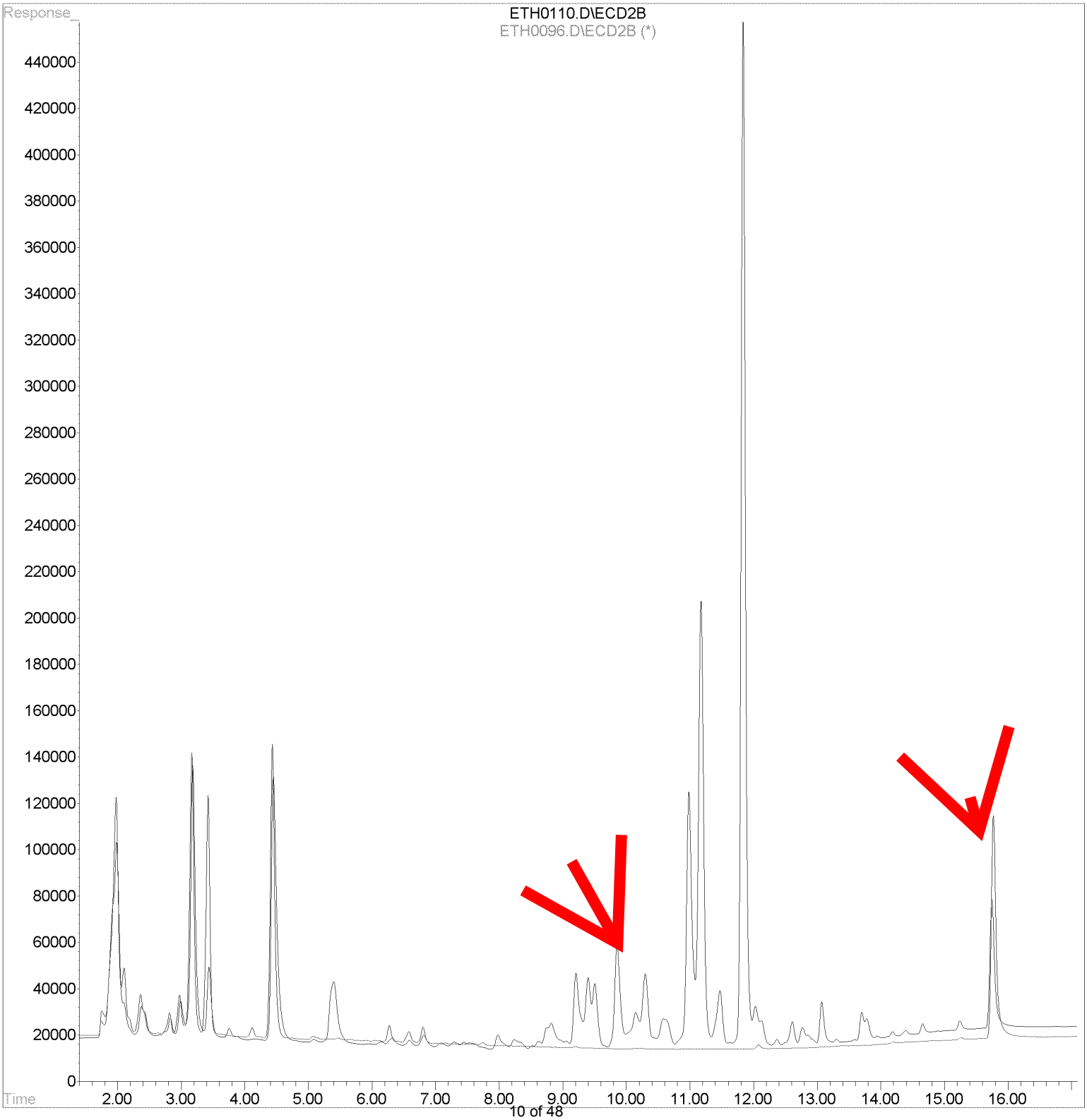
Acquired : 1 May 2014 7:41 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-004
Misc Info :
Vial Number: 22



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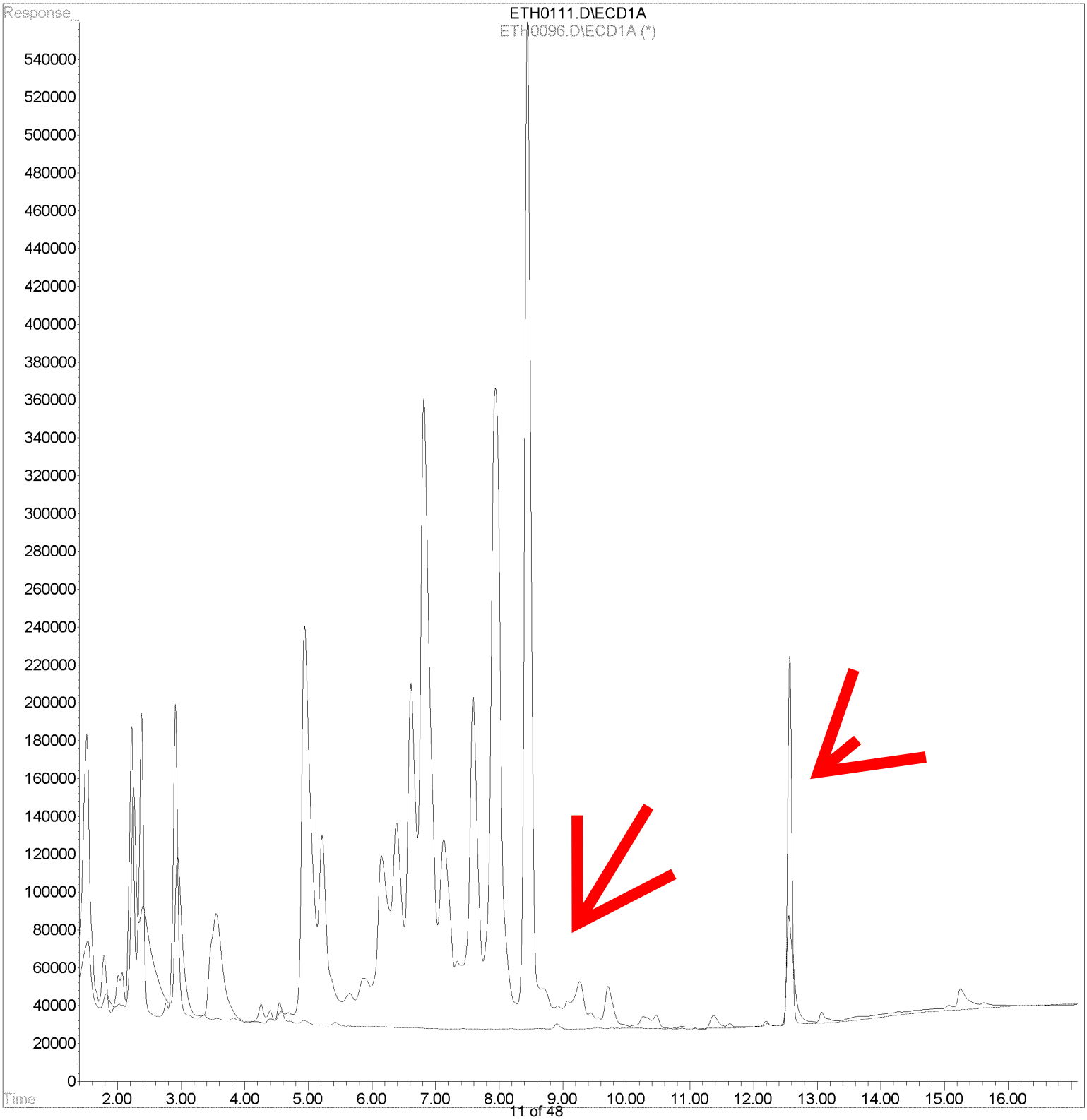
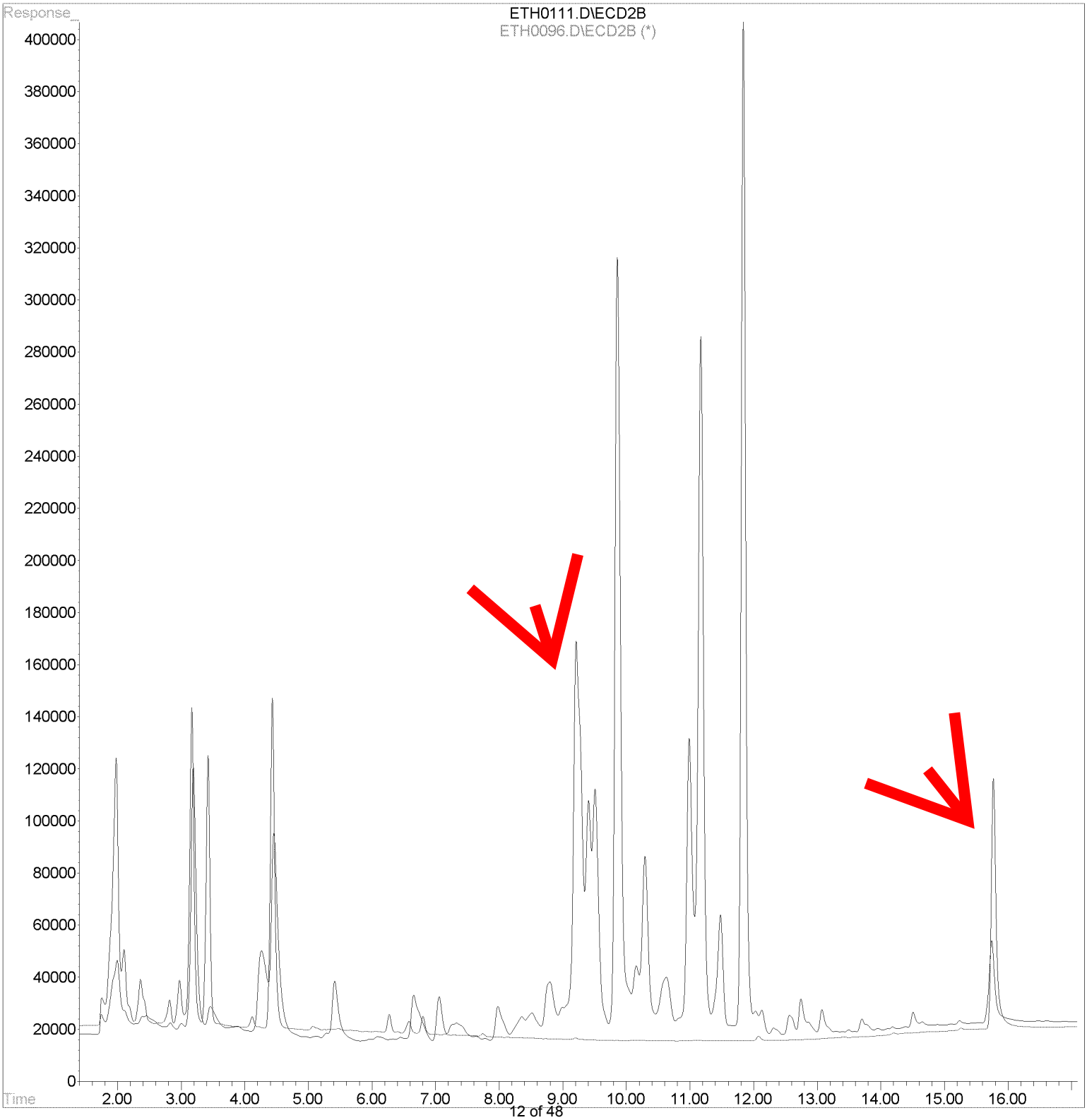
Instrument : GC ECD
Sample Name: 14040300-005
Misc Info :
Vial Number: 23



File : Y:\3\DATA\2014\050114P\ETH0111.D
Operator :
Acquired : 1 May 2014 8:03 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-005
Misc Info :
Vial Number: 23



File : Y:\3\DATA\2014\050114P\ETH0112.D
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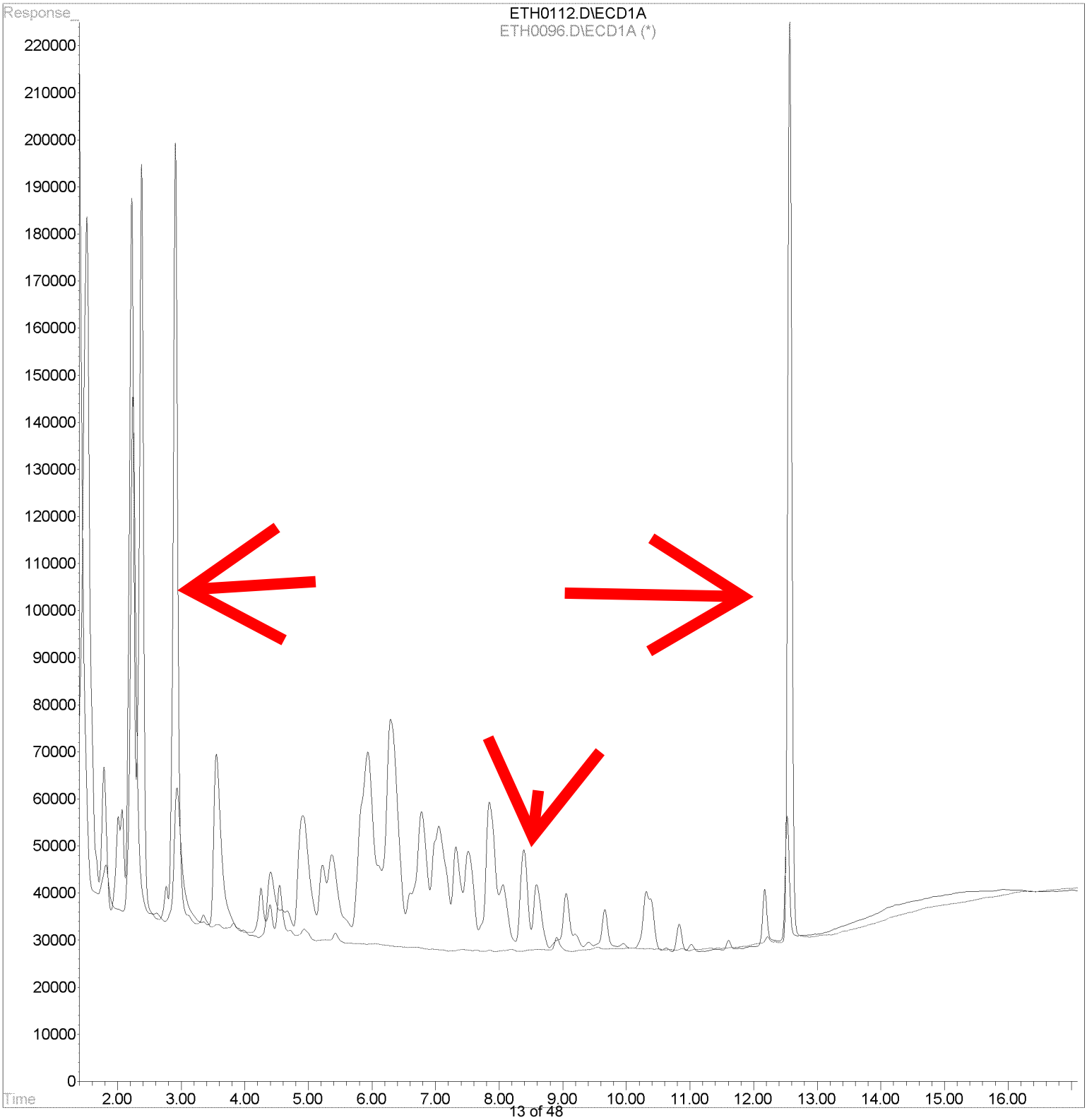
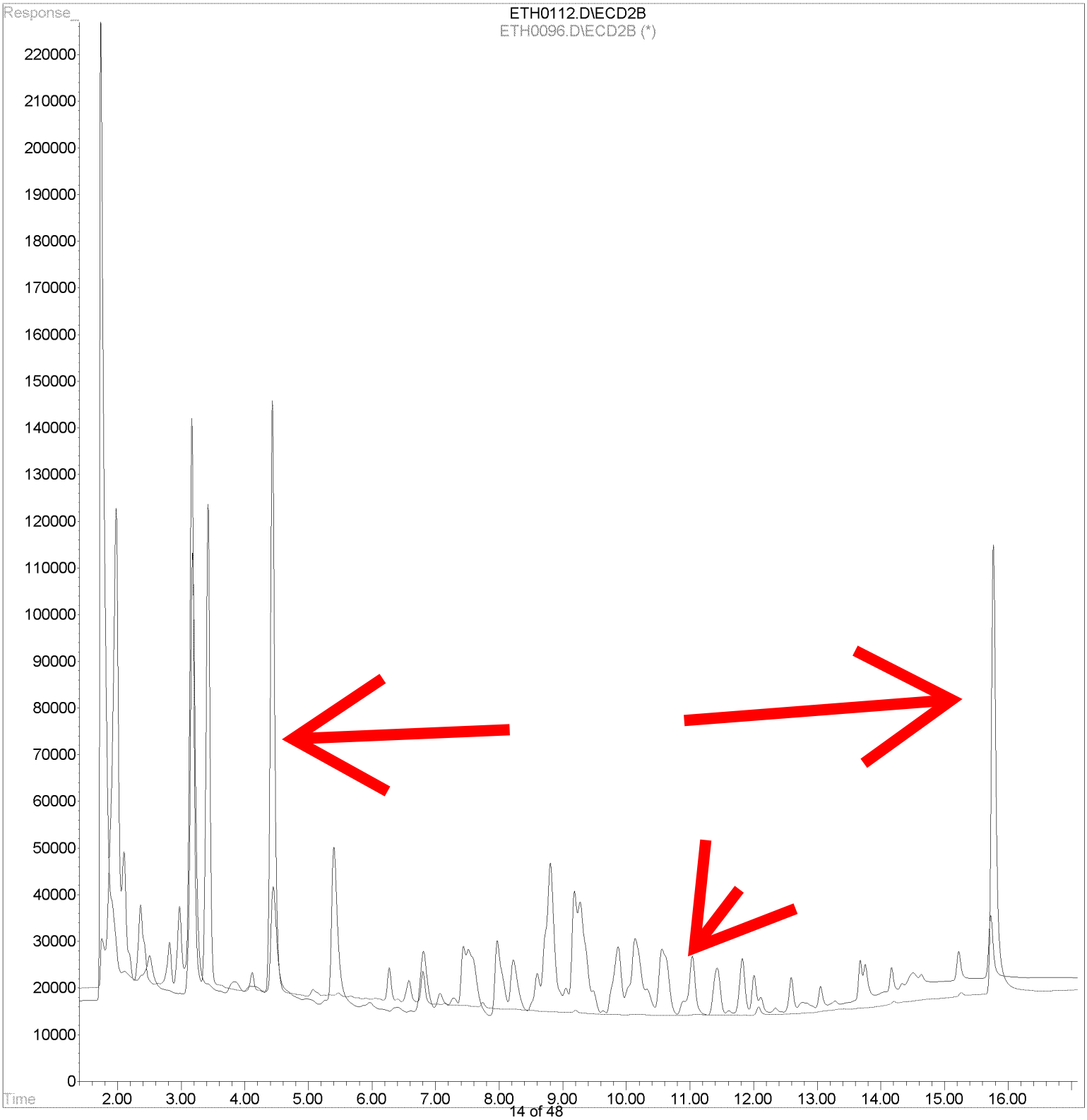
Acquired : 1 May 2014 8:24 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-006
Misc Info :
Vial Number: 24



File : Y:\3\DATA\2014\050114P\ETH0112.D
Operator :
Acquired : 1 May 2014 8:24 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-006
Misc Info :
Vial Number: 24



File : Y:\3\DATA\2014\050114P\ETH0113.D
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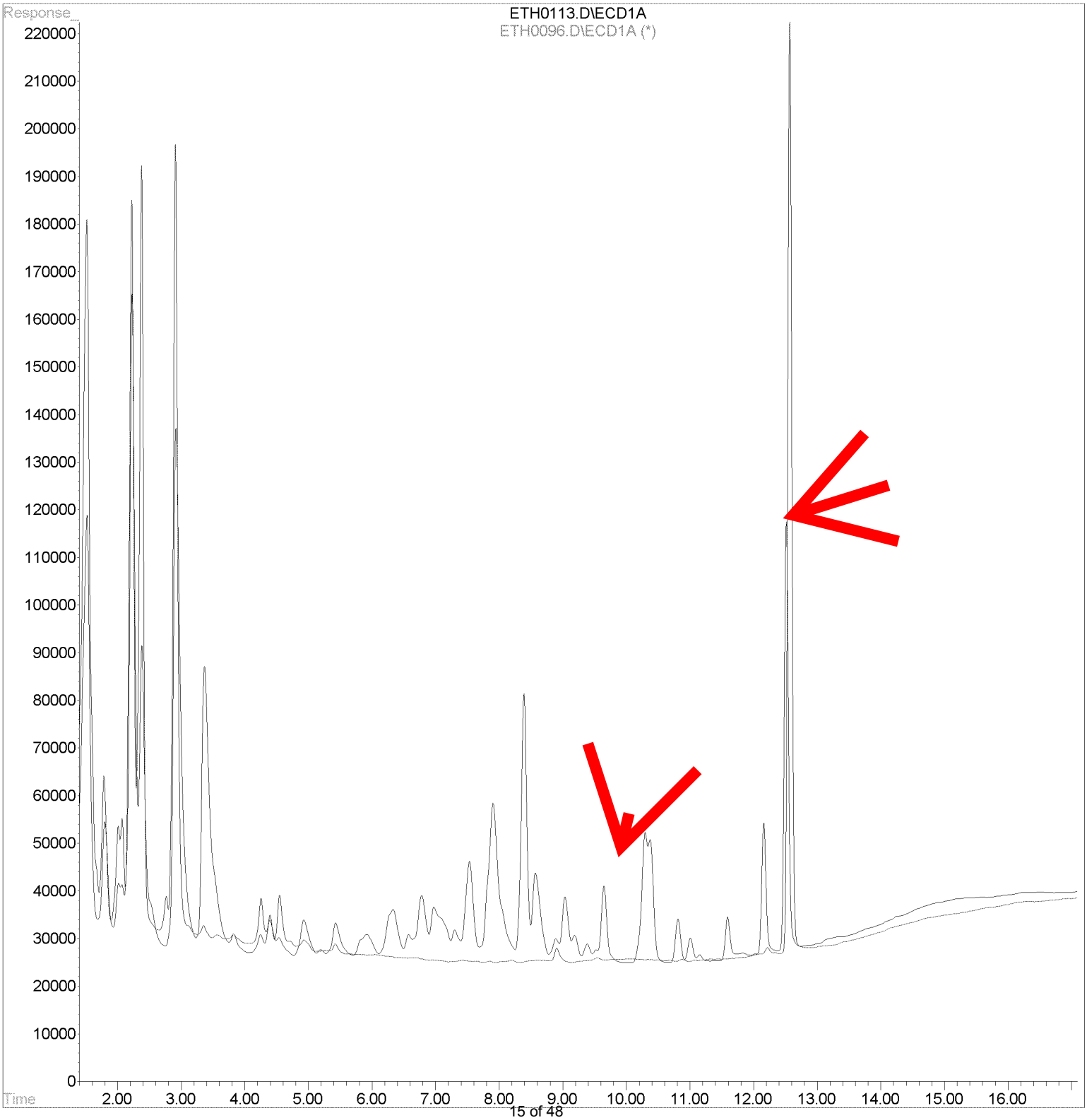
Instrument : GC ECD
Sample Name: 14040300-007
Misc Info :
Vial Number: 25



File : Y:\3\DATA\2014\050114P\ETH0113.D
Operator :
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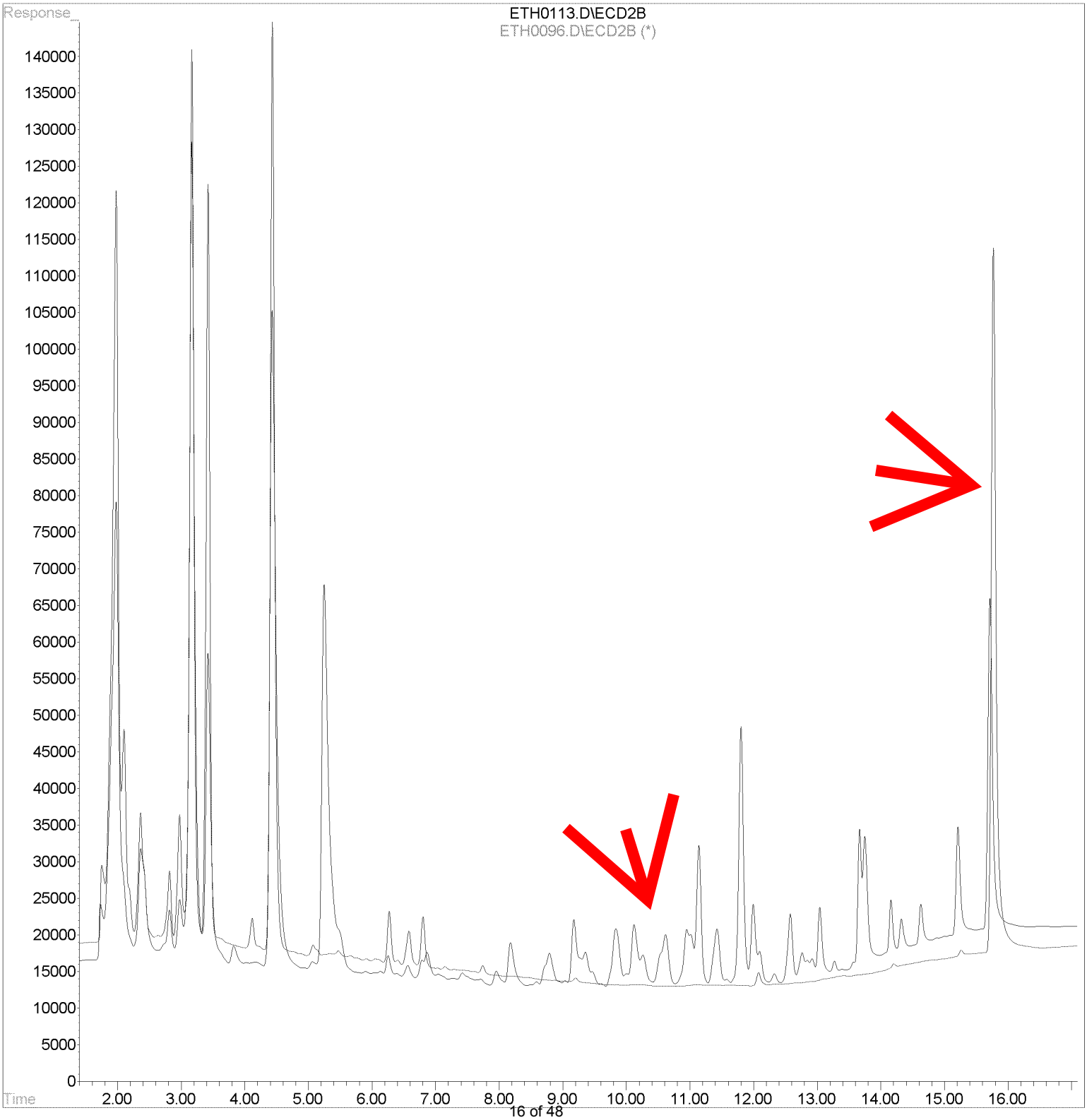
Instrument : GC ECD
Sample Name: 14040300-007
Misc Info :
Vial Number: 25



File : Y:\3\DATA\2014\050114P\ETH0114.D
Operator :
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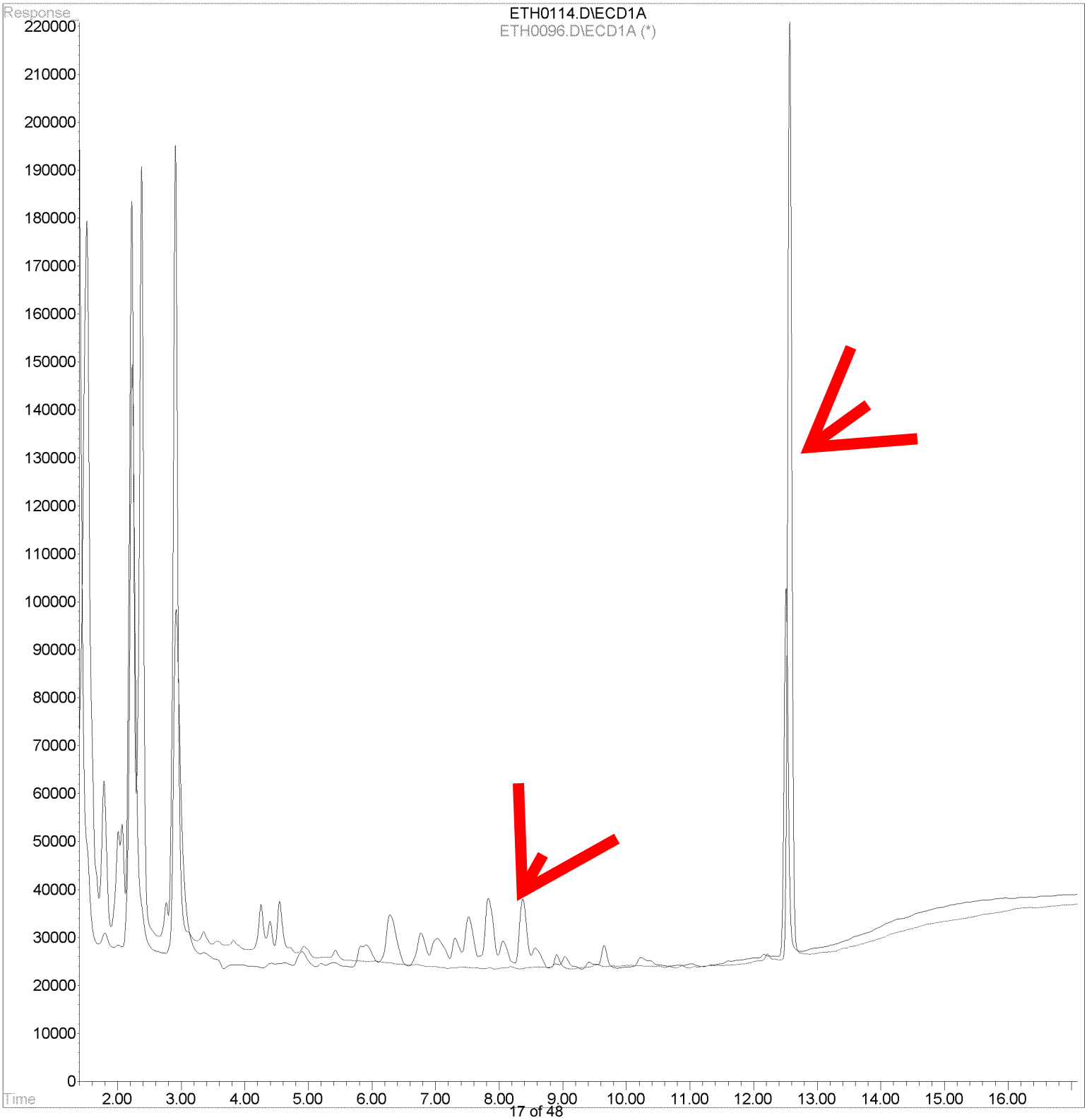
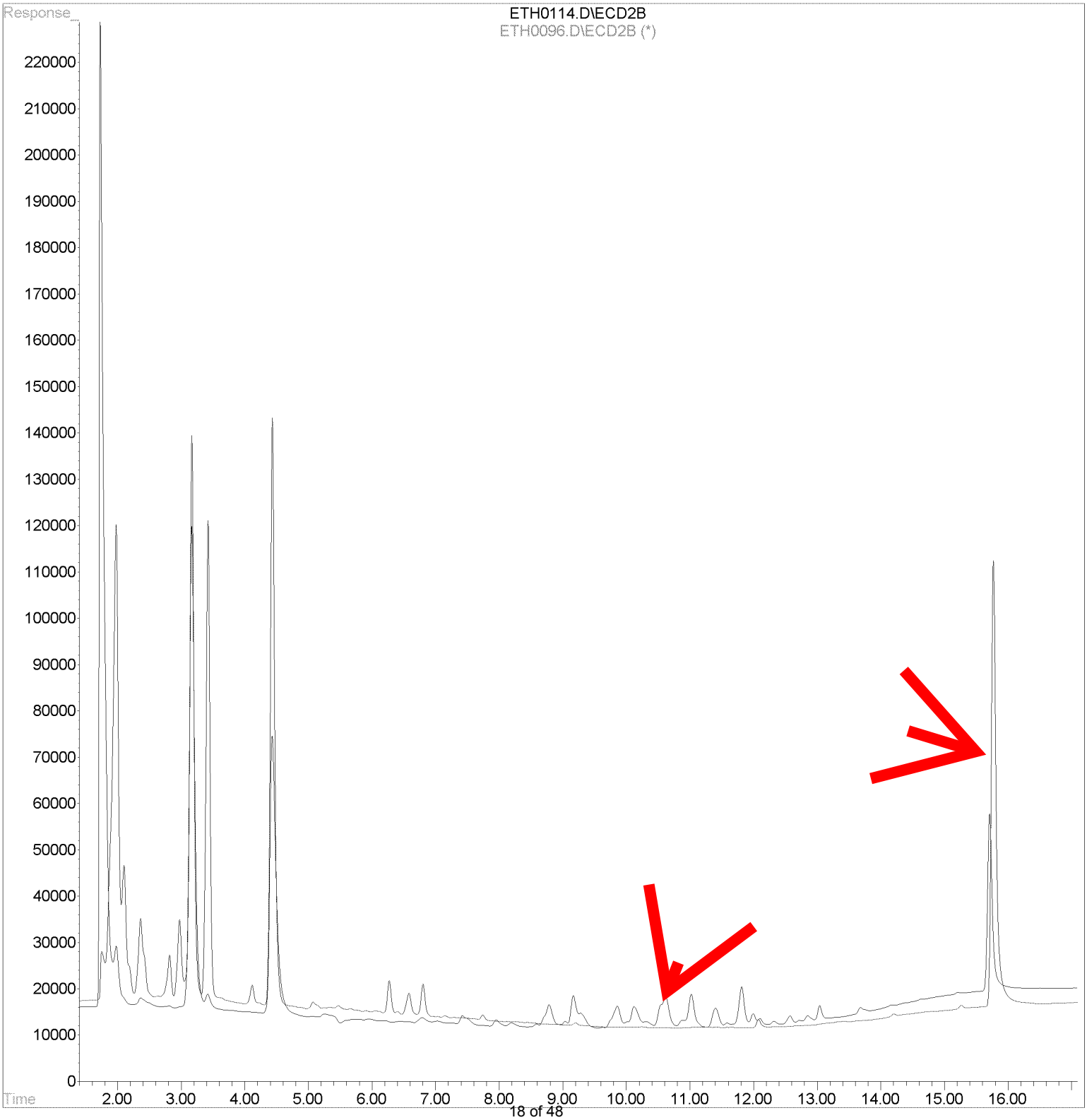
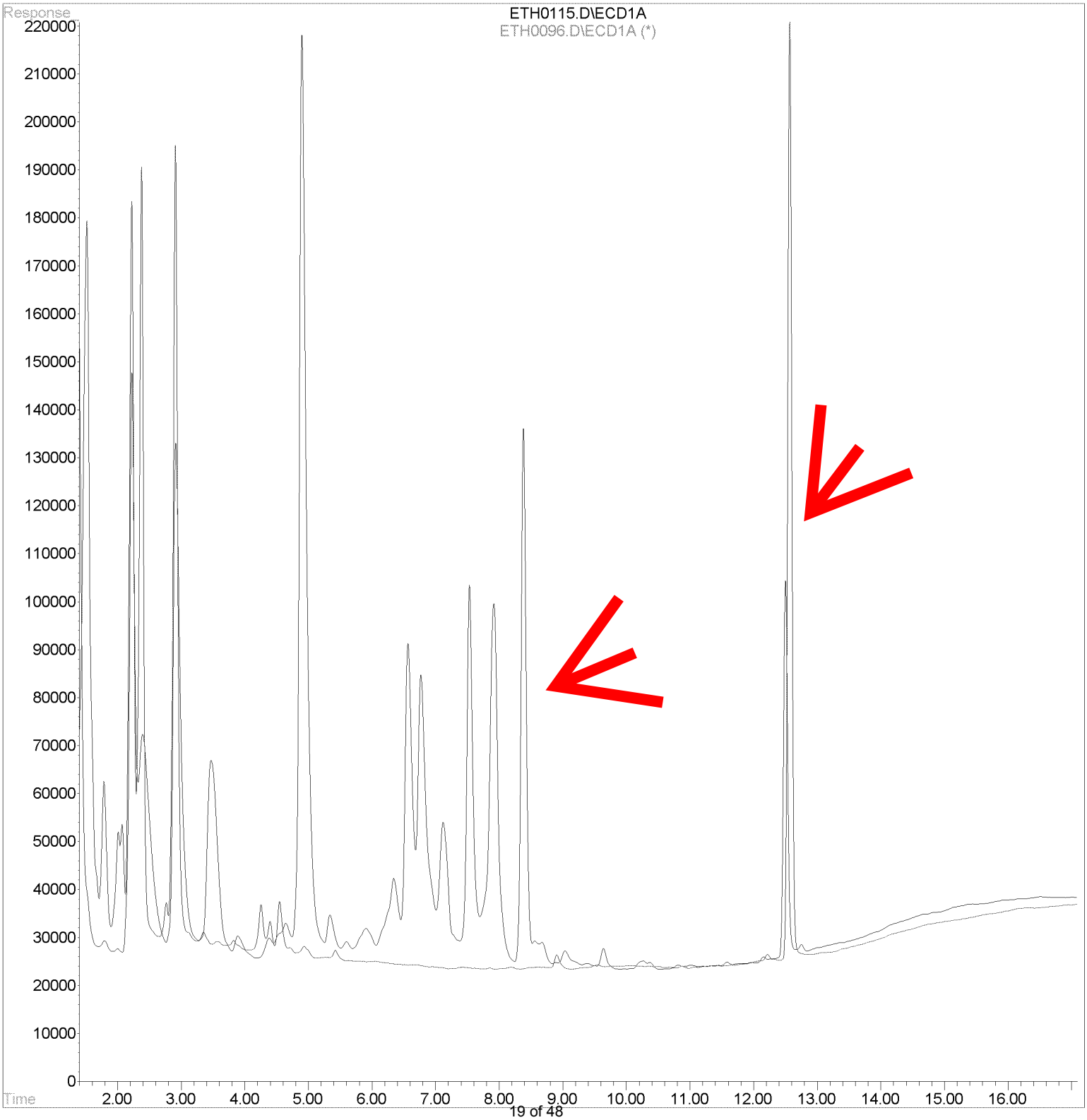
Instrument : GC ECD
Sample Name: 14040300-008
Misc Info :
Vial Number: 26



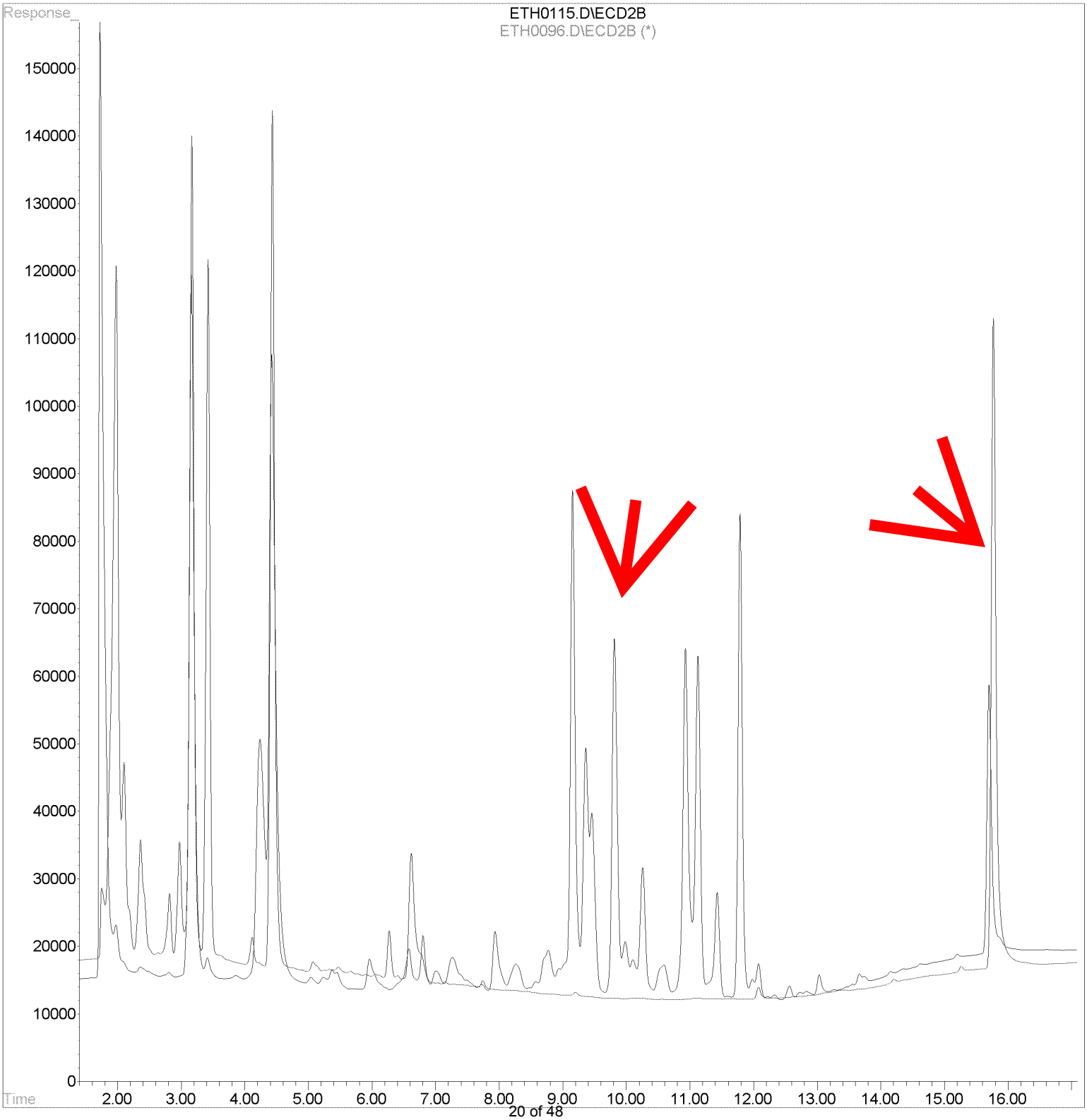
File : Y:\3\DATA\2014\050114P\ETH0114.D
Operator :
Acquired : 1 May 2014 9:07 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-008
Misc Info :
Vial Number: 26



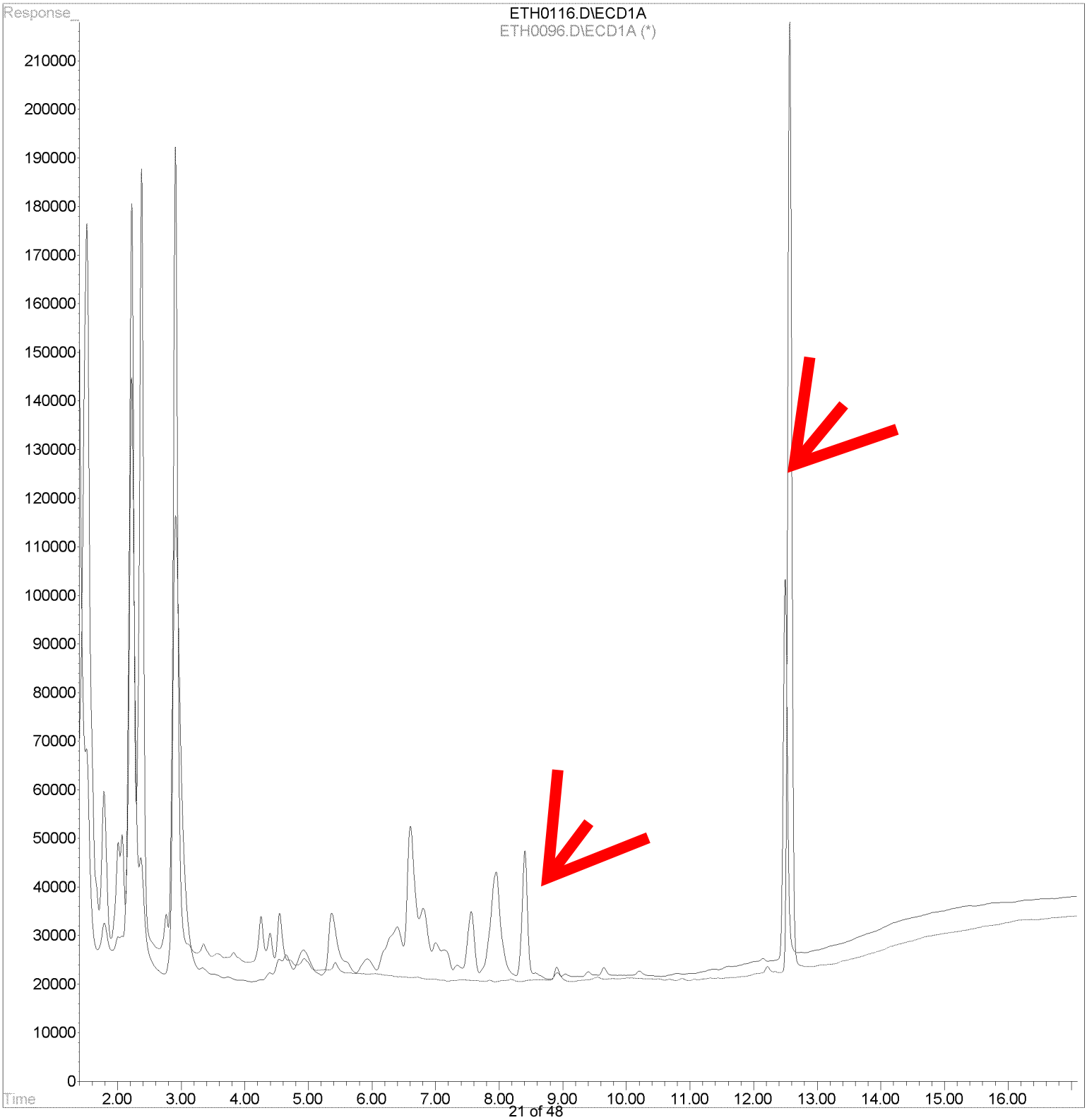
File : Y:\3\DATA\2014\050114P\ETH0115.D
Operator :
Acquired : 1 May 2014 9:29 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-009
Misc Info :
Vial Number: 27



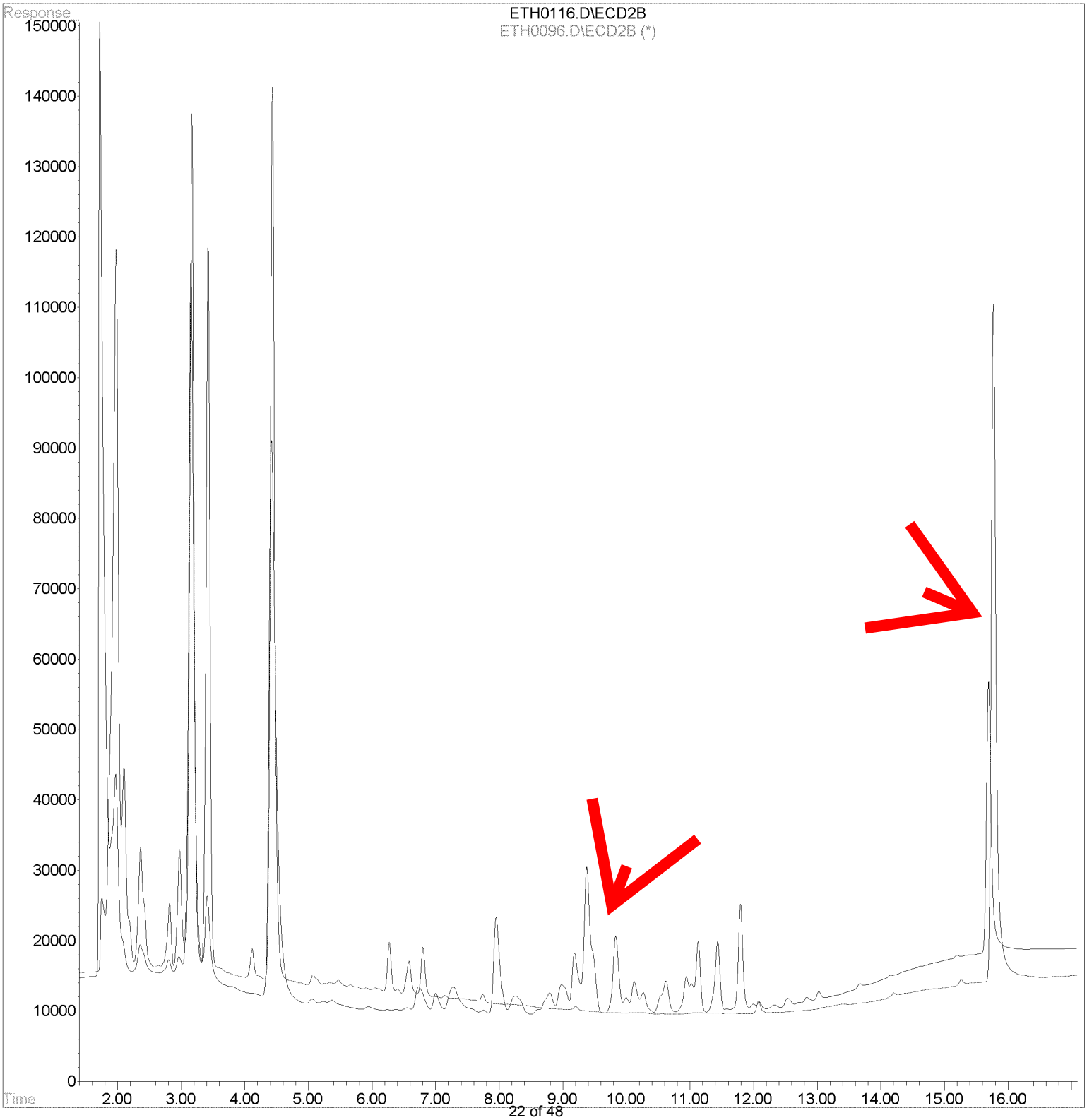
File : Y:\3\DATA\2014\050114P\ETH0115.D
Operator :
Acquired : 1 May 2014 9:29 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-009
Misc Info :
Vial Number: 27



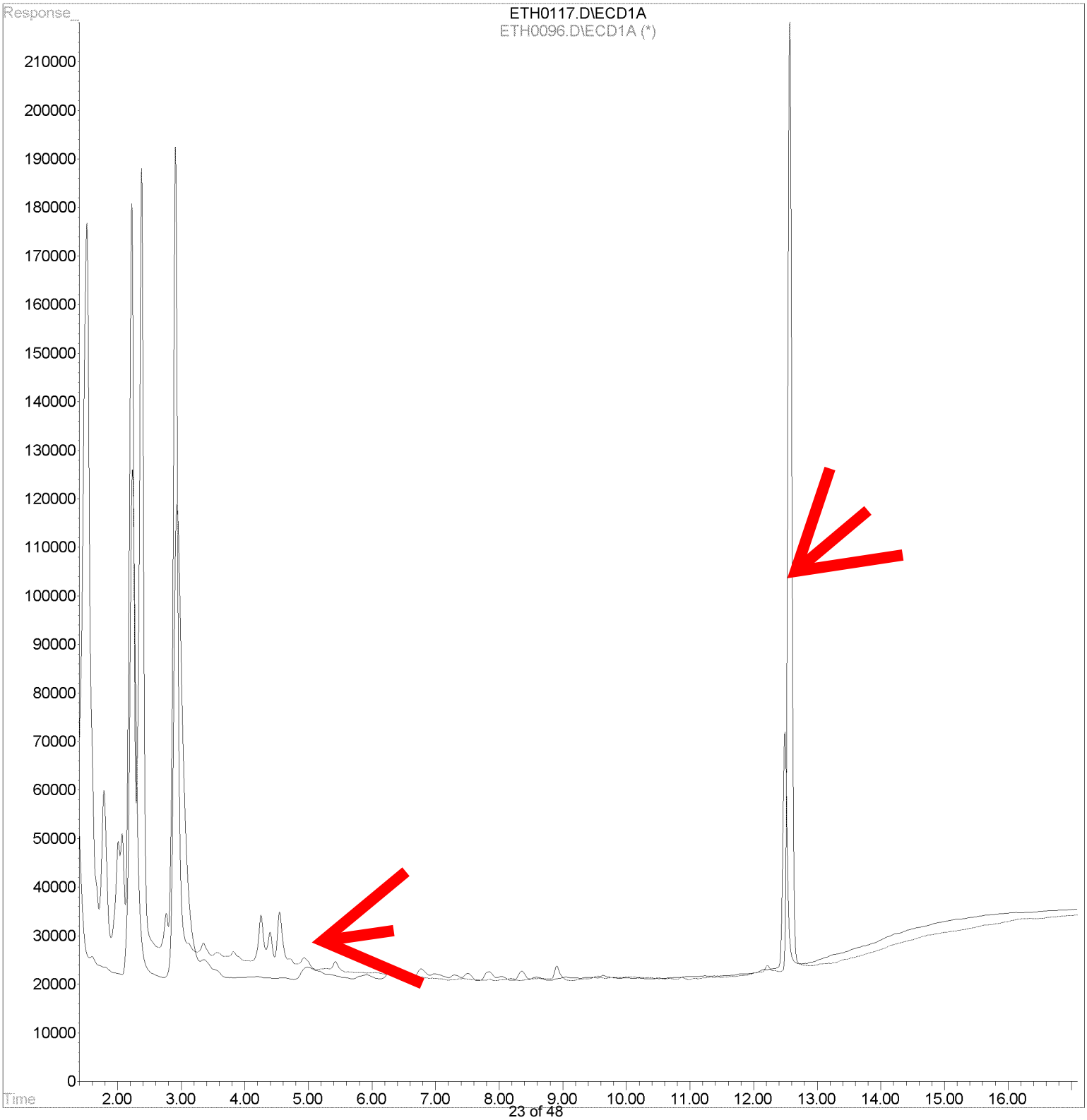
File : Y:\3\DATA\2014\050114P\ETH0116.D
Operator :
Acquired : 1 May 2014 9:50 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-010
Misc Info :
Vial Number: 28



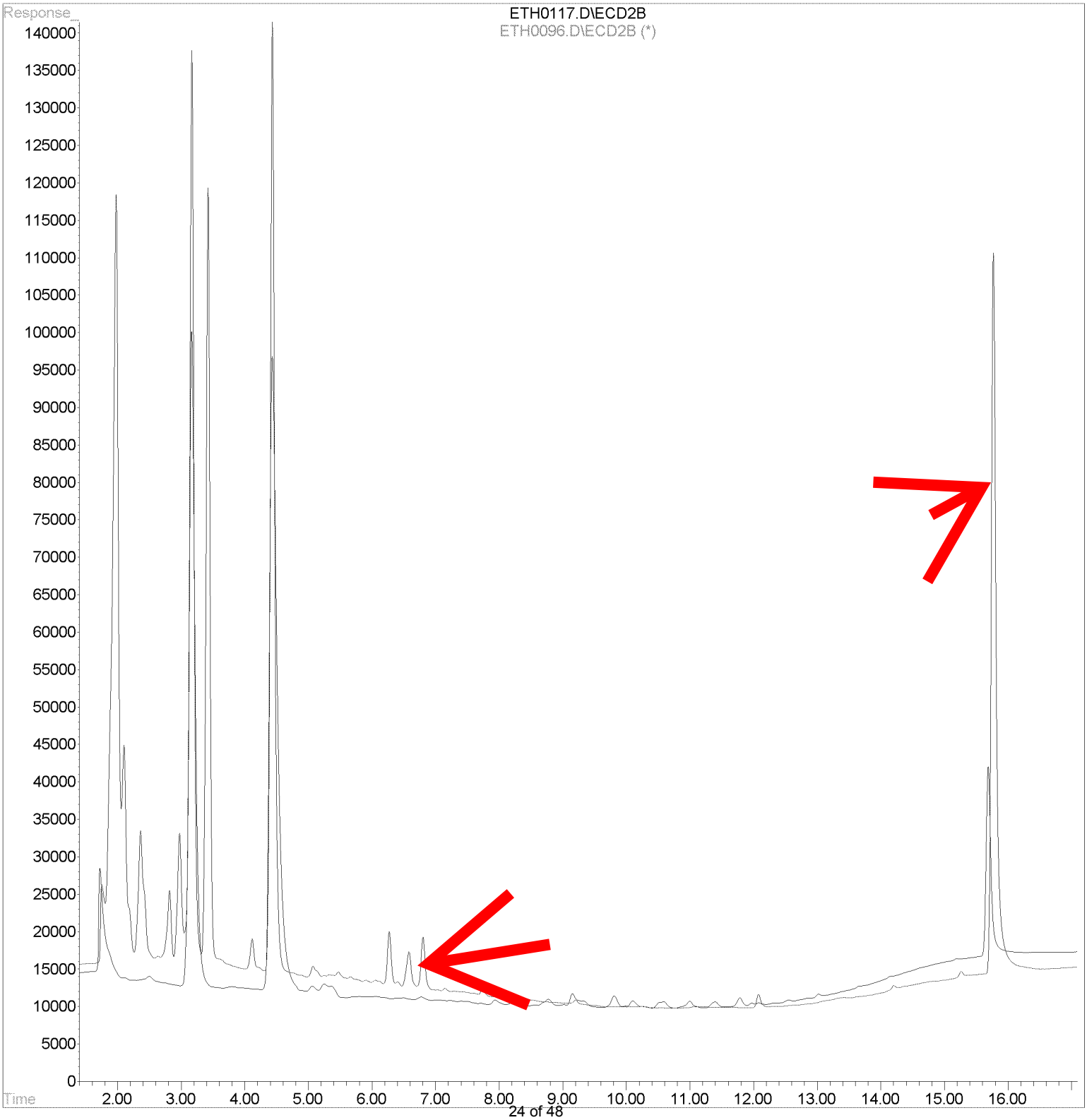
File : Y:\3\DATA\2014\050114P\ETH0116.D
Operator :
Acquired : 1 May 2014 9:50 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-010
Misc Info :
Vial Number: 28



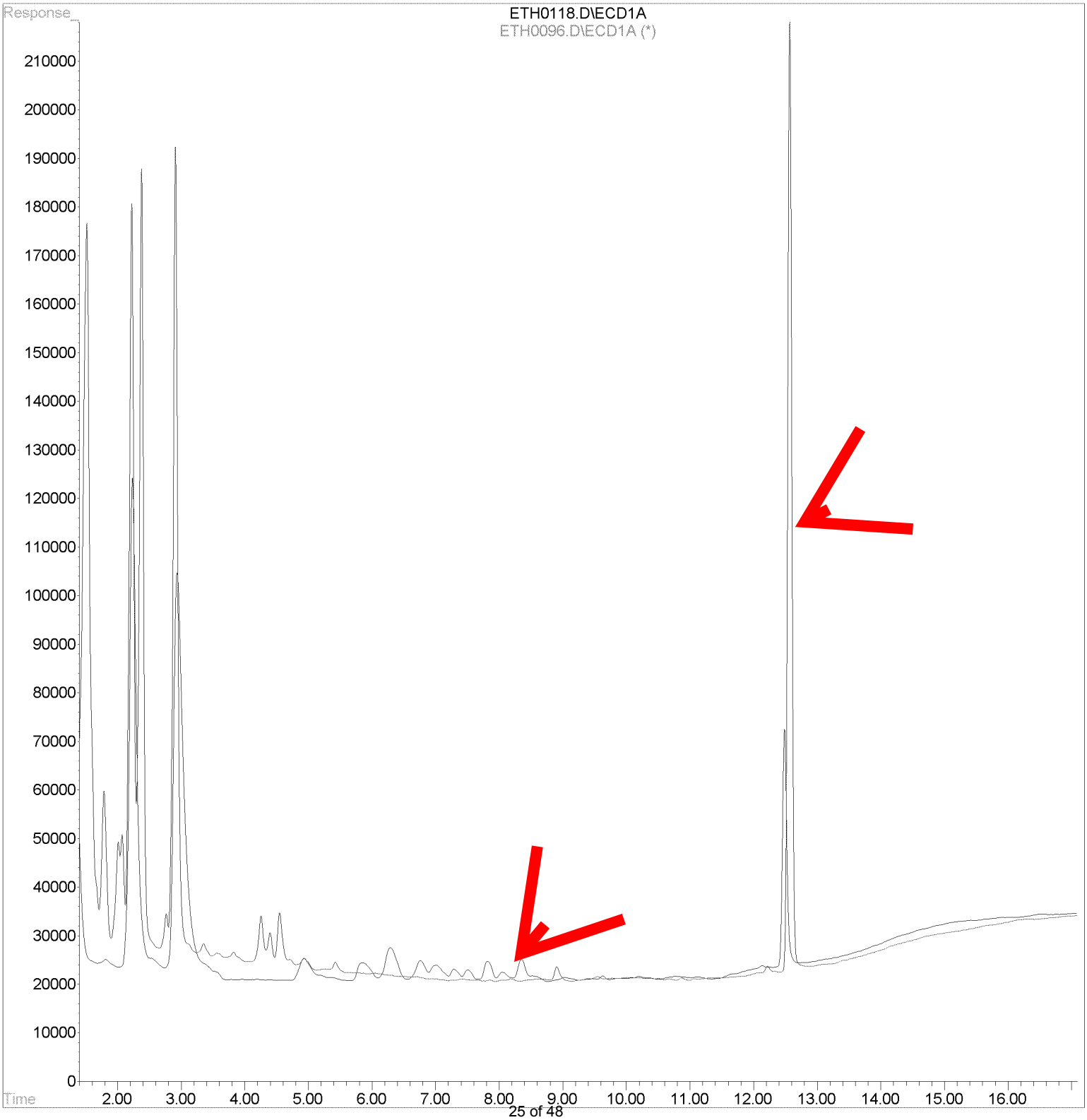
File : Y:\3\DATA\2014\050114P\ETH0117.D
Operator :
Acquired : 1 May 2014 10:11 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-011
Misc Info :
Vial Number: 29



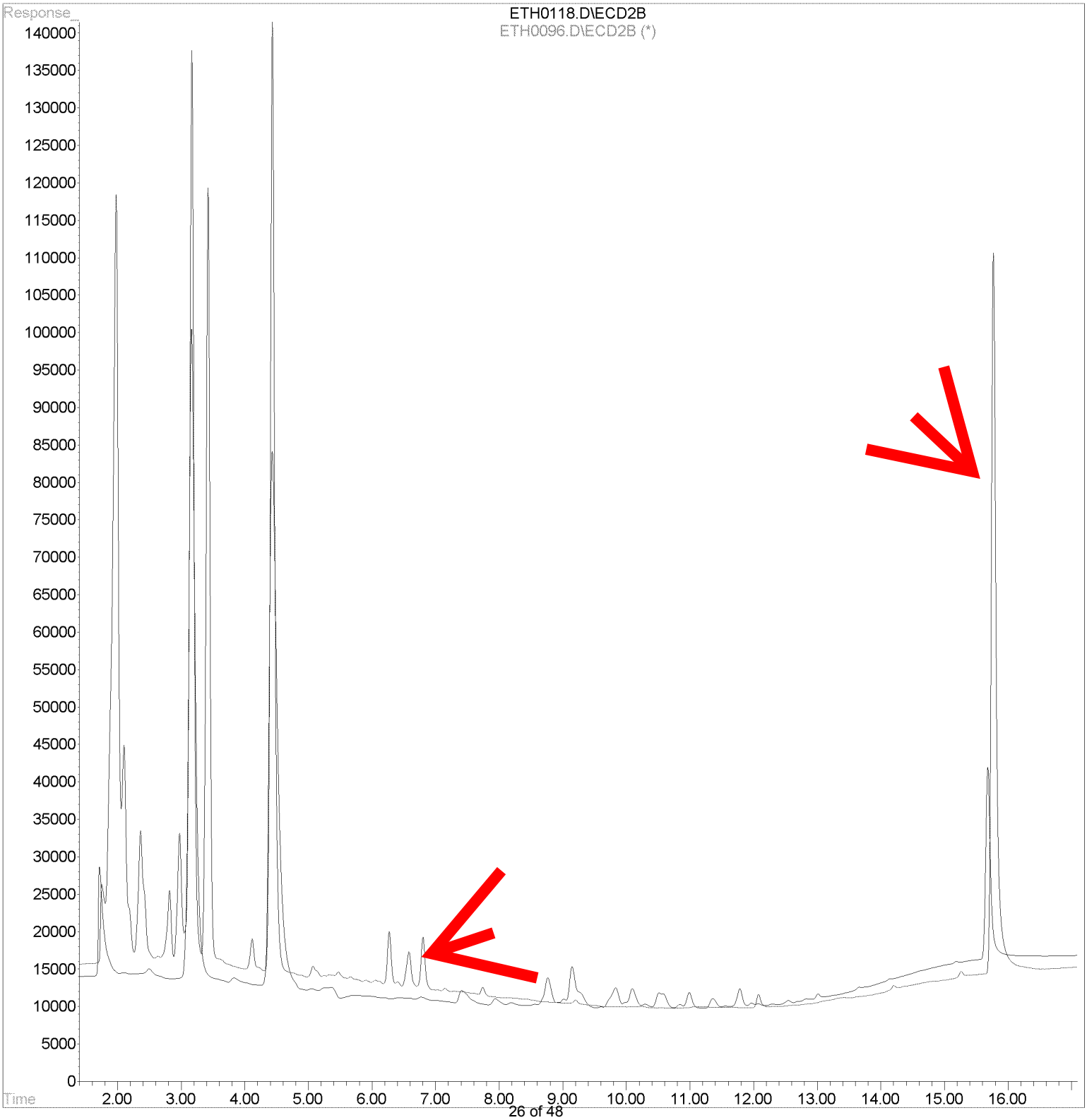
File : Y:\3\DATA\2014\050114P\ETH0117.D
Operator :
Acquired : 1 May 2014 10:11 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-011
Misc Info :
Vial Number: 29



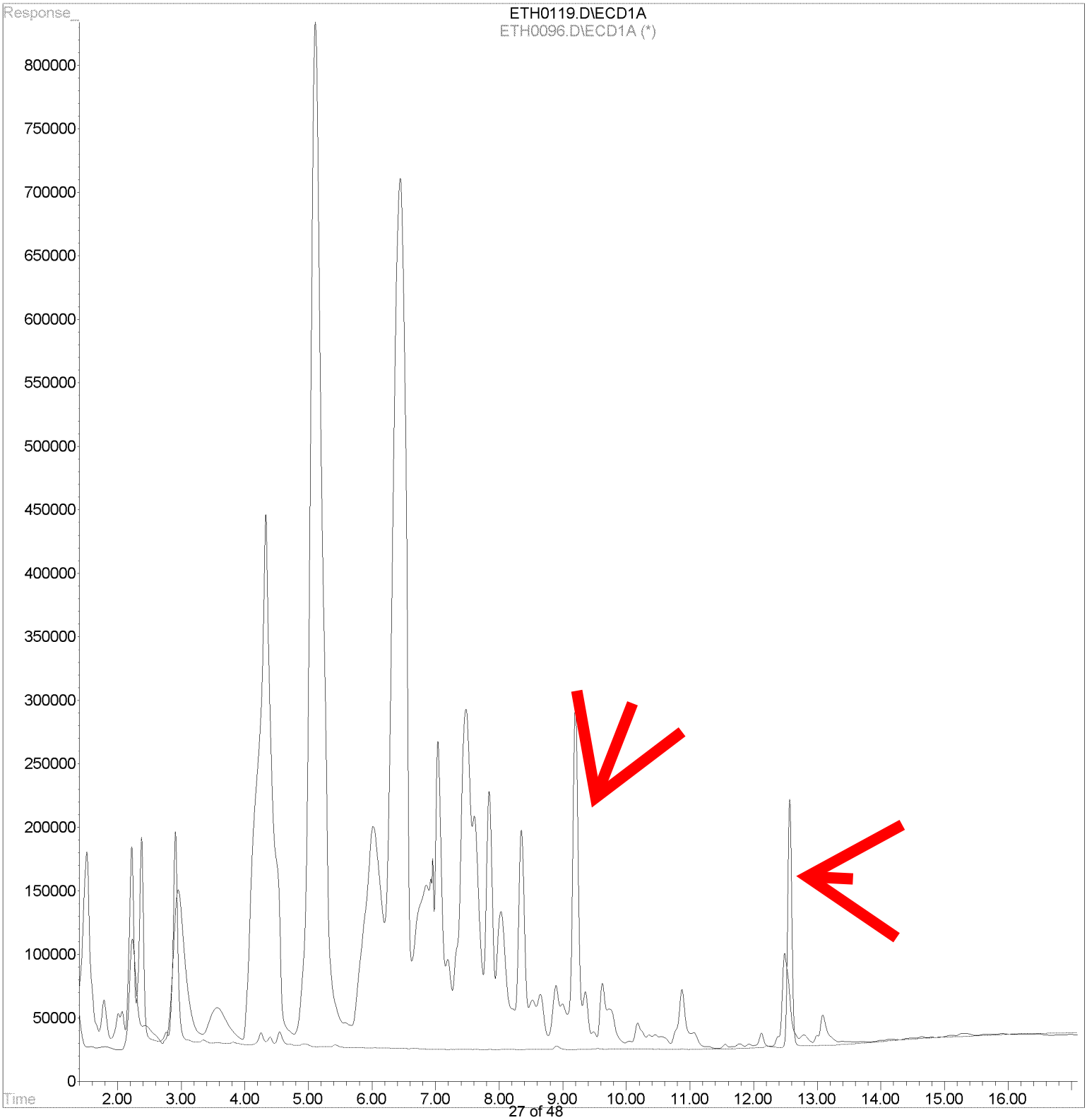
File : Y:\3\DATA\2014\050114P\ETH0118.D
Operator :
Acquired : 1 May 2014 10:33 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-012
Misc Info :
Vial Number: 30



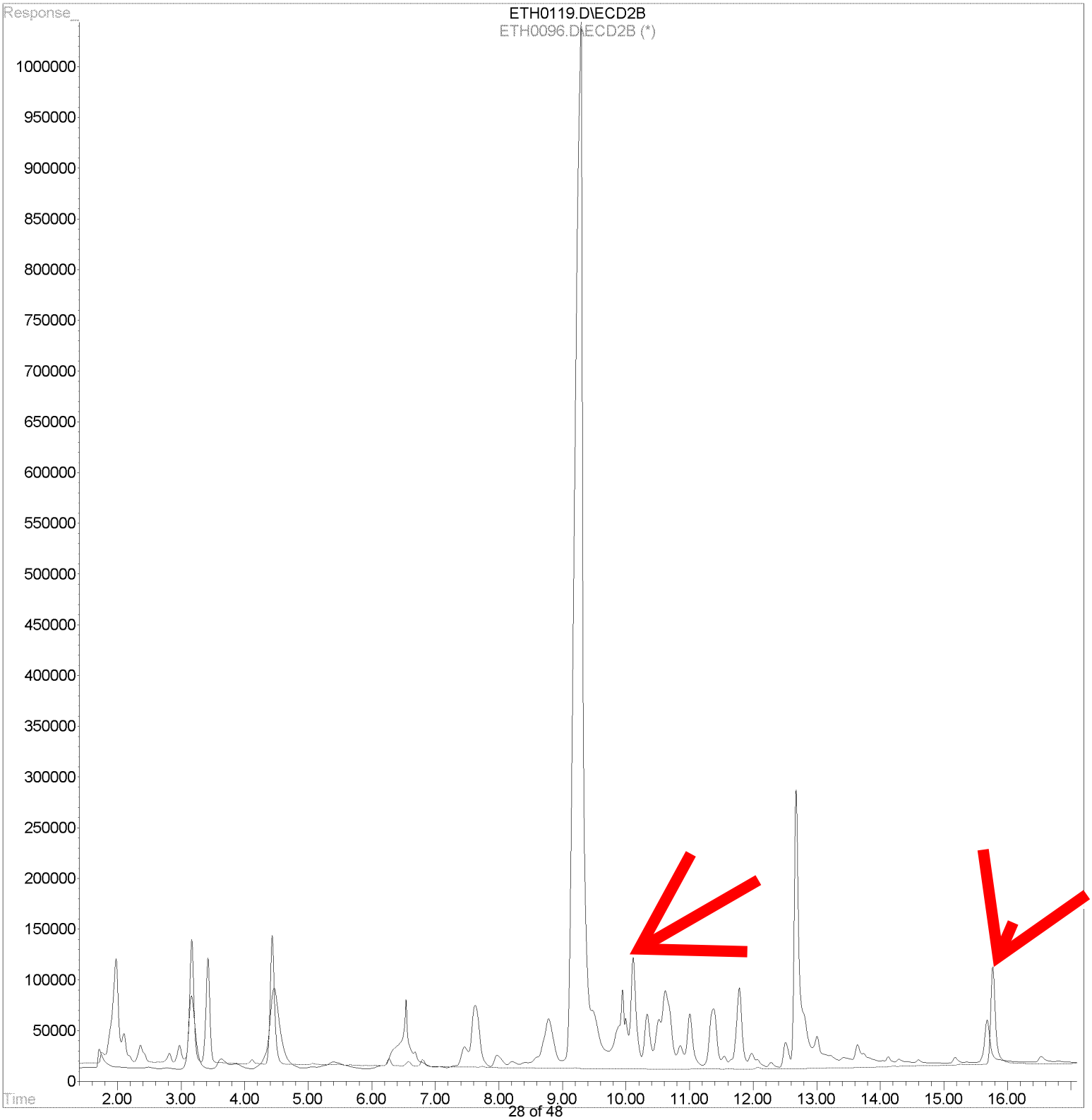
File : Y:\3\DATA\2014\050114P\ETH0118.D
Operator :
Acquired : 1 May 2014 10:33 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-012
Misc Info :
Vial Number: 30



File : Y:\3\DATA\2014\050114P\ETH0119.D
Operator :
Acquired : 1 May 2014 10:54 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-013
Misc Info :
Vial Number: 31



File : Y:\3\DATA\2014\050114P\ETH0119.D
Operator :
Acquired : 1 May 2014 10:54 pm using AcqMethod PEST6.M
Instrument : GC ECD
Sample Name: 14040300-013
Misc Info :
Vial Number: 31



PCB Method Blank Data

Laboratory Number:	14040300	**Date Analyzed:**	5/1/2014
Method Blank Number:	042814	**Analyst:**	CH

Compound	Method Blank Result (ug/kg)	Detection Limit (ug/kg)
Aroclor 1016/1242	<DL	66.6
Aroclor 1221	<DL	66.6
Aroclor 1232	<DL	66.6
Aroclor 1248	<DL	66.6
Aroclor 1254	<DL	66.6
Aroclor 1260	<DL	66.6

Surrogate Compound	Recovery (ug/l)	Percent (%) Recovered	Surrogate Recovery Range
2,4,5,6-Tetrachloro-m-xylene	0.571	57.1%	50-110%
Decachlorobipheny	0.399	39.9%	50-110%
Expected Concentration of Surrogate in ug/l	1.00		

PCB Laboratory Control Spike Recovery Data

Laboratory Number:	14040300	**Date Analyzed:**	5/1/2014
Control Spike Number:	042814	**Analyst:**	CH

Control Spike Compound Added	Concentration Added (ug/kg)	LCS Recovery (ug/kg)	Percent (%) Recovered	LCSD Recovery (ug/kg)	Percent (%) Recovered
Aroclor 1016	333	196	59%	166	50%
Aroclor 1260	333	158	48%	139	42%

Compound	Percent (%) Recovery Limits	Percent (%) RPD	Percent (%) RPD Limits
Aroclor 1016	40-140%	16.36%	≤30%
Aroclor 1260	40-140%	13.20%	≤30%

Surrogate Compound	Recovery (ug/l)	Percent (%) Recovered	Surrogate Recovery Range
2,4,5,6-Tetrachloro-m-xylene	0.567	56.7%	30-150%
Decachlorobiphenyl	0.305	30.5%	30-150%
Expected Concentration of Surrogate in ug/l	1.00		

Laboratory Number: 14040300 **Date Analyzed:** 4/28/2014

Method Blank Number MB042814S **Analyst:** MG

Control Spike Compound Added	Method Blank Results	Detection Limits (mg/kg)
Arsenic	<DL	2.50
Barium	<DL	2.50
Cadmium	<DL	0.25
Chromium	<DL	0.25
Lead	<DL	2.50
Selenium	<DL	2.50
Silver	<DL	0.25
Mercury (SW7471A)	<DL	0.02

Control Spike Number: BS/BSD042814S

Control Spike Compound Added	Concentration Added (mg/l)	LCS Recovery (mg/l)	Percent (%) Recovered	LCSD Recovery (mg/l)	Percent (%) Recovered	Percent (%) Recovery Limits
Arsenic	0.50	0.54	108%	0.55	110%	80-120%
Barium	0.50	0.52	105%	0.53	107%	80-120%
Cadmium	0.50	0.55	110%	0.55	111%	80-120%
Chromium	0.50	0.54	107%	0.55	110%	80-120%
Lead	0.50	0.53	106%	0.54	109%	80-120%
Selenium	0.50	0.52	104%	0.53	107%	80-120%
Silver	0.50	0.53	106%	0.52	105%	80-120%
Mercury (SW7471A)	0.0050	0.0051	102%	0.0054	108%	80-120%

Compound %RPD		Percent (%) RPD Limits
Arsenic	2.20%	<20%
Barium	1.99%	<20%
Cadmium	0.36%	<20%
Chromium	2.93%	<20%
Lead	2.48%	<20%
Selenium	2.70%	<20%
Silver	1.21%	<20%
Mercury (SW7471A)	5.71%	<20%

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Terracon Consultants Inc
Ryan Rouillard
77 Sundial Ave Suite 401W
Manchester NH 03103

Control #: 96400 & 95736
Project Number: J1147126
Project Name: Massachusetts Mills - Bldg 3
Project Location: 150 Mass Millis Dr., Lowell MA

Lab ID: 14040300
Date: 5/2/2014

Lab ID: 14040300

Sample Receiving and Comment Summary

Were samples submitted with a chain of custody?	Yes
Do all samples received match the chain of custody?	Yes
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Was there evidence of cooling if required?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	N/A
Was the cooler temperature recorded if applicable?	Yes
If the sample pH was not correct was it adjusted where applicable?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were Samples for O-phos filtered in the field?	N/A
Were samples recieved in the appropriate containers?	Yes

Sample	Method	Client Identity	Matrix	Analyst
14040300-001	SW 8082A	PCB 01 Wh Paint on wood beams & ceil.deck & bsemnt	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-002	SW 8082A	PCB 02 Wh Paint on Metal Pipe & columns - basement	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-002	SW 8015	PCB 02 Wh Paint on Metal Pipe & columns - basement	Solid	CalebH

Comment: Reported carbon range is C9-C36.

Sample	Method	Client Identity	Matrix	Analyst
14040300-003	SW 8082A	PCB 03 Wh Paint on Brick Walls - Basement	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-003	SW 8015	PCB 03 Wh Paint on Brick Walls - Basement	Solid	CalebH

Comment: Reported carbon range is C9-C36.

Sample	Method	Client Identity	Matrix	Analyst
14040300-004	SW 8082A	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-005	SW 8082A	PCB 05 Ceiling Hung Pipe Trap Oils - Bsmt.	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-006	SW 8082A	PCB 06 Oil on Concrete Footing - Basement	Solid	CalebH

Comment:

Sample	Method	Client Identity	Matrix	Analyst
14040300-006	SW 8082A	PCB 06 Oil on Concrete Footing - Basement	Solid	CalebH

Comment: All surrogates low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-007	SW 8082A	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim	Solid	CalebH

Comment: TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-007	SW 8015	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim	Solid	CalebH

Comment: Reported carbon range is C9-C36.

Sample	Method	Client Identity	Matrix	Analyst
14040300-008	SW 8082A	PCB 08 Ext. Window Glazing (Wood Windows)	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-009	SW 8082A	PCB 09 Wh Paint on Int Brick wall/wood ceil deck..	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-010	SW 8082A	PCB 10 Ext Wind caulk (wood/metal wndw) to masonry	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-011	SW 8082A	PCB 11 Roof Edge Flashing Mastic	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-012	SW 8082A	PCB 12 Asphalt Roof System - Top Field	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

Sample	Method	Client Identity	Matrix	Analyst
14040300-013	SW 8082A	PCB 13 Asphalt Roof System - Bottom Field	Solid	CalebH

Comment: Sample does not match any aroclor pattern. TCMX Surrogate low due to matrix.

**** Blank comment sections denote "No Comment"***

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Terracon Consultants Inc
Ryan Rouillard
77 Sundial Ave Suite 401W
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Control #: 96400 & 95736
Project Number: J1147126
Project Name: Massachusetts Mills - Bldg 3
Project Location: 150 Mass Millis Dr., Lowell MA

Analytical Results

Lab ID: 14040300
Date: 5/2/2014

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-001	EPA 200.7	PCB 01 Wh Paint on wood beams & ceil.deck & bsemn		Solid	CharleneF

Start Date/Time Sampled: 4/9/2014 10:30:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Acid Digestion				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-001	SW 3540C	PCB 01 Wh Paint on wood beams & ceil.deck & bsemn		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 10:30:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-001	SW 3546	PCB 01 Wh Paint on wood beams & ceil.deck & bsemn		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 10:30:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Extraction SW 3546				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-001	SW 6010C	PCB 01 Wh Paint on wood beams & ceil.deck & bsemn	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 10:30:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Arsenic	7440-38-2	3.20 mg/Kg		4/28/2014	1	2.5
Barium	7440-39-3	62.4 mg/Kg		4/28/2014	1	2.5
Cadmium	7440-43-9	5.37 mg/Kg		4/28/2014	1	0.25
Chromium	7440-47-3	10.1 mg/Kg		4/28/2014	1	0.25
Lead	7439-92-1	200 mg/Kg		4/28/2014	1	1.2
Selenium	7782-49-2	< 2.5 mg/Kg		4/28/2014	1	2.5
Silver	7440-22-4	< 0.25 mg/Kg		4/28/2014	1	0.25

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-001	SW 7471A	PCB 01 Wh Paint on wood beams & ceil.deck & bsemn	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 10:30:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Mercury	7439-97-6	0.046 mg/Kg		4/30/2014	1	0.02

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-001	SW 8015	PCB 01 Wh Paint on wood beams & ceil.deck & bsemn	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 10:30:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Total Other Petroleum Hydrocarbons		< 33000 ug/Kg		4/29/2014	327.5	33000
TPH as Diesel		< 33000 ug/Kg		4/29/2014	327.5	33000
TPH as Lube Oil		41000000 ug/Kg		4/29/2014	3275	330000

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-001	SW 8082A	PCB 01 Wh Paint on wood beams & ceil.deck & bsemn	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 10:30:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1221	11104-28-2	< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1232	11141-16-5	< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1248	12672-29-6	< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1254	11097-69-1	< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1260	11096-82-5	< 96 ug/Kg		5/1/2014	960.6	96

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-002	EPA 200.7	PCB 02 Wh Paint on Metal Pipe & columns - basement		Solid	CharleneF

Start Date/Time Sampled: 4/9/2014 11:00:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Acid Digestion				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-002	SW 3540C	PCB 02 Wh Paint on Metal Pipe & columns - basement		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 11:00:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/28/2014	1	0

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-002	SW 3546	PCB 02 Wh Paint on Metal Pipe & columns - basement		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 11:00:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Extraction SW 3546				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-002	SW 6010C	PCB 02 Wh Paint on Metal Pipe & columns - basement	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 11:00:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Arsenic	7440-38-2	9.01 mg/Kg		4/28/2014	1	2.5
Barium	7440-39-3	99.2 mg/Kg		4/28/2014	1	2.5
Cadmium	7440-43-9	22.1 mg/Kg		4/28/2014	1	0.25
Chromium	7440-47-3	30.2 mg/Kg		4/28/2014	1	0.25
Lead	7439-92-1	20000 mg/Kg		4/28/2014	1	1.2
Selenium	7782-49-2	< 2.5 mg/Kg		4/28/2014	1	2.5
Silver	7440-22-4	< 0.25 mg/Kg		4/28/2014	1	0.25

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-002	SW 7471A	PCB 02 Wh Paint on Metal Pipe & columns - basement	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 11:00:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Mercury	7439-97-6	0.048 mg/Kg		4/30/2014	1	0.02

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-002	SW 8015	PCB 02 Wh Paint on Metal Pipe & columns - basement	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 11:00:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Total Other Petroleum Hydrocarbons		8300000 ug/Kg		4/29/2014	3275	330000
TPH as Diesel		< 33000 ug/Kg		4/29/2014	327.5	33000
TPH as Lube Oil		< 33000 ug/Kg		4/29/2014	327.5	33000

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-002	SW 8082A	PCB 02 Wh Paint on Metal Pipe & columns - basement	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 11:00:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 94 ug/Kg		5/1/2014	942.5	94
Aroclor 1221	11104-28-2	< 94 ug/Kg		5/1/2014	942.5	94

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-002	SW 8082A	PCB 02 Wh Paint on Metal Pipe & columns - basement	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 11:00:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1232	11141-16-5	< 94 ug/Kg		5/1/2014	942.5	94
Aroclor 1248	12672-29-6	< 94 ug/Kg		5/1/2014	942.5	94
Aroclor 1254	11097-69-1	< 94 ug/Kg		5/1/2014	942.5	94
Aroclor 1260	11096-82-5	< 94 ug/Kg		5/1/2014	942.5	94

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-003	EPA 200.7	PCB 03 Wh Paint on Brick Walls - Basement		Solid	CharleneF

Start Date/Time Sampled: 4/9/2014 11:20:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Acid Digestion				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-003	SW 3540C	PCB 03 Wh Paint on Brick Walls - Basement		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 11:20:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-003	SW 3546	PCB 03 Wh Paint on Brick Walls - Basement		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 11:20:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Extraction SW 3546				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-003	SW 6010C	PCB 03 Wh Paint on Brick Walls - Basement	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 11:20:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Arsenic	7440-38-2	15.5 mg/Kg		4/28/2014	2	5
Barium	7440-39-3	1800 mg/Kg		4/28/2014	2	5
Cadmium	7440-43-9	3.36 mg/Kg		4/28/2014	2	0.5
Chromium	7440-47-3	38.7 mg/Kg		4/28/2014	2	0.5
Lead	7439-92-1	2100 mg/Kg		4/28/2014	2	2.5
Selenium	7782-49-2	< 5 mg/Kg		4/28/2014	2	5
Silver	7440-22-4	< 0.5 mg/Kg		4/28/2014	2	0.5

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-003	SW 7471A	PCB 03 Wh Paint on Brick Walls - Basement	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 11:20:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Mercury	7439-97-6	0.586 mg/Kg		4/30/2014	1	0.02

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-003	SW 8015	PCB 03 Wh Paint on Brick Walls - Basement	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 11:20:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Total Other Petroleum Hydrocarbons		4200000 ug/Kg		4/30/2014	329.7	33000
TPH as Diesel		< 33000 ug/Kg		4/30/2014	329.7	33000
TPH as Lube Oil		< 33000 ug/Kg		4/30/2014	329.7	33000

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-003	SW 8082A	PCB 03 Wh Paint on Brick Walls - Basement	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 11:20:00 AM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 97 ug/Kg		5/1/2014	969.9	97
Aroclor 1221	11104-28-2	< 97 ug/Kg		5/1/2014	969.9	97
Aroclor 1232	11141-16-5	< 97 ug/Kg		5/1/2014	969.9	97
Aroclor 1248	12672-29-6	< 97 ug/Kg		5/1/2014	969.9	97
Aroclor 1254	11097-69-1	< 97 ug/Kg		5/1/2014	969.9	97
Aroclor 1260	11096-82-5	< 97 ug/Kg		5/1/2014	969.9	97

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-004	EPA 200.7	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr		Solid	CharleneF

Start Date/Time Sampled: 4/9/2014 2:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Acid Digestion				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-004	SW 3540C	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 2:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/28/2014	1	0

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-004	SW 3546	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 2:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Extraction SW 3546				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-004	SW 6010C	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 2:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Arsenic	7440-38-2	< 3.32 mg/Kg		4/28/2014	1.33	3.32
Barium	7440-39-3	600 mg/Kg		4/28/2014	1.33	3.32
Cadmium	7440-43-9	1.96 mg/Kg		4/28/2014	1.33	0.332
Chromium	7440-47-3	6.46 mg/Kg		4/28/2014	1.33	0.332
Lead	7439-92-1	930 mg/Kg		4/28/2014	1.33	1.7
Selenium	7782-49-2	< 3.32 mg/Kg		4/28/2014	1.33	3.32
Silver	7440-22-4	< 0.332 mg/Kg		4/28/2014	1.33	0.332

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-004	SW 7471A	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 2:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Mercury	7439-97-6	0.258 mg/Kg		4/30/2014	1	0.02

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-004	SW 8015	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 2:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Total Other Petroleum Hydrocarbons		< 33000 ug/Kg		4/30/2014	330.8	33000
TPH as Diesel		< 33000 ug/Kg		4/30/2014	330.8	33000
TPH as Lube Oil		22000000 ug/Kg		4/30/2014	3308	330000

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-004	SW 8082A	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 2:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1221	11104-28-2	< 99 ug/Kg		5/1/2014	989.1	99

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-004	SW 8082A	PCB 04 Oil Stain Hrdwd Flring-1st flr-west end ctr	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 2:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1232	11141-16-5	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1248	12672-29-6	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1254	11097-69-1	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1260	11096-82-5	< 99 ug/Kg		5/1/2014	989.1	99

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-005	SW 3540C	PCB 05 Ceiling Hung Pipe Trap Oils - Bsmt.		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 3:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-005	SW 8082A	PCB 05 Ceiling Hung Pipe Trap Oils - Bsmt.	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 3:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 200 ug/Kg		5/1/2014	2038.8	200
Aroclor 1221	11104-28-2	< 200 ug/Kg		5/1/2014	2038.8	200
Aroclor 1232	11141-16-5	< 200 ug/Kg		5/1/2014	2038.8	200
Aroclor 1248	12672-29-6	< 200 ug/Kg		5/1/2014	2038.8	200
Aroclor 1254	11097-69-1	< 200 ug/Kg		5/1/2014	2038.8	200
Aroclor 1260	11096-82-5	< 200 ug/Kg		5/1/2014	2038.8	200

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-006	SW 3540C	PCB 06 Oil on Concrete Footing - Basement		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 3:20:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-006	SW 8082A	PCB 06 Oil on Concrete Footing - Basement	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 3:20:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1221	11104-28-2	< 98 ug/Kg		5/1/2014	979.4	98

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-006	SW 8082A	PCB 06 Oil on Concrete Footing - Basement	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 3:20:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1232	11141-16-5	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1248	12672-29-6	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1254	11097-69-1	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1260	11096-82-5	620 ug/Kg		5/1/2014	979.4	98

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-007	EPA 200.7	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim		Solid	CharleneF

Start Date/Time Sampled: 4/9/2014 3:30:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Acid Digestion				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-007	SW 3540C	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 3:30:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-007	SW 3546	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 3:30:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Extraction SW 3546				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-007	SW 6010C	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 3:30:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Arsenic	7440-38-2	16.5 mg/Kg		4/28/2014	1	2.5
Barium	7440-39-3	1090 mg/Kg		4/28/2014	1	2.5
Cadmium	7440-43-9	5.50 mg/Kg		4/28/2014	1	0.25
Chromium	7440-47-3	4230 mg/Kg		4/28/2014	1	0.25
Lead	7439-92-1	84000 mg/Kg		4/28/2014	1	1.2
Selenium	7782-49-2	< 2.5 mg/Kg		4/28/2014	1	2.5
Silver	7440-22-4	< 0.25 mg/Kg		4/28/2014	1	0.25

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-007	SW 7471A	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 3:30:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Mercury	7439-97-6	0.069 mg/Kg		4/30/2014	1	0.02

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-007	SW 8015	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 3:30:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Total Other Petroleum Hydrocarbons		16000000 ug/Kg		4/30/2014	3286	330000
TPH as Diesel		< 33000 ug/Kg		4/30/2014	328.6	33000
TPH as Lube Oil		< 33000 ug/Kg		4/30/2014	328.6	33000

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-007	SW 8082A	PCB 07 Ext. Paint on Wood/Metal Wind Door &Trim	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 3:30:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1221	11104-28-2	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1232	11141-16-5	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1248	12672-29-6	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1254	11097-69-1	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1260	11096-82-5	510 ug/Kg		5/1/2014	979.4	98

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-008	SW 3540C	PCB 08 Ext. Window Glazing (Wood Windows)		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 3:40:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/29/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-008	SW 8082A	PCB 08 Ext. Window Glazing (Wood Windows)	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 3:40:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1221	11104-28-2	< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1232	11141-16-5	< 96 ug/Kg		5/1/2014	960.6	96

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-008	SW 8082A	PCB 08 Ext. Window Glazing (Wood Windows)	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 3:40:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1248	12672-29-6	< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1254	11097-69-1	< 96 ug/Kg		5/1/2014	960.6	96
Aroclor 1260	11096-82-5	< 96 ug/Kg		5/1/2014	960.6	96

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-009	EPA 200.7	PCB 09 Wh Paint on Int Brick wall/wood ceil deck..		Solid	CharleneF

Start Date/Time Sampled: 4/9/2014 3:50:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Acid Digestion				4/28/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-009	SW 3540C	PCB 09 Wh Paint on Int Brick wall/wood ceil deck..		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 3:50:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/29/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-009	SW 6010C	PCB 09 Wh Paint on Int Brick wall/wood ceil deck..	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 3:50:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Arsenic	7440-38-2	< 5 mg/Kg		4/28/2014	2	5
Barium	7440-39-3	467 mg/Kg		4/28/2014	2	5
Cadmium	7440-43-9	56.7 mg/Kg		4/28/2014	2	0.5
Chromium	7440-47-3	351 mg/Kg		4/28/2014	2	0.5
Lead	7439-92-1	5200 mg/Kg		4/28/2014	2	2.5
Selenium	7782-49-2	< 5 mg/Kg		4/28/2014	2	5
Silver	7440-22-4	< 0.5 mg/Kg		4/28/2014	2	0.5

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-009	SW 7471A	PCB 09 Wh Paint on Int Brick wall/wood ceil deck..	mg/Kg	Solid	MichelleG

Start Date/Time Sampled: 4/9/2014 3:50:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Mercury	7439-97-6	0.049 mg/Kg		4/30/2014	1	0.02

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-009	SW 8082A	PCB 09 Wh Paint on Int Brick wall/wood ceil deck..	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 3:50:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 93 ug/Kg		5/1/2014	933.6	93
Aroclor 1221	11104-28-2	< 93 ug/Kg		5/1/2014	933.6	93
Aroclor 1232	11141-16-5	< 93 ug/Kg		5/1/2014	933.6	93
Aroclor 1248	12672-29-6	< 93 ug/Kg		5/1/2014	933.6	93
Aroclor 1254	11097-69-1	< 93 ug/Kg		5/1/2014	933.6	93
Aroclor 1260	11096-82-5	< 93 ug/Kg		5/1/2014	933.6	93

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-010	SW 3540C	PCB 10 Ext Wind caulk (wood/metal wndw) to masonry		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 4:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/29/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-010	SW 8082A	PCB 10 Ext Wind caulk (wood/metal wndw) to masonry	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 4:00:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 95 ug/Kg		5/1/2014	951.4	95
Aroclor 1221	11104-28-2	< 95 ug/Kg		5/1/2014	951.4	95
Aroclor 1232	11141-16-5	< 95 ug/Kg		5/1/2014	951.4	95
Aroclor 1248	12672-29-6	< 95 ug/Kg		5/1/2014	951.4	95
Aroclor 1254	11097-69-1	< 95 ug/Kg		5/1/2014	951.4	95
Aroclor 1260	11096-82-5	< 95 ug/Kg		5/1/2014	951.4	95

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-011	SW 3540C	PCB 11 Roof Edge Flashing Mastic		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 4:10:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/29/2014	1	0

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-011	SW 8082A	PCB 11 Roof Edge Flashing Mastic	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 4:10:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1221	11104-28-2	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1232	11141-16-5	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1248	12672-29-6	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1254	11097-69-1	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1260	11096-82-5	< 99 ug/Kg		5/1/2014	989.1	99

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-012	SW 3540C	PCB 12 Asphalt Roof System - Top Field		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 4:20:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/29/2014	1	0

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-012	SW 8082A	PCB 12 Asphalt Roof System - Top Field	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 4:20:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1221	11104-28-2	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1232	11141-16-5	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1248	12672-29-6	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1254	11097-69-1	< 99 ug/Kg		5/1/2014	989.1	99
Aroclor 1260	11096-82-5	< 99 ug/Kg		5/1/2014	989.1	99

Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-013	SW 3540C	PCB 13 Asphalt Roof System - Bottom Field		Solid	JustinF

Start Date/Time Sampled: 4/9/2014 4:25:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Soxhlet Extraction				4/29/2014	1	0

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Sample	Method	Client Sample Identity	Units	Matrix	Analyst
14040300-013	SW 8082A	PCB 13 Asphalt Roof System - Bottom Field	ug/Kg	Solid	CalebH

Start Date/Time Sampled: 4/9/2014 4:25:00 PM **Composite End Date/Time:**

Parameter	CAS Number	Result	Qualifier	Date/Time Analyzed	Dilution Factor	RDL
Aroclor 1016/1242		< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1221	11104-28-2	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1232	11141-16-5	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1248	12672-29-6	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1254	11097-69-1	< 98 ug/Kg		5/1/2014	979.4	98
Aroclor 1260	11096-82-5	< 98 ug/Kg		5/1/2014	979.4	98

Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
TNTC-	Too numerous to count.
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for volatile analysis was not <2 when checked at time of analysis.

Chain of Custody No. 96400

Multiple COC's Yes (No)

(PAGE 2 #COC 95736) 1 of 2

ChemServe ENVIRONMENTAL ANALYSTS

CHAIN OF CUSTODY

317 Elm Street Milford, NH 03055
(603) 673-5440/ Fax (603) 673-0366

Ⓐ CUSTOMER INFORMATION

CUSTOMER: Terracon Consultants, Inc

ADDRESS: 77 Sundial Ave.

CITY/STATE/ZIP Manchester, NH

TELEPHONE: (781) 602-5375

REPORT TO: RDRouillard@Terracon.com

EMAIL TO: Ryan Rouillard

Ⓑ PROJECT INFORMATION

JOB NAME: Massachusetts Mills - Bldg #3

JOB NUMBER: J1147126

LOCATION: 150 Mass Mills Dr, Lowell, MA

INVOICE EMAIL: RDRouillard@Terracon.com

INVOICE TO: R Rouillard

P.O. NUMBER:

Ⓒ SAMPLE INFORMATION

TURNAROUND TIME: (CIRCLE ONE:)

10 DAY STANDARD — RUSH (MUST BE PRE-APPROVED)

7day (5 day) 4 day 3 day 2 day 1 day Same Day

MCP ☒ YES ☐ NO ☐ GWI ☐ GW2 ☐ GW3

STATION # Ⓓ	SAMPLE IDENTIFICATION & LOCATION Ⓔ BLDG #3	COLLECTED Ⓕ DATE	COLLECTED Ⓖ TIME	SAMPLE TYPE Ⓗ GRAB	SAMPLE TYPE Ⓗ COMP	Ⓘ MATRIX SOLID (S) LIQUID (L) COMBINED (C) HAZARD (H)	Ⓙ # OF CONTAINERS	Ⓚ CONTAINER AND PRESERVATIVE: PCB 8082-7 VOA 5540 / TCLP / RCRA 8 Metals										Ⓛ ANALYSIS
PCB 01	WHITE PAINT ON WOOD BEAMS AND CEILING DECK - BASEMENT	4/9	1030	X		S	1	X	X									West End Bldg
PCB 02	WHITE PAINT ON METAL PIPE AND COLUMNS - BASEMENT	4/9	1100	X		S	1	X	X									Center Bldg near (Elevator Shaft)
PCB 03	WHITE PAINT ON BRICK WALLS BASEMENT	4/9	1120	X		S	1	X	X									
PCB 04	OIL-STAINED HARDWOOD FLOORING 1ST FLR - WEST END/CENTER	4/9	1400	X		S	1	X	X									Exists on All Levels
PCB 05	CEILING HUNG PIPE TRAP OILS - BSMT.	4/9	1500	X		S	1	X	X									
PCB 06	OIL ON CONCRETE FOOTING - BASEMENT	4/9	1520	X		S	1	X	X									
PCB 07	EXTERIOR PAINT ON WOOD/METAL WINDOW/DOOR & TRIM	4/9	1530	X		S	1	X	X									
PCB 08	EXTERIOR WINDOW GLAZING (WOOD WINDOWS)	4/9	1540	X		S	1	X	X									Front + Rear Bldg Facade Windows

Ⓜ CUSTODY

SAMPLER: (print name) Ryan Rouillard

SIGNATURE:

		DATE	MILITARY TIME
		4/9/14	1630
RELINQUISHED:		DATE 4/25/14	TIME 1015
RECEIVED:		DATE 4/25/14	TIME 1015
RELINQUISHED:		DATE 4/25/14	TIME 1015
RECEIVED FOR LAB:		DATE 4/25/14	TIME 1015

SAMPLE CHECK LIST:
RECEIVED WITHIN HOLD TIME (YES) OR NO
RECEIVED IN GOOD CONDITION (YES) OR NO
TEMP BLANK 16.0 °C
SHIPPED OR (HAND DELIVERED)
SAMPLES WERE PROPERLY PRESERVED (YES) NO N/A
SAMPLES WERE FILTERED IN FIELD LAB (N/A)
IF NO EXPLAIN:

GROUP # 1404307 5/2

FIELD READING(S) & COMMENTS:

Chain of Custody No. 95736

Multiple COC's (Yes) No

2 of 2

Page 1 COC (#96400)

ChemServe ENVIRONMENTAL ANALYSTS

CHAIN OF CUSTODY

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(603) 673-5440/ Fax (603) 673-0366

(A) CUSTOMER INFORMATION

CUSTOMER: Terracon Consultants, Inc.

ADDRESS: 77 Sundial Ave.

CITY/STATE/ZIP: Manchester, NH

TELEPHONE: (781) 603-5375

REPORT TO: RDRouillard@Terracon.com

EMAIL TO: Ryan Rouillard

(B) PROJECT INFORMATION

JOB NAME: Massachusetts Mills - BLDG #3

JOB NUMBER: J1147126

LOCATION: 150 Mass Mills Dr., Lowell, MA

INVOICE EMAIL: -SAME-

INVOICE TO: R. Rouillard

P.O. NUMBER:

(C) SAMPLE INFORMATION

TURNAROUND TIME: (CIRCLE ONE:)

10 DAY STANDARD — RUSH (MUST BE PRE-APPROVED)

7day (5 day) 4 day 3 day 2 day 1 day Same Day

MCP ☐ YES ☐ NO ☐ GW1 ☐ GW2 ☐ GW3

(K) CONTAINER AND PRESERVATIVE: PCB 8082/3540C; PCB/RCRA 8 Metals

STATION # (D)	SAMPLE IDENTIFICATION & LOCATION (E)	COLLECTED (F) DATE	COLLECTED (G) TIME	SAMPLE TYPE (H) GRAB	SAMPLE TYPE (H) COMP	(I) MATRIX SOLID (S) LIQUID (L) COMBINED (C) HAZARD (H)	(J) # OF CONTAINERS	PCB 8082/3540C	PCB/RCRA 8 Metals									(L) ANALYSIS
PCB 09	White Paint on Interior Brick walls / wood ceiling Deck/columns	4/9	1550	X		S	1		X									
PCB 10	Exterior window caulk (wood/metal windows) to masonry	4/9	1600	X		S	1	X										
PCB 11	Roof Edge Flashing Mastic	4/9	1610	X		S	1	X										
PCB 12	Asphalt Roof System - Top Field	4/9	1620	X		S	1	X										Combined East + West End Samples
PCB 13	Asphalt Roof System - Bottom Field	4/9	1625	X		S	1	X										↓

(M) CUSTODY

SAMPLER: Ryan Rouillard (print name)

SIGNATURE: [signature]

	DATE	MILITARY TIME
SIGNATURE	4/9/14	1640
RELINQUISHED: [signature]	4/25/14	1015
RECEIVED: [signature]	4/25/14	1015
RELINQUISHED: [signature]	4/25/14	1215
RECEIVED FOR LAB: [signature]	4/25/14	1215

SAMPLE CHECK LIST:

RECEIVED WITHIN HOLD TIME (YES) OR NO

RECEIVED IN GOOD CONDITION (YES) OR NO

TEMP BLANK 16.8 °C

SHIPPED OR (HAND) DELIVERED

SAMPLES WERE PROPERLY PRESERVED (YES) NO N/A

SAMPLES WERE FILTERED IN FIELD LAB (N/A)

IF NO EXPLAIN:

GROUP # 14040300 5/2

FIELD READING(S) & COMMENTS:

Appendix C
Field Sketches and ACM Drawing

4/18/14

3/4/B

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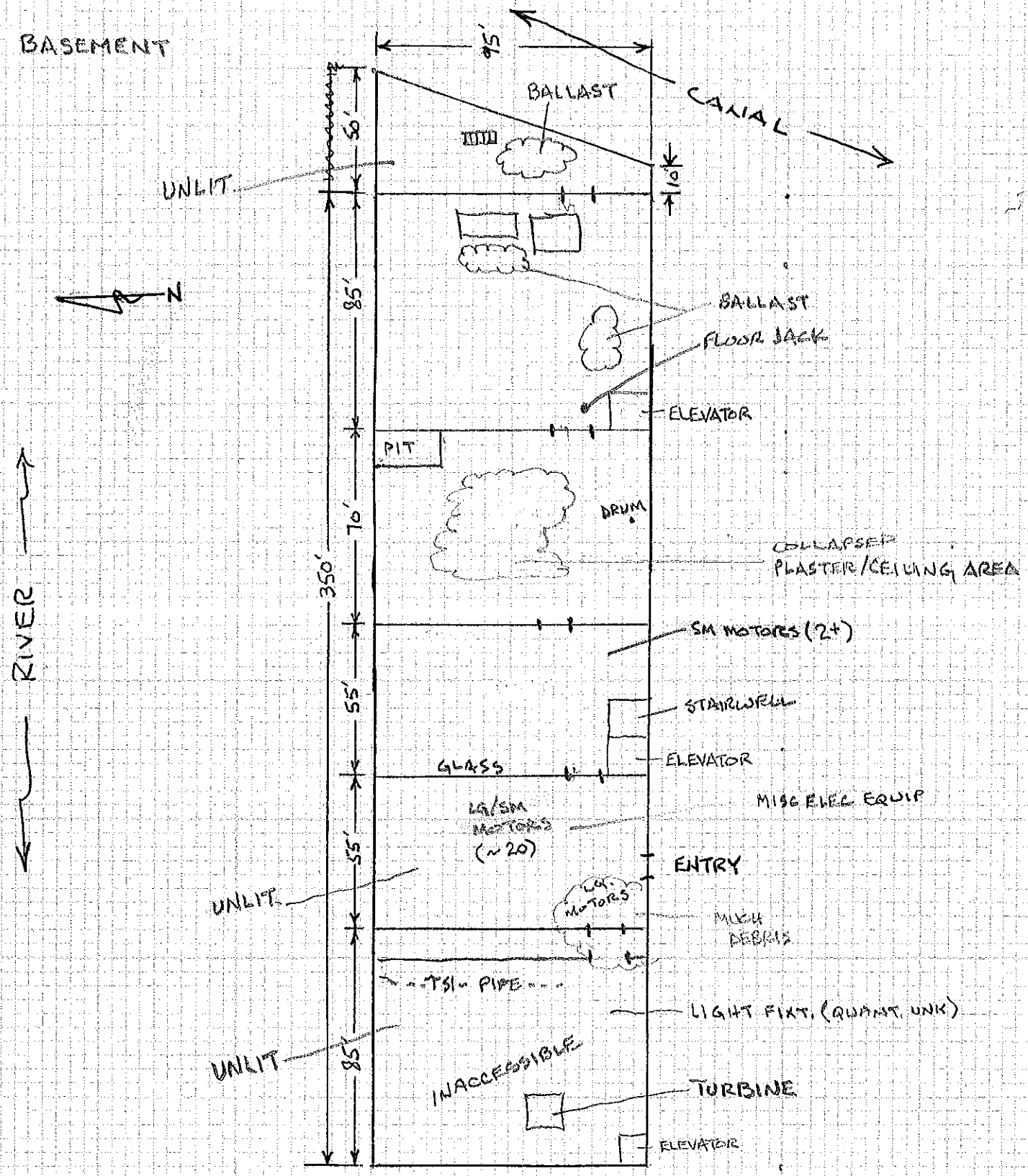
PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/17/14 Comp. By R.E. HAINES ~~CHECKED BY:~~ - NTS -



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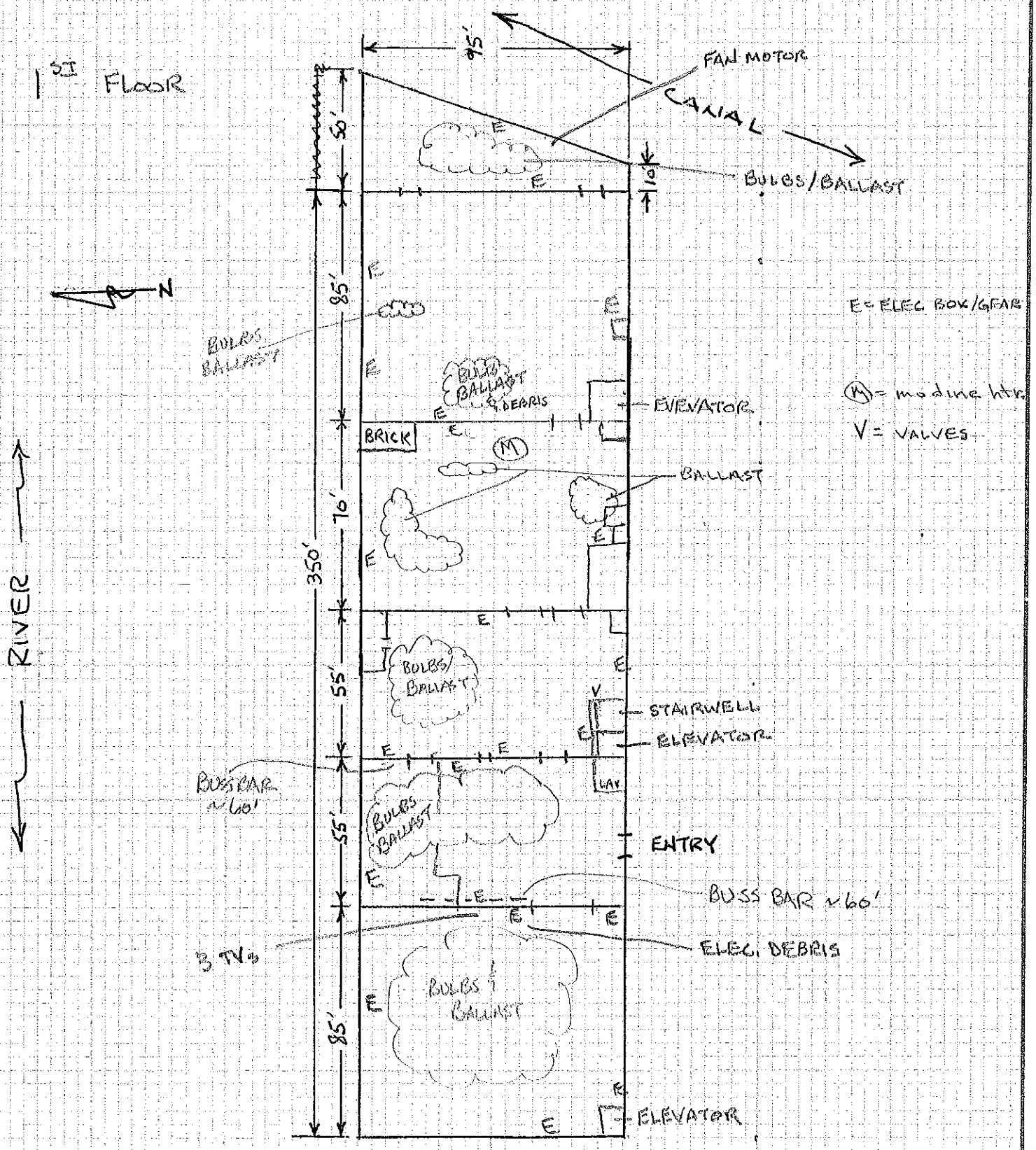
PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/17/14 Comp. By R.E. HAINES ~~CHECKED BY:~~ - NTS -



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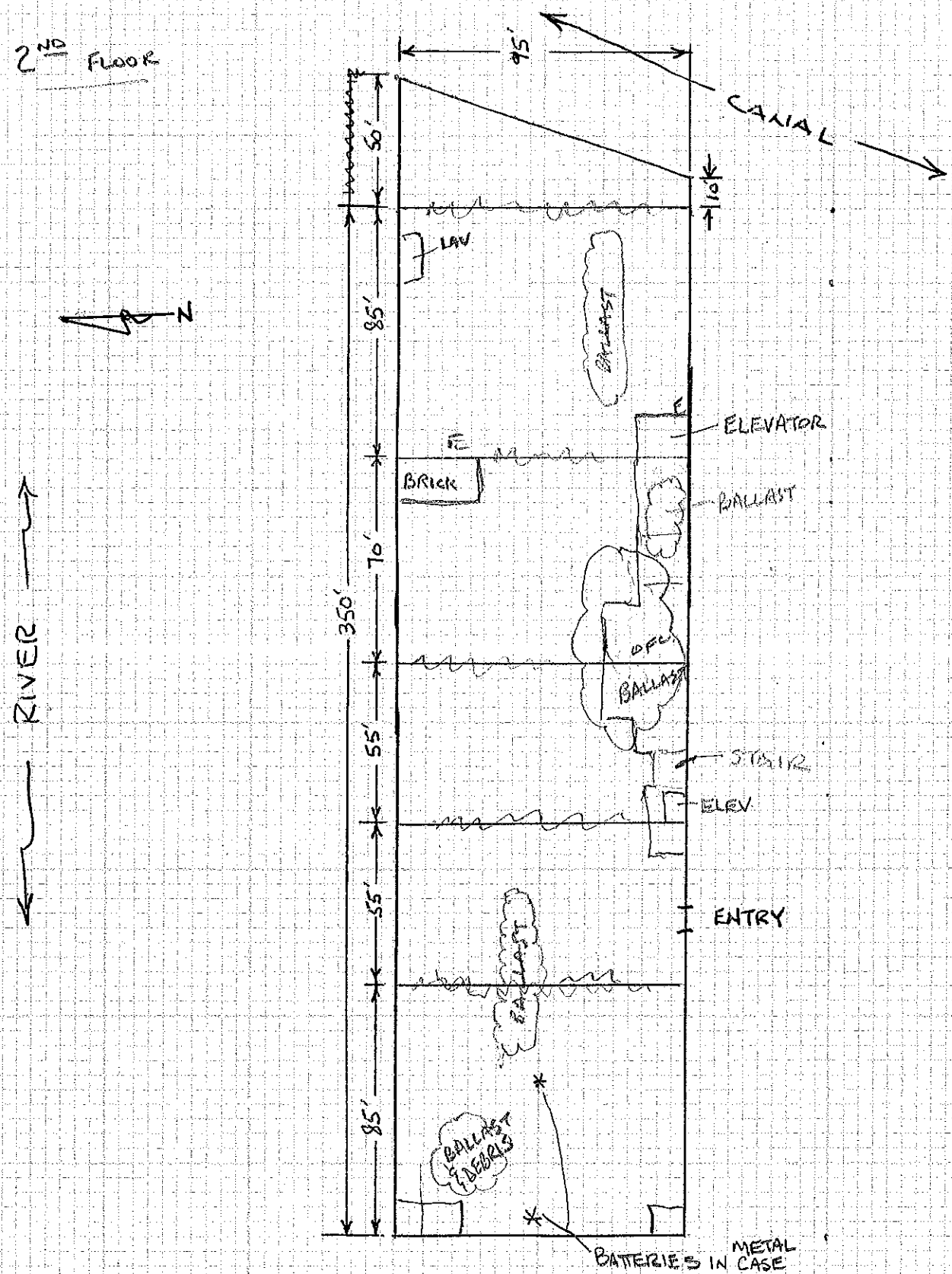
PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/17/14 Comp. By R.E. HAINES ~~CHECKED BY~~: - NTS -



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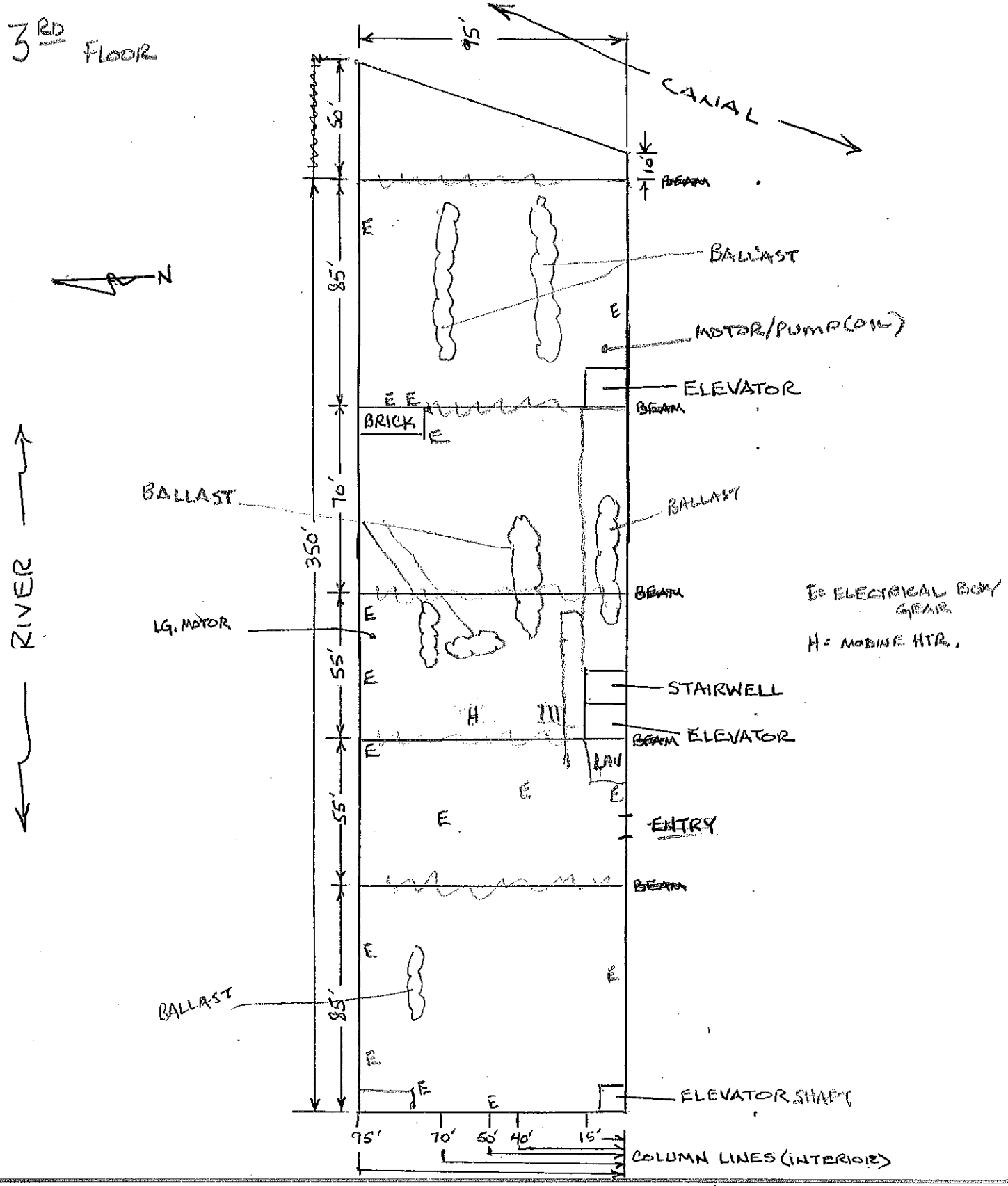
PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/18/14 Comp. By R.E. HAINES ~~CHECKED BY~~: - NTS -



Form 112--5-93

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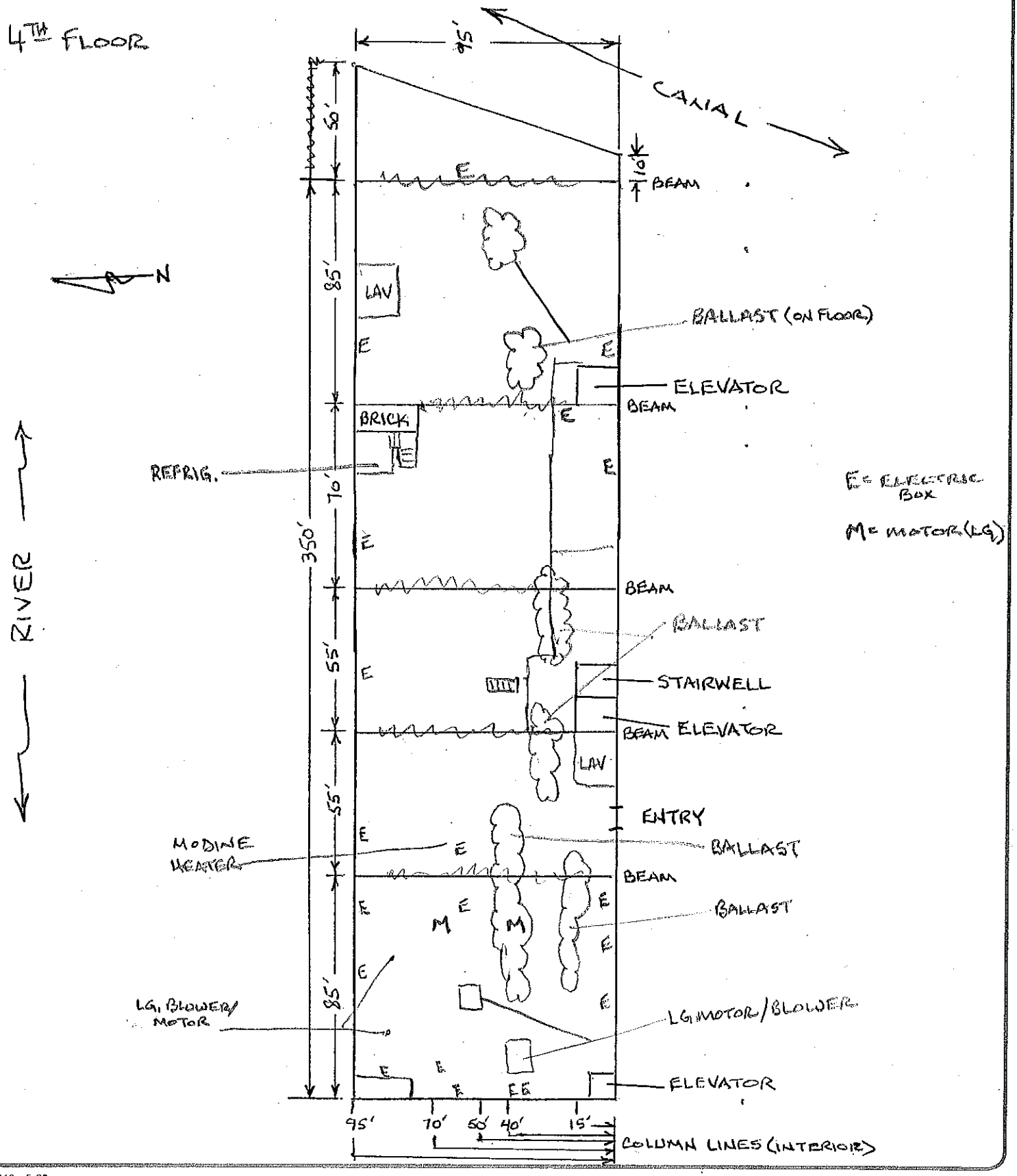
PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/18/14 Comp. By R.E. HAINES ~~CHECKED BY~~: - NTS -

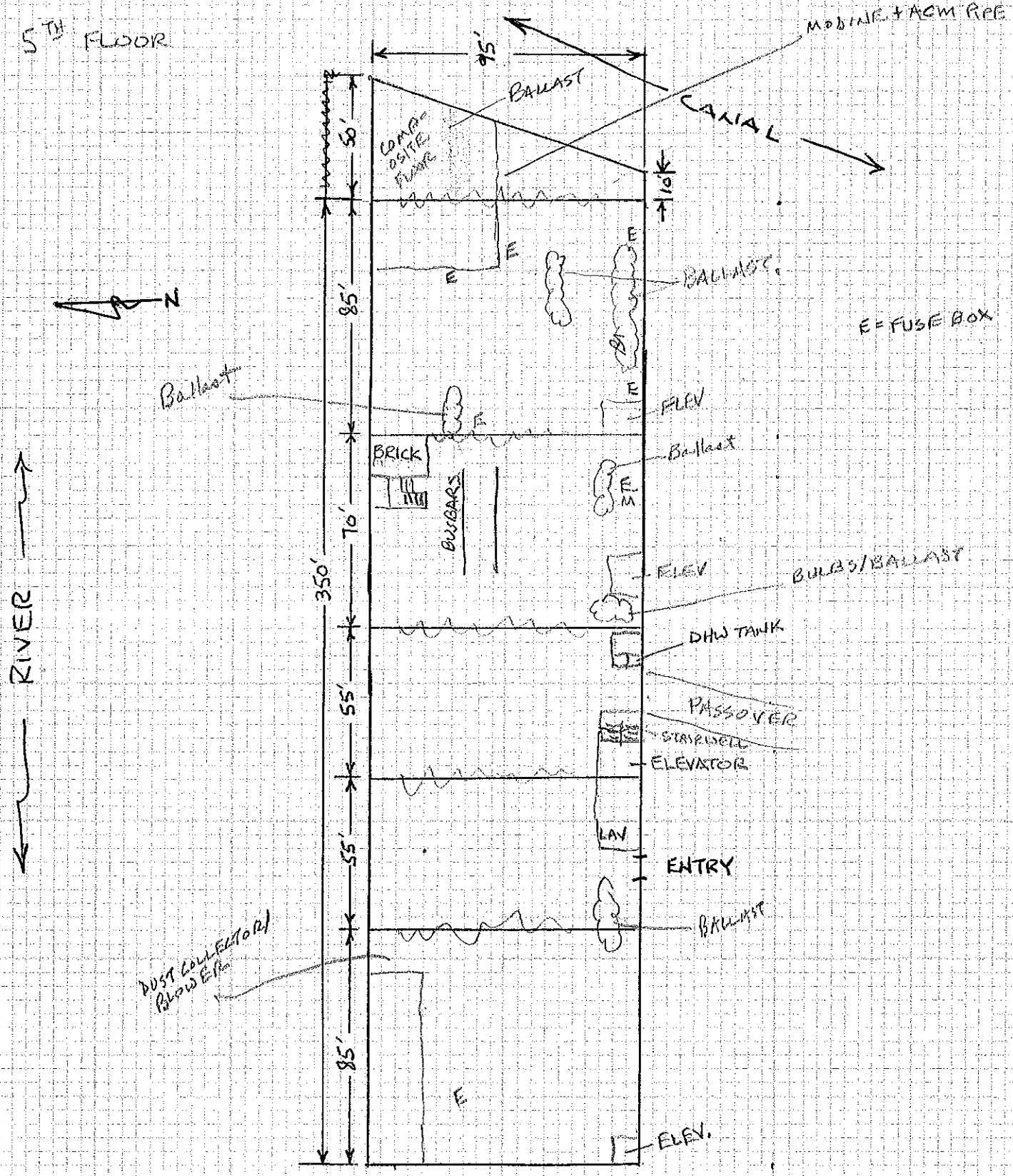


Form 112—5-93

Terracon

PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/17/14 Comp. By R.E. HAINES ~~CHECKED BY:~~ - NTS -



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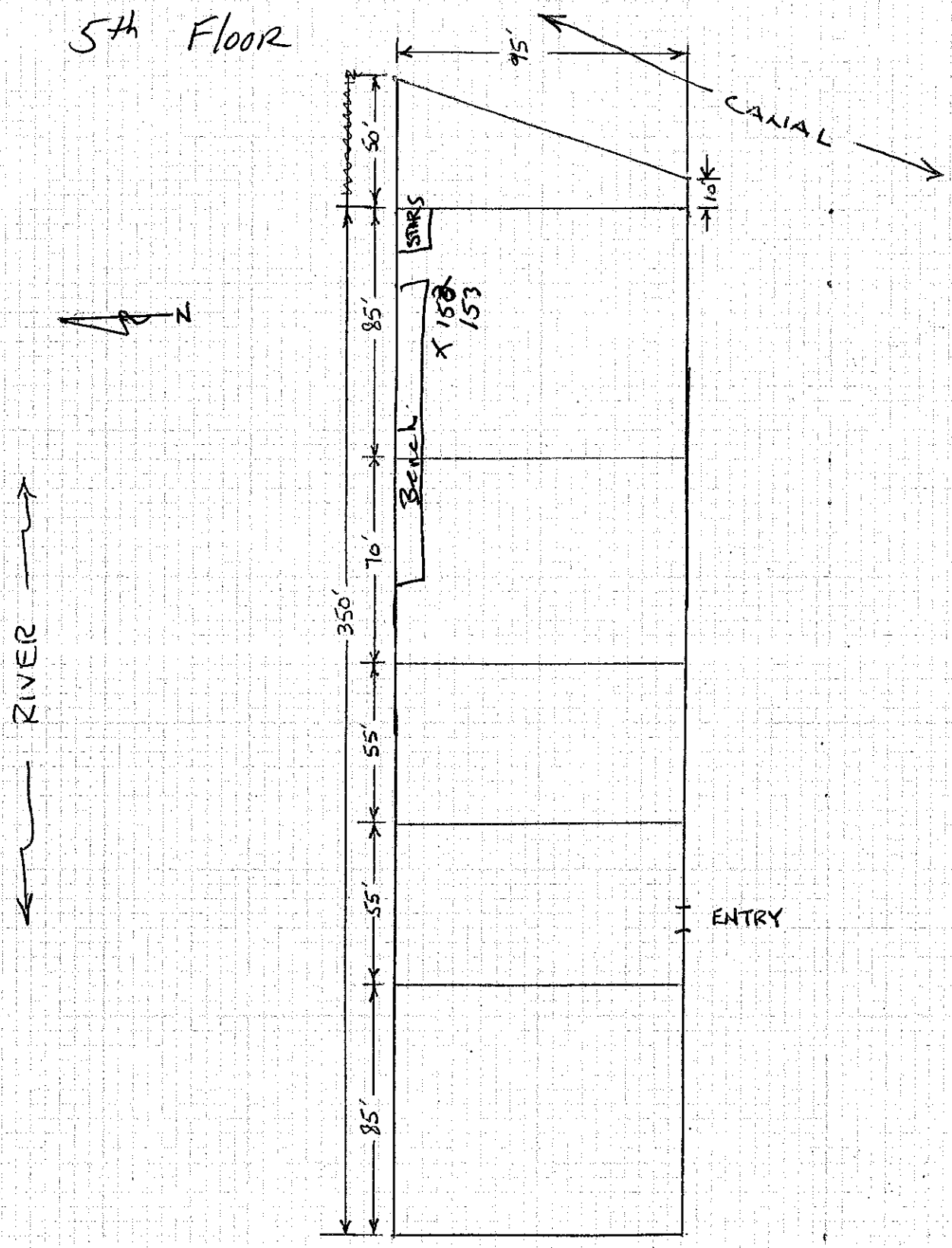
PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/17/14 Comp. By R.E. HAINES ~~CHECKED BY:~~ - NTS -

5th Floor



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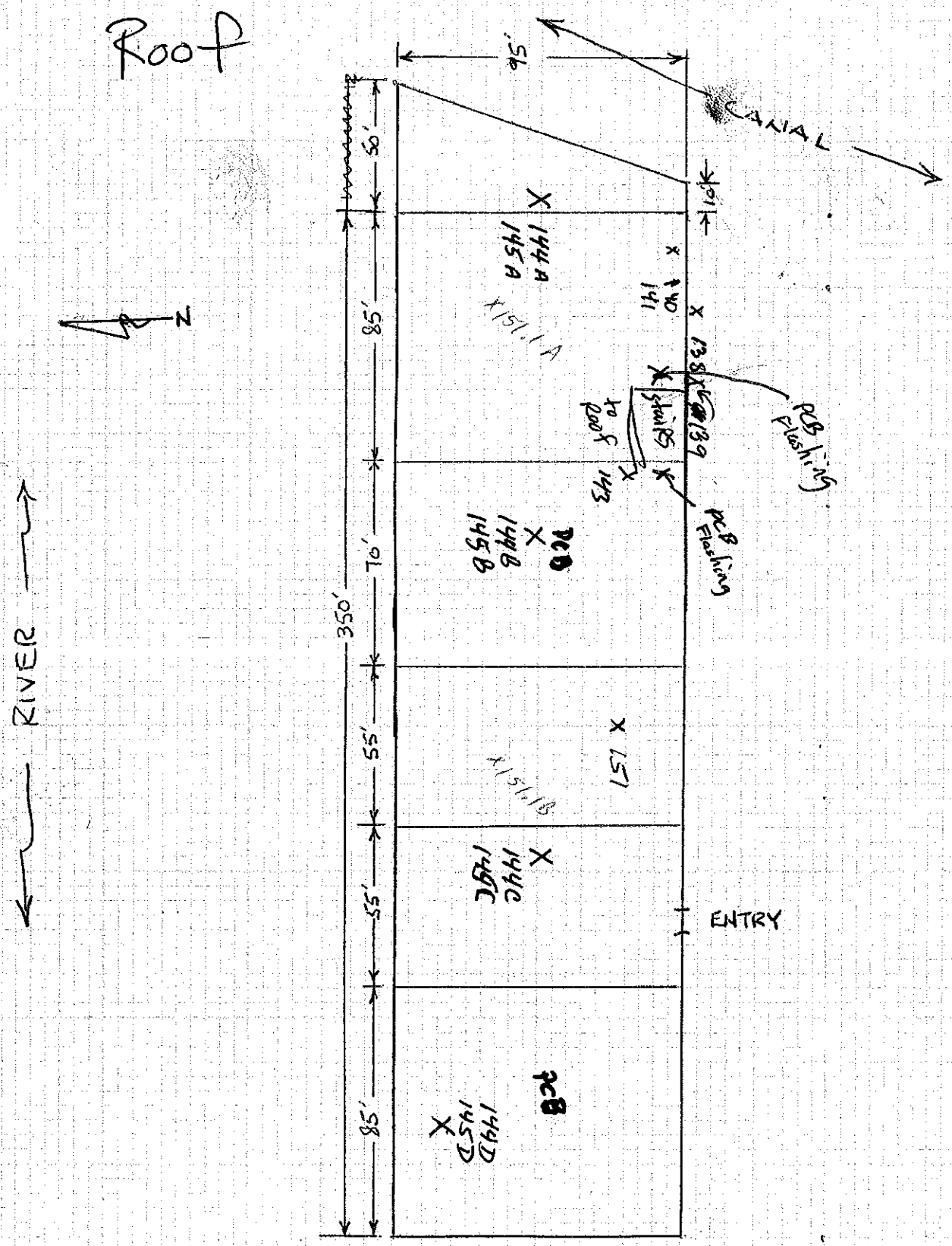
PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/17/14 Comp. By R.E. HAINES ~~CHECKED BY~~: - NTS -

Roof



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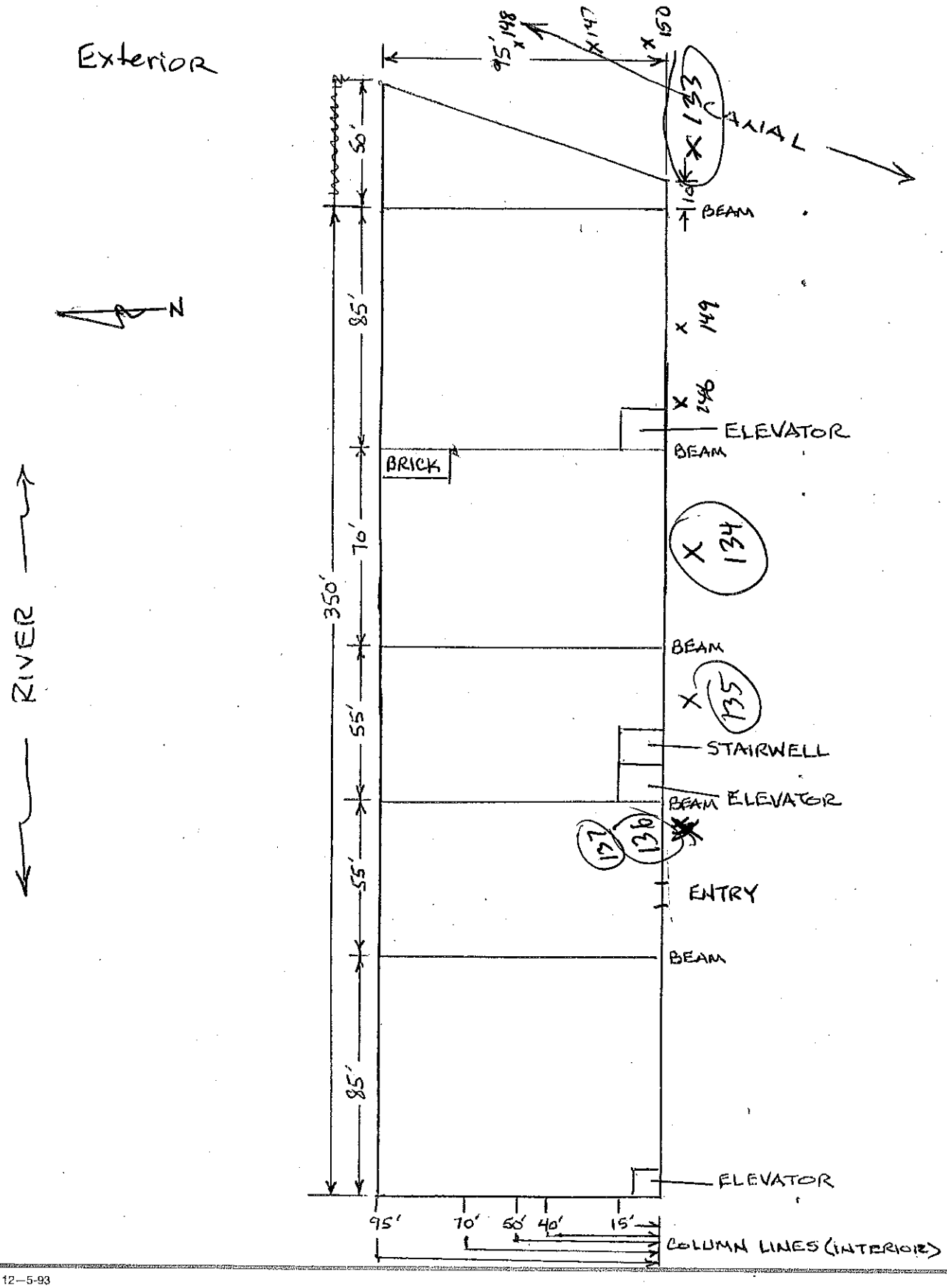
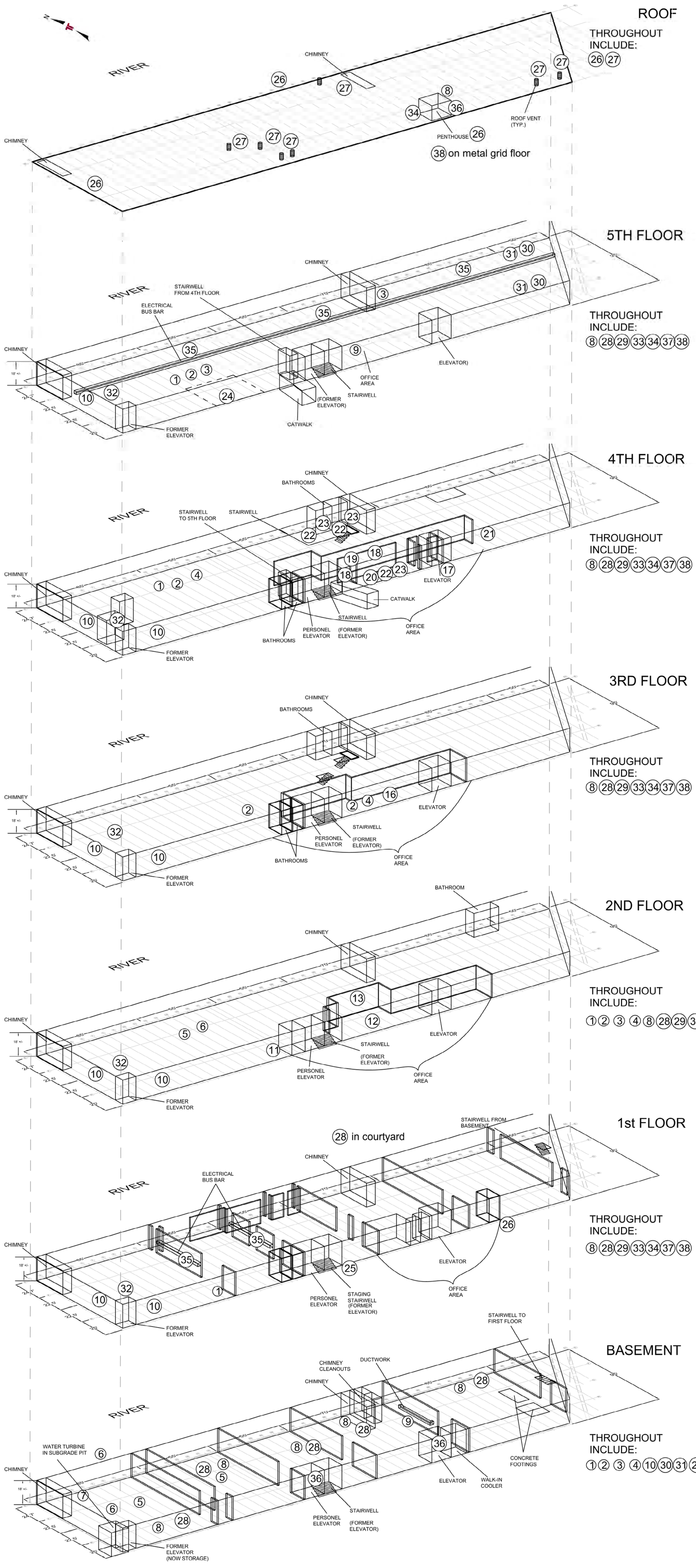
PROJECT: PICKER BLDG. / MASS MILLS / LOWELL, MA Page 1 of 1

JOB NO. J1147126 Date 4/17/14 Comp. By R.E. HAINES ~~CHECKED BY~~: - NTS -



Form 112—5-93



Confirmed Asbestos-Containing Materials:

1. 2-Inch corrugated pipe/fitting insulation
2. 2-Inch white/gray pipe/fitting insulation
3. 4-Inch white/gray pipe/fitting insulation
4. 6-Inch white/gray pipe/fitting insulation
5. 10-Inch white pipe/fitting insulation
6. 12-Inch white pipe/fitting insulation
7. 20-Inch white pipe/fitting insulation
8. Off-white wood window glazing
9. Asbestos-cement board debris
10. Off-white metal window glazing
11. Beige Conveyor belt duct caulk
12. 12"x12" Beige mottle floor tile
13. Tan interior window glazing
14. 9"x9" Brown floor tile and associated mastic
15. Gray cementitious flooring (painted red)
16. 9"x9" Brown mottle floor tile
17. Brown glue daubs
18. Light Brown glue daubs
19. 9"x9" Tan floor tile and associated black mastic (over 9"x9" green floor tile and beneath carpeting)
20. White wood window sash and sill glazing
21. 9"x9" Salmon floor tile and associated black mastic
22. 12"x12" Light green mottle floor tile
23. Yellow adhesive associated with the 12"12" light gray mottle floor tile
24. Cream diamond-shaped sheet flooring/backing/adhesive beneath the 12"x12" light gray mottle floor tile and associated yellow adhesive
25. Green asphalt siding
26. Gray roof sealant/edge flashing sealant
27. Roof penetration mastic
28. Window glazing debris
29. Pipe/fitting insulation debris

Trace (less than 1%) concentrations of asbestos were identified in the following:

30. Plaster base/skim coats on metal and wood lathe
31. Plaster debris located on flooring
32. White glazing on wire-mesh (metal frame) windows

Assumed Universal Wastes:

33. Universal wastes (i.e., bulbs/ballasts, asbestos board and assumed PCB oils in electrical equipment and elevator motors/water in elevator pits, hydraulic door closers, mercury-containing equipment, emergency exit signs/lights with lead-acid batteries, fire extinguishers, and other universal wastes).

Assumed asbestos materials include:

34. Asbestos-cement board in electrical equipment
35. Asbestos-cement board in ceiling-hung bus duct
36. Asbestos elevator brake pads
37. Asbestos pipe/fitting insulation debris, loose and flaking lead paint debris, and other hazardous materials debris
38. Lead paint on brick walls, wood ceiling decks/beams, and metal columns/components (interior/exterior building).

Prepared For: REES-LARKIN DEVELOPMENT 179 BOYLSTON STREET BUILDING P JAMAICA PLAIN, MA 02130	Project Mngr: RDR Drawn By: MCR Checked By: ADS Approved By: RRR	Project No. J1147122/J1147126 Scale: 1" = 30' File No. J1147126.dwg Date: May 2014	PRE-RENOVATION ASBESTOS AND HAZARDOUS MATERIALS PLAN MASSACHUSETTS MILLS - BUILDING #3 (PICKER BUILDING) (FORMER LY 95 BRIDGE STREET LOWELL, MASSACHUSETTS

Terracon
77 Sundial Ave. Manchester, NH 03103
PH. (603)647-9700 FAX (603) 647-4432

Appendix D
LBP Solutions, LLC XRF Lead Survey Report

Pre-Renovation/Demolition
Lead Based Paint Determination

Project:

150 Mass Mills Drive
Lowell, MA 01852

Dates:

March 13 and April 17, 18, 2014

Prepared By:

LBP Solutions, LLC
P.O. Box 2134
Attleboro, MA 02703

Prepared For:

Terracon – Northeast Division
77 Sundial Avenue, Suite 401W
Manchester, NH 03103

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2 SITE DESCRIPTION: 4

3 SURVEY PERSONNEL 4

4 TESTING METHODOLOGY 4

5 XRF TESTING RESULTS 6

6 CONCLUSIONS AND RECOMMENDATIONS 12

7 APPENDICES 13

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Certification of Field Activities

Lead Determination

Site Location:	150 Mass Mills Drive Lowell, MA 01852
Conducted By:	Jeffery W. Harris
Title:	Master Lead Inspector, License # M/R 3708
Dates:	March 13 and April 17, 18, 2014
Signature:	_____

Report Preparation

Prepared By:	Jeffery W. Harris
Title:	Master Lead Inspector, License # M/R 3708
Dates:	April 23, 2013
Signature:	_____

1 Executive Summary:

LBP Solutions, LLC conducted an OSHA Lead Based Paint Determination on March 13 and April 17 and 18, 2014 of interior and exterior components of the building at 150 Mass Mills Drive, Lowell, MA 01852. Mr. Jeffery W. Harris conducted the on-site investigation.

The intent of the lead paint survey was to identify building surfaces in designated areas, coated with lead based paint, utilizing XRF testing technology. The information collected, as a result of testing, can be used to ensure OSHA compliance relative to worker exposure and proper disposal of demolition debris.

Some components tested were found to be coated with lead based paint $\geq$ 0.4 mg/cm2. A detailed listing of surfaces tested with the x-ray fluorescence analyzer can be found in section 5. The data in this report is representative of the interior and exterior surfaces that were accessible on survey dates listed above.

The information contained in this report summarizes the sampling and analytical methodologies, site description, materials found to contain lead based paint, quantities, XRF testing results and qualifications of personnel.

2 Site Description:

150 Mass Mills Drive, Lowell, MA 01852 is a vacant, brick mill building. Visual assessments and representative XRF testing was conducted on the interior and exterior of the building, as requested by the client. The building has no electricity or lights and as a result the inspection was conducted using headlamps and flash lights. Some areas were not accessible at the time of the inspection due to significant debris blocking access in the basement and safety considerations throughout such as rotted, fire and/or water damaged floors and ceilings. All of the window and door debris scattered throughout the basement that was tested had levels in excess of 0.4 mg/cm2.

3 Survey Personnel

Jeffery W. Harris, MA license # M/R 3708 conducted the lead-based paint determination.

4 Testing Methodology

Lead in paint sampling of representative interior building surfaces was conducted to assist with Contractor compliance with the United States Department of Labor (US DOL) Occupational Safety and Health Administration (OSHA) Lead Exposure in Construction Standard (29 CFR 1926.62), EPA Hazardous Waste Disposal Regulations (40 CFR Parts 260 through 271.

Representative surfaces from selected accessible areas of the building were analyzed using an X-Ray Fluorescence Analyzer (XRF). An RMD, LPA-1 Lead Paint XRF Analyzer, Serial Number 2730 was used, which is a complete lead paint analysis system that quickly, accurately, and non-destructively measures the concentration of LBP on surfaces. Please refer to Appendix A for specific sampling methodologies associated with the XRF.

The XRF abatement level was set to 0.4 mg/cm2 as per manufacturer's specifications. The XRF unit is designed to take a measurement with a 95% confidence down to a level of 0.2 mg/cm2. XRF readings below 0.2 mg/cm2 cannot be used conclusively to determine the presence/absence of lead in paint. Further analysis of these samples via laboratory analysis is recommended for clarification of the presence or absence of lead. If no lead is detected by laboratory analysis then the OSHA Lead in Construction Standard does not apply to that particular surface. Surfaces with XRF readings below 0.2 mg/cm2, with no paint chip sampling conducted should be assumed to contain lead unless further lab analysis indicates otherwise.

XRF field screening results and locations are noted on the table included within this report under Section 5. The table contains the type of component tested, the condition of the paint ("Intact", "Fair" or "Poor"), the type of substrate (such as wood, metal, etc.) and the color of the component. The locations of the individual tests are listed by room number as well as the corresponding lead results in (mg/cm^2) as reported by the XRF.

The Risk Assessor used an RMD X-ray fluorescence analyzer, Model LPA-1, to perform the lead-based paint determination. In conducting the determination, various representative architectural elements were tested. Not all painted surfaces in each functional space were tested for the presence of lead-based paint. Section 5 contains the XRF Data for this property. The Detailed Report represents all XRF readings of coated surfaces tested.

5 XRF Testing Results

SUMMARY REPORT OF LEAD PAINT INSPECTION FOR: 150 mass Mills Drive, Lowell, MA 01852

Inspection Date: 04/17/14
Report Date: 5/12/2014
Abatement Level: 0.4
Report No. 04/17/14 09:00
Total Readings: 203 Actionable: 123
Job Started: 04/17/14 09:00

Read No.	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm²)	Mode
Exterior Room 001 Exterior									
168	A	Wall	U Rgt		P	Brick	White	1.2	QM
172	A	Door	Ctr	Door	P	Wood	green	7.0	QM
Interior Room 001 1st Floor									
004	-	Support Colu	Ctr		P	Metal	green	3.6	QM
005	-	Support Colu	Ctr		P	Metal	White	4.1	QM
014	-	Support Colu	Rgt		P	Metal	green	4.8	QM
021	A	Fire System	Ctr		P	Metal	White	2.3	QM
012	A	Wall	U Ctr		P	Brick	blue	2.5	QM
	Bath								
023	A	Wall	U Rgt		P	Brick	White	3.7	QM
024	A	Wall	U Rgt		P	Brick	green	4.1	QM
006	A	Window	Ctr	Sash	P	Metal	green	2.4	QM
022	A	Door	Ctr	Lintel	P	Metal	White	2.1	QM
	Brick Arcways								
011	B	Wall	U Ctr		P	Brick	White	2.7	QM
008	C	Support Colu	Ctr		P	Metal	green	4.3	QM
	Right of Exhaust Fan								
016	C	ElecConduit	Ctr		P	Metal	White	0.7	QM
009	C	Wall	U Ctr		P	Brick	green	4.3	QM
010	C	Wall	U Ctr		P	Brick	White	5.7	QM
007	C	Window	Ctr	Frame	P	Wood	green	6.9	QM
015	C	Window	Ctr	Frame	P	Wood	green	4.5	QM
017	C	Door	Ctr	Frame	P	Metal	White	1.6	QM
	Brick Archways								
018	C	Door	Ctr	Door	P	Metal	White	3.4	QM
	Hanging Sliding Door								
025	D	Wall	U Ctr		P	Brick	green	4.6	QM
029	D	Wall	U Rgt		P	Brick	red	5.6	QM
Interior Room 002 2nd Floor									
041	-	Support Colu	Lft		P	Metal	green	1.8	QM
045	-	Support Colu	Lft		P	Metal	White	2.2	QM
040	-	Support Colu	Ctr		P	Metal	green	2.9	QM
044	-	Support Colu	Ctr		P	Metal	White	2.1	QM
042	-	Support Colu	Rgt		P	Metal	green	1.6	QM
043	-	Support Colu	Rgt		P	Metal	White	2.3	QM
052	A	Pipes	Rgt		P	Metal	White	1.6	QM
031	A	Wall	U Ctr		P	Brick	White	1.0	QM
032	A	Wall	U Ctr		P	Brick	green	2.1	QM
033	A	Wall	U Ctr		P	Brick	blue	1.6	QM
048	A	Window	Rgt	Frame	P	Wood	Brown	5.1	QM
047	A	Window	Rgt	Sash	P	Wood	Brown	4.6	QM
036	B	Wall	U Ctr		P	Brick	green	2.1	QM
037	B	Wall	U Ctr		P	Brick	White	2.4	QM
049	C	Partition	Rgt		P	Wood	green	1.4	QM
	Bathroom								
053	C	Pipes	Rgt		P	Metal	green	3.5	QM
034	C	Wall	U Ctr		P	Brick	White	1.2	QM
035	C	Wall	U Ctr		P	Brick	green	1.9	QM
050	C	Window	Rgt	Frame	P	Wood	White	9.3	QM
038	D	Wall	U Ctr		P	Brick	White	1.7	QM

039	D	Wall	U	Ctr		P	Brick	green	1.9	QM
Interior Room 003 3rd Floor										
057	-	Support Colu		Lft		P	Metal	White	2.8	QM
058	-	Support Colu		Lft		P	Metal	green	4.1	QM
056	-	Support Colu		Ctr		P	Metal	White	4.6	QM
059	-	Support Colu		Ctr		P	Metal	green	2.7	QM
055	-	Support Colu		Rgt		P	Metal	White	3.9	QM
060	-	Support Colu		Rgt		P	Metal	green	3.6	QM
054	A	Pipes		Rgt		P	Metal	White	1.4	QM
063	A	Wall	U	Ctr		P	Brick	White	3.5	QM
064	A	Wall	U	Ctr		P	Brick	green	2.2	QM
071	A	Window		Ctr	Sash	P	Wood	White	5.8	QM
084	A	Door		Ctr	Frame	P	Metal	black	0.5	QM
085	A	Stairs		Ctr	Risers	P	Wood	Grey	0.7	QM
061	B	Wall	U	Ctr		P	Brick	green	2.4	QM
062	B	Wall	U	Ctr		P	Brick	White	2.1	QM
065	C	Wall	U	Ctr		P	Brick	green	4.2	QM
066	C	Wall	U	Ctr		P	Brick	White	2.9	QM
075	C	Wall	U	Ctr		P	Brick	Grey	7.9	QM
067	D	Wall	U	Ctr		P	Brick	White	2.7	QM
068	D	Wall	U	Ctr		P	Brick	green	2.2	QM
Interior Room 004 4th Floor										
099	-	Support Colu		Lft		P	Metal	White	3.9	QM
098	-	Support Colu		Ctr		P	Metal	White	5.6	QM
100	-	Support Colu		Rgt		P	Metal	White	4.1	QM
091	A	Wall	U	Ctr		P	Brick	White	1.9	QM
102	A	Window		Ctr	Frame	P	Wood	White	8.4	QM
108	A	Door		Ctr	Door	P	Metal	Brown	0.6	QM
	Elevator									
092	B	Wall	U	Ctr		P	Brick	White	3.6	QM
105	B	Window		Ctr	Sash	P	Metal	White	1.9	QM
113	C	Pipes		Ctr		P	Metal	White	2.6	QM
	Bathroom									
093	C	Wall	U	Ctr		P	Brick	White	2.2	QM
094	D	Wall	U	Ctr		P	Brick	White	4.1	QM
Interior Room 005 5th Floor										
153	A	Support		Ctr		P	Metal	White	2.9	QM
	Bridge Support Framework									
164	A	Partition		Ctr		P	Wood	White	1.4	QM
	Bathroom									
165	A	Radiator		Ctr		P	Metal	White	1.9	QM
	Bathroom									
166	A	Waste Pipe		Ctr		P	Metal	White	3.6	QM
	Bathroom									
125	A	Wall	U	Ctr		P	Brick	Grey	4.5	QM
126	A	Wall	U	Ctr		P	Brick	White	5.6	QM
152	A	Wall	U	Ctr		P	Metal	White	2.5	QM
	Bridge									
144	A	Window		Rgt	Sash	P	Metal	White	3.4	QM
149	A	Door		Ctr	Door	P	Metal	Grey	2.1	QM
	Sliding Track									
167	A	Door		Ctr	Header	P	Metal	Grey	3.2	QM
	Elevator									
147	B	Support Colu		Lft		P	Metal	red	1.9	QM
148	B	Support Colu		Lft		P	Metal	Beige	1.6	QM
146	B	Wall	L	Rgt		P	Brick	green	2.6	QM
127	B	Wall	U	Ctr		P	Brick	White	3.9	QM
128	B	Wall	U	Ctr		P	Brick	Grey	4.2	QM
145	B	Wall	U	Rgt		P	Brick	Yellow	1.5	QM
143	B	Window		Ctr	Sash	P	Metal	White	2.1	QM
137	C	Support Colu		Lft		P	Metal	Grey	6.1	QM
142	C	Support Colu		Lft		P	Metal	White	5.1	QM
135	C	Pipes		Ctr		P	Metal	White	3.5	QM
136	C	Pipes		Ctr		P	Metal	Grey	6.2	QM
138	C	Support Colu		Ctr		P	Metal	Grey	3.5	QM
141	C	Support Colu		Ctr		P	Metal	White	6.7	QM
139	C	Support Colu		Rgt		P	Metal	Grey	0.4	QM
140	C	Support Colu		Rgt		P	Metal	White	3.8	QM

129	C	Wall	U	Ctr		P	Brick	Grey	6.5	QM
130	C	Wall	U	Ctr		P	Brick	White	4.1	QM
158	C	Window		Ctr	Sash	P	Wood	White	6.8	QM
131	D	Wall	U	Ctr		P	Brick	White	3.5	QM
132	D	Wall	U	Ctr		P	Brick	Grey	6.2	QM
Interior Room 006 Basement										
179	-	Support Colu		Lft		P	Metal	White	1.9	QM
180	-	Support Colu		Ctr		P	Metal	White	1.6	QM
182	-	Waste Pipe		Ctr		P	Metal	Beige	1.4	QM
184	-	Duct Work		Ctr		P	Aluminum	Beige	0.5	QM
181	-	Support Colu		Rgt		P	Metal	White	2.4	QM
186	-	Window		Ctr	Debris	P	Wood	Grey	6.8	QM
187	-	Door		Rgt	Frame	P	Metal	Beige	2.4	QM
188	A	Wall	U	Ctr		P	Brick	White	0.6	QM
189	A	Window		Rgt	Frame	P	Wood	Beige	>9.9	QM
190	A	Window		Rgt	Sash	P	Wood	Beige	>9.9	QM
191	A	Door		Ctr	Debris	P	Wood	Beige	>9.9	QM
193	B	Foundation		Ctr		P	Granite	White	1.4	QM
192	B	Wall	U	Ctr		P	Brick	White	0.7	QM
194	B	Window		Ctr	Frame	P	Wood	Beige	5.6	QM
195	B	Window		Ctr	Sash	P	Wood	Beige	6.0	QM
196	B	Door		Ctr	Frame	P	Metal	Grey	4.5	QM
197	C	Wall	U	Ctr		P	Brick	White	0.6	QM
198	C	Ceiling		Ctr		P	Concrete	White	1.5	QM
199	C	Window		Ctr	Frame	P	Wood	Beige	>9.9	QM
200	C	Window		Ctr	Sash	P	Wood	Beige	6.9	QM

Comment:
Waste Pipe Room

Calibration Readings

---- End of Readings ----

The Summary report represents all readings that were ≥ 0.4 mg/cm2. OSHA considers all readings above 0.0 mg/cm2 to be lead. Please see Detailed Report below for all readings.

DETAILED REPORT OF LEAD PAINT INSPECTION FOR: 150 mass Mills Drive, Lowell, MA 01852

Inspection Date: 04/17/14
Report Date: 5/12/2014
Abatement Level: 0.4
Report No. 04/17/14 09:00
Total Readings: 203
Job Started: 04/17/14 09:00

Read No.	Wall	Structure	Location	Member	Paint Cond	Substrate	Paint Color	Lead (mg/cm²)	Mode
Exterior Room 001 Exterior									
168	A	Wall	U Rgt		P	Brick	White	1.2	QM
170	A	Window	Ctr	Frame	P	Wood	green	0.0	QM
169	A	Window	Ctr	Sash	P	Wood	green	0.0	QM
172	A	Door	Ctr	Door	P	Wood	green	7.0	QM
171	A	Door	Rgt	Frame	P	Wood	green	0.0	QM
174	B	Window	Ctr	Frame	P	Wood	green	0.0	QM
173	B	Window	Ctr	Sash	P	Wood	green	0.0	QM
175	C	Window	Ctr	Frame	P	Wood	green	0.0	QM
176	C	Window	Ctr	Sash	P	Wood	green	0.0	QM
178	D	Window	Ctr	Frame	P	Wood	green	0.0	QM
177	D	Window	Ctr	Sash	P	Wood	green	0.0	QM
Interior Room 001 1st Floor									
004	-	Support Colu	Ctr		P	Metal	green	3.6	QM
005	-	Support Colu	Ctr		P	Metal	White	4.1	QM
014	-	Support Colu	Rgt		P	Metal	green	4.8	QM
013	A	Partition	Ctr		P	Wood	blue	0.2	QM
021	A	Fire System	Ctr		P	Metal	White	2.3	QM

012	A	Wall	U	Ctr		P	Brick	blue	2.5	QM
	Bath									
023	A	Wall	U	Rgt		P	Brick	White	3.7	QM
024	A	Wall	U	Rgt		P	Brick	green	4.1	QM
020	A	Window		Ctr	Frame	P	Wood	green	0.0	QM
006	A	Window		Ctr	Sash	P	Metal	green	2.4	QM
019	A	Window		Ctr	Sash	P	Wood	green	0.0	QM
022	A	Door		Ctr	Lintel	P	Metal	White	2.1	QM
	Brick Arcways									
011	B	Wall	U	Ctr		P	Brick	White	2.7	QM
008	C	Support Colu		Ctr		P	Metal	green	4.3	QM
	Right of Exhaust Fan									
016	C	ElecConduit		Ctr		P	Metal	White	0.7	QM
009	C	Wall	U	Ctr		P	Brick	green	4.3	QM
010	C	Wall	U	Ctr		P	Brick	White	5.7	QM
007	C	Window		Ctr	Frame	P	Wood	green	6.9	QM
015	C	Window		Ctr	Frame	P	Wood	green	4.5	QM
017	C	Door		Ctr	Frame	P	Metal	White	1.6	QM
	Brick Archways									
018	C	Door		Ctr	Door	P	Metal	White	3.4	QM
	Hanging Sliding Door									
025	D	Wall	U	Ctr		P	Brick	green	4.6	QM
028	D	Wall	U	Rgt		P	Wood	black	-0.1	QM
029	D	Wall	U	Rgt		P	Brick	red	5.6	QM
026	D	Floor		Rgt		P	Wood	Grey	0.2	QM
027	D	Door		Rgt	Header	P	Wood	Lt Green	0.1	QM
030	D	Door		Rgt	Header	P	Metal	White	0.2	QM
	Cage									
Interior Room 002 2nd Floor										
041	-	Support Colu		Lft		P	Metal	green	1.8	QM
045	-	Support Colu		Lft		P	Metal	White	2.2	QM
040	-	Support Colu		Ctr		P	Metal	green	2.9	QM
044	-	Support Colu		Ctr		P	Metal	White	2.1	QM
042	-	Support Colu		Rgt		P	Metal	green	1.6	QM
043	-	Support Colu		Rgt		P	Metal	White	2.3	QM
052	A	Pipes		Rgt		P	Metal	White	1.6	QM
031	A	Wall	U	Ctr		P	Brick	White	1.0	QM
032	A	Wall	U	Ctr		P	Brick	green	2.1	QM
033	A	Wall	U	Ctr		P	Brick	blue	1.6	QM
046	A	Wall	U	Rgt		P	Dry wall	White	-0.1	QM
048	A	Window		Rgt	Frame	P	Wood	Brown	5.1	QM
047	A	Window		Rgt	Sash	P	Wood	Brown	4.6	QM
036	B	Wall	U	Ctr		P	Brick	green	2.1	QM
037	B	Wall	U	Ctr		P	Brick	White	2.4	QM
049	C	Partition		Rgt		P	Wood	green	1.4	QM
	Bathroom									
053	C	Pipes		Rgt		P	Metal	green	3.5	QM
034	C	Wall	U	Ctr		P	Brick	White	1.2	QM
035	C	Wall	U	Ctr		P	Brick	green	1.9	QM
050	C	Window		Rgt	Frame	P	Wood	White	9.3	QM
051	C	Window		Rgt	Sash	P	Wood	White	0.0	QM
038	D	Wall	U	Ctr		P	Brick	White	1.7	QM
039	D	Wall	U	Ctr		P	Brick	green	1.9	QM
Interior Room 003 3rd Floor										
057	-	Support Colu		Lft		P	Metal	White	2.8	QM
058	-	Support Colu		Lft		P	Metal	green	4.1	QM
056	-	Support Colu		Ctr		P	Metal	White	4.6	QM
059	-	Support Colu		Ctr		P	Metal	green	2.7	QM
076	-	Support Colu		Ctr		P	Wood	red	0.3	QM
055	-	Support Colu		Rgt		P	Metal	White	3.9	QM
060	-	Support Colu		Rgt		P	Metal	green	3.6	QM
087	-	Ceiling		Ctr		P	Wood	White	0.0	QM
088	-	Ceiling		Ctr	Beam	P	Wood	White	0.0	QM
054	A	Pipes		Rgt		P	Metal	White	1.4	QM
063	A	Wall	U	Ctr		P	Brick	White	3.5	QM
064	A	Wall	U	Ctr		P	Brick	green	2.2	QM
069	A	Wall	U	Ctr		P	Wood	green	0.2	QM
070	A	Wall	U	Ctr		P	Wood	White	0.1	QM
079	A	Wall	U	Ctr		P	Dry wall	Grey	-0.1	QM

080	A	Wall	U	Ctr		P	Dry wall	green	-0.1	QM
081	A	Wall	U	Ctr		P	Dry wall	White	0.2	QM
072	A	Window		Ctr	Frame	P	Wood	White	0.0	QM
071	A	Window		Ctr	Sash	P	Wood	White	5.8	QM
082	A	Door		Ctr	Frame	P	Wood	Lt Green	0.1	QM
083	A	Door		Ctr	Frame	P	Wood	Brown	0.2	QM
084	A	Door		Ctr	Frame	P	Metal	black	0.5	QM
086	A	Stairs		Ctr	Low Walls	P	Wood	White	0.2	QM
085	A	Stairs		Ctr	Risers	P	Wood	Grey	0.7	QM
061	B	Wall	U	Ctr		P	Brick	green	2.4	QM
062	B	Wall	U	Ctr		P	Brick	White	2.1	QM
065	C	Wall	U	Ctr		P	Brick	green	4.2	QM
066	C	Wall	U	Ctr		P	Brick	White	2.9	QM
075	C	Wall	U	Ctr		P	Brick	Grey	7.9	QM
073	C	Window		Ctr	Frame	P	Wood	White	0.0	QM
074	C	Window		Ctr	Sash	P	Wood	White	0.0	QM
067	D	Wall	U	Ctr		P	Brick	White	2.7	QM
068	D	Wall	U	Ctr		P	Brick	green	2.2	QM
078	D	Window		Ctr	Frame	P	Wood	green	0.0	QM
077	D	Window		Ctr	Sash	P	Wood	green	0.0	QM
Interior Room 004 4th Floor										
099	-	Support Colu		Lft		P	Metal	White	3.9	QM
098	-	Support Colu		Ctr		P	Metal	White	5.6	QM
100	-	Support Colu		Rgt		P	Metal	White	4.1	QM
110	-	Floor		Ctr		P	Wood	Grey	0.2	QM
089	-	Ceiling		Ctr	Beam	P	Wood	White	0.0	QM
090	-	Ceiling		Ctr		P	Wood	White	0.0	QM
114	A	Wall	L	Ctr		P	Wood	Beige	0.1	QM
091	A	Wall	U	Ctr		P	Brick	White	1.9	QM
095	A	Wall	U	Ctr		P	Dry wall	White	-0.1	QM
096	A	Wall	U	Ctr		P	Dry wall	green	0.1	QM
097	A	Wall	U	Ctr		P	Wood	Grey	0.2	QM
102	A	Window		Ctr	Frame	P	Wood	White	8.4	QM
101	A	Window		Ctr	Sash	P	Wood	White	0.0	QM
108	A	Door		Ctr	Door	P	Metal	Brown	0.6	QM
	Elevator									
109	A	Door		Ctr	Frame	P	Wood	Brown	0.2	QM
092	B	Wall	U	Ctr		P	Brick	White	3.6	QM
105	B	Window		Ctr	Sash	P	Metal	White	1.9	QM
112	C	Partition		Ctr		P	Wood	White	0.0	QM
	Bathroom									
113	C	Pipes		Ctr		P	Metal	White	2.6	QM
	Bathroom									
093	C	Wall	U	Ctr		P	Brick	White	2.2	QM
103	C	Window		Ctr	Frame	P	Wood	White	0.0	QM
104	C	Window		Ctr	Sash	P	Wood	White	0.0	QM
111	C	Door		Ctr	Door	P	Wood	White	0.0	QM
	Bathroom									
117	C	Stairs		Ctr	Column	P	Wood	red	0.2	QM
118	C	Stairs		Ctr	Upper Wall	P	Wood	Grey	0.1	QM
115	C	Stairs		Ctr	Treads	P	Wood	Grey	0.1	QM
116	C	Stairs		Ctr	Risers	P	Wood	Grey	0.2	QM
094	D	Wall	U	Ctr		P	Brick	White	4.1	QM
107	D	Window		Ctr	Frame	P	Metal	White	0.0	QM
106	D	Window		Ctr	Sash	P	Metal	White	0.0	QM
Interior Room 005 5th Floor										
163	-	Beam		Ctr		P	Wood	White	0.0	QM
162	-	Ceiling		Ctr		P	Wood	White	0.0	QM
153	A	Support		Ctr		P	Metal	White	2.9	QM
	Bridge Support Framework									
154	A	Framework		Ctr		P	Wood	White	0.1	QM
	Bathrooms									
164	A	Partition		Ctr		P	Wood	White	1.4	QM
	Bathroom									
165	A	Radiator		Ctr		P	Metal	White	1.9	QM
	Bathroom									
166	A	Waste Pipe		Ctr		P	Metal	White	3.6	QM
	Bathroom									
125	A	Wall	U	Ctr		P	Brick	Grey	4.5	QM

126	A	Wall	U	Ctr		P	Brick	White	5.6	QM
150	A	Wall	U	Ctr		P	Wood	Grey	0.2	QM
151	A	Wall	U	Ctr		P	Dry wall	White	0.1	QM
152	A	Wall	U	Ctr		P	Metal	White	2.5	QM
	Bridge									
156	A	Window		Ctr	Frame	P	Wood	White	0.0	QM
155	A	Window		Ctr	Sash	P	Wood	White	0.0	QM
144	A	Window		Rgt	Sash	P	Metal	White	3.4	QM
149	A	Door		Ctr	Door	P	Metal	Grey	2.1	QM
	Sliding Track									
167	A	Door		Ctr	Header	P	Metal	Grey	3.2	QM
	Elevator									
147	B	Support Colu		Lft		P	Metal	red	1.9	QM
148	B	Support Colu		Lft		P	Metal	Beige	1.6	QM
146	B	Wall	L	Rgt		P	Brick	green	2.6	QM
127	B	Wall	U	Ctr		P	Brick	White	3.9	QM
128	B	Wall	U	Ctr		P	Brick	Grey	4.2	QM
145	B	Wall	U	Rgt		P	Brick	Yellow	1.5	QM
143	B	Window		Ctr	Sash	P	Metal	White	2.1	QM
137	C	Support Colu		Lft		P	Metal	Grey	6.1	QM
142	C	Support Colu		Lft		P	Metal	White	5.1	QM
135	C	Pipes		Ctr		P	Metal	White	3.5	QM
136	C	Pipes		Ctr		P	Metal	Grey	6.2	QM
138	C	Support Colu		Ctr		P	Metal	Grey	3.5	QM
141	C	Support Colu		Ctr		P	Metal	White	6.7	QM
139	C	Support Colu		Rgt		P	Metal	Grey	0.4	QM
140	C	Support Colu		Rgt		P	Metal	White	3.8	QM
133	C	Wall	U	Lft		P	Plaster	Grey	0.1	QM
134	C	Wall	U	Lft		P	Plaster	White	0.2	QM
129	C	Wall	U	Ctr		P	Brick	Grey	6.5	QM
130	C	Wall	U	Ctr		P	Brick	White	4.1	QM
160	C	Wall	U	Rgt		P	Plaster	White	0.2	QM
161	C	Wall	U	Rgt		P	Plaster	Grey	0.3	QM
157	C	Window		Ctr	Frame	P	Wood	White	0.0	QM
158	C	Window		Ctr	Sash	P	Wood	White	6.8	QM
131	D	Wall	U	Ctr		P	Brick	White	3.5	QM
132	D	Wall	U	Ctr		P	Brick	Grey	6.2	QM
159	D	Window		Ctr	Frame	P	Wood	White	0.0	QM

Interior Room 006 Basement

179	-	Support Colu		Lft		P	Metal	White	1.9	QM
180	-	Support Colu		Ctr		P	Metal	White	1.6	QM
182	-	Waste Pipe		Ctr		P	Metal	Beige	1.4	QM
183	-	Support Colu		Ctr		P	Wood	Beige	0.2	QM
184	-	Duct Work		Ctr		P	Aluminum	Beige	0.5	QM
181	-	Support Colu		Rgt		P	Metal	White	2.4	QM
185	-	Ceiling		Ctr		P	Plaster	White	0.2	QM
186	-	Window		Ctr	Debris	P	Wood	Grey	6.8	QM
187	-	Door		Rgt	Frame	P	Metal	Beige	2.4	QM
188	A	Wall	U	Ctr		P	Brick	White	0.6	QM
189	A	Window		Rgt	Frame	P	Wood	Beige	>9.9	QM
190	A	Window		Rgt	Sash	P	Wood	Beige	>9.9	QM
191	A	Door		Ctr	Debris	P	Wood	Beige	>9.9	QM
193	B	Foundation		Ctr		P	Granite	White	1.4	QM
192	B	Wall	U	Ctr		P	Brick	White	0.7	QM
194	B	Window		Ctr	Frame	P	Wood	Beige	5.6	QM
195	B	Window		Ctr	Sash	P	Wood	Beige	6.0	QM
196	B	Door		Ctr	Frame	P	Metal	Grey	4.5	QM
197	C	Wall	U	Ctr		P	Brick	White	0.6	QM
198	C	Ceiling		Ctr		P	Concrete	White	1.5	QM
199	C	Window		Ctr	Frame	P	Wood	Beige	>9.9	QM
200	C	Window		Ctr	Sash	P	Wood	Beige	6.9	QM

Comment:
Waste Pipe Room

Calibration Readings

001	1.0	TC
002	1.0	TC
003	1.0	TC
119	1.0	TC
120	1.0	TC

121	1.0	TC
122	1.0	TC
123	1.0	TC
124	1.0	TC
201	1.0	TC
202	1.0	TC
203	1.0	TC

6 Conclusions and Recommendations

Two Hundred Three (203) total XRF readings were taken. **Twelve (12)** were calibration readings and **One Hundred Twenty Three (123)** were found to have painted surfaces with lead levels ≥ 0.4mg/cm2. Please see **Section 5, Summary and Detailed Reports**.

In areas where demolition or renovations are to occur and lead is present, the demolition debris waste stream should be further analyzed during segregation for compliance with EPA and MA DES regulations to ensure proper disposal. TCLP testing should be performed to characterize all waste prior to disposal. TCLP testing can be performed prior to waste segregation but results may not be indicative of the actual waste streams produced during demolition.

Demolition workers should be trained and protected in accordance with OSHA regulation 29CFR 1926.62 which state in part:

This section applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard. Construction work is defined as work for construction, alteration and/or repair, including painting and decorating. It includes but is not limited to the following:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, repair, or renovation of structures, substrates, or portions thereof that contain lead, or materials containing lead.
- Handlers of salvageable materials and the treatment/disposal facility must be informed of the material's lead content. All personnel involved must be trained in personal protection and proper work practice procedures in accordance with OSHA regulations.
- All waste contaminated with lead paint should be disposed of in accordance with all state, local, and federal regulations.

7 Appendices

Appendix A - XRF Methodology

Appendix B – Inspector Qualifications

Appendix C - Drawings

Appendix A - XRF Performance and Characteristics Sheets (PCS) Sheets

Performance Characteristic Sheet

EFFECTIVE DATE: **October 25, 2006** **EDITION NO.: 5**

MANUFACTURER AND MODEL:

Make: ***Radiation Monitoring Devices***
Model: ***LPA-1***
Source: ***^{57}Co***
Note: This sheet supersedes all previous sheets for the XRF instrument of the make, model, and source shown above ***for instruments sold or serviced after June 26, 1995. For other instruments, see prior editions.***

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Quick mode or 30-second equivalent standard (Time Corrected) mode readings.

XRF CALIBRATION CHECK LIMITS:

0.7 to 1.3 mg/cm^2 (inclusive)

SUBSTRATE CORRECTION:

For XRF results below 4.0 mg/cm^2, substrate correction is recommended for:

Metal using 30-second equivalent standard (Time Corrected) mode readings.
None using quick mode readings.

Substrate correction is not needed for:

Brick, Concrete, Drywall, Plaster, and Wood using 30-second equivalent standard (Time Corrected) mode readings
Brick, Concrete, Drywall, Metal, Plaster, and Wood using quick mode readings

THRESHOLDS:

30-SECOND EQUIVALENT STANDARD MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results corrected for substrate bias on metal substrate only	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	0.9
	Plaster	1.0
	Wood	1.0

QUICK MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Readings not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted on approximately 150 test locations in July 1995. The instrument that performed testing in September had a new source installed in June 1995 with 12 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm^2 for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.02 mg/cm^2 at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

> Using the same XRF instrument, take three readings on a <u>bare</u> substrate area covered with the NIST SRM paint film nearest 1 mg/cm^2. Repeat this procedure by taking three more readings on a second <u>bare</u> substrate area of the same substrate covered with the NIST SRM.
>
> Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.
>
> For each substrate type (the 1.02 mg/cm^2 NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):
>
> $$\text{Correction value} = (1^{st} + 2^{nd} + 3^{rd} + 4^{th} + 5^{th} + 6^{th}\ \textit{Reading}) / 6 - 1.02\ mg/cm^2$$
>
> Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use either the Quick Mode or 30-second equivalent standard (Time Corrected) Mode readings.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

BIAS AND PRECISION:

Do not use these bias and precision data to correct for substrate bias. These bias and precision data were computed without substrate correction from samples with reported laboratory results less than 4.0 mg/cm^2 lead. The data which were used to determine the bias and precision estimates given in the table below have the following properties. During the July 1995 testing, there were 15 test locations with a laboratory-reported result equal to or greater than 4.0 mg/cm^2 lead. Of these, one 30-second standard mode reading was less than 1.0 mg/cm^2 and none of the quick mode readings were less than 1.0 mg/cm^2. The instrument that tested in July is representative of instruments sold or serviced after June 26, 1995. These data are for illustrative purposes only. Actual bias must be determined on the site. Results provided above already account for bias and precision. Bias and precision ranges are provided to show the variability found between machines of the same model.

30-SECOND STANDARD MODE READING MEASURED AT	SUBSTRATE	BIAS (mg/cm^2)	PRECISION* (mg/cm^2)
0.0 mg/cm^2	Brick	0.0	0.1
	Concrete	0.0	0.1
	Drywall	0.1	0.1
	Metal	0.3	0.1
	Plaster	0.1	0.1
	Wood	0.0	0.1
0.5 mg/cm^2	Brick	0.0	0.2
	Concrete	0.0	0.2
	Drywall	0.0	0.2
	Metal	0.2	0.2
	Plaster	0.0	0.2
	Wood	0.0	0.2
1.0 mg/cm^2	Brick	0.0	0.3
	Concrete	0.0	0.3
	Drywall	0.0	0.3
	Metal	0.2	0.3
	Plaster	0.0	0.3
	Wood	0.0	0.3
2.0 mg/cm^2	Brick	-0.1	0.4
	Concrete	-0.1	0.4
	Drywall	-0.1	0.4
	Metal	0.1	0.4
	Plaster	-0.1	0.4
	Wood	-0.1	0.4

*Precision at 1 standard deviation.

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than the upper boundary of the inconclusive range, and negative if they are less than the lower boundary of the inconclusive range, or inconclusive if in between. The inconclusive range includes both its upper and lower bounds. Earlier editions of this *XRF Performance Characteristics Sheet* did not include both bounds of the inconclusive range as "inconclusive." While this edition of the Performance Characteristics Sheet uses a different system, the specific XRF readings that are considered positive, negative, or inconclusive for a given XRF model and substrate remain unchanged, so previous inspection results are not affected.

DOCUMENTATION:

An EPA document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD. A HUD document titled *A Nonparametric Method for Estimating the 5th and 95th Percentile Curves of Variable-Time XRF Readings Based on Monotone Regression* provides supplemental information on the methodology for variable-time XRF instruments. A copy of this document can be obtained from the HUD lead web site, www.hud.gov/offices/lead.

This XRF Performance Characteristic Sheet was developed by QuanTech, Inc., under a contract from the U.S. Department of Housing and Urban Development (HUD). HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.

Appendix B - Inspector Certifications:

Jeff Harris

Master Inspector/Risk Assessor

License #: 1/15/2016

Expires: 1/15/2015

Appendix C - Drawings: No drawings available at time of survey

Appendix E
Photos

Photo 1: First floor, west end. Note miscellaneous debris, flaking wall paint.

Photo 2: First floor, center. Asbestos pipe insulation and flaking paint on brick.

Photo 3: First floor: Plank ceiling section.

Photo 4: First floor: Hole to basement.

Photo 5: First floor: Flourescent light fixture.

Photo 6: Light ballast, not marked as “No PCB”.

Photo 7: First floor: Paint, light fixtures, ballast.

Photo 8: First floor: Plaster ceiling delamination.

Photo 9: First floor: Former ceiling plaster.

Photo 10: First floor: Interior masonry (brick) wall, miscellaneous floor debris.

Photo 11: First floor: Above ceiling.

Photo 12: First floor: Floor debris.

Photo 13: First floor: burned out stairwell.

Photo 14: First floor looking up the burned out stairwell.

Photo 15: First floor, miscellaneous containerized materials.

Photo 16: Interior stairwell to basement.

Photo 17: Basement, window glazing compound. Note both wooden and metal frame windows observed.

Photo 18: Basement: Ceiling, floor debris.

Photo 19: Exterior, south side central portion of building. Note catwalk 1 of 2.

Photo 20: Exterior, south side. Window damage/condition.

Photo 21: Exterior, south side, east end of building.

Photo 22: Exterior, south side, looking west.

Photo 1: Basement: Motors, debris, ACM

Photo 2: Basement: ACM pipe insulation in extremely poor condition.

Photo 3: Basement: Floor debris, plaster debris, asbestos debris.

Photo 4: Basement: Wood debris on soil.

Photo 5: Basement: Plaster and pipe insulation debris, mixed with wire, wood and general debris.

Photo 6: Basement: ACM insulation debris (from pipe overhead), mixed with windows, glazing, wood and misc. debris.

Photo 7: Basement: Metal, wood, CMU block, plaster, paint chip debris. Note transite blocks on panel.

Photo 8: First floor: Buss bar and flaking paint (LBP).

Photo 9: Second floor: General floor condition and debris

Photo 10: Second floor:

Photo 11: View north from third floor.

Photo 12: Floor debris (paint chips).

Photo 13: First floor: Paint chips, plaster, miscellaneous debris.

Photo 14: First floor: Note hole in floor and buckling hardwood flooring.

Photo 15: First floor: Electrical panel (typ.).

Photo 16: Transformer (typical).

Photo 17: First floor: Metal pan ceiling.

Photo 18: First floor: Floor debris mix (paint chips, roofing, plaster, other unidentified).

Photo 1: Basement debris near access stairway (note ceiling).

Photo 2: Thermal system insulation (pipe) debris and miscellaneous debris on floor (note clutter).

Photo 3: Thermal system insulation (pipe) debris on floor.

Photo 4: Miscellaneous debris pile, including suspect ACM.

Photo 5: Wood and steel columns, wood beams, wood ceiling (1st floor). Note hole in ceiling, makeshift wood brace, and missing plaster on floor below).

Photo 6: Furniture, iron, plaster debris and junk piles. Note TSI pipe at bottom of beams.

Photo 7: TSI pipe from Photo 6.

Photo 8: TSI pipe debris in a miscellaneous construction debris pile.

Photo 9: Cloth bags frozen on pallet, misc. other debris.

Photo 10: TSI pipe debris mixed with wood, soil, metal, glass.

Photo 11: TSI pipe (significant damage). Debris on floor below.

Photo 12: TSI block insulation on floor.

Photo 13: TSI pipe (continued from photo 11).

Photo 14: Plaster and TSI pipe debris. Metal duct on left.

Photo 15: TSI pipe debris by wood window. Large TSI pipe in background.

Photo 15: Plaster ceiling failure (metal mesh lath).

Photo 16: Plaster ceiling, conduit

Photo 17: Photo 18: Plaster ceiling.

Photo 18: Plaster ceiling failure, ceiling failure. Note ceiling line along beam.

Photo 19: Plaster damage/failure from long-term water intrusion. Note black rot on ceiling planking above.

Photo 20: Plaster ceiling at beam.

Photo 21: Plaster ceiling failure and wood beams.

Photo 22: Plaster ceiling with metal mesh lath.

Appendix F
Licenses

R.I. ANALYTICAL
Specialists in Environmental Services

RONALD R. JACOBS

successfully completed the course and examination for

Asbestos Inspector Refresher (4 hrs)

In Compliance with Requirements of Rhode Island DOH R-23-24.5-ASB and
TSCA Title II MAP which meets the requirements of USEPA AHERA 40 CFR 763

96%	11/13/2013
Exam Grade	Date of Exam
MA132236	11/13/2014
Certificate Number	Expiration Date
11/13/2013	11/13/2013
Start of course	End of course

Lance Comeau

Lance Comeau
Training Coordinator
R.I. Analytical 40 Illinois Avenue Warwick, RI 02888
Tel: 401-737-8500 Email: LComeau@RIAnalytical.com

Commonwealth of Massachusetts

Department of Labor Standards

Heather E. Rowe, Director

Asbestos Inspector

RYAN ROUILLARD

Eff. Date 12/04/13

Exp. Date 12/03/14

AI061903

Member of C.O.N.E.S.

HV

14

HV - RENEW

ATTACHMENT 4

Alpha Analytical's Laboratory Report

ANALYTICAL REPORT

Lab Number:	L1606873
Client:	ENPRO Services 114 Bridge Road Salisbury, MA 01952
ATTN:	Tony SantaFe
Phone:	(978) 465-1595
Project Name:	DELLBROOK/MASS MILLS
Project Number:	62303-0027
Report Date:	03/14/16

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: DELLBROOK/MASS MILLS
Project Number: 62303-0027

Lab Number: L1606873
Report Date: 03/14/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1606873-01	TANK#1	WIPE	MASS MILLS	03/09/16 14:00	03/10/16
L1606873-02	TANK#2	WIPE	MASS MILLS	03/09/16 14:15	03/10/16

Project Name: DELLBROOK/MASS MILLS **Lab Number:** L1606873

Project Number: 62303-0027 **Report Date:** 03/14/16

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name: DELLBROOK/MASS MILLS **Lab Number:** L1606873
Project Number: 62303-0027 **Report Date:** 03/14/16

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 03/14/16

ORGANICS

PCBS

Project Name: DELLBROOK/MASS MILLS **Lab Number:** L1606873

Project Number: 62303-0027 **Report Date:** 03/14/16

SAMPLE RESULTS

Lab ID:	L1606873-01	Date Collected:	03/09/16 14:00
Client ID:	TANK#1	Date Received:	03/10/16
Sample Location:	MASS MILLS	Field Prep:	Not Specified
Matrix:	Wipe	Extraction Method:	EPA 3540C
Analytical Method:	97,8082A	Extraction Date:	03/10/16 18:15
Analytical Date:	03/12/16 00:55	Cleanup Method:	EPA 3665A
Analyst:	KB	Cleanup Date:	03/11/16
		Cleanup Method:	EPA 3660B
		Cleanup Date:	03/11/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug Abs	0.300	--	1	A
Aroclor 1221	ND		ug Abs	0.300	--	1	A
Aroclor 1232	ND		ug Abs	0.300	--	1	A
Aroclor 1242	ND		ug Abs	0.300	--	1	A
Aroclor 1248	ND		ug Abs	0.200	--	1	A
Aroclor 1254	ND		ug Abs	0.300	--	1	A
Aroclor 1260	ND		ug Abs	0.200	--	1	A
Aroclor 1262	ND		ug Abs	0.100	--	1	A
Aroclor 1268	ND		ug Abs	0.100	--	1	A
PCBs, Total	ND		ug Abs	0.100	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		30-150	A
Decachlorobiphenyl	91		30-150	A
2,4,5,6-Tetrachloro-m-xylene	91		30-150	B
Decachlorobiphenyl	82		30-150	B

Project Name: DELLBROOK/MASS MILLS **Lab Number:** L1606873

Project Number: 62303-0027 **Report Date:** 03/14/16

SAMPLE RESULTS

Lab ID:	L1606873-02	Date Collected:	03/09/16 14:15
Client ID:	TANK#2	Date Received:	03/10/16
Sample Location:	MASS MILLS	Field Prep:	Not Specified
Matrix:	Wipe	Extraction Method:	EPA 3540C
Analytical Method:	97,8082A	Extraction Date:	03/10/16 18:15
Analytical Date:	03/12/16 01:12	Cleanup Method:	EPA 3665A
Analyst:	KB	Cleanup Date:	03/11/16
		Cleanup Method:	EPA 3660B
		Cleanup Date:	03/11/16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug Abs	0.300	--	1	A
Aroclor 1221	ND		ug Abs	0.300	--	1	A
Aroclor 1232	ND		ug Abs	0.300	--	1	A
Aroclor 1242	ND		ug Abs	0.300	--	1	A
Aroclor 1248	ND		ug Abs	0.200	--	1	A
Aroclor 1254	ND		ug Abs	0.300	--	1	A
Aroclor 1260	ND		ug Abs	0.200	--	1	A
Aroclor 1262	ND		ug Abs	0.100	--	1	A
Aroclor 1268	ND		ug Abs	0.100	--	1	A
PCBs, Total	ND		ug Abs	0.100	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	87		30-150	A
Decachlorobiphenyl	98		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		30-150	B
Decachlorobiphenyl	91		30-150	B

Project Name: DELLBROOK/MASS MILLS

Project Number: 62303-0027

Lab Number: L1606873

Report Date: 03/14/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8082A
Analytical Date: 03/12/16 00:06
Analyst: KB

Extraction Method: EPA 3540C
Extraction Date: 03/10/16 18:15
Cleanup Method: EPA 3665A
Cleanup Date: 03/11/16
Cleanup Method: EPA 3660B
Cleanup Date: 03/11/16

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-02 Batch: WG872680-1						
Aroclor 1016	ND		ug Abs	0.300	--	A
Aroclor 1221	ND		ug Abs	0.300	--	A
Aroclor 1232	ND		ug Abs	0.300	--	A
Aroclor 1242	ND		ug Abs	0.300	--	A
Aroclor 1248	ND		ug Abs	0.200	--	A
Aroclor 1254	ND		ug Abs	0.300	--	A
Aroclor 1260	ND		ug Abs	0.200	--	A
Aroclor 1262	ND		ug Abs	0.100	--	A
Aroclor 1268	ND		ug Abs	0.100	--	A
PCBs, Total	ND		ug Abs	0.100	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		30-150	A
Decachlorobiphenyl	95		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	78		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: DELLBROOK/MASS MILLS
Project Number: 62303-0027
Lab Number: L1606873
Report Date: 03/14/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-02 Batch: WG872680-2 WG872680-3									
Aroclor 1016	72		96		40-140	28		30	A
Aroclor 1260	57		85		40-140	**39**	Q	30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		95		30-150	A
Decachlorobiphenyl	67		99		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		95		30-150	B
Decachlorobiphenyl	59		89		30-150	B

Project Name: DELLBROOK/MASS MILLS
Project Number: 62303-0027

Lab Number: L1606873
Report Date: 03/14/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information	Custody Seal
Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1606873-01A	Amber 100ml Hexane preserved	A	N/A	2.8	Y	Absent	MCP-8082LL-10-3540C(365)
L1606873-02A	Amber 100ml Hexane preserved	A	N/A	2.8	Y	Absent	MCP-8082LL-10-3540C(365)

*Values in parentheses indicate holding time in days

Project Name:	DELLBROOK/MASS MILLS	**Lab Number:**	L1606873
Project Number:	62303-0027	**Report Date:**	03/14/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

Report Format: Data Usability Report

Project Name:	DELLBROOK/MASS MILLS	**Lab Number:**	L1606873
Project Number:	62303-0027	**Report Date:**	03/14/16

Data Qualifiers

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: DELLBROOK/MASS MILLS **Lab Number:** L1606873
Project Number: 62303-0027 **Report Date:** 03/14/16

REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 524.2: 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, m/p-xylene, o-xylene
EPA 624: 2-Butanone (MEK), 1,4-Dioxane, tert-Amylmethyl Ether, tert-Butyl Alcohol, m/p-xylene, o-xylene
EPA 625: Aniline, Benzoic Acid, Benzyl Alcohol, 4-Chloroaniline, 3-Methylphenol, 4-Methylphenol.
EPA 1010A: NPW: Ignitability
EPA 6010C: NPW: Strontium; SCM: Strontium
EPA 8151A: NPW: 2,4-DB, Dicamba, Dichloroprop, MCPA, MCPP; SCM: 2,4-DB, Dichloroprop, MCPA, MCPP
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene, Isopropanol; SCM: Iodomethane (methyl iodide), Methyl methacrylate (soil); 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 9010: NPW: Amenable Cyanide Distillation, Total Cyanide Distillation
EPA 9038: NPW: Sulfate
EPA 9050A: NPW: Specific Conductance
EPA 9056: NPW: Chloride, Nitrate, Sulfate
EPA 9065: NPW: Phenols
EPA 9251: NPW: Chloride
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
EPA 8270D: NPW: Biphenyl; SCM: Biphenyl, Caprolactam
EPA 8270D-SIM Isotope Dilution: SCM: 1,4-Dioxane
SM 2540D: TSS
SM2540G: SCM: Percent Solids
EPA 1631E: SCM: Mercury
EPA 7474: SCM: Mercury
EPA 8081B: NPW and SCM: Mirex, Hexachlorobenzene.
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA 8270-SIM: NPW and SCM: Alkylated PAHs.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene, n-Butylbenzene, n-Propylbenzene, sec-Butylbenzene, tert-Butylbenzene.
Biological Tissue Matrix: ***8270D-SIM; 3050B; 3051A; 7471B; 8081B; 8082A; 6020A:*** Lead***; 8270D:*** bis(2-ethylhexyl)phthalate, Butylbenzylphthalate, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, Fluoranthene, Pentachlorophenol.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F,**
EPA 353.2: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 3/10/16

ALPHA Job #: L1606873

Client Information

Client: ENPRO Services, Inc.
Address: 114 Bridge Rd
Salisbury, MA 01952
Phone: 978 225-1113
Email: asantafe@enpro.com

Project Information

Project Name: DellBrook / Mass Mills
Project Location: Mass Mills
Project #: 62303-0027
Project Manager: ASS
ALPHA Quote #:

Turn-Around Time

☐ Standard ☑ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

*48 Hr TAT

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☑ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Sample Comments	TOTAL # BOTTLES
06873-01	Tank #1	3/9/16	200	Wipe	ASS							X			
02	Tank #2	3/9/16	215	Wipe	ASS							X			

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type															
Preservative															

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Secured / Stamp	3/10/16 800am	Secured / Stamp	800am
Secured / Stamp	3/10/16 2:18pm	AAL	3/10/16 1418
	3/10/16 1543		3/10/16 1543

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ATTACHMENT 5

Table showing PCB results for Soils within the 300-400 yd^3 Stockpile

Table 9
Summary of Soil Analytical Data: 300-400 CY Stockpile in western portion of Courtyard

Parameter	MassDEP Published Background Concentrations		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit	SAMPLING LOCATIONS			
	Natural Soils	Soils Assoc. Fill	RCS-1	RCS-2	S-1/ GW-1	S-1/ GW-2	S-1/ GW-3	S-2/ GW-1	S-2/ GW-2	S-2/ GW-3	S-3/ GW-1	S-3/ GW-2	S-3/ GW-3	UCL	B-5 (1-3')	B-7 (1-3')	FO-1-TP (1-2')	FO-1-TP (2-3')
Sampling Date															3/14/2016	3/14/2016	3/9/2016	3/9/2016
Sample Depth During Investigative Event															1-3 Feet	1-3 Feet	1-2 Feet	2-3 Feet
Sample Depth Relative to October 1, 2016															Excavated and Stockpiled	Excavated and Stockpiled	Excavated and Stockpiled	Excavated and Stockpiled
NOTES:															11	11		
MADEP-EPH-04-1.1 (mg/Kg dry)																		
C9-C18 ALIPHATICS			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	20000	NT	NT	NT	NT
C19-C36 ALIPHATICS			3000	5000	3000	3000	3000	5000	5000	5000	5000	5000	5000	20000	NT	NT	NT	NT
UNADJUSTED C11-C22 AROMATICS			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
C11-C22 AROMATICS			1000	3000	1000	1000	1000	1000	3000	3000	1000	5000	5000	10000	NT	NT	NT	NT
ACENAPHTHENE	0.5	2	4	3000	4	1000	1000	4	3000	3000	4	5000	5000	10000	NT	NT	NT	NT
ACENAPHTHYLENE	0.5	1	1	10	1	600	10	1	600	10	1	600	10	10000	NT	NT	NT	NT
ANTHRACENE	1	4	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
BENZO(A)ANTHRACENE	2	9	7	40	7	7	7	40	40	40	300	300	300	3000	NT	NT	NT	NT
BENZO(A)PYRENE	2	7	2	7	2	2	2	7	7	7	30	30	30	300	NT	NT	NT	NT
BENZO(B)FLUORANTHENE	2	8	7	40	7	7	7	40	40	40	300	300	300	3000	NT	NT	NT	NT
BENZO(G,H,I)PERYLENE	1	3	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
BENZO(K)FLUORANTHENE	1	4	70	400	70	70	70	400	400	400	3000	3000	3000	10000	NT	NT	NT	NT
CHRYSENE	2	7	70	400	70	70	70	400	400	400	3000	3000	3000	10000	NT	NT	NT	NT
DIBENZ(A,H)ANTHRACENE	0.5	1	0.7	4	0.7	0.7	0.7	4	4	4	30	30	30	300	NT	NT	NT	NT
FLUORANTHENE	4	10	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
FLUORENE	1	2	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
INDENO(1,2,3-CD)PYRENE	1	3	7	40	7	7	7	40	40	40	300	300	300	3000	NT	NT	NT	NT
2-METHYLNAPHTHALENE	0.5	1	0.7	80	0.7	80	300	1	80	500	1	80	500	5000	NT	NT	NT	NT
NAPHTHALENE	0.5	1	4	20	4	20	500	4	20	1000	4	20	3000	10000	NT	NT	NT	NT
PHENANTHRENE	3	20	10	1000	10	500	500	20	1000	1000	20	3000	3000	10000	NT	NT	NT	NT
PYRENE	4	20	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)			90	600	90	90	90	600	600	600	2000	2000	2000	10000	NT	NT	NT	NT
DIBENZOFURAN (see notes 7, 9)			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
DI-N-BUTYLPHTHALATE (see note 7)			50	500	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
MADEP-VPH-04-1.1 (mg/Kg dry)																		
UNADJUSTED C5-C8 ALIPHATICS			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
C5-C8 ALIPHATICS			100	500	100	100	100	500	500	500	500	500	500	5000	NT	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
C9-C12 ALIPHATICS			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	20000	NT	NT	NT	NT
C9-C10 AROMATICS			100	500	100	100	100	300	500	500	300	500	500	5000	NT	NT	NT	NT
BENZENE			2	200	2	40	40	2	200	200	2	400	1000	10000	NT	NT	NT	NT
ETHYLBENZENE			40	1000	40	500	500	40	1000	1000	40	1000	3000	10000	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)			0.1	100	0.1	100	100	0.1	100	500	0.1	100	500	5000	NT	NT	NT	NT
NAPHTHALENE	0.5	1	4	20	4	20	500	4	20	1000	4	20	3000	10000	NT	NT	NT	NT
TOLUENE			30	1000	30	500	500	30	1000	1000	30	2000	3000	10000	NT	NT	NT	NT
M/P-XYLENE			100	100	400	100	500	400	100	1000	400	100	3000	10000	NT	NT	NT	NT
O-XYLENE			100	100	400	100	500	400	100	1000	400	100	3000	10000	NT	NT	NT	NT

Table 9
Summary of Soil Analytical Data: 300-400 CY Stockpile in western portion of Courtyard

Parameter	MassDEP Published Background Concentrations		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit	SAMPLING LOCATIONS			
	Natural Soils	Soils Assoc. Fill	RCS-1	RCS-2	S-1/ GW-1	S-1/ GW-2	S-1/ GW-3	S-2/ GW-1	S-2/ GW-2	S-2/ GW-3	S-3/ GW-1	S-3/ GW-2	S-3/ GW-3	UCL	B-5 (1-3')	B-7 (1-3')	FO-1-TP (1-2')	FO-1-TP (2-3')
SM 2540G (% Wt)																		
% Solids			~	~	~	~	~	~	~	~	~	~	~	~	66.6	86.7	85.5	85.9
SW-846 6010C/D (mg/Kg dry) Metals Digestion																		
ANTIMONY	1	7	20	30	20	20	20	30	30	30	30	30	30	300	NT	NT	ND (2.9)	ND (2.9)
ARSENIC	20	20	20	20	20	20	20	20	20	20	50	50	50	500	NT	NT	14	18
BARIUM	50	50	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	95	130
BERYLLIUM	0.4	0.9	90	200	90	90	90	200	200	200	200	200	200	2000	NT	NT	0.39	1.9
CADMIUM	2	3	70	100	70	70	70	100	100	100	100	100	10	1000	NT	NT	0.98	1.3
CHROMIUM (as +3)	30	40	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	31	37
LEAD	100	600	200	600	200	200	200	600	600	600	600	600	600	6000	NT	NT	1100	220
NICKEL	20	30	600	1000	600	600	600	1000	1000	1000	1000	1000	1000	10000	NT	NT	22	29
SELENIUM	0.5	1	400	700	400	400	400	700	700	700	700	700	700	7000	NT	NT	ND (5.9)	ND (5.7)
SILVER	0.6	5	100	200	100	100	100	200	200	200	200	200	200	2000	NT	NT	ND (0.59)	ND (0.57)
THALLIUM	0.6	5	8	60	8	8	8	60	60	60	80	80	80	800	NT	NT	ND (2.9)	ND (2.9)
VANADIUM	30	30	400	700	400	400	400	700	700	700	700	700	700	7000	NT	NT	96	140
ZINC	100	300	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	160	190
SW-846 7471B (mg/Kg dry) Metals Digestion																		
MERCURY	0.3	1	20	30	20	20	20	30	30	30	30	30	30	300	NT	NT	0.93	0.84
SW-846 7196A (mg/Kg dry)																		
CHROMIUM +6	30	40	100	200	100	100	100	200	200	200	200	200	200	2000	NT	NT	NT	NT
SM2580 A (mV)																		
OXIDATION/REDUCTION POTENTIAL			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
SW-846 9045C (pH Units)																		
PH			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
SW-846 6010C-D (mg/L) 1311 TCLP EXT																		
CADMIUM			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
LEAD			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
SW-846 8082A (mg/Kg dry)																		
PCB 1016			1	4	1	1	1	4	4	4	4	4	4	100	ND (0.56)	ND (1.1) *	ND (2.3) *	ND (1.1) *
PCB 1221			1	4	1	1	1	4	4	4	4	4	4	100	ND (0.56)	ND (1.1) *	ND (2.3) *	ND (1.1) *
PCB 1232			1	4	1	1	1	4	4	4	4	4	4	100	ND (0.56)	ND (1.1) *	ND (2.3) *	ND (1.1) *
PCB 1242			1	4	1	1	1	4	4	4	4	4	4	100	ND (0.56)	ND (1.1) *	ND (2.3) *	ND (1.1) *
PCB 1248			1	4	1	1	1	4	4	4	4	4	4	100	ND (0.56)	ND (1.1) *	ND (2.3) *	ND (1.1) *
PCB 1254			1	4	1	1	1	4	4	4	4	4	4	100	3.7	6.0	12	7.8
PCB 1260			1	4	1	1	1	4	4	4	4	4	4	100	ND (0.56)	ND (1.1) *	ND (2.3) *	ND (1.1) *
PCB 1262			1	4	1	1	1	4	4	4	4	4	4	100	ND (0.56)	ND (1.1) *	ND (2.3) *	ND (1.1) *
PCB 1268			1	4	1	1	1	4	4	4	4	4	4	100	ND (0.56)	ND (1.1) *	ND (2.3) *	ND (1.1) *
TOTAL PCBs			1	4	1	1	1	4	4	4	4	4	4	100	3.7	6.0	12.0	7.8

Table 9
Summary of Soil Analytical Data: 300-400 CY Stockpile in western portion of Courtyard

Parameter	MassDEP Published Background Concentrations		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit	SAMPLING LOCATIONS			
	Natural Soils	Soils Assoc. Fill	RCS-1	RCS-2	S-1/ GW-1	S-1/ GW-2	S-1/ GW-3	S-2/ GW-1	S-2/ GW-2	S-2/ GW-3	S-3/ GW-1	S-3/ GW-2	S-3/ GW-3	UCL	B-5 (1-3')	B-7 (1-3')	FO-1-TP (1-2')	FO-1-TP (2-3')
SW-846 8081B (mg/Kg dry)																		
ALDRIN			0.08	0.5	0.08	0.08	0.08	0.5	0.5	0.5	3	3	3	30	NT	NT	ND (0.12) *	ND (0.11) *
ALPHA-BHC			50	500	~	~	~	~	~	~	~	~	~	~	NT	NT	ND (0.12)	ND (0.11)
BETA-BHC			10	100	~	~	~	~	~	~	~	~	~	~	NT	NT	ND (0.12)	ND (0.11)
DELTA-BHC			10	100	~	~	~	~	~	~	~	~	~	~	NT	NT	ND (0.12)	ND (0.11)
GAMMA-BHC (LINDANE)			0.003	0.5	0.003	0.1	0.5	0.003	2	0.5	0.003	2	0.5	600	NT	NT	ND (0.046) *	ND (0.045) *
CHLORDANE			5	30	5	5	5	30	30	30	60	60	60	600	NT	NT	ND (0.46)	ND (0.45)
4,4'-DDD			8	40	8	8	8	40	40	40	60	60	60	600	NT	NT	ND (0.093)	ND (0.090)
4,4'-DDE			6	30	6	6	6	30	30	30	60	60	60	600	NT	NT	0.093	ND (0.090)
4,4'-DDT			6	30	6	6	6	30	30	30	60	60	60	600	NT	NT	0.13	0.13
DIELDRIN			0.08	0.5	0.08	0.08	0.08	0.5	0.5	0.5	3	3	3	30	NT	NT	0.19	0.16
ENDOSULFAN I			0.5	1	0.5	300	1	0.5	500	1	0.5	500	1	5000	NT	NT	ND (0.12)	ND (0.11)
ENDOSULFAN II			0.5	1	0.5	300	1	0.5	500	1	0.5	500	1	5000	NT	NT	ND (0.19)	ND (0.18)
ENDOSULFAN SULFATE			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	ND (0.19)	ND (0.18)
ENDRIN			10	20	10	10	10	20	20	20	20	20	20	200	NT	NT	ND (0.19)	ND (0.18)
ENDRIN KETONE			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	ND (0.19)	ND (0.18)
HEPTACHLOR			0.3	2	0.3	0.3	0.3	2	2	2	10	10	10	100	NT	NT	ND (0.12)	ND (0.11)
HEPTACHLOR EPOXIDE			0.1	0.9	0.1	0.1	0.1	0.9	0.9	0.9	1	1	1	10	NT	NT	ND (0.12) *	ND (0.11) *
HEXACHLOROBENZENE			0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	8	NT	NT	ND (0.14)	ND (0.14)
METHOXYCHLOR			200	400	200	200	200	400	400	400	400	400	400	4000	NT	NT	ND (1.2)	ND (1.1)
SW-846 8081B (µg/L) 1311 TCLP EXT																		
HEPTACHLOR			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
SW-846 8151A (mg/kg dry)																		
2,4-D			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
2,4-DB			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
2,4,5-TP (SILVEX)			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
2,4,5-T			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
DALAPON			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
DICAMBA			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
DICHLOROPROP			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
DINOSEB			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
MCPA			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
MCPP			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
SW-846 8100 Modified (mg/Kg dry)																		
TPH			1000	3000	1000	1000	1000	1000	3000	5000	1000	5000	5000	10000	NT	NT	NT	NT

Table 9
Summary of Soil Analytical Data: 300-400 CY Stockpile in western portion of Courtyard

Parameter	MassDEP Published Background Concentrations		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit	SAMPLING LOCATIONS			
	Natural Soils	Soils Assoc. Fill	RCS-1	RCS-2	S-1/ GW-1	S-1/ GW-2	S-1/ GW-3	S-2/ GW-1	S-2/ GW-2	S-2/ GW-3	S-3/ GW-1	S-3/ GW-2	S-3/ GW-3	UCL	B-5 (1-3')	B-7 (1-3')	FO-1-TP (1-2')	FO-1-TP (2-3')
SW-846 8260C (mg/Kg dry)																		
ACETONE			6	50	6	50	400	6	50	400	6	50	400	10000	NT	NT	NT	NT
TERT-AMYLMETHYL ETHER			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
BENZENE			2	200	2	40	40	2	200	200	2	400	1000	10000	NT	NT	NT	NT
BROMOBENZENE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
BROMOCHLOROMETHANE			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
BROMODICHLOROMETHANE			0.1	0.1	0.1	0.1	30	0.1	0.1	100	0.1	0.1	500	5000	NT	NT	NT	NT
BROMOFORM			0.1	1	0.1	1	300	0.1	1	800	0.1	1	800	10000	NT	NT	NT	NT
BROMOMETHANE			0.5	0.5	0.5	0.5	30	0.5	0.5	30	0.5	0.5	30	6000	NT	NT	NT	NT
2-BUTANONE (MEK)			4	50	4	50	400	4	50	400	4	50	400	10000	NT	NT	NT	NT
N-BUTYLBENZENE			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
SEC-BUTYLBENZENE			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
TERT-BUTYLBENZENE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
TERT-BUTYLETHYL ETHER			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
CARBON DISULFIDE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
CARBON TETRACHLORIDE			5	5	10	5	30	10	5	100	10	5	1000	10000	NT	NT	NT	NT
CHLOROBENZENE			1	3	1	3	100	1	3	100	1	3	100	10000	NT	NT	NT	NT
CHLORODIBROMOMETHANE			0.005	0.03	0.005	0.03	20	0.005	0.03	100	0.005	0.03	500	5000	NT	NT	NT	NT
CHLOROETHANE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
CHLOROFORM			0.2	0.2	0.4	0.2	500	0.4	0.2	1000	0.4	0.2	1000	10000	NT	NT	NT	NT
CHLOROMETHANE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
2-CHLOROTOLUENE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
4-CHLOROTOLUENE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2-DIBROMO-3-CHLOROPROPANE			10	100	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2-DIBROMOETHANE (EDB)			0.1	0.1	0.1	0.1	1	0.1	0.1	5	0.1	0.1	40	400	NT	NT	NT	NT
DIBROMOMETHANE			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2-DICHLOROBENZENE			9	100	9	100	300	9	100	300	9	100	300	10000	NT	NT	NT	NT
1,3-DICHLOROBENZENE			3	200	3	100	100	3	200	500	3	200	500	5000	NT	NT	NT	NT
1,4-DICHLOROBENZENE			0.7	1	0.7	1	80	0.7	1	400	0.7	1	2000	10000	NT	NT	NT	NT
DICHLORODIFLUOROMETHANE			1000	10000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,1-DICHLOROETHANE			0.4	9	0.4	9	500	0.4	9	1000	0.4	9	1000	10000	NT	NT	NT	NT
1,2-DICHLOROETHANE			0.1	0.1	0.1	0.1	20	0.1	0.1	100	0.1	0.1	300	9000	NT	NT	NT	NT
1,1-DICHLOROETHYLENE			3	40	3	40	500	3	40	1000	3	40	3000	10000	NT	NT	NT	NT
CIS-1,2-DICHLOROETHYLENE			0.1	0.1	0.3	0.1	100	0.3	0.1	500	0.3	0.1	500	5000	NT	NT	NT	NT
TRANS-1,2-DICHLOROETHYLENE			1	1	1	1	500	1	1	1000	1	1	3000	10000	NT	NT	NT	NT
1,2-DICHLOROPROPANE			0.1	0.1	0.1	0.1	30	0.1	0.1	100	0.1	0.1	1000	10000	NT	NT	NT	NT
1,3-DICHLOROPROPANE			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
2,2-DICHLOROPROPANE			0.1	0.2	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,1-DICHLOROPROPENE			0.01	0.1	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
CIS-1,3-DICHLOROPROPENE			0.01	0.1	0.01	0.4	9	0.01	0.4	70	0.01	0.4	100	4000	NT	NT	NT	NT
TRANS-1,3-DICHLOROPROPENE			0.01	0.1	0.01	0.4	9	0.01	0.4	70	0.01	0.4	100	4000	NT	NT	NT	NT
DIETHYL ETHER			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
DIISOPROPYL ETHER			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,4-DIOXANE			0.2	6	0.2	6	20	0.2	6	90	0.2	6	500	5000	NT	NT	NT	NT
ETHYLBENZENE			40	1000	40	500	500	40	1000	1000	40	1000	3000	10000	NT	NT	NT	NT
HEXACHLOROBUTADIENE			30	100	30	30	30	100	100	100	100	100	100	1000	NT	NT	NT	NT
2-HEXANONE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
ISOPROPYLBENZENE			1000	10000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
P-ISOPROPYLTOLUENE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)			0.1	100	0.1	100	100	0.1	100	500	0.1	100	500	5000	NT	NT	NT	NT

Table 9
Summary of Soil Analytical Data: 300-400 CY Stockpile in western portion of Courtyard

Parameter	MassDEP Published Background Concentrations		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit	SAMPLING LOCATIONS			
	Natural Soils	Soils Assoc. Fill	RCS-1	RCS-2	S-1/ GW-1	S-1/ GW-2	S-1/ GW-3	S-2/ GW-1	S-2/ GW-2	S-2/ GW-3	S-3/ GW-1	S-3/ GW-2	S-3/ GW-3	UCL	B-5 (1-3')	B-7 (1-3')	FO-1-TP (1-2')	FO-1-TP (2-3')
METHYLENE CHLORIDE			0.1	20	0.1	20	200	0.1	20	900	0.1	20	900	10000	NT	NT	NT	NT
4-METHYL-2-PENTANONE (MIBK)			0.4	50	0.4	50	400	0.4	50	400	0.4	50	400	10000	NT	NT	NT	NT
NAPHTHALENE			4	20	4	20	500	4	20	1000	4	20	3000	10000	NT	NT	NT	NT
N-PROPYLBENZENE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
STYRENE			3	4	3	4	70	3	4	200	3	4	2000	10000	NT	NT	NT	NT
1,1,1,2-TETRACHLOROETHANE			0.1	0.1	0.1	0.1	80	0.1	0.1	400	0.1	0.1	500	5000	NT	NT	NT	NT
1,1,2,2-TETRACHLOROETHANE			0.005	0.02	0.005	0.02	10	0.005	0.02	50	0.005	0.02	400	4000	NT	NT	NT	NT
TETRACHLOROETHYLENE			1	10	1	10	30	1	10	200	1	10	1000	10000	NT	NT	NT	NT
TETRAHYDROFURAN			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
TOLUENE			30	1000	30	500	500	30	1000	1000	30	2000	3000	10000	NT	NT	NT	NT
1,2,3-TRICHLOROBENZENE			~	~	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2,4-TRICHLOROBENZENE			2	6	2	6	700	2	6	3000	2	6	5000	10000	NT	NT	NT	NT
1,1,1-TRICHLOROETHANE			30	600	30	500	500	30	600	1000	30	600	3000	10000	NT	NT	NT	NT
1,1,2-TRICHLOROETHANE			0.1	2	0.1	2	40	0.1	2	200	0.1	2	500	5000	NT	NT	NT	NT
TRICHLOROETHYLENE			0.3	0.3	0.3	0.3	30	0.3	0.3	60	0.3	0.3	60	600	NT	NT	NT	NT
TRICHLOROFLUOROMETHANE			1000	10000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2,3-TRICHLOROPROPANE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2,4-TRIMETHYLBENZENE			1000	10000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,3,5-TRIMETHYLBENZENE			10	100	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
VINYL CHLORIDE			0.7	0.7	0.9	0.7	1	0.9	0.7	7	0.9	0.7	60	600	NT	NT	NT	NT
M/P-XYLENE			100	100	400	100	500	400	100	1000	400	100	3000	10000	NT	NT	NT	NT
O-XYLENE			100	100	400	100	500	400	100	1000	400	100	3000	10000	NT	NT	NT	NT
SW-846 8270D (mg/Kg dry)																		
ACENAPHTHENE			4	3000	4	1000	1000	4	3000	3000	4	5000	5000	10000	NT	NT	NT	NT
ACENAPHTHYLENE			1	10	1	600	10	1	600	10	1	600	10	10000	NT	NT	NT	NT
ACETOPHENONE			1000	10000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
ANILINE			1000	10000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
ANTHRACENE			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
BENZO(A)ANTHRACENE			7	40	7	7	7	40	40	40	300	300	300	3000	NT	NT	NT	NT
BENZO(A)PYRENE			2	7	2	2	2	7	7	7	30	30	30	300	NT	NT	NT	NT
BENZO(B)FLUORANTHENE			7	40	7	7	7	40	40	40	300	300	300	3000	NT	NT	NT	NT
BENZO(G,H,I)PERYLENE			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
BENZO(K)FLUORANTHENE			70	400	70	70	70	400	400	400	3000	3000	3000	10000	NT	NT	NT	NT
BIS(2-CHLOROETHOXY)METHANE			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
BIS(2-CHLOROETHYL)ETHER			0.7	0.7	0.7	0.7	8	0.7	0.7	3	0.7	0.7	80	800	NT	NT	NT	NT
BIS(2-CHLOROISOPROPYL)ETHER			0.7	0.7	0.7	0.7	30	0.7	0.7	100	0.7	0.7	1000	10000	NT	NT	NT	NT
BIS(2-ETHYLHEXYL)PHTHALATE			90	600	90	90	90	600	600	600	2000	2000	2000	10000	NT	NT	NT	NT
4-BROMOPHENYL PHENYL ETHER			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
BUTYLBENZYLPHTHALATE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
4-CHLOROANILINE			1	3	1	100	3	1	100	3	1	100	3	3000	NT	NT	NT	NT
2-CHLORONAPHTHALENE			1000	10000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
2-CHLOROPHENOL			0.7	100	0.7	100	100	0.7	100	300	0.7	100	300	3000	NT	NT	NT	NT
CHRYSENE			70	400	70	70	70	400	400	400	3000	3000	3000	10000	NT	NT	NT	NT
DIBENZ(A,H)ANTHRACENE			0.7	4	0.7	0.7	0.7	4	4	4	30	30	30	300	NT	NT	NT	NT
DIBENZOFURAN			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
DI-N-BUTYLPHTHALATE			50	500	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2-DICHLOROBENZENE			9	100	9	100	300	9	100	300	9	100	300	10000	NT	NT	NT	NT
1,3-DICHLOROBENZENE			3	200	3	100	100	3	200	500	3	200	500	5000	NT	NT	NT	NT
1,4-DICHLOROBENZENE			0.7	1	0.7	1	80	0.7	1	400	0.7	1	2000	10000	NT	NT	NT	NT
3,3'-DICHLOROBENZIDINE			3	20	3	3	3	10	10	10	100	100	100	1000	NT	NT	NT	NT

Table 9
Summary of Soil Analytical Data: 300-400 CY Stockpile in western portion of Courtyard

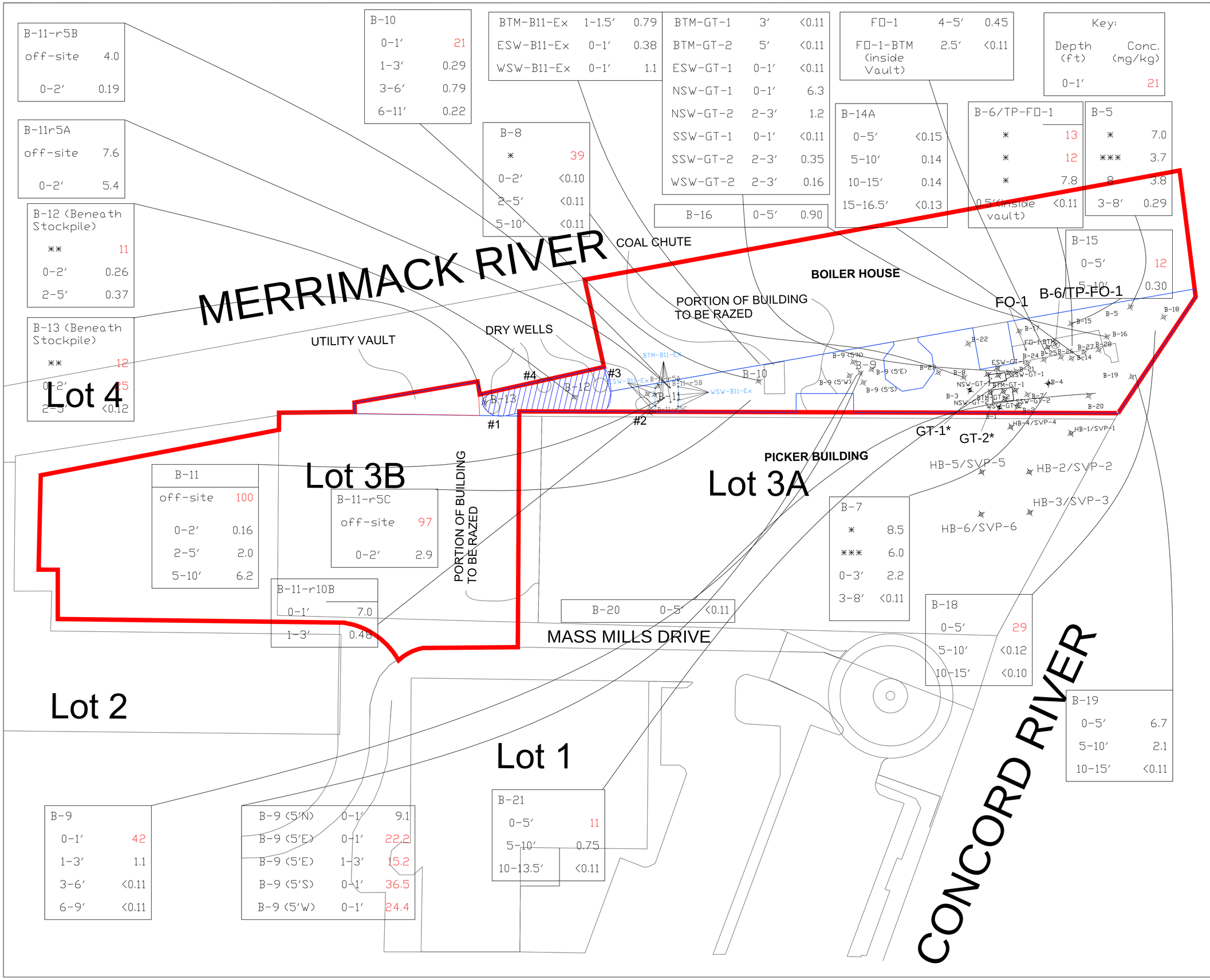
Parameter	MassDEP Published Background Concentrations		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit	SAMPLING LOCATIONS			
	Natural Soils	Soils Assoc. Fill	RCS-1	RCS-2	S-1/ GW-1	S-1/ GW-2	S-1/ GW-3	S-2/ GW-1	S-2/ GW-2	S-2/ GW-3	S-3/ GW-1	S-3/ GW-2	S-3/ GW-3	UCL	B-5 (1-3')	B-7 (1-3')	FO-1-TP (1-2')	FO-1-TP (2-3')
2,4-DICHLOROPHENOL			0.7	40	0.7	60	40	0.7	60	40	0.7	60	40	8000	NT	NT	NT	NT
DIETHYLPHTHALATE			10	200	10	200	300	10	200	300	10	200	300	10000	NT	NT	NT	NT
2,4-DIMETHYLPHENOL			0.7	100	0.7	100	500	0.7	100	1000	0.7	100	1000	10000	NT	NT	NT	NT
DIMETHYLPHTHALATE			0.7	50	0.7	50	600	0.7	50	600	0.7	50	600	10000	NT	NT	NT	NT
2,4-DINITROPHENOL			3	50	3	50	50	3	50	100	3	50	100	8000	NT	NT	NT	NT
2,4-DINITROTOLUENE			0.7	10	0.7	2	2	0.7	10	10	0.7	50	80	800	NT	NT	NT	NT
2,6-DINITROTOLUENE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
DI-N-OCTYLPHTHALATE			1000	10000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2-DIPHENYLHYDRAZINE (AZOBENZENE)			50	500	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
FLUORANTHENE			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
FLUORENE			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
HEXACHLOROBENZENE			0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	8	NT	NT	NT	NT
HEXACHLOROBUTADIENE			30	100	30	30	30	100	100	100	100	100	100	1000	NT	NT	NT	NT
HEXACHLOROETHANE			0.7	3	0.7	3	50	0.7	3	200	0.7	3	200	2000	NT	NT	NT	NT
INDENO(1,2,3-CD)PYRENE			7	40	7	7	7	40	40	40	300	300	300	3000	NT	NT	NT	NT
ISOPHORONE			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
2-METHYLNAPHTHALENE			0.7	80	0.7	80	300	1	80	500	1	80	500	5000	NT	NT	NT	NT
O-CRESOL			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
M/P-CRESOL			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
NAPHTHALENE			4	20	4	20	500	4	20	1000	4	20	3000	10000	NT	NT	NT	NT
NITROBENZENE			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
2-NITROPHENOL			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
4-NITROPHENOL			100	1000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
PENTACHLOROPHENOL			3	10	3	3	3	3	20	10	3	70	10	700	NT	NT	NT	NT
PHENANTHRENE			10	1000	10	500	500	20	1000	1000	20	3000	3000	10000	NT	NT	NT	NT
PHENOL			1	20	1	50	20	1	50	20	1	50	20	10000	NT	NT	NT	NT
PYRENE			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000	NT	NT	NT	NT
PYRIDINE			500	5000	~	~	~	~	~	~	~	~	~	~	NT	NT	NT	NT
1,2,4-TRICHLOROBENZENE			2	6	2	6	700	2	6	3000	2	6	5000	10000	NT	NT	NT	NT
2,4,5-TRICHLOROPHENOL			4	600	4	1000	600	4	1000	600	4	100	200	10000	NT	NT	NT	NT
2,4,6-TRICHLOROPHENOL			0.7	20	0.7	20	20	0.7	20	20	0.7	20	20	4000	NT	NT	NT	NT

NOTES:

1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.
7. SP-1 is a sample from stockpile of surficial soil samples. It was analyzed for VOCs via USEPA Method 8260C. None were detected. It was also analyzed for SVOCs via USEPA Method 8270. PAHs, 2 phthalates and dibenzofuran were detected. These data are summarized with the EPH/PAH data. Analysis for TPH via USEPA Method 8100M was also conducted. TPH was detected at 3800 mg/kg. Soils from B-11 were added to SP-1 and these soils were shipped off-Site to a hazardous waste facility approved to accept PCBs containing >50 mg/kg PCBs.
8. FO-1, FO-1 (3') and FO-1-BTM are samples inside and beneath vault. They were analyzed for VOCs via USEPA Method 8260C and SVOCs via USEPA Method 8270. No VOCs or SVOCs were detected except for SVOCs in FO-1. Analysis for TPH via USEPA Method 8100M was also conducted. No TPH was detected in FO-1 (3'), 31 mg/kg TPH was detected in FO-1-BTM, and 33,000 mg/kg TPH in FO-1.

ATTACHMENT 6

F-size Drawing of Figure 6



GEC

Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

- Lot 3B
- Calculated Area
- Hand Boring
- Test Pit
- Boring
- Current Stockpile of 300 - 400 CY of 1-3' Soils from Eastern Portion of Courtyard

Stockpile SP-1: Shipped to Michigan

Stockpile SP-2: Placed in Coal Chute Repository

Stockpile SP-3: Returned to Fuel Oil Bunker

PCB Exceedances >10mg/kg shown in Red

* Soils moved to coal chute

* * Soils moved to dry well no. 1

* ** Soils moved to stockpile or dry wells no. 2 to 4

Site Plan - Distribution of PCBs in Soil (Based on Conditions 10/1/2016)

Masscahusetts Mills
169.2 Bridge Street
Lowell, Massachusetts

GEC Project Number: 1785-6090
GEC File Number: 02082017

FIGURE 6

SCALE

0 30 60
FEET

ATTACHMENT 7

ENPRO Cost Estimate

TABULATION OF ESTIMATED COST RANGE
Date: 10/18/16
Client: Mass Mills III Limited Partnership
Contact: Mr. Jon Rudzinski
Phone: (617) 838-9388
Project: Load/Transportation/ and Disposal
Project Location: Massachusetts Mills 150 Mass Mill Drive, Lowell, MA. 01852
Prepared by: Tony Santa Fe, Project Manager, ENPRO Services Inc.

Item	Description	ESTIMATED QUANTITY			UNIT OF MEASURE	UNIT PRICE	ESTIMATED TOTAL PRICE $$$		
	Task One: Mobilization & Demobilization, Site Set-Up								
a	Equipment:								
	Mob and Demob of Front End Loader	2	to	2	EVENT	350	700.00	to	700.00
	Mob and Demob of Track Skid Steer	2	to	2	EVENT	250	500.00	to	500.00
	Mob and Demob of 3 stage Decon trailer	2	to	2	EVENT	225	450.00	to	450.00
	Mob and Demob of Water Truck	2	to	2	EVENT	350	700.00	to	700.00
		Subtotal Task One:					**$2,350.00**	**to**	**$2,350.00**
	EIS Fee (Energy ,Insurance and Security fee) 9.25%	**1**	**to**	**1**	**Fee**	**9.25%**	**$217.38**	**to**	**$217.38**
		Total :					**$2,567.38**	**to**	**$2,567.38**
	Task Two: -Loading of Stockpiled Soils								
a	Labor:								
	Foreman/Operator	80	to	100	HOUR	60	4,800.00	to	6,000.00
	Recovery Technician/Operator (3)	80	to	100	HOUR	150	12,000.00	to	15,000.00
b	Equipment:								
	Utility Truck c/w Small Power and Hand Tools	8	to	10	DAY	225	1,800.00	to	2,250.00
	Front End Loader	8	to	10	DAY	550	4,400.00	to	5,500.00
	Skid Steer	8	to	10	DAY	225	1,800.00	to	2,250.00
	Water Truck	8	to	10	DAY	375	3,000.00	to	3,750.00
	Water Pressure Washer Trailer	8	to	10	DAY	250	2,000.00	to	2,500.00
	3 stage decon trailer	8	to	10	DAY	400	3,200.00	to	4,000.00
c	Material:								
	6-Mil Poly Sheeting	20	to	20	ROLL	65	1,300.00	to	1,300.00
	Personal Protective Clothing and Equipment	28	to	28	SET	45	1,260.00	to	1,260.00
	Rolloff Liner	27	to	27	LINER	65	1,755.00	to	1,755.00
	Loading area Material	1	to	1	EST	600	600.00	to	600.00
	MA Sales Tax 6.25%	1	to	1	TAX	%	307.19	to	307.19
d	Roll Off Containers:								
	Mob and Demob of Rolloff Containers	27	to	27	EVENT	575	15,525.00	to	15,525.00
	Driver Demurge (1 hour onsite/ event)	27	to	27	HOUR	56	1,512.00	to	1,512.00
		Subtotal Task Two:					**$55,259.19**	**to**	**$63,509.19**
	EIS Fee (Energy ,Insurance and Security fee) 9.25%	**1**	**to**	**1**	**Fee**	**9.25%**	**$5,111.47**	**to**	**$5,874.60**
		Total :					**$60,370.66**	**to**	**$69,383.79**

Task Three: - Transportation and Disposal of Soil <50ppm PCBs w/ asbestos and Petroleum (assumes shipped on BOL) -Waste Management Norridgewolk, ME

a	Transportation and Disposal								
	Transportation	27	to	27	EVENT	1175	31,725.00	to	31,725.00
	Disposal (12 Ton Minimum)	400	to	400	TON	107	42,800.00	to	42,800.00
	Can Rental	35	to	35	DAY	18	630.00	to	630.00
		Subtotal Task Two:					**$75,155.00**	**to**	**$75,155.00**
	EIS Fee (Energy ,Insurance and Security fee) 9.25%	**1**	**to**	**1**	**Fee**	**9.25%**	**$6,951.84**	**to**	**$6,951.84**
		Total :					**$82,106.84**	**to**	**$82,106.84**
		Total Cost-Task 1 thru 3 :					**$145,044.87**	**to**	**$154,058.00**

Limiting assumptions and conditions:

1 The above pricing is portal to portal from Salisbury, MA
2 Disposal volumes will be invoiced on actual volumes of soil generated.
3 Work area will be free of vehicles and other materials prior to, and during, ENPRO's work
4 Water ,Power and Restroom will be Available for ENPRO personal to utilize at no Cost to ENPRO
5 Disposal is based on facility acceptance and approval
6 Estimate is for tasks listed above only. ENPRO will provide additional estimates, if needed for additional work scope(s)

Payment Terms: Should it be determined by the receiving disposal facility that a waste stream has been received off-specification from the information as profiled by the generator, a surcharge will be incurred. All payments are due upon receipt of invoice. An interest charge of 1.5% per month (18% per annum) will be charged and paid for on all outstanding balances that are over 30 days due. Should it be necessary to employ outside services to collect on any amount, it is specifically agreed that the client will pay all such costs, including reasonable attorney's fees and court costs. Pricing provided herein is valid for a period of 30 days.

Accepted By: (Authorized Signature)

Title

Printed Name

Date

TABULATION OF ESTIMATED COST RANGE
Date: May 12, 2016
Client: Mass Mills III Limited Partnership
Contact: Mr. Jon Rudzinski
Phone: (617) 838-9388
Project: Soils Relocation
Project Location: Massachusetts Mills 150 Mass Mill Drive, Lowell, MA. 01852
Prepared by: Tony Santa Fe, Project Manager, ENPRO Services Inc.

Item	Description	ESTIMATED QUANTITY			UNIT OF MEASURE	UNIT PRICE	ESTIMATED TOTAL PRICE $$$		
	Task One: Mobilization & Demobilization, Site Set-Up								
a	Equipment:								
	Mob and Demob of Front End Loader	2	to	2	EVENT	350	700.00	to	700.00
	Mob and Demob of Track Skid Steer	2	to	2	EVENT	250	500.00	to	500.00
	Mob and Demob of 3 stage Decon trailer	2	to	2	EVENT	225	450.00	to	450.00
	Mob and Demob of Water Truck	2	to	2	EVENT	350	700.00	to	700.00
		Subtotal Task One:					**$2,350.00**	**to**	**$2,350.00**
	EIS Fee (Energy ,Insurance and Security fee) 9.25%	**1**	**to**	**1**	**Fee**	**9.25%**	**$140.00**	**to**	**$140.00**
		Total :					**$2,490.00**	**to**	**$2,490.00**
	Task Two: -Relocating of Soils onsite								
a	Labor:								
	Foreman/Operator	30	to	40	HOUR	60	1,800.00	to	2,400.00
	Recovery Technician/Operator (3)	30	to	40	HOUR	150	4,500.00	to	6,000.00
b	Equipment:								
	Utility Truck c/w Small Power and Hand Tools	3	to	4	DAY	225	675.00	to	900.00
	Front End Loader	3	to	4	DAY	550	1,650.00	to	2,200.00
	Skid Steer	3	to	4	DAY	225	675.00	to	900.00
	Water Truck	8	to	10	DAY	375	3,000.00	to	3,750.00
	Water Pressure Washer Trailer	3	to	4	DAY	250	750.00	to	1,000.00
	3 stage decon trailer	3	to	4	DAY	400	1,200.00	to	1,600.00
c	Material:								
	Personal Protective Clothing and Equipment	12	to	16	SET	45	540.00	to	720.00
	MA Sales Tax 6.25%	1	to	1	TAX	%	33.75	to	45.00
		Subtotal Task Two:					**$14,823.75**	**to**	**$19,515.00**
	EIS Fee (Energy ,Insurance and Security fee) 9.25%	**1**	**to**	**1**	**Fee**	**9.25%**	**$681.21**	**to**	**$748.71**
		Total :					**$15,504.96**	**to**	**$20,263.71**
		Total Cost-Task 1 thru 2 :					**$17,994.96**	**to**	**$22,753.71**

Limiting assumptions and conditions:

1 The above pricing is portal to portal from Salisbury, MA
2 Work area will be free of vehicles and other materials prior to, and during, ENPRO's work
3 Water ,Power and Restroom will be Available for ENPRO personal to utilize at no Cost to ENPRO
4 Estimate is for tasks listed above only. ENPRO will provide additional estimates, if needed for additional work scope(s)

Accepted By: (Authorized Signature)	Title
Printed Name	Date

ATTACHMENT 8

Table 1: Updated

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	MassDEP Published Background		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit
	Natural Soils	Soils assoc. Fill	RCS-1	RCS-2	S-1/GW-1	S-1/GW-2	S-1/GW-3	S-2/GW-1	S-2/GW-2	S-2/GW-3	S-3/GW-1	S-3/GW-2	S-3/GW-3	UCL
Sampling Date														
Sample Depth During Investigative Event														
Sample Depth or Disposition Relative to October 1, 2016														
NOTES:														
MADEP-EPH-04-1.1 (mg/Kg dry)														
C9-C18 ALIPHATICS			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	20000
C19-C36 ALIPHATICS			3000	5000	3000	3000	3000	5000	5000	5000	5000	5000	5000	20000
UNADJUSTED C11-C22 AROMATICS			~	~	~	~	~	~	~	~	~	~	~	~
C11-C22 AROMATICS			1000	3000	1000	1000	1000	1000	3000	3000	1000	5000	5000	10000
ACENAPHTHENE	0.5	2	4	3000	4	1000	1000	4	3000	3000	4	5000	5000	10000
ACENAPHTHYLENE	0.5	1	1	10	1	600	10	1	600	10	1	600	10	10000
ANTHRACENE	1	4	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
BENZO(A)ANTHRACENE	2	9	7	40	7	7	7	40	40	40	300	300	300	3000
BENZO(A)PYRENE	2	7	2	7	2	2	2	7	7	7	30	30	30	300
BENZO(B)FLUORANTHENE	2	8	7	40	7	7	7	40	40	40	300	300	300	3000
BENZO(G,H,I)PERYLENE	1	3	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
BENZO(K)FLUORANTHENE	1	4	70	400	70	70	70	400	400	400	3000	3000	3000	10000
CHRYSENE	2	7	70	400	70	70	70	400	400	400	3000	3000	3000	10000
DIBENZ(A,H)ANTHRACENE	0.5	1	0.7	4	0.7	0.7	0.7	4	4	4	30	30	30	300
FLUORANTHENE	4	10	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
FLUORENE	1	2	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
INDENO(1,2,3-CD)PYRENE	1	3	7	40	7	7	7	40	40	40	300	300	300	3000
2-METHYLNAPHTHALENE	0.5	1	0.7	80	0.7	80	300	1	80	500	1	80	500	5000
NAPHTHALENE	0.5	1	4	20	4	20	500	4	20	1000	4	20	3000	10000
PHENANTHRENE	3	20	10	1000	10	500	500	20	1000	1000	20	3000	3000	10000
PYRENE	4	20	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)			90	600	90	90	90	600	600	600	2000	2000	2000	10000
DIBENZOFURAN (see notes 7, 9)			100	1000	~	~	~	~	~	~	~	~	~	~
DI-N-BUTYLPHTHALATE (see note 7)			50	500	~	~	~	~	~	~	~	~	~	~
MADEP-VPH-04-1.1 (mg/Kg dry)														
UNADJUSTED C5-C8 ALIPHATICS			~	~	~	~	~	~	~	~	~	~	~	~
C5-C8 ALIPHATICS			100	500	100	100	100	500	500	500	500	500	500	5000
UNADJUSTED C9-C12 ALIPHATICS			~	~	~	~	~	~	~	~	~	~	~	~
C9-C12 ALIPHATICS			1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	20000
C9-C10 AROMATICS			100	500	100	100	100	300	500	500	300	500	500	5000
BENZENE			2	200	2	40	40	2	200	200	2	400	1000	10000
ETHYLBENZENE			40	1000	40	500	500	40	1000	1000	40	1000	3000	10000
METHYL TERT-BUTYL ETHER (MTBE)			0.1	100	0.1	100	100	0.1	100	500	0.1	100	500	5000
NAPHTHALENE	0.5	1	4	20	4	20	500	4	20	1000	4	20	3000	10000
TOLUENE			30	1000	30	500	500	30	1000	1000	30	2000	3000	10000
M/P-XYLENE			100	100	400	100	500	400	100	1000	400	100	3000	10000
O-XYLENE			100	100	400	100	500	400	100	1000	400	100	3000	10000

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	MassDEP Published Background		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit
	Natural Soils	Soils assoc. Fill	RCS-1	RCS-2	S-1/GW-1	S-1/GW-2	S-1/GW-3	S-2/GW-1	S-2/GW-2	S-2/GW-3	S-3/GW-1	S-3/GW-2	S-3/GW-3	UCL
SM 2540G (% Wt)														
% Solids			~	~	~	~	~	~	~	~	~	~	~	~
SW-846 6010C/D (mg/Kg dry) Metals Digestion														
ANTIMONY	1	7	20	30	20	20	20	30	30	30	30	30	30	300
ARSENIC	20	20	20	20	20	20	20	20	20	20	50	50	50	500
BARIUM	50	50	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
BERYLLIUM	0.4	0.9	90	200	90	90	90	200	200	200	200	200	200	2000
CADMIUM	2	3	70	100	70	70	70	100	100	100	100	100	10	1000
CHROMIUM (as +3)	30	40	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
LEAD	100	600	200	600	200	200	200	600	600	600	600	600	600	6000
NICKEL	20	30	600	1000	600	600	600	1000	1000	1000	1000	1000	1000	10000
SELENIUM	0.5	1	400	700	400	400	400	700	700	700	700	700	700	7000
SILVER	0.6	5	100	200	100	100	100	200	200	200	200	200	200	2000
THALLIUM	0.6	5	8	60	8	8	8	60	60	60	80	80	80	800
VANADIUM	30	30	400	700	400	400	400	700	700	700	700	700	700	7000
ZINC	100	300	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
SW-846 7471B (mg/Kg dry) Metals Digestion														
MERCURY	0.3	1	20	30	20	20	20	30	30	30	30	30	30	300
SW-846 7196A (mg/Kg dry)														
CHROMIUM +6	30	40	100	200	100	100	100	200	200	200	200	200	200	2000
SM2580 A (mV)														
OXIDATION/REDUCTION POTENTIAL			~	~	~	~	~	~	~	~	~	~	~	~
SW-846 9045C (pH Units)														
PH			~	~	~	~	~	~	~	~	~	~	~	~
SW-846 6010C-D (mg/L) 1311 TCLP EXT														
CADMIUM			~	~	~	~	~	~	~	~	~	~	~	~
LEAD			~	~	~	~	~	~	~	~	~	~	~	~
SW-846 8082A (mg/Kg dry)														
PCB 1016			1	4	1	1	1	4	4	4	4	4	4	100
PCB 1221			1	4	1	1	1	4	4	4	4	4	4	100
PCB 1232			1	4	1	1	1	4	4	4	4	4	4	100
PCB 1242			1	4	1	1	1	4	4	4	4	4	4	100
PCB 1248			1	4	1	1	1	4	4	4	4	4	4	100
PCB 1254			1	4	1	1	1	4	4	4	4	4	4	100
PCB 1260			1	4	1	1	1	4	4	4	4	4	4	100
PCB 1262			1	4	1	1	1	4	4	4	4	4	4	100
PCB 1268			1	4	1	1	1	4	4	4	4	4	4	100
TOTAL PCBs			1	4	1	1	1	4	4	4	4	4	4	100

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	MassDEP Published Background		Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									Upper Concentration Limit
	Natural Soils	Soils assoc. Fill	RCS-1	RCS-2	S-1/GW-1	S-1/GW-2	S-1/GW-3	S-2/GW-1	S-2/GW-2	S-2/GW-3	S-3/GW-1	S-3/GW-2	S-3/GW-3	UCL
SW-846 8081B (mg/Kg dry)														
ALDRIN			0.08	0.5	0.08	0.08	0.08	0.5	0.5	0.5	3	3	3	30
ALPHA-BHC			50	500	~	~	~	~	~	~	~	~	~	~
BETA-BHC			10	100	~	~	~	~	~	~	~	~	~	~
DELTA-BHC			10	100	~	~	~	~	~	~	~	~	~	~
GAMMA-BHC (LINDANE)			0.003	0.5	0.003	0.1	0.5	0.003	2	0.5	0.003	2	0.5	600
CHLORDANE			5	30	5	5	5	30	30	30	60	60	60	600
4,4'-DDD			8	40	8	8	8	40	40	40	60	60	60	600
4,4'-DDE			6	30	6	6	6	30	30	30	60	60	60	600
4,4'-DDT			6	30	6	6	6	30	30	30	60	60	60	600
DIELDRIN			0.08	0.5	0.08	0.08	0.08	0.5	0.5	0.5	3	3	3	30
ENDOSULFAN I			0.5	1	0.5	300	1	0.5	500	1	0.5	500	1	5000
ENDOSULFAN II			0.5	1	0.5	300	1	0.5	500	1	0.5	500	1	5000
ENDOSULFAN SULFATE			~	~	~	~	~	~	~	~	~	~	~	~
ENDRIN			10	20	10	10	10	20	20	20	20	20	20	200
ENDRIN KETONE			~	~	~	~	~	~	~	~	~	~	~	~
HEPTACHLOR			0.3	2	0.3	0.3	0.3	2	2	2	10	10	10	100
HEPTACHLOR EPOXIDE			0.1	0.9	0.1	0.1	0.1	0.9	0.9	0.9	1	1	1	10
HEXACHLOROBENZENE			0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	8
METHOXYCHLOR			200	400	200	200	200	400	400	400	400	400	400	4000
SW-846 8081B (µg/L) 1311 TCLP EXT														
HEPTACHLOR			~	~	~	~	~	~	~	~	~	~	~	~
SW-846 8151A (mg/kg dry)														
2,4-D			100	1000	~	~	~	~	~	~	~	~	~	~
2,4-DB			100	1000	~	~	~	~	~	~	~	~	~	~
2,4,5-TP (SILVEX)			100	1000	~	~	~	~	~	~	~	~	~	~
2,4,5-T			100	1000	~	~	~	~	~	~	~	~	~	~
DALAPON			~	~	~	~	~	~	~	~	~	~	~	~
DICAMBA			500	5000	~	~	~	~	~	~	~	~	~	~
DICHLOROPROP			~	~	~	~	~	~	~	~	~	~	~	~
DINOSEB			500	5000	~	~	~	~	~	~	~	~	~	~
MCPA			100	1000	~	~	~	~	~	~	~	~	~	~
MCPP			~	~	~	~	~	~	~	~	~	~	~	~

NOTES:

1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.
7. SP-1 is a sample from stockpile of surficial soil samples. It was analyzed for VOCs via USEPA Method 8260C. None were detected. It was also analyzed for SVOCs via USEPA Method 8270. PAHs, 2 phthalates and dibenzofuran were detected. These data are summarized with the EPH/PAH data. Analysis for TPH via USEPA Method 8100M was also conducted. TPH was detected at 3800 mg/kg. Soils from B-11 were added to SP-1 and these soils were shipped off-Site to a hazardous waste facility approved to accept PCBs containing >50 mg/kg PCBs.
8. FO-1, FO-1 (3') and FO-1-BTM are samples inside and beneath vault. They were analyzed for VOCs via USEPA Method 8260C and SVOCs via USEPA Method 8270. No VOCs or SVOCs were detected except for SVOCs in FO-1. Analysis for TPH via USEPA Method 8100M was also conducted. No TPH was detected in FO-1 (3'), 31 mg/kg TPH was detected in FO-1-BTM, and 33,000 mg/kg TPH in FO-1.

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS														
	B-1 (15'-20')	B-3 (15'-20')	B-3 (15'-20') (25-28'')	B-4 (15'-20')	B-4 (15'-20') (21-24'')	B-5 (0-1')	B-5 (1-3')	B-5 (0-3')	B-5 (3-6')	B-5 (6-11')	B-7 (0-1')	B-7 (1-3')	B-7 (0-3')	B-7 (3-6')	B-7 (6-11')
Sampling Date	8/14/2015	8/14/2015	8/14/2015	8/14/2015	8/14/2015	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016
Sample Depth During Investigative Event	15-20 Feet	15-20 Feet	15-20 Feet	15-20 Feet	15-20 Feet	0-1 Feet	1-3 Feet	0-3 Feet	3-6 Feet	6-11 Feet	0-1 Feet	1-3 Feet	0-3 Feet	3-6 Feet	6-11 Feet
Sample Depth or Disposition Relative to October 1, 2016	12-17 Feet	14-19 Feet	14-19 Feet	12-17 Feet	12-17 Feet	Excavated and Placed in Coal Chute	Excavated and Stockpiled or placed in dry wells no. 2 to 4	See B-5 (0-1') and (1-3')	0-3 Feet	3-8 Feet	Excavated and Placed in Coal Chute	Excavated and Stockpiled or placed in dry wells no. 2 to 4	See B-5 (0-1') and (1-3')	0-3 Feet	3-8 Feet
NOTES:			13		13	11	11A, 11B	11, 11A, 11B			11	11A, 11B	11, 11A, 11B		
MADEP-EPH-04-1.1 (mg/Kg dry)															
C9-C18 ALIPHATICS	810	48	NT	570	NT	NT	NT	24	26	300	NT	NT	61	ND (11)	ND (22)
C19-C36 ALIPHATICS	1700	77	NT	1200	NT	NT	NT	160	64	750	NT	NT	140	28	48
UNADJUSTED C11-C22 AROMATICS	3400	220	NT	3700	NT	NT	NT	420	280	1400	NT	NT	240	120	96
C11-C22 AROMATICS	**3400**	200	NT	**3600**	NT	NT	NT	310	220	**1400**	NT	NT	180	83	83
ACENAPHTHENE	ND (0.22)	0.22	NT	ND (0.22)	NT	NT	NT	1.4	0.76	ND (0.49)	NT	NT	*2.6*	0.54	ND (0.22)
ACENAPHTHYLENE	ND (0.22)	ND (0.11)	NT	ND (0.22)	NT	NT	NT	0.37	0.11	ND (0.49)	NT	NT	0.38	ND (0.11)	ND (0.22)
ANTHRACENE	1.9	0.65	NT	5.4	NT	NT	NT	3.4	1.8	ND (0.49)	NT	NT	*5.4*	1.4	0.29
BENZO(A)ANTHRACENE	3.0	1.1	NT	**7.4**	NT	NT	NT	**7.4**	4.1	ND (0.49)	NT	NT	***11***	2.9	1.2
BENZO(A)PYRENE	ND (0.22)	0.88	NT	**5.5**	NT	NT	NT	**6.5**	**3.7**	ND (0.49)	NT	NT	***9.3***	**2.4**	1.1
BENZO(B)FLUORANTHENE	ND (0.22)	1.2	NT	**7.1**	NT	NT	NT	***9.1***	5.3	ND (0.49)	NT	NT	***12***	3.3	1.3
BENZO(G,H,I)PERYLENE	ND (0.22)	0.58	NT	1.5	NT	NT	NT	*3.4*	1.7	ND (0.49)	NT	NT	*5.0*	1.2	0.66
BENZO(K)FLUORANTHENE	ND (0.22)	0.43	NT	2.5	NT	NT	NT	3.0	2.0	ND (0.49)	NT	NT	*4.6*	1.2	0.52
CHRYSENE	3.8	1.2	NT	*7.8*	NT	NT	NT	*8.5*	5.0	ND (0.49)	NT	NT	*12*	3.2	1.3
DIBENZ(A,H)ANTHRACENE	ND (0.22)	ND (0.11)	NT	ND (0.22)	NT	NT	NT	***1.1***	0.65	ND (0.49)	NT	NT	***1.7***	0.41	ND (0.22)
FLUORANTHENE	3.5	2.3	NT	*15*	NT	NT	NT	*18*	9.5	1.2	NT	NT	*26*	6.6	2.3
FLUORENE	*3.5*	0.44	NT	*6.9*	NT	NT	NT	1.9	0.90	ND (0.49)	NT	NT	*3.4*	0.78	ND (0.22)
INDENO(1,2,3-CD)PYRENE	ND (0.22)	0.51	NT	2.6	NT	NT	NT	*4.1*	2.1	ND (0.49)	NT	NT	*5.1*	1.3	0.56
2-METHYLNAPHTHALENE	0.49	ND (0.11)	NT	***3.1***	NT	NT	NT	0.67	0.29	0.70	NT	NT	0.96	0.22	ND (0.22)
NAPHTHALENE	*1.3*	0.12	NT	*2.1*	NT	NT	NT	*1.7*	0.44	0.79	NT	NT	*1.5*	0.32	ND (0.22)
PHENANTHRENE	5.3	1.9	NT	***21***	NT	NT	NT	15	7.4	1.6	NT	NT	*23*	6.1	1.2
PYRENE	2.6	2.3	NT	13	NT	NT	NT	17	8.8	ND (0.49)	NT	NT	*22*	5.9	2.4
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIBENZOFURAN (see notes 7, 9)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DI-N-BUTYLPHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MADEP-VPH-04-1.1 (mg/Kg dry)															
UNADJUSTED C5-C8 ALIPHATICS	ND (29)	ND (12)	NT	ND (44)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C5-C8 ALIPHATICS	ND (29)	ND (12)	NT	ND (44)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS	88	53	NT	100	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C12 ALIPHATICS	ND (29)	ND (12)	NT	ND (44)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C10 AROMATICS	84	51	NT	100	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BENZENE	0.26	ND (0.062)	NT	0.52	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ETHYLBENZENE	ND (0.14)	ND (0.062)	NT	ND (0.22)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)	ND (0.14)	ND (0.062)	NT	ND (0.22)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NAPHTHALENE	ND (0.72)	ND (0.31)	NT	ND (1.1)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
TOLUENE	ND (0.14)	ND (0.062)	NT	0.32	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
M/P-XYLENE	ND (0.29)	ND (0.12)	NT	ND (0.44)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
O-XYLENE	ND (0.14)	ND (0.062)	NT	ND (0.22)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS														
	B-1 (15'-20')	B-3 (15'-20')	B-3 (15'-20') (25-28'')	B-4 (15'-20')	B-4 (15'-20') (21-24'')	B-5 (0-1')	B-5 (1-3')	B-5 (0-3')	B-5 (3-6')	B-5 (6-11')	B-7 (0-1')	B-7 (1-3')	B-7 (0-3')	B-7 (3-6')	B-7 (6-11')
SM 2540G (% Wt)															
% Solids	88.9	87.2	89.6	91.0	86.1	88.6	66.6	85.3	87.1	80.4	87.4	86.7	85.2	90.3	89
SW-846 6010C/D (mg/Kg dry) Metals Digestion															
ANTIMONY	NT	NT	NT	NT	NT	NT	NT	ND (2.7)	NT	NT	NT	NT	ND (2.8)	NT	NT
ARSENIC	NT	NT	NT	NT	NT	NT	NT	11	NT	NT	NT	NT	13	NT	NT
BARIUM	NT	NT	NT	NT	NT	NT	NT	*120*	NT	NT	NT	NT	*91*	NT	NT
BERYLLIUM	NT	NT	NT	NT	NT	NT	NT	*1.4*	NT	NT	NT	NT	*1.3*	NT	NT
CADMIUM	NT	NT	NT	NT	NT	NT	NT	0.89	NT	NT	NT	NT	1.2	NT	NT
CHROMIUM (as +3)	NT	NT	NT	NT	NT	NT	NT	34	NT	NT	NT	NT	*50*	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	100	NT	NT	NT	NT	150	NT	NT
NICKEL	NT	NT	NT	NT	NT	NT	NT	29	NT	NT	NT	NT	26	NT	NT
SELENIUM	NT	NT	NT	NT	NT	NT	NT	ND (5.4)	NT	NT	NT	NT	ND (5.7)	NT	NT
SILVER	NT	NT	NT	NT	NT	NT	NT	ND (0.54)	NT	NT	NT	NT	ND (0.57)	NT	NT
THALLIUM	NT	NT	NT	NT	NT	NT	NT	ND (2.7)	NT	NT	NT	NT	ND (2.8)	NT	NT
VANADIUM	NT	NT	NT	NT	NT	NT	NT	*110*	*55*	30	NT	NT	*66*	*31*	14
ZINC	NT	NT	NT	NT	NT	NT	NT	200	NT	NT	NT	NT	260	NT	NT
SW-846 7471B (mg/Kg dry) Metals Digestion															
MERCURY	NT	NT	NT	NT	NT	NT	NT	0.16	NT	NT	NT	NT	0.38	NT	NT
SW-846 7196A (mg/Kg dry)															
CHROMIUM +6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SM2580 A (mV)															
OXIDATION/REDUCTION POTENTIAL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 9045C (pH Units)															
PH	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 6010C-D (mg/L) 1311 TCLP EXT															
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	0.050	NT	NT	NT	NT	0.027	NT	NT
SW-846 8082A (mg/Kg dry)															
PCB 1016	NT	NT	NT	NT	NT	ND (1.1) *	ND (0.56)	NT	ND (0.57)	ND (0.12)	ND (1.1) *	ND (1.1) *	NT	ND (0.55)	ND (0.11)
PCB 1221	NT	NT	NT	NT	NT	ND (1.1) *	ND (0.56)	NT	ND (0.57)	ND (0.12)	ND (1.1) *	ND (1.1) *	NT	ND (0.55)	ND (0.11)
PCB 1232	NT	NT	NT	NT	NT	ND (1.1) *	ND (0.56)	NT	ND (0.57)	ND (0.12)	ND (1.1) *	ND (1.1) *	NT	ND (0.55)	ND (0.11)
PCB 1242	NT	NT	NT	NT	NT	ND (1.1) *	ND (0.56)	NT	ND (0.57)	ND (0.12)	ND (1.1) *	ND (1.1) *	NT	ND (0.55)	ND (0.11)
PCB 1248	NT	NT	NT	NT	NT	ND (1.1) *	ND (0.56)	NT	ND (0.57)	ND (0.12)	ND (1.1) *	ND (1.1) *	NT	ND (0.55)	ND (0.11)
PCB 1254	NT	NT	NT	NT	NT	**7.0**	**3.7**	NT	**3.8**	0.29	**8.5**	**6.0**	NT	**2.2**	ND (0.11)
PCB 1260	NT	NT	NT	NT	NT	ND (1.1) *	ND (0.56)	NT	ND (0.57)	ND (0.12)	ND (1.1) *	ND (1.1) *	NT	ND (0.55)	ND (0.11)
PCB 1262	NT	NT	NT	NT	NT	ND (1.1) *	ND (0.56)	NT	ND (0.57)	ND (0.12)	ND (1.1) *	ND (1.1) *	NT	ND (0.55)	ND (0.11)
PCB 1268	NT	NT	NT	NT	NT	ND (1.1) *	ND (0.56)	NT	ND (0.57)	ND (0.12)	ND (1.1) *	ND (1.1) *	NT	ND (0.55)	ND (0.11)
TOTAL PCBs	NT	NT	NT	NT	NT	**7.0**	**3.7**	NT	**3.8**	0.29	**8.5**	**6.0**	NT	**2.2**	ND (0.11)

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS														
	B-1 (15'-20')	B-3 (15'-20')	B-3 (15'-20') (25-28'')	B-4 (15'-20')	B-4 (15'-20') (21-24'')	B-5 (0-1')	B-5 (1-3')	B-5 (0-3')	B-5 (3-6')	B-5 (6-11')	B-7 (0-1')	B-7 (1-3')	B-7 (0-3')	B-7 (3-6')	B-7 (6-11')
SW-846 8081B (mg/Kg dry)															
ALDRIN	NT	NT	NT	NT	NT	NT	NT	ND (0.12) *	NT	NT	NT	NT	ND (0.12) *	NT	NT
ALPHA-BHC	NT	NT	NT	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT
BETA-BHC	NT	NT	NT	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT
DELTA-BHC	NT	NT	NT	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT
GAMMA-BHC (LINDANE)	NT	NT	NT	NT	NT	NT	NT	ND (0.047) *	NT	NT	NT	NT	ND (0.047) *	NT	NT
CHLORDANE	NT	NT	NT	NT	NT	NT	NT	ND (0.47)	NT	NT	NT	NT	ND (0.47)	NT	NT
4,4'-DDD	NT	NT	NT	NT	NT	NT	NT	ND (0.094)	NT	NT	NT	NT	ND (0.094)	NT	NT
4,4'-DDE	NT	NT	NT	NT	NT	NT	NT	ND (0.094)	NT	NT	NT	NT	ND (0.094)	NT	NT
4,4'-DDT	NT	NT	NT	NT	NT	NT	NT	ND (0.094)	NT	NT	NT	NT	0.11	NT	NT
DIELDRIN	NT	NT	NT	NT	NT	NT	NT	ND (0.094) *	NT	NT	NT	NT	ND (0.094) *	NT	NT
ENDOSULFAN I	NT	NT	NT	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT
ENDOSULFAN II	NT	NT	NT	NT	NT	NT	NT	ND (0.19)	NT	NT	NT	NT	ND (0.19)	NT	NT
ENDOSULFAN SULFATE	NT	NT	NT	NT	NT	NT	NT	ND (0.19)	NT	NT	NT	NT	ND (0.19)	NT	NT
ENDRIN	NT	NT	NT	NT	NT	NT	NT	ND (0.19)	NT	NT	NT	NT	ND (0.19)	NT	NT
ENDRIN KETONE	NT	NT	NT	NT	NT	NT	NT	ND (0.19)	NT	NT	NT	NT	ND (0.19)	NT	NT
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT
HEPTACHLOR EPOXIDE	NT	NT	NT	NT	NT	NT	NT	ND (0.12) *	NT	NT	NT	NT	ND (0.12) *	NT	NT
HEXACHLOROBENZENE	NT	NT	NT	NT	NT	NT	NT	ND (0.14)	NT	NT	NT	NT	ND (0.14)	NT	NT
METHOXYCHLOR	NT	NT	NT	NT	NT	NT	NT	ND (1.2)	NT	NT	NT	NT	ND (1.2)	NT	NT
SW-846 8081B (µg/L) 1311 TCLP EXT															
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8151A (mg/kg dry)															
2,4-D	NT	NT	NT	NT	NT	NT	NT	ND (0.029)	NT	NT	NT	NT	ND (0.029)	NT	NT
2,4-DB	NT	NT	NT	NT	NT	NT	NT	ND (0.029)	NT	NT	NT	NT	ND (0.029)	NT	NT
2,4,5-TP (SILVEX)	NT	NT	NT	NT	NT	NT	NT	ND (0.0029)	NT	NT	NT	NT	ND (0.0029)	NT	NT
2,4,5-T	NT	NT	NT	NT	NT	NT	NT	ND (0.0029)	NT	NT	NT	NT	ND (0.0029)	NT	NT
DALAPON	NT	NT	NT	NT	NT	NT	NT	ND (0.073)	NT	NT	NT	NT	ND (0.073)	NT	NT
DICAMBA	NT	NT	NT	NT	NT	NT	NT	ND (0.0029)	NT	NT	NT	NT	ND (0.0029)	NT	NT
DICHLOROPROP	NT	NT	NT	NT	NT	NT	NT	ND (0.029)	NT	NT	NT	NT	ND (0.029)	NT	NT
DINOSEB	NT	NT	NT	NT	NT	NT	NT	ND (0.015)	NT	NT	NT	NT	ND (0.015)	NT	NT
MCPA	NT	NT	NT	NT	NT	NT	NT	ND (2.9)	NT	NT	NT	NT	ND (2.9)	NT	NT
MCPP	NT	NT	NT	NT	NT	NT	NT	ND (2.9)	NT	NT	NT	NT	ND (2.9)	NT	NT

NOTES:

1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.

9. SP-3 was analyzed for VPH via MADEP's Method and for VOCs via USEPA Method 8260C. No VPH or VOCs were detected. It was also analyzed for SVOCs via USEPA Method 8270. Only PAHs and dibenzofuran were detected and they are reported with the EPH data. The sands were retruned to the vault

10. B-7 (03') and B-10 (0-3') were analyzed for PAHs via both MassDEP's Method and USEPA Method 8270D. For each PAH, the highest detected value for both methods is provided in this table.

11. Soils were excavated and placed in coal chute, which was modified to be a soil repository. SP-2 stockpile soils were placed in coal chute first. Coals over the FO-1 vault and remainder of 0-1 foot interval soils from the east end of the courtyard were placed in the coal chute.

11a. The 1-3 foot excavated soils from the east end of the courtyard were placed in the stockpile located at the west end of the courtyard atop 1-3 foot interval soils. Approximately 300 to 400 cubic yards of soils are in the stockpile.

11b. Some of the 1-3 foot interval soils from the eastt end of the courtyard were placed in dry wells no. 2 to 4, located between B-11 and the utility void.

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS															
	B-8 (0-1')	B-8 (1-3')	B-8 (3-6')	B-8 (6-11')	B-9 (0-1')	B-9 (1-3')	B-9 (0-3')	B-9 (3-6')	B-9 (6-9')	B-9 (5'E) (0-1)	B-9 (5'E) (1-3)	B-9 (5'N) (0-1)	B-9 (5'S) (0-1)	B-9 (5'W) (0-1)	B-10 (0-1')	B-10 (1-3')
Sampling Date	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	9/30/2016	9/30/2016	9/30/2016	9/30/2016	9/30/2016	3/14/2016	3/14/2016
Sample Depth During Investigative Event	0-1 Feet	1-3 Feet	3-6 Feet	6-11 Feet	0-1 Feet	1-3 Feet	0-3 Feet	3-6 Feet	6-9 Feet	0-1 Feet	1-3 Feet	0-1 Feet	0-1 Feet	0-1 Feet	0-1 Feet	1-3 Feet
Sample Depth or Disposition Relative to October 1, 2016	Excavated and Placed in Coal Chute	0-2 Feet	2-5 Feet	5-10 Feet	0-1 Feet	1-3 Feet	0-3 Feet	3-6 Feet	6-9 Feet	0-1 Feet	1-3 Feet	0-1 Feet	0-1 Feet	0-1 Feet	0-1 Feet	1-3 Feet
NOTES:	11															
MADEP-EPH-04-1.1 (mg/Kg dry)																
C9-C18 ALIPHATICS	NT	NT	NT	NT	NT	NT	ND (12)	ND (11)	NT	NT	NT	NT	NT	NT	NT	NT
C19-C36 ALIPHATICS	NT	NT	NT	NT	NT	NT	ND (12)	ND (11)	NT	NT	NT	NT	NT	NT	NT	NT
UNADJUSTED C11-C22 AROMATICS	NT	NT	NT	NT	NT	NT	39	59	NT	NT	NT	NT	NT	NT	NT	NT
C11-C22 AROMATICS	NT	NT	NT	NT	NT	NT	37	46	NT	NT	NT	NT	NT	NT	NT	NT
ACENAPHTHENE	NT	NT	NT	NT	NT	NT	ND (0.12)	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
ACENAPHTHYLENE	NT	NT	NT	NT	NT	NT	ND (0.12)	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
ANTHRACENE	NT	NT	NT	NT	NT	NT	0.12	0.38	NT	NT	NT	NT	NT	NT	NT	NT
BENZO(A)ANTHRACENE	NT	NT	NT	NT	NT	NT	0.21	1.2	NT	NT	NT	NT	NT	NT	NT	NT
BENZO(A)PYRENE	NT	NT	NT	NT	NT	NT	0.22	1.0	NT	NT	NT	NT	NT	NT	NT	NT
BENZO(B)FLUORANTHENE	NT	NT	NT	NT	NT	NT	0.35	1.3	NT	NT	NT	NT	NT	NT	NT	NT
BENZO(G,H,I)PERYLENE	NT	NT	NT	NT	NT	NT	0.13	0.54	NT	NT	NT	NT	NT	NT	NT	NT
BENZO(K)FLUORANTHENE	NT	NT	NT	NT	NT	NT	ND (0.12)	0.50	NT	NT	NT	NT	NT	NT	NT	NT
CHRYSENE	NT	NT	NT	NT	NT	NT	0.30	1.3	NT	NT	NT	NT	NT	NT	NT	NT
DIBENZ(A,H)ANTHRACENE	NT	NT	NT	NT	NT	NT	ND (0.12)	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
FLUORANTHENE	NT	NT	NT	NT	NT	NT	0.44	2.4	NT	NT	NT	NT	NT	NT	NT	NT
FLUORENE	NT	NT	NT	NT	NT	NT	ND (0.12)	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
INDENO(1,2,3-CD)PYRENE	NT	NT	NT	NT	NT	NT	0.12	0.59	NT	NT	NT	NT	NT	NT	NT	NT
2-METHYLNAPHTHALENE	NT	NT	NT	NT	NT	NT	ND (0.12)	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
NAPHTHALENE	NT	NT	NT	NT	NT	NT	ND (0.12)	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
PHENANTHRENE	NT	NT	NT	NT	NT	NT	0.51	1.4	NT	NT	NT	NT	NT	NT	NT	NT
PYRENE	NT	NT	NT	NT	NT	NT	0.49	2.3	NT	NT	NT	NT	NT	NT	NT	NT
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIBENZOFURAN (see notes 7, 9)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DI-N-BUTYLPHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MADEP-VPH-04-1.1 (mg/Kg dry)																
UNADJUSTED C5-C8 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C5-C8 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C12 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C10 AROMATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ETHYLBENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NAPHTHALENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
TOLUENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
M/P-XYLENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
O-XYLENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS															
	B-8 (0-1')	B-8 (1-3')	B-8 (3-6')	B-8 (6-11')	B-9 (0-1')	B-9 (1-3')	B-9 (0-3')	B-9 (3-6')	B-9 (6-9')	B-9 (5'E) (0-1)	B-9 (5'E) (1-3)	B-9 (5'N) (0-1)	B-9 (5'S) (0-1)	B-9 (5'W) (0-1)	B-10 (0-1')	B-10 (1-3')
SM 2540G (% Wt)																
% Solids	82.9	93.9	89.2	88.2	84.1	88.5	85.7	87.7	88.8	81.7	86.7	88.9	85.2	63.1	77.7	83.2
SW-846 6010C/D (mg/Kg dry) Metals Digestion																
ANTIMONY	NT	NT	NT	NT	NT	NT	NT	ND (2.7)	NT	NT	NT	NT	NT	NT	NT	NT
ARSENIC	NT	NT	NT	NT	NT	NT	NT	11	NT	NT	NT	NT	NT	NT	NT	NT
BARIUM	NT	NT	NT	NT	NT	NT	NT	30	NT	NT	NT	NT	NT	NT	NT	NT
BERYLLIUM	NT	NT	NT	NT	NT	NT	NT	*6.7*	NT	NT	NT	NT	NT	NT	NT	NT
CADMIUM	NT	NT	NT	NT	NT	NT	NT	0.97	NT	NT	NT	NT	NT	NT	NT	NT
CHROMIUM (as +3)	NT	NT	NT	NT	NT	NT	NT	14	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	26	NT	NT	NT	NT	NT	NT	NT	NT
NICKEL	NT	NT	NT	NT	NT	NT	NT	*42*	NT	NT	NT	NT	NT	NT	NT	NT
SELENIUM	NT	NT	NT	NT	NT	NT	NT	ND (5.4)	NT	NT	NT	NT	NT	NT	NT	NT
SILVER	NT	NT	NT	NT	NT	NT	NT	ND (0.54)	NT	NT	NT	NT	NT	NT	NT	NT
THALLIUM	NT	NT	NT	NT	NT	NT	NT	ND (2.7)	NT	NT	NT	NT	NT	NT	NT	NT
VANADIUM	NT	NT	*39*	*41*	NT	NT	*390*	***510***	*120*	NT	NT	NT	NT	NT	NT	NT
ZINC	NT	NT	NT	NT	NT	NT	NT	81	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7471B (mg/Kg dry) Metals Digestion																
MERCURY	NT	NT	NT	NT	NT	NT	NT	0.19	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7196A (mg/Kg dry)																
CHROMIUM +6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SM2580 A (mV)																
OXIDATION/REDUCTION POTENTIAL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 9045C (pH Units)																
PH	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 6010C-D (mg/L) 1311 TCLP EXT																
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8082A (mg/Kg dry)																
PCB 1016	ND (6.0) *	ND (0.10)	ND (0.11)	ND (0.11)	ND (5.8) *	ND (0.11)	NT	ND (0.11)	ND (0.11)	ND (2.4) *	ND (1.1) *	ND (1.1) *	ND (4.6) *	ND (3.1) *	ND (2.5) *	ND (0.12)
PCB 1221	ND (6.0) *	ND (0.10)	ND (0.11)	ND (0.11)	ND (5.8) *	ND (0.11)	NT	ND (0.11)	ND (0.11)	ND (2.4) *	ND (1.1) *	ND (1.1) *	ND (4.6) *	ND (3.1) *	ND (2.5) *	ND (0.12)
PCB 1232	ND (6.0) *	ND (0.10)	ND (0.11)	ND (0.11)	ND (5.8) *	ND (0.11)	NT	ND (0.11)	ND (0.11)	ND (2.4) *	ND (1.1) *	ND (1.1) *	ND (4.6) *	ND (3.1) *	ND (2.5) *	ND (0.12)
PCB 1242	ND (6.0) *	ND (0.10)	ND (0.11)	ND (0.11)	ND (5.8) *	ND (0.11)	NT	ND (0.11)	ND (0.11)	ND (2.4) *	ND (1.1) *	ND (1.1) *	ND (4.6) *	ND (3.1) *	ND (2.5) *	ND (0.12)
PCB 1248	ND (6.0) *	ND (0.10)	ND (0.11)	ND (0.11)	ND (5.8) *	ND (0.11)	NT	ND (0.11)	ND (0.11)	ND (2.4) *	2.5	ND (1.1) *	ND (4.6) *	ND (3.1) *	ND (2.5) *	ND (0.12)
PCB 1254	**39**	ND (0.10)	ND (0.11)	ND (0.11)	**42**	**1.1**	NT	ND (0.11)	ND (0.11)	**18**	**9.8**	**7.4**	**30**	**20**	**21**	0.29
PCB 1260	ND (6.0) *	ND (0.10)	ND (0.11)	ND (0.11)	ND (5.8) *	ND (0.11)	NT	ND (0.11)	ND (0.11)	**4.2**	**5.4**	**1.7**	**6.5**	**4.4**	ND (2.5) *	ND (0.12)
PCB 1262	ND (6.0) *	ND (0.10)	ND (0.11)	ND (0.11)	ND (5.8) *	ND (0.11)	NT	ND (0.11)	ND (0.11)	ND (2.4) *	ND (1.1) *	ND (1.1) *	ND (4.6) *	ND (3.1) *	ND (2.5) *	ND (0.12)
PCB 1268	ND (6.0) *	ND (0.10)	ND (0.11)	ND (0.11)	ND (5.8) *	ND (0.11)	NT	ND (0.11)	ND (0.11)	ND (2.4) *	ND (1.1) *	ND (1.1) *	ND (4.6) *	ND (3.1) *	ND (2.5) *	ND (0.12)
TOTAL PCBs	**39**	ND (0.10)	ND (0.11)	ND (0.11)	**42**	**1.1**	NT	ND (0.11)	ND (0.11)	**22.2**	**15.2**	**9.1**	**36.5**	**24.4**	**21**	0.29

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS															
	B-8 (0-1')	B-8 (1-3')	B-8 (3-6')	B-8 (6-11')	B-9 (0-1')	B-9 (1-3')	B-9 (0-3')	B-9 (3-6')	B-9 (6-9')	B-9 (5'E) (0-1)	B-9 (5'E) (1-3)	B-9 (5'N) (0-1)	B-9 (5'S) (0-1)	B-9 (5'W) (0-1)	B-10 (0-1')	B-10 (1-3')
SW-846 8081B (mg/Kg dry)																
ALDRIN	NT	NT	NT	NT	NT	NT	NT	ND (0.11) *	NT	NT	NT	NT	NT	NT	NT	NT
ALPHA-BHC	NT	NT	NT	NT	NT	NT	NT	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
BETA-BHC	NT	NT	NT	NT	NT	NT	NT	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
DELTA-BHC	NT	NT	NT	NT	NT	NT	NT	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
GAMMA-BHC (LINDANE)	NT	NT	NT	NT	NT	NT	NT	ND (0.046) *	NT	NT	NT	NT	NT	NT	NT	NT
CHLORDANE	NT	NT	NT	NT	NT	NT	NT	ND (0.46)	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDD	NT	NT	NT	NT	NT	NT	NT	ND (0.091)	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDE	NT	NT	NT	NT	NT	NT	NT	ND (0.091)	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDT	NT	NT	NT	NT	NT	NT	NT	ND (0.091)	NT	NT	NT	NT	NT	NT	NT	NT
DIELDRIN	NT	NT	NT	NT	NT	NT	NT	ND (0.091) *	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN I	NT	NT	NT	NT	NT	NT	NT	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN II	NT	NT	NT	NT	NT	NT	NT	ND (0.18)	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN SULFATE	NT	NT	NT	NT	NT	NT	NT	ND (0.18)	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN	NT	NT	NT	NT	NT	NT	NT	ND (0.18)	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN KETONE	NT	NT	NT	NT	NT	NT	NT	ND (0.18)	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	ND (0.11)	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR EPOXIDE	NT	NT	NT	NT	NT	NT	NT	ND (0.11) *	NT	NT	NT	NT	NT	NT	NT	NT
HEXACHLOROBENZENE	NT	NT	NT	NT	NT	NT	NT	ND (0.14)	NT	NT	NT	NT	NT	NT	NT	NT
METHOXYCHLOR	NT	NT	NT	NT	NT	NT	NT	ND (1.1)	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8081B (µg/L) 1311 TCLP EXT																
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8151A (mg/kg dry)																
2,4-D	NT	NT	NT	NT	NT	NT	NT	ND (0.028)	NT	NT	NT	NT	NT	NT	NT	NT
2,4-DB	NT	NT	NT	NT	NT	NT	NT	ND (0.028)	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-TP (SILVEX)	NT	NT	NT	NT	NT	NT	NT	ND (0.0028)	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-T	NT	NT	NT	NT	NT	NT	NT	ND (0.0028)	NT	NT	NT	NT	NT	NT	NT	NT
DALAPON	NT	NT	NT	NT	NT	NT	NT	ND (0.071)	NT	NT	NT	NT	NT	NT	NT	NT
DICAMBA	NT	NT	NT	NT	NT	NT	NT	ND (0.0028)	NT	NT	NT	NT	NT	NT	NT	NT
DICHLOROPROP	NT	NT	NT	NT	NT	NT	NT	ND (0.028)	NT	NT	NT	NT	NT	NT	NT	NT
DINOSEB	NT	NT	NT	NT	NT	NT	NT	ND (0.014)	NT	NT	NT	NT	NT	NT	NT	NT
MCPA	NT	NT	NT	NT	NT	NT	NT	ND (2.8)	NT	NT	NT	NT	NT	NT	NT	NT
MCPP	NT	NT	NT	NT	NT	NT	NT	ND (2.8)	NT	NT	NT	NT	NT	NT	NT	NT

NOTES:

1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.

12. These soils contain >50 mg/kg PCBs and were excavated and transported off-site to a hazardous waste facility approved to accept >50 mg/kg PCBs.
13. Sample hydrocarbon fingerprinted via USEPA Method 8015C. Hydrocarbon was identified as Fuel Oil No. 6. B-3 (15'-20') (25-28") and B-4 (15'-20') (21-24") contained 10,000 and 6,300 mg/kg Fuel Oil No. 6, respectively.
14. EPH extraction for B-18(5-10), B-19 (5-10) and B-19 (10-15) was conducted on day 29 after sample collection, more than 2 times the extraction hold period of 14 days. This data is used only for qualitative purposes to evaluate distribution of petroleum contamination.
15. Located beneath stockpiled soils on west end of courtyard.
16. 0-1 Foot interval soils from west end of courtyard were excavated and placed in dry well no. 1.

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS															
	B-10 (0-3')	**B-10 (3-6')**	**B-10 (6-11')**	**B-11 (0-1')**	**B-11 (1-3')**	**B-11 (3-6')**	**B-11 (6-11')**	**B-11-r10b (0-1')**	**B-11-r10b (0-3')**	**B-11-r10b (1-3')**	**B-11-r5a (0-1')**	**B-11-r5a (0-3')**	**B-11-r5a (1-3')**	**B-11-r5b (0-1')**	**B-11-r5b (0-3')**	**B-11-r5b (1-3')**
Sampling Date	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/14/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016	3/30/2016
Sample Depth During Investigative Event	0-3 Feet	3-6 Feet	6-11 Feet	0-1 Feet	1-3 Feet	3-6 Feet	6-11 Feet	0-1 Feet	0-3 Feet	1-3 Feet	0-1 Feet	0-3 Feet	1-3 Feet	0-1 Feet	0-3 Feet	1-3 Feet
Sample Depth or Disposition Relative to October 1, 2016	0-3 Feet	3-6 Feet	6-11 Feet	Excavated and Transport-ed Off-Site	1-3 Feet	3-6 Feet	6-11 Feet	0-1 Feet	0-3 Feet	1-3 Feet	Excavated and Transport-ed Off-Site	0-2 Feet	0-2 Feet	Excavated and Transport-ed Off-Site	0-2 Feet	0-2 Feet
NOTES:	10			7, 12							7, 12			7, 12		
MADEP-EPH-04-1.1 (mg/Kg dry)																
C9-C18 ALIPHATICS	18	ND (11)	NT	NT	NT	NT	ND (12)	NT	180	NT	NT	42	NT	NT	24	NT
C19-C36 ALIPHATICS	150	19	NT	NT	NT	NT	46	NT	530	NT	NT	230	NT	NT	120	NT
UNADJUSTED C11-C22 AROMATICS	200	35	NT	NT	NT	NT	58	NT	1100	NT	NT	570	NT	NT	120	NT
C11-C22 AROMATICS	190	31	NT	NT	NT	NT	51	NT	**1100**	NT	NT	400	NT	NT	97	NT
ACENAPHTHENE	0.49	ND (0.11)	NT	NT	NT	NT	ND (0.12)	NT	ND (0.23)	NT	NT	0.46	NT	NT	0.58	NT
ACENAPHTHYLENE	ND (0.46)	ND (0.11)	NT	NT	NT	NT	ND (0.12)	NT	ND (0.23)	NT	NT	0.77	NT	NT	ND (0.23)	NT
ANTHRACENE	1.1	ND (0.11)	NT	NT	NT	NT	0.24	NT	0.38	NT	NT	4.0	NT	NT	0.86	NT
BENZO(A)ANTHRACENE	2.1	0.28	NT	NT	NT	NT	0.54	NT	0.74	NT	NT	***15***	NT	NT	1.4	NT
BENZO(A)PYRENE	1.4	0.29	NT	NT	NT	NT	0.54	NT	0.68	NT	NT	**15**	NT	NT	1.2	NT
BENZO(B)FLUORANTHENE	2.4	0.38	NT	NT	NT	NT	0.68	NT	ND (0.23)	NT	NT	**19**	NT	NT	1.5	NT
BENZO(G,H,I)PERYLENE	1.1	0.18	NT	NT	NT	NT	0.24	NT	0.89	NT	NT	8.7	NT	NT	0.58	NT
BENZO(K)FLUORANTHENE	0.67	0.15	NT	NT	NT	NT	0.25	NT	ND (0.23)	NT	NT	7	NT	NT	0.53	NT
CHRYSENE	2.4	0.37	NT	NT	NT	NT	0.61	NT	1.3	NT	NT	*15*	NT	NT	1.6	NT
DIBENZ(A,H)ANTHRACENE	ND (0.46)	ND (0.11)	NT	NT	NT	NT	ND (0.12)	NT	ND (0.23)	NT	NT	***2.3***	NT	NT	ND (0.23)	NT
FLUORANTHENE	4.1	0.61	NT	NT	NT	NT	1.3	NT	1.7	NT	NT	*31*	NT	NT	3.3	NT
FLUORENE	0.57	ND (0.11)	NT	NT	NT	NT	ND (0.12)	NT	ND (0.23)	NT	NT	0.6	NT	NT	0.41	NT
INDENO(1,2,3-CD)PYRENE	1.1	0.18	NT	NT	NT	NT	0.32	NT	ND (0.23)	NT	NT	***10***	NT	NT	0.7	NT
2-METHYLNAPHTHALENE	ND (0.46)	ND (0.11)	NT	NT	NT	NT	ND (0.12)	NT	ND (0.23)	NT	NT	0.31	NT	NT	ND (0.23)	NT
NAPHTHALENE	ND (0.46)	ND (0.11)	NT	NT	NT	NT	ND (0.12)	NT	ND (0.23)	NT	NT	*1.2*	NT	NT	ND (0.23)	NT
PHENANTHRENE	4.7	0.55	NT	NT	NT	NT	1.1	NT	1.7	NT	NT	**11**	NT	NT	4	NT
PYRENE	4.1	0.71	NT	NT	NT	NT	1.4	NT	1.2	NT	NT	*31*	NT	NT	3.5	NT
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIBENZOFURAN (see notes 7, 9)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DI-N-BUTYLPHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MADEP-VPH-04-1.1 (mg/Kg dry)																
UNADJUSTED C5-C8 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C5-C8 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C12 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C10 AROMATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ETHYLBENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NAPHTHALENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
TOLUENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
M/P-XYLENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
O-XYLENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS															
	B-10 (0-3')	B-10 (3-6')	B-10 (6-11')	B-11 (0-1')	B-11 (1-3')	B-11 (3-6')	B-11 (6-11')	B-11-r10b (0-1')	B-11-r10b (0-3')	B-11-r10b (1-3')	B-11-r5a (0-1')	B-11-r5a (0-3')	B-11-r5a (1-3')	B-11-r5b (0-1')	B-11-r5b (0-3')	B-11-r5b (1-3')
SM 2540G (% Wt)																
% Solids	86.6	88.7	90.3	79.4	88.2	85.2	84.2	83.6	86.5	85.3	81.2	85.7	83.2	82.2	86.4	86.3
SW-846 6010C/D (mg/Kg dry) Metals Digestion																
ANTIMONY	ND (2.7)	NT	NT	NT	NT	ND (2.8)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ARSENIC	10	NT	NT	NT	NT	9.2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BARIUM	*64*	NT	NT	NT	NT	*160*	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BERYLLIUM	*25*	NT	NT	NT	NT	*11*	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CADMIUM	0.82	NT	NT	NT	NT	1.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CHROMIUM (as +3)	26	NT	NT	NT	NT	33	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	68	NT	NT	NT	NT	200	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NICKEL	*64*	NT	NT	NT	NT	*85*	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SELENIUM	ND (5.4)	NT	NT	NT	NT	ND (5.6)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SILVER	ND (0.54)	NT	NT	NT	NT	ND (0.56)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
THALLIUM	ND (2.7)	NT	NT	NT	NT	ND (2.8)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
VANADIUM	***2100***	***560***	*260*	NT	NT	***900***	***870***	NT	*380*	NT	NT	*140*	NT	NT	***550***	NT
ZINC	65	NT	NT	NT	NT	180	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7471B (mg/Kg dry) Metals Digestion																
MERCURY	0.13	NT	NT	NT	NT	*1.2*	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7196A (mg/Kg dry)																
CHROMIUM +6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SM2580 A (mV)																
OXIDATION/REDUCTION POTENTIAL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 9045C (pH Units)																
PH	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 6010C-D (mg/L) 1311 TCLP EXT																
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	0.029	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8082A (mg/Kg dry)																
PCB 1016	NT	ND (0.11)	ND (0.11)	ND (13) *	ND (0.11)	ND (0.23)	ND (1.2) *	ND (0.59)	NT	ND (0.11)	ND (1.2) *	NT	ND (0.59)	ND (0.59)	NT	ND (0.11)
PCB 1221	NT	ND (0.11)	ND (0.11)	ND (13) *	ND (0.11)	ND (0.23)	ND (1.2) *	ND (0.59)	NT	ND (0.11)	ND (1.2) *	NT	ND (0.59)	ND (0.59)	NT	ND (0.11)
PCB 1232	NT	ND (0.11)	ND (0.11)	ND (13) *	ND (0.11)	ND (0.23)	ND (1.2) *	ND (0.59)	NT	ND (0.11)	ND (1.2) *	NT	ND (0.59)	ND (0.59)	NT	ND (0.11)
PCB 1242	NT	ND (0.11)	ND (0.11)	ND (13) *	ND (0.11)	ND (0.23)	ND (1.2) *	ND (0.59)	NT	ND (0.11)	ND (1.2) *	NT	ND (0.59)	ND (0.59)	NT	ND (0.11)
PCB 1248	NT	ND (0.11)	ND (0.11)	ND (13) *	ND (0.11)	ND (0.23)	ND (1.2) *	ND (0.59)	NT	ND (0.11)	ND (1.2) *	NT	ND (0.59)	ND (0.59)	NT	ND (0.11)
PCB 1254	NT	0.79	0.22	**100**	0.16	**2.0**	**6.2**	**6.2**	NT	0.48	**7.6**	NT	**5.4**	**4.0**	NT	0.19
PCB 1260	NT	ND (0.11)	ND (0.11)	ND (13) *	ND (0.11)	ND (0.23)	ND (1.2) *	0.75	NT	ND (0.11)	ND (1.2) *	NT	ND (0.59)	ND (0.59)	NT	ND (0.11)
PCB 1262	NT	ND (0.11)	ND (0.11)	ND (13) *	ND (0.11)	ND (0.23)	ND (1.2) *	ND (0.59)	NT	ND (0.11)	ND (1.2) *	NT	ND (0.59)	ND (0.59)	NT	ND (0.11)
PCB 1268	NT	ND (0.11)	ND (0.11)	ND (13) *	ND (0.11)	ND (0.23)	ND (1.2) *	ND (0.59)	NT	ND (0.11)	ND (1.2) *	NT	ND (0.59)	ND (0.59)	NT	ND (0.11)
TOTAL PCBs	NT	0.79	0.22	**100**	0.16	**2.0**	**6.2**	**7.0**	NT	0.48	**7.6**	NT	**5.4**	**4.0**	NT	0.19

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS															
	B-10 (0-3')	B-10 (3-6')	B-10 (6-11')	B-11 (0-1')	B-11 (1-3')	B-11 (3-6')	B-11 (6-11')	B-11-r10b (0-1')	B-11-r10b (0-3')	B-11-r10b (1-3')	B-11-r5a (0-1')	B-11-r5a (0-3')	B-11-r5a (1-3')	B-11-r5b (0-1')	B-11-r5b (0-3')	B-11-r5b (1-3')
SW-846 8081B (mg/Kg dry)																
ALDRIN	ND (0.12) *	NT	NT	NT	NT	ND (0.12) *	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ALPHA-BHC	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BETA-BHC	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DELTA-BHC	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
GAMMA-BHC (LINDANE)	ND (0.046) *	NT	NT	NT	NT	ND (0.047) *	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CHLORDANE	ND (0.46)	NT	NT	NT	NT	ND (0.47)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDD	ND (0.092)	NT	NT	NT	NT	ND (0.094)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDE	ND (0.092)	NT	NT	NT	NT	ND (0.094)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDT	ND (0.092)	NT	NT	NT	NT	0.16	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIELDRIN	ND (0.092) *	NT	NT	NT	NT	ND (0.094) *	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN I	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN II	ND (0.18)	NT	NT	NT	NT	ND (0.19)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN SULFATE	ND (0.18)	NT	NT	NT	NT	ND (0.19)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN	ND (0.18)	NT	NT	NT	NT	ND (0.19)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN KETONE	ND (0.18)	NT	NT	NT	NT	ND (0.19)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR	ND (0.12)	NT	NT	NT	NT	ND (0.12)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR EPOXIDE	ND (0.12) *	NT	NT	NT	NT	ND (0.12) *	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEXACHLOROBENZENE	ND (0.14)	NT	NT	NT	NT	ND (0.14)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHOXYCHLOR	ND (1.2)	NT	NT	NT	NT	ND (1.2)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8081B (µg/L) 1311 TCLP EXT																
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8151A (mg/kg dry)																
2,4-D	ND (0.029)	NT	NT	NT	NT	ND (0.029)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4-DB	ND (0.029)	NT	NT	NT	NT	ND (0.029)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-TP (SILVEX)	ND (0.0029)	NT	NT	NT	NT	ND (0.0029)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-T	ND (0.0029)	NT	NT	NT	NT	ND (0.0029)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DALAPON	ND (0.072)	NT	NT	NT	NT	ND (0.073)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DICAMBA	ND (0.0029)	NT	NT	NT	NT	ND (0.0029)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DICHLOROPROP	ND (0.029)	NT	NT	NT	NT	ND (0.029)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DINOSEB	ND (0.014)	NT	NT	NT	NT	ND (0.015)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MCPA	ND (2.9)	NT	NT	NT	NT	ND (2.9)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MCPP	ND (2.9)	NT	NT	NT	NT	ND (2.9)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

NOTES:
1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	B-11-r5c (0-1')	**B-11-r5c (0-3')**	**B-11-r5c (1-3')**	**Btm-B11-ex**	**ESW-B11-ex**	**WSW-B11-ex**	**B-12 (0-1')**	**B-12 (1-3')**	**B-12 (0-3')**	**B-12 (3-6')**	**B-13 (0-1')**	**B-13 (1-3')**	**B-13 (0-3')**	**B-13 (3-6')**
Sampling Date	3/30/2016	3/30/2016	3/30/2016	5/27/2016	5/27/2016	5/27/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016	3/23/2016
Sample Depth During Investigative Event	0-1 Feet	0-3 Feet	1-3 Feet	1-1.5 Feet	0-1 Feet	0-1 Feet	0-1 Feet	1-3 Feet	0-3 Feet	3-6 Feet	0-1 Feet	1-3 Feet	0-3 Feet	3-6 Feet
Sample Depth or Disposition Relative to October 1, 2016	Excavated and Transport-ed Off-Site	0-2 Feet	0-2 Feet	0-0.5 Feet	0-1 Feet	0-1 Feet	Excavated and Put in Dry Well no. 1	0-2 Feet, beneath stockpile	0-2 Feet, beneath stockpile	2-5 Feet, beneath stockpile	Excavated and Put in Dry Well no. 1	0-2 Feet, beneath stockpile	0-2 Feet, beneath stockpile	2-5 Feet, beneath stockpile
NOTES:	7, 12						16	15	15	15	16	15	15	15
MADEP-EPH-04-1.1 (mg/Kg dry)														
C9-C18 ALIPHATICS	NT	57	NT	NT	NT	NT	NT	NT	ND (31)	ND (11)	NT	NT	17	ND (12)
C19-C36 ALIPHATICS	NT	310	NT	NT	NT	NT	NT	NT	65	16	NT	NT	80	19
UNADJUSTED C11-C22 AROMATICS	NT	320	NT	NT	NT	NT	NT	NT	140	44	NT	NT	280	110
C11-C22 AROMATICS	NT	290	NT	NT	NT	NT	NT	NT	130	34	NT	NT	240	26
ACENAPHTHENE	NT	0.49	NT	NT	NT	NT	NT	NT	1.3	0.39	NT	NT	1.1	0.93
ACENAPHTHYLENE	NT	ND (0.24)	NT	NT	NT	NT	NT	NT	ND (0.15)	ND (0.11)	NT	NT	ND (0.14)	ND (0.24)
ANTHRACENE	NT	0.88	NT	NT	NT	NT	NT	NT	2.3	0.52	NT	NT	0.42	1.5
BENZO(A)ANTHRACENE	NT	1.5	NT	NT	NT	NT	NT	NT	2.8	0.70	NT	NT	0.60	2.3
BENZO(A)PYRENE	NT	1.6	NT	NT	NT	NT	NT	NT	**2.2**	0.67	NT	NT	1.0	1.9
BENZO(B)FLUORANTHENE	NT	2	NT	NT	NT	NT	NT	NT	3.4	0.85	NT	NT	0.84	2.5
BENZO(G,H,I)PERYLENE	NT	0.98	NT	NT	NT	NT	NT	NT	0.93	0.36	NT	NT	0.32	0.96
BENZO(K)FLUORANTHENE	NT	0.78	NT	NT	NT	NT	NT	NT	1.4	0.33	NT	NT	0.28	0.92
CHRYSENE	NT	1.8	NT	NT	NT	NT	NT	NT	2.8	0.68	NT	NT	2.6	0.25
DIBENZ(A,H)ANTHRACENE	NT	ND (0.24)	NT	NT	NT	NT	NT	NT	0.41	ND (0.11)	NT	NT	0.35	ND (0.24)
FLUORANTHENE	NT	5.1	NT	NT	NT	NT	NT	NT	7.8	1.9	NT	NT	1.8	0.56
FLUORENE	NT	0.42	NT	NT	NT	NT	NT	NT	1.3	0.22	NT	NT	0.17	0.74
INDENO(1,2,3-CD)PYRENE	NT	1	NT	NT	NT	NT	NT	NT	1.2	0.41	NT	NT	1.5	1.2
2-METHYLNAPHTHALENE	NT	0.28	NT	NT	NT	NT	NT	NT	0.45	ND (0.11)	NT	NT	ND (0.14)	ND (0.24)
NAPHTHALENE	NT	0.88	NT	NT	NT	NT	NT	NT	0.98	0.16	NT	NT	0.68	ND (0.24)
PHENANTHRENE	NT	3.2	NT	NT	NT	NT	NT	NT	8.8	1.8	NT	NT	6.9	5.9
PYRENE	NT	3.7	NT	NT	NT	NT	NT	NT	7.1	1.7	NT	NT	6.4	0.51
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIBENZOFURAN (see notes 7, 9)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DI-N-BUTYLPHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MADEP-VPH-04-1.1 (mg/Kg dry)														
UNADJUSTED C5-C8 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C5-C8 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C12 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C10 AROMATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ETHYLBENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NAPHTHALENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
TOLUENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
M/P-XYLENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
O-XYLENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	B-11-r5c (0-1')	B-11-r5c (0-3')	B-11-r5c (1-3')	Btm-B11-ex	ESW-B11-ex	WSW-B11-ex	B-12 (0-1')	B-12 (1-3')	B-12 (0-3')	B-12 (3-6')	B-13 (0-1')	B-13 (1-3')	B-13 (0-3')	B-13 (3-6')
SM 2540G (% Wt)														
% Solids	77.4	81.7	85.3	88.3	86.8	87.1	77.3	92.5	64.2	88.1	61.4	78.4	72.0	82.8
SW-846 6010C/D (mg/Kg dry) Metals Digestion														
ANTIMONY	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ARSENIC	NT	NT	NT	NT	NT	NT	NT	NT	4.4	4.1	NT	NT	8.3	5.1
BARIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BERYLLIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CHROMIUM (as +3)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	NT	**210**	120	NT	NT	***1300***	34
NICKEL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SELENIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SILVER	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
THALLIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
VANADIUM	NT	***640***	NT	NT	NT	NT	NT	NT	20	13	NT	NT	*35*	22
ZINC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7471B (mg/Kg dry) Metals Digestion														
MERCURY	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7196A (mg/Kg dry)														
CHROMIUM +6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SM2580 A (mV)														
OXIDATION/REDUCTION POTENTIAL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 9045C (pH Units)														
PH	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 6010C-D (mg/L) 1311 TCLP EXT														
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	NT	0.47	ND (0.010)	NT	NT	0.64	NT
SW-846 8082A (mg/Kg dry)														
PCB 1016	ND (13) *	NT	ND (0.57)	ND (0.11)	ND (0.12)	ND (0.11)	ND (2.5) *	ND (0.10)	NT	ND (0.11)	ND (3.2) *	ND (6.3) *	NT	ND (0.12)
PCB 1221	ND (13) *	NT	ND (0.57)	ND (0.11)	ND (0.12)	ND (0.11)	ND (2.5) *	ND (0.10)	NT	ND (0.11)	ND (3.2) *	ND (6.3) *	NT	ND (0.12)
PCB 1232	ND (13) *	NT	ND (0.57)	ND (0.11)	ND (0.12)	ND (0.11)	ND (2.5) *	ND (0.10)	NT	ND (0.11)	ND (3.2) *	ND (6.3) *	NT	ND (0.12)
PCB 1242	ND (13) *	NT	ND (0.57)	ND (0.11)	ND (0.12)	ND (0.11)	ND (2.5) *	ND (0.10)	NT	ND (0.11)	ND (3.2) *	ND (6.3) *	NT	ND (0.12)
PCB 1248	ND (13) *	NT	ND (0.57)	ND (0.11)	ND (0.12)	ND (0.11)	ND (2.5) *	ND (0.10)	NT	ND (0.11)	ND (3.2) *	ND (6.3) *	NT	ND (0.12)
PCB 1254	**97**	NT	**2.9**	0.79	0.38	**1.1**	**11**	0.26	NT	0.37	**12**	**25**	NT	ND (0.12)
PCB 1260	ND (13) *	NT	ND (0.57)	ND (0.11)	ND (0.12)	ND (0.11)	ND (2.5) *	ND (0.10)	NT	ND (0.11)	ND (3.2) *	ND (6.3) *	NT	ND (0.12)
PCB 1262	ND (13) *	NT	ND (0.57)	ND (0.11)	ND (0.12)	ND (0.11)	ND (2.5) *	ND (0.10)	NT	ND (0.11)	ND (3.2) *	ND (6.3) *	NT	ND (0.12)
PCB 1268	ND (13) *	NT	ND (0.57)	ND (0.11)	ND (0.12)	ND (0.11)	ND (2.5) *	ND (0.10)	NT	ND (0.11)	ND (3.2) *	ND (6.3) *	NT	ND (0.12)
TOTAL PCBs	**97**	NT	**2.9**	0.79	0.38	**1.1**	**11**	0.26	NT	0.37	**12**	**25**	NT	ND (0.12)

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	B-11-r5c (0-1')	B-11-r5c (0-3')	B-11-r5c (1-3')	Btm-B11-ex	ESW-B11-ex	WSW-B11-ex	B-12 (0-1')	B-12 (1-3')	B-12 (0-3')	B-12 (3-6')	B-13 (0-1')	B-13 (1-3')	B-13 (0-3')	B-13 (3-6')
SW-846 8081B (mg/Kg dry)														
ALDRIN	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ALPHA-BHC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BETA-BHC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DELTA-BHC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
GAMMA-BHC (LINDANE)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CHLORDANE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDD	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIELDRIN	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN I	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN II	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN SULFATE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN KETONE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR EPOXIDE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEXACHLOROBENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHOXYCHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8081B (µg/L) 1311 TCLP EXT														
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8151A (mg/kg dry)														
2,4-D	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4-DB	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-TP (SILVEX)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-T	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DALAPON	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DICAMBA	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DICHLOROPROP	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DINOSEB	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MCPA	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MCPP	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

NOTES:
1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS														
	BTM-GT-1	**BTM-GT-2**	**ESW-GT-1**	**NSW-GT-1**	**NSW-GT-2**	**SSW-GT-1**	**SSW-GT-2**	**WSW-GT-2**	**SP-1**	**FO-1 (3')**	**SP-3**	**FO-1-TP (0-1')**	**FO-1-TP (1-2')**	**FO-1-TP (2-3')**	**FO-1**
Sampling Date	3/8/2016	3/8/2016	3/8/2016	3/8/2016	3/8/2016	3/8/2016	3/8/2016	3/8/2016	2/29/2016	3/9/2016	3/29/2016	3/9/2016	3/9/2016	3/9/2016	3/10/2016
Sample Depth During Investigative Event	6 Feet	8 Feet	3-4 Feet	3-4 Feet	5-6 Feet	3-4 Feet	5-6 Feet	5-6 Feet	Stockpile / Top Soils	3.5 Feet (just in vault)	Stockpile / Sands in vault	0-1 Feet (below grade / above vault)	1-2 Feet (below grade / above vault)	2-3 Feet (below grade / above vault)	7-8 feet (under vault, oily material)
Sample Depth or Disposition Relative to October 1, 2016	3 Feet	5 Feet	0-1 Feet	0-1 Feet	2-3 Feet	0-1 Feet	2-3 Feet	2-3 Feet	Stockpile / Transported Off-Site	0.5 Feet (just in vault)	Stockpile / Sands in vault	Excavated and Placed in Coal Chute	Excavated and Placed in Coal Chute	Excavated and Placed in Coal Chute	4-5 feet (under vault, oily material)
NOTES:									7,12	8	9				8
MADEP-EPH-04-1.1 (mg/Kg dry)															via 8270C
C9-C18 ALIPHATICS	ND (12)	ND (11)	13	34	ND (22)	ND (11)	37	ND (11)	NT	ND (10)	NT	NT	NT	NT	NT
C19-C36 ALIPHATICS	ND (12)	31	29	140	77	17	200	ND (11)	NT	ND (10)	NT	NT	NT	NT	NT
UNADJUSTED C11-C22 AROMATICS	27	45	41	560	140	33	220	40	NT	ND (10)	NT	NT	NT	NT	NT
C11-C22 AROMATICS	25	45	41	420	120	31	210	33	NT	ND (10)	NT	NT	NT	NT	NT
ACENAPHTHENE	ND (0.12)	ND (0.11)	ND (0.11)	1.7	0.37	ND (0.11)	ND (0.43)	ND (0.11)	*2.4*	ND (0.10)	0.70	NT	NT	NT	***4.9***
ACENAPHTHYLENE	ND (0.12)	ND (0.11)	ND (0.11)	ND (0.23)	ND (0.22)	ND (0.11)	ND (0.43)	ND (0.11)	ND (0.85)	ND (0.10)	ND (0.18)	NT	NT	NT	ND (3.8) *
ANTHRACENE	ND (0.12)	ND (0.11)	ND (0.11)	*4.7*	0.73	ND (0.11)	ND (0.43)	0.18	*5.3*	ND (0.10)	1.5	NT	NT	NT	*4.9*
BENZO(A)ANTHRACENE	ND (0.12)	ND (0.11)	ND (0.11)	***10***	1.7	ND (0.11)	0.78	0.5	***10***	ND (0.10)	3.0	NT	NT	NT	4.8
BENZO(A)PYRENE	0.27	0.11	ND (0.11)	***9.3***	0.69	0.24	0.94	0.52	***8.0***	ND (0.10)	**2.6**	NT	NT	NT	ND (3.8) *
BENZO(B)FLUORANTHENE	0.32	0.15	ND (0.11)	***13***	2	0.31	1.1	0.67	***9.8***	ND (0.10)	3.5	NT	NT	NT	ND (3.8)
BENZO(G,H,I)PERYLENE	0.38	ND (0.11)	ND (0.11)	*4.9*	0.96	0.33	0.77	0.41	*4.5*	ND (0.10)	1.4	NT	NT	NT	ND (3.8)
BENZO(K)FLUORANTHENE	ND (0.12)	ND (0.11)	ND (0.11)	*4.8*	0.73	ND (0.11)	0.44	0.26	3.9	ND (0.10)	1.4	NT	NT	NT	ND (3.8)
CHRYSENE	0.15	0.11	ND (0.11)	*12*	1.8	0.17	1.0	0.59	*9.7*	ND (0.10)	2.8	NT	NT	NT	6.6
DIBENZ(A,H)ANTHRACENE	ND (0.12)	ND (0.11)	ND (0.11)	***1.5***	ND (0.22)	ND (0.11)	ND (0.43)	ND (0.11)	***1.4***	ND (0.10)	0.59	NT	NT	NT	ND (3.8) *
FLUORANTHENE	0.15	0.17	0.14	*27*	3.7	0.19	1.6	1.1	*22*	ND (0.10)	7.0	NT	NT	NT	6.4
FLUORENE	ND (0.12)	ND (0.11)	ND (0.11)	*2.1*	0.37	ND (0.11)	ND (0.43)	ND (0.11)	*2.8*	ND (0.10)	0.93	NT	NT	NT	*11*
INDENO(1,2,3-CD)PYRENE	0.36	ND (0.11)	ND (0.11)	*5.2*	0.93	0.25	0.56	0.36	*5.1*	ND (0.10)	1.4	NT	NT	NT	ND (3.8)
2-METHYLNAPHTHALENE	ND (0.12)	ND (0.11)	ND (0.11)	0.48	ND (0.22)	ND (0.11)	ND (0.43)	ND (0.11)	0.93	ND (0.10)	0.29	NT	NT	NT	*33*
NAPHTHALENE	ND (0.12)	ND (0.11)	ND (0.11)	0.70	ND (0.22)	ND (0.11)	ND (0.43)	ND (0.11)	*1.6*	ND (0.10)	0.59	NT	NT	NT	*8.3*
PHENANTHRENE	0.34	ND (0.11)	0.4	19	3	0.24	1.2	0.74	*24*	ND (0.10)	5.9	NT	NT	NT	*32*
PYRENE	ND (0.12)	0.18	0.13	*25*	3.4	0.19	1.6	1	*23*	ND (0.10)	5.0	NT	NT	NT	*33*
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	30	NT	ND (0.36)	NT	NT	NT	ND (7.5)
DIBENZOFURAN (see notes 7, 9)	NT	NT	NT	NT	NT	NT	NT	NT	1.9	NT	0.37	NT	NT	NT	ND (7.5)
DI-N-BUTYLPHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	5.6	NT	ND (0.36)	NT	NT	NT	ND (7.5)
MADEP-VPH-04-1.1 (mg/Kg dry)															
UNADJUSTED C5-C8 ALIPHATICS	ND (9.6)	ND (9.9)	ND (9.5)	ND (8.6)	ND (8.3)	ND (10)	ND (11)	ND (8.2)	NT	ND (7.9)	ND (8.9)	NT	NT	NT	NT
C5-C8 ALIPHATICS	ND (9.6)	ND (9.9)	ND (9.5)	ND (8.6)	ND (8.3)	ND (10)	ND (11)	ND (8.2)	NT	ND (7.9)	ND (8.9)	NT	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS	ND (9.6)	ND (9.9)	ND (9.5)	ND (8.6)	ND (8.3)	ND (10)	ND (11)	ND (8.2)	NT	ND (7.9)	ND (8.9)	NT	NT	NT	NT
C9-C12 ALIPHATICS	ND (9.6)	ND (9.9)	ND (9.5)	ND (8.6)	ND (8.3)	ND (10)	ND (11)	ND (8.2)	NT	ND (7.9)	ND (8.9)	NT	NT	NT	NT
C9-C10 AROMATICS	ND (9.6)	ND (9.9)	ND (9.5)	ND (8.6)	ND (8.3)	ND (10)	ND (11)	ND (8.2)	NT	ND (7.9)	ND (8.9)	NT	NT	NT	NT
BENZENE	0.10	0.058	0.15	ND (0.043)	ND (0.042)	ND (0.052)	ND (0.053)	ND (0.041)	NT	ND (0.040)	ND (0.044)	NT	NT	NT	NT
ETHYLBENZENE	ND (0.048)	ND (0.050)	ND (0.047)	ND (0.043)	ND (0.042)	ND (0.052)	ND (0.053)	ND (0.041)	NT	ND (0.040)	ND (0.044)	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)	ND (0.048)	ND (0.050)	ND (0.047)	ND (0.043)	ND (0.042)	ND (0.052)	ND (0.053)	ND (0.041)	NT	ND (0.040)	ND (0.044)	NT	NT	NT	NT
NAPHTHALENE	ND (0.24)	ND (0.25)	ND (0.24)	ND (0.22)	ND (0.21)	ND (0.26)	ND (0.26)	ND (0.20)	NT	ND (0.20)	ND (0.22)	NT	NT	NT	NT
TOLUENE	0.60	0.32	0.23	0.14	ND (0.042)	0.25	0.087	ND (0.041)	NT	ND (0.040)	ND (0.044)	NT	NT	NT	NT
M/P-XYLENE	ND (0.096)	ND (0.099)	ND (0.095)	ND (0.086)	ND (0.083)	ND (0.10)	ND (0.11)	ND (0.082)	NT	ND (0.079)	ND (0.089)	NT	NT	NT	NT
O-XYLENE	ND (0.048)	ND (0.050)	ND (0.047)	ND (0.043)	ND (0.042)	ND (0.052)	ND (0.053)	ND (0.041)	NT	ND (0.040)	ND (0.044)	NT	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS														
	BTM-GT-1	BTM-GT-2	ESW-GT-1	NSW-GT-1	NSW-GT-2	SSW-GT-1	SSW-GT-2	WSW-GT-2	SP-1	FO-1 (3')	SP-3	FO-1-TP (0-1')	FO-1-TP (1-2')	FO-1-TP (2-3')	FO-1
SM 2540G (% Wt)															
% Solids	85.8	90.3	88.1	88	89.1	89.5	90.6	88.9	80.2	95.5	94.4	85.4	85.5	85.9	72.0
SW-846 6010C/D (mg/Kg dry) Metals Digestion															
ANTIMONY	ND (2.9)	ND (2.7)	ND (2.8)	ND (2.6)	ND (2.8)	ND (2.8)	ND (2.8)	ND (2.7)	ND (3.1)	ND (2.6)	ND (2.4)	3.0	ND (2.9)	ND (2.9)	ND (3.4)
ARSENIC	7.4	ND (2.7)	14	9.8	6.0	3.1	5.7	4.4	***23***	15	8.8	19	14	18	ND (3.4)
BARIUM	34	27	43	*72*	42	27	31	28	*800*	32	50	*140*	*95*	*130*	36
BERYLLIUM	ND (0.29)	ND (0.27)	ND (0.28)	ND (0.26)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.27)	*14*	0.63	0.73	0.68	0.39	*1.9*	0.58
CADMIUM	0.36	0.34	1.0	0.81	0.61	ND (0.28)	0.60	0.33	*3.9*	0.51	0.44	1.4	0.98	1.3	ND (0.34)
CHROMIUM (as +3)	11	10	14	26	19	12	18	11	*160*	25	30	36	31	37	3.1
LEAD	100	41	**290**	**230**	64	58	59	40	***2400***	7	25	**340**	***1100***	**220**	8.5
NICKEL	11	8.9	23	22	14	9.0	18	8.8	*240*	20	18	*32*	22	29	8.9
SELENIUM	ND (5.9)	ND (5.4)	ND (5.6)	ND (5.3)	ND (5.6)	ND (5.6)	ND (5.5)	ND (5.5)	ND (6.2)	ND (5.2)	ND (4.8)	ND (5.7)	ND (5.9)	ND (5.7)	ND (6.8)
SILVER	ND (0.59)	ND (0.54)	ND (0.56)	ND (0.53)	ND (0.56)	ND (0.56)	ND (0.55)	ND (0.55)	ND (0.62)	ND (0.52)	ND (0.48)	ND (1.1)	ND (0.59)	ND (0.57)	ND (0.68)
THALLIUM	ND (2.9)	ND (2.7)	ND (2.8)	ND (2.6)	ND (2.8)	ND (2.8)	ND (2.8)	ND (2.7)	ND (3.1)	ND (2.6)	***9.8***	ND (2.8)	ND (2.9)	ND (2.9)	ND (3.4)
VANADIUM	27	14	*36*	*100*	*32*	14	*50*	15	***3500***	*32*	33	*160*	*96*	*140*	42
ZINC	37	43	210	140	89	42	79	35	***1100***	23	43	250	160	190	5.1
SW-846 7471B (mg/Kg dry) Metals Digestion															
MERCURY	0.14	0.095	0.63	*1.3*	0.25	0.10	0.51	0.099	0.43	ND (0.025)	0.050	0.68	0.93	0.84	ND (0.035)
SW-846 7196A (mg/Kg dry)															
CHROMIUM +6	NT	NT	NT	NT	NT	NT	NT	NT	ND (4.9)	NT	NT	NT	NT	NT	NT
SM2580 A (mV)															
OXIDATION/REDUCTION POTENTIAL	NT	NT	NT	NT	NT	NT	NT	NT	120	NT	NT	NT	NT	NT	NT
SW-846 9045C (pH Units)															
PH	NT	NT	NT	NT	NT	NT	NT	NT	7.4	NT	NT	NT	NT	NT	4.6
SW-846 6010C-D (mg/L) 1311 TCLP EXT															
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	0.025	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	NT	0.78	NT	NT	NT	NT	NT	NT
SW-846 8082A (mg/Kg dry)															
PCB 1016	ND (0.11)	ND (0.11)	ND (0.11)	ND (1.1) *	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (12) *	ND (0.10)	ND (0.53)	ND (2.3) *	ND (2.3) *	ND (1.1) *	ND (0.14)
PCB 1221	ND (0.11)	ND (0.11)	ND (0.11)	ND (1.1) *	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (12) *	ND (0.10)	ND (0.53)	ND (2.3) *	ND (2.3) *	ND (1.1) *	ND (0.14)
PCB 1232	ND (0.11)	ND (0.11)	ND (0.11)	ND (1.1) *	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (12) *	ND (0.10)	ND (0.53)	ND (2.3) *	ND (2.3) *	ND (1.1) *	ND (0.14)
PCB 1242	ND (0.11)	ND (0.11)	ND (0.11)	ND (1.1) *	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (12) *	ND (0.10)	ND (0.53)	ND (2.3) *	ND (2.3) *	ND (1.1) *	ND (0.14)
PCB 1248	ND (0.11)	ND (0.11)	ND (0.11)	ND (1.1) *	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (12) *	ND (0.10)	ND (0.53)	ND (2.3) *	ND (2.3) *	ND (1.1) *	ND (0.14)
PCB 1254	ND (0.11)	ND (0.11)	ND (0.11)	**6.3**	**1.2**	ND (0.11)	0.35	0.16	**63**	ND (0.10)	**2.6**	**13**	**12**	**7.8**	0.45
PCB 1260	ND (0.11)	ND (0.11)	ND (0.11)	ND (1.1) *	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (12) *	ND (0.10)	ND (0.53)	ND (2.3) *	ND (2.3) *	ND (1.1) *	ND (0.14)
PCB 1262	ND (0.11)	ND (0.11)	ND (0.11)	ND (1.1) *	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (12) *	ND (0.10)	ND (0.53)	ND (2.3) *	ND (2.3) *	ND (1.1) *	ND (0.14)
PCB 1268	ND (0.11)	ND (0.11)	ND (0.11)	ND (1.1) *	ND (0.11)	ND (0.11)	ND (0.11)	ND (0.11)	ND (12) *	ND (0.10)	ND (0.53)	ND (2.3) *	ND (2.3) *	ND (1.1) *	ND (0.14)
TOTAL PCBs	ND (0.11)	ND (0.11)	ND (0.11)	**6.3**	**1.2**	ND (0.11)	0.35	0.16	**63**	ND (0.10)	**2.6**	**13**	**12**	**7.8**	0.45

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Parameter	SAMPLING LOCATIONS														
	BTM-GT-1	BTM-GT-2	ESW-GT-1	NSW-GT-1	NSW-GT-2	SSW-GT-1	SSW-GT-2	WSW-GT-2	SP-1	FO-1 (3')	SP-3	FO-1-TP (0-1')	FO-1-TP (1-2')	FO-1-TP (2-3')	FO-1
SW-846 8081B (mg/Kg dry)															
ALDRIN	ND (0.0058)	ND (0.055)	ND (0.0056)	ND (0.11) *	ND (0.11) *	ND (0.0056)	ND (0.11) *	ND (0.0055)	ND (0.12) *	ND (0.0051)	ND (0.0053)	ND (0.11) *	ND (0.12) *	ND (0.11) *	ND (0.69) *
ALPHA-BHC	ND (0.0058)	ND (0.055)	ND (0.0056)	ND (0.11)	ND (0.11)	ND (0.0056)	ND (0.11)	ND (0.0055)	ND (0.12)	ND (0.0051)	ND (0.0053)	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.69)
BETA-BHC	ND (0.0058)	ND (0.055)	ND (0.0056)	ND (0.11)	ND (0.11)	ND (0.0056)	ND (0.11)	ND (0.0055)	ND (0.12)	ND (0.0051)	ND (0.0053)	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.69)
DELTA-BHC	ND (0.0058)	ND (0.055)	ND (0.0056)	ND (0.11)	ND (0.11)	ND (0.0056)	ND (0.11)	ND (0.0055)	ND (0.12)	ND (0.0051)	ND (0.0053)	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.69)
GAMMA-BHC (LINDANE)	ND (0.0023)	ND (0.022) *	ND (0.0022)	ND (0.045) *	ND (0.044) *	ND (0.0022)	ND (0.043) *	ND (0.0022)	ND (0.049) *	ND (0.0021)	ND (0.0021)	ND (0.046) *	ND (0.046) *	ND (0.045) *	ND (0.28) *
CHLORDANE	ND (0.023)	ND (0.22)	ND (0.022)	ND (0.45)	ND (0.44)	ND (0.022)	ND (0.43)	0.045	ND (0.49)	ND (0.021)	ND (0.021)	ND (0.46)	ND (0.46)	ND (0.45)	ND (2.8)
4,4'-DDD	ND (0.0046)	ND (0.044)	ND (0.0045)	ND (0.090)	ND (0.088)	ND (0.0045)	ND (0.087)	ND (0.0044)	ND (0.099)	ND (0.0041)	ND (0.0042)	ND (0.092)	ND (0.093)	ND (0.090)	ND (0.56)
4,4'-DDE	ND (0.0046)	ND (0.044)	ND (0.0045)	ND (0.090)	ND (0.088)	ND (0.0045)	ND (0.087)	ND (0.0044)	ND (0.099)	ND (0.0041)	ND (0.0042)	ND (0.092)	0.093	ND (0.090)	ND (0.56)
4,4'-DDT	ND (0.0046)	ND (0.044)	ND (0.0045)	ND (0.090)	ND (0.088)	ND (0.0045)	ND (0.087)	ND (0.0044)	ND (0.099)	ND (0.0041)	0.019	0.15	0.13	0.13	ND (0.56)
DIELDRIN	ND (0.0046)	ND (0.044)	ND (0.0045)	**0.11**	ND (0.088) *	ND (0.0045)	ND (0.087) *	ND (0.0044)	ND (0.099) *	ND (0.0041)	ND (0.0042)	**0.16**	**0.19**	**0.16**	ND (0.56) *
ENDOSULFAN I	ND (0.0058)	ND (0.055)	ND (0.0056)	ND (0.11)	ND (0.11)	ND (0.0056)	ND (0.11)	ND (0.0055)	ND (0.12)	ND (0.0051)	ND (0.0053)	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.69) *
ENDOSULFAN II	ND (0.0092)	ND (0.088)	ND (0.0089)	ND (0.18)	ND (0.18)	ND (0.0089)	ND (0.17)	ND (0.0088)	ND (0.20)	ND (0.0082)	ND (0.0085)	ND (0.18)	ND (0.19)	ND (0.18)	ND (1.1) *
ENDOSULFAN SULFATE	ND (0.0092)	ND (0.088)	ND (0.0089)	ND (0.18)	ND (0.18)	ND (0.0089)	ND (0.17)	ND (0.0088)	ND (0.20)	ND (0.0082)	ND (0.0085)	ND (0.18)	ND (0.19)	ND (0.18)	ND (1.1)
ENDRIN	ND (0.0092)	ND (0.088)	ND (0.0089)	ND (0.18)	ND (0.18)	ND (0.0089)	ND (0.17)	ND (0.0088)	ND (0.20)	ND (0.0082)	ND (0.0085)	ND (0.18)	ND (0.19)	ND (0.18)	ND (1.1)
ENDRIN KETONE	ND (0.0092)	ND (0.088)	ND (0.0089)	ND (0.18)	ND (0.18)	ND (0.0089)	ND (0.17)	ND (0.0088)	ND (0.20)	ND (0.0082)	ND (0.0085)	ND (0.18)	ND (0.19)	ND (0.18)	ND (1.1)
HEPTACHLOR	ND (0.0058)	ND (0.055)	ND (0.0056)	ND (0.11)	ND (0.11)	ND (0.0056)	ND (0.11)	ND (0.0055)	ND (0.12)	ND (0.0051)	ND (0.0053)	ND (0.11)	ND (0.12)	ND (0.11)	ND (0.69) *
HEPTACHLOR EPOXIDE	ND (0.0058)	ND (0.055)	ND (0.0056)	ND (0.11) *	ND (0.11) *	ND (0.0056)	ND (0.11) *	ND (0.0055)	**0.29**	ND (0.0051)	ND (0.0053)	ND (0.11) *	ND (0.12) *	ND (0.11) *	ND (0.69) *
HEXACHLOROBENZENE	ND (0.0069)	ND (0.066)	ND (0.0067)	ND (0.14)	ND (0.13)	ND (0.0067)	ND (0.13)	ND (0.0066)	ND (0.15)	ND (0.0062)	ND (0.0064)	ND (0.14)	ND (0.14)	ND (0.14)	ND (0.83) *
METHOXYCHLOR	ND (0.058)	ND (0.55)	ND (0.056)	ND (1.1)	ND (1.1)	ND (0.056)	ND (1.1)	ND (0.055)	ND (1.2)	ND (0.051)	ND (0.053)	ND (1.1)	ND (1.2)	ND (1.1)	ND (6.9)
SW-846 8081B (µg/L) 1311 TCLP EXT															
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.050)	NT	NT	NT	NT	NT	NT
SW-846 8151A (mg/kg dry)															
2,4-D	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.31)	NT	ND (0.026)	NT	NT	NT	NT
2,4-DB	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.31)	NT	ND (0.026)	NT	NT	NT	NT
2,4,5-TP (SILVEX)	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.031)	NT	ND (0.026)	NT	NT	NT	NT
2,4,5-T	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.031)	NT	ND (0.026)	NT	NT	NT	NT
DALAPON	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.77)	NT	ND (0.066)	NT	NT	NT	NT
DICAMBA	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.031)	NT	ND (0.0026)	NT	NT	NT	NT
DICHLOROPROP	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.31)	NT	ND (0.026)	NT	NT	NT	NT
DINOSEB	NT	NT	NT	NT	NT	NT	NT	NT	ND (0.15)	NT	ND (0.013)	NT	NT	NT	NT
MCPA	NT	NT	NT	NT	NT	NT	NT	NT	ND (31)	NT	ND (2.6)	NT	NT	NT	NT
MCPP	NT	NT	NT	NT	NT	NT	NT	NT	ND (31)	NT	ND (2.6)	NT	NT	NT	NT

NOTES:
1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	FO-1-BTM	**B-14 (10-15)**	**B-14A (0-5)**	**B-14A (5-10)**	**B-14A (10-15)**	**B-14A (10-15)**	**B-14A (15-16.5)**	**B-15 (0-5)**	**B-15 (5-10)**	**B-16 (0-5)**	**B-16 (5-10)**	**B-16 (10-15)**	**B-17 (5-7.5)**	**B-18 (0-5)**
Sampling Date	3/10/2016	9/15/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016
Sample Depth During Investigative Event	Vault bottom (5.5 feet below grade)	10-15 Feet	0-5 Feet	5-10 Feet	10-15 Feet	10-15 Feet	15-16.5 Feet	0-5 Feet	5-10 Feet	0-5 Feet	5-10 Feet	10-15 Feet	5-7.5 Feet	0-5 Feet
Sample Depth or Disposition Relative to October 1, 2016	Vault bottom (2.5 Feet below grade)	10-15 Feet	0-5 Feet	5-10 Feet	10-15 Feet	10-15 Feet	15-16.5 Feet	0-5 Feet	5-10 Feet	0-5 Feet	5-10 Feet	10-15 Feet	5-7.5 Feet	0-5 Feet
NOTES:	8													
MADEP-EPH-04-1.1 (mg/Kg dry)														
C9-C18 ALIPHATICS	NT	NT	**2400**	**1300**	**8300**	NT	220	NT	140	NT	NT	150	85	NT
C19-C36 ALIPHATICS	NT	NT	**3400**	2100	**11000**	NT	420	NT	**4700**	NT	NT	380	670	NT
UNADJUSTED C11-C22 AROMATICS	NT	NT	7300	2600	15000	NT	1600	NT	3700	NT	NT	850	660	NT
C11-C22 AROMATICS	NT	NT	**7200**	**2500**	**15000**	NT	**1600**	NT	**3700**	NT	NT	850	650	NT
ACENAPHTHENE	NT	NT	ND (2.9)	ND (0.56)	ND (2.4)	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
ACENAPHTHYLENE	NT	NT	ND (2.9) *	ND (0.56)	ND (2.4) *	NT	ND (1.3) *	NT	ND (1.1) *	NT	NT	ND (0.20)	ND (0.21)	NT
ANTHRACENE	NT	NT	ND (2.9)	1.4	*11*	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
BENZO(A)ANTHRACENE	NT	NT	ND (2.9)	ND (0.56)	ND (2.4)	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
BENZO(A)PYRENE	NT	NT	ND (2.9) *	ND (0.56)	ND (2.4) *	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
BENZO(B)FLUORANTHENE	NT	NT	ND (2.9)	ND (0.56)	ND (2.4)	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
BENZO(G,H,I)PERYLENE	NT	NT	ND (2.9)	ND (0.56)	ND (2.4)	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
BENZO(K)FLUORANTHENE	NT	NT	ND (2.9)	ND (0.56)	ND (2.4)	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
CHRYSENE	NT	NT	ND (2.9)	ND (0.56)	ND (2.4)	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
DIBENZ(A,H)ANTHRACENE	NT	NT	ND (2.9) *	ND (0.56)	ND (2.4) *	NT	ND (1.3) *	NT	ND (1.1) *	NT	NT	ND (0.20)	ND (0.21)	NT
FLUORANTHENE	NT	NT	*12*	4.6	*22*	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
FLUORENE	NT	NT	ND (2.9)	*3.1*	*29*	NT	*4.9*	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
INDENO(1,2,3-CD)PYRENE	NT	NT	ND (2.9)	ND (0.56)	ND (2.4)	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
2-METHYLNAPHTHALENE	NT	NT	***12***	***5.7***	***65***	NT	***1.9***	NT	ND (1.1) *	NT	NT	ND (0.20)	ND (0.21)	NT
NAPHTHALENE	NT	NT	ND (2.9)	*3.1*	***27***	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
PHENANTHRENE	NT	NT	**12**	4.0	***35***	NT	4.6	NT	ND (1.1)	NT	NT	ND (0.20)	0.63	NT
PYRENE	NT	NT	7.1	1.7	12	NT	ND (1.3)	NT	ND (1.1)	NT	NT	ND (0.20)	ND (0.21)	NT
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIBENZOFURAN (see notes 7, 9)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DI-N-BUTYLPHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MADEP-VPH-04-1.1 (mg/Kg dry)														
UNADJUSTED C5-C8 ALIPHATICS	ND (8.3)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C5-C8 ALIPHATICS	ND (8.3)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS	ND (8.3)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C12 ALIPHATICS	ND (8.3)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C10 AROMATICS	ND (8.3)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BENZENE	ND (0.042)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ETHYLBENZENE	ND (0.042)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)	ND (0.042)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NAPHTHALENE	ND (0.21)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
TOLUENE	ND (0.042)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
M/P-XYLENE	ND (0.083)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
O-XYLENE	ND (0.042)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	FO-1-BTM	B-14 (10-15)	B-14A (0-5)	B-14A (5-10)	B-14A (10-15)	B-14A (10-15)	B-14A (15-16.5)	B-15 (0-5)	B-15 (5-10)	B-16 (0-5)	B-16 (5-10)	B-16 (10-15)	B-17 (5-7.5)	B-18 (0-5)
SM 2540G (% Wt)														
% Solids	91.9	NT	68.0	88.8	81.7	NT	75.4	91.1	92.3	92.5	NT	95.3	91.4	91.4
SW-846 6010C/D (mg/Kg dry) Metals Digestion														
ANTIMONY	ND (2.5)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ARSENIC	7.0	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BARIUM	30	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BERYLLIUM	ND (0.25)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CADMIUM	0.26	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CHROMIUM (as +3)	20	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	6.3	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NICKEL	14	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SELENIUM	ND (5.0)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SILVER	ND (0.50)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
THALLIUM	ND (2.5)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
VANADIUM	29	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ZINC	29	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7471B (mg/Kg dry) Metals Digestion														
MERCURY	ND (0.026)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7196A (mg/Kg dry)														
CHROMIUM +6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SM2580 A (mV)														
OXIDATION/REDUCTION POTENTIAL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 9045C (pH Units)														
PH	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 6010C-D (mg/L) 1311 TCLP EXT														
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8082A (mg/Kg dry)														
PCB 1016	ND (0.11)	NT	ND (0.15)	ND (0.11)	ND (0.12)	NT	ND (0.13)	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT	ND (5.5) *
PCB 1221	ND (0.11)	NT	ND (0.15)	ND (0.11)	ND (0.12)	NT	ND (0.13)	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT	ND (5.5) *
PCB 1232	ND (0.11)	NT	ND (0.15)	ND (0.11)	ND (0.12)	NT	ND (0.13)	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT	ND (5.5) *
PCB 1242	ND (0.11)	NT	ND (0.15)	ND (0.11)	ND (0.12)	NT	ND (0.13)	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT	ND (5.5) *
PCB 1248	ND (0.11)	NT	ND (0.15)	ND (0.11)	ND (0.12)	NT	ND (0.13)	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT	ND (5.5) *
PCB 1254	ND (0.11)	NT	ND (0.15)	0.14	0.14	NT	ND (0.13)	**12**	0.30	0.90	NT	NT	NT	**29**
PCB 1260	ND (0.11)	NT	ND (0.15)	ND (0.11)	ND (0.12)	NT	ND (0.13)	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT	ND (5.5) *
PCB 1262	ND (0.11)	NT	ND (0.15)	ND (0.11)	ND (0.12)	NT	ND (0.13)	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT	ND (5.5) *
PCB 1268	ND (0.11)	NT	ND (0.15)	ND (0.11)	ND (0.12)	NT	ND (0.13)	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT	ND (5.5) *
TOTAL PCBs	ND (0.11)	NT	ND (0.15)	0.14	0.14	NT	ND (0.13)	**12**	0.30	0.90	NT	NT	NT	**29**

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Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	FO-1-BTM	B-14 (10-15)	B-14A (0-5)	B-14A (5-10)	B-14A (10-15)	B-14A (10-15)	B-14A (15-16.5)	B-15 (0-5)	B-15 (5-10)	B-16 (0-5)	B-16 (5-10)	B-16 (10-15)	B-17 (5-7.5)	B-18 (0-5)
SW-846 8081B (mg/Kg dry)														
ALDRIN	ND (0.0054)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ALPHA-BHC	ND (0.0054)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BETA-BHC	ND (0.0054)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DELTA-BHC	ND (0.0054)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
GAMMA-BHC (LINDANE)	ND (0.0022)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CHLORDANE	ND (0.022)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDD	ND (0.0043)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDE	ND (0.0043)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDT	ND (0.0043)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIELDRIN	ND (0.0043)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN I	ND (0.0054)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN II	ND (0.0086)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN SULFATE	ND (0.0086)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN	ND (0.0086)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN KETONE	ND (0.0086)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR	ND (0.0054)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR EPOXIDE	ND (0.0054)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEXACHLOROBENZENE	ND (0.0065)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHOXYCHLOR	ND (0.054)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8081B (µg/L) 1311 TCLP EXT														
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8151A (mg/kg dry)														
2,4-D	ND (0.027)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4-DB	ND (0.027)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-TP (SILVEX)	ND (0.0027)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-T	ND (0.0027)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DALAPON	ND (0.068)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DICAMBA	ND (0.0027)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DICHLOROPROP	ND (0.027)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DINOSEB	ND (0.014)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MCPA	ND (2.7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MCPP	ND (2.7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

NOTES:
1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	B-18 (5-10)	B-18 (10-15)	B-19 (0-5)	B-19 (5-10)	B-19 (10-15)	B-19 (15-17)	B-20 (0-5)	B-20 (5-8)	B-21 (0-5)	B-21 (5-10)	B-21 (10-13.5)	B-22 (10-15)	B-22 (15-20)	B-23 (5-9)
Sampling Date	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/15/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016	9/16/2016
Sample Depth During Investigative Event	5-10 Feet	10-15 Feet	0-5 Feet	5-10 Feet	10-15 Feet	15-17 Feet	0-5 Feet	5-8 Feet	0-5 Feet	5-10 Feet	10-13.5 Feet	10-15 Feet	15-20 Feet	5-9 Feet
Sample Depth or Disposition Relative to October 1, 2016	5-10 Feet	10-15 Feet	0-5 Feet	5-10 Feet	10-15 Feet	15-17 Feet	0-5 Feet	5-8 Feet	0-5 Feet	5-10 Feet	10-13.5 Feet	10-15 Feet	15-20 Feet	5-9 Feet
NOTES:	14			14	14									
MADEP-EPH-04-1.1 (mg/Kg dry)														
C9-C18 ALIPHATICS	28	59	NT	20	110	200	NT	ND (11)	28	860	110	63	ND (11)	ND (11)
C19-C36 ALIPHATICS	33	310	NT	70	370	730	NT	32	180	1200	500	330	ND (11)	18
UNADJUSTED C11-C22 AROMATICS	92	530	NT	300	570	1600	NT	69	490	2400	1000	560	ND (11)	64
C11-C22 AROMATICS	90	530	NT	220	570	**1600**	NT	67	390	**2400**	1000	560	ND (11)	48
ACENAPHTHENE	ND (0.12)	ND (0.52)	NT	1.3	ND (0.53)	ND (0.53)	NT	ND (0.11)	1.6	ND (0.52)	ND (0.55)	ND (0.24)	ND (0.11)	0.32
ACENAPHTHYLENE	ND (0.12)	ND (0.52)	NT	ND (0.11)	ND (0.53)	ND (0.53)	NT	ND (0.11)	ND (0.22)	ND (0.52)	ND (0.55)	ND (0.24)	ND (0.11)	ND (0.11)
ANTHRACENE	ND (0.12)	ND (0.52)	NT	2.5	ND (0.53)	ND (0.53)	NT	ND (0.11)	3.0	ND (0.52)	ND (0.55)	0.28	ND (0.11)	0.32
BENZO(A)ANTHRACENE	ND (0.12)	ND (0.52)	NT	6.0	ND (0.53)	ND (0.53)	NT	0.14	6.7	ND (0.52)	ND (0.55)	0.53	ND (0.11)	1.2
BENZO(A)PYRENE	ND (0.12)	ND (0.52)	NT	**5.1**	ND (0.53)	ND (0.53)	NT	0.12	**6.3**	ND (0.52)	ND (0.55)	0.64	ND (0.11)	1.3
BENZO(B)FLUORANTHENE	0.15	ND (0.52)	NT	7.0	ND (0.53)	ND (0.53)	NT	0.23	***8.4***	ND (0.52)	ND (0.55)	0.85	ND (0.11)	1.6
BENZO(G,H,I)PERYLENE	ND (0.12)	ND (0.52)	NT	2.7	ND (0.53)	ND (0.53)	NT	0.13	*3.2*	ND (0.52)	ND (0.55)	ND (0.24)	ND (0.11)	0.82
BENZO(K)FLUORANTHENE	ND (0.12)	ND (0.52)	NT	2.6	ND (0.53)	ND (0.53)	NT	ND (0.11)	3.2	ND (0.52)	ND (0.55)	ND (0.24)	ND (0.11)	0.57
CHRYSENE	0.25	ND (0.52)	NT	6.7	ND (0.53)	ND (0.53)	NT	0.28	*7.9*	ND (0.52)	ND (0.55)	0.74	ND (0.11)	1.3
DIBENZ(A,H)ANTHRACENE	ND (0.12)	ND (0.52)	NT	**0.90**	ND (0.53)	ND (0.53)	NT	ND (0.11)	***1.2***	ND (0.52)	ND (0.55)	ND (0.24)	ND (0.11)	0.19
FLUORANTHENE	0.15	ND (0.52)	NT	*14*	ND (0.53)	ND (0.53)	NT	0.30	*18*	1.8	ND (0.55)	1.8	ND (0.11)	2.8
FLUORENE	0.13	ND (0.52)	NT	1.3	ND (0.53)	ND (0.53)	NT	ND (0.11)	1.7	1.5	ND (0.55)	ND (0.24)	ND (0.11)	0.15
INDENO(1,2,3-CD)PYRENE	ND (0.12)	ND (0.52)	NT	*3.3*	ND (0.53)	ND (0.53)	NT	ND (0.11)	*3.9*	ND (0.52)	ND (0.55)	ND (0.24)	ND (0.11)	0.79
2-METHYLNAPHTHALENE	0.16	ND (0.52)	NT	**0.99**	ND (0.53)	ND (0.53)	NT	ND (0.11)	0.39	ND (0.52)	ND (0.55)	ND (0.24)	ND (0.11)	ND (0.11)
NAPHTHALENE	0.31	ND (0.52)	NT	0.44	ND (0.53)	ND (0.53)	NT	ND (0.11)	0.41	ND (0.52)	ND (0.55)	ND (0.24)	ND (0.11)	0.18
PHENANTHRENE	0.49	ND (0.52)	NT	**11**	ND (0.53)	ND (0.53)	NT	0.37	**14**	3.3	ND (0.55)	0.41	ND (0.11)	1.9
PYRENE	0.18	ND (0.52)	NT	13	ND (0.53)	ND (0.53)	NT	0.37	17	ND (0.52)	ND (0.55)	1.7	ND (0.11)	2.7
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIBENZOFURAN (see notes 7, 9)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DI-N-BUTYLPHTHALATE (see note 7)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MADEP-VPH-04-1.1 (mg/Kg dry)														
UNADJUSTED C5-C8 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C5-C8 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C12 ALIPHATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
C9-C10 AROMATICS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ETHYLBENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NAPHTHALENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
TOLUENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
M/P-XYLENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
O-XYLENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	B-18 (5-10)	B-18 (10-15)	B-19 (0-5)	B-19 (5-10)	B-19 (10-15)	B-19 (15-17)	B-20 (0-5)	B-20 (5-8)	B-21 (0-5)	B-21 (5-10)	B-21 (10-13.5)	B-22 (10-15)	B-22 (15-20)	B-23 (5-9)
SM 2540G (% Wt)														
% Solids	86.9	95.1	90.1	94.3	93.9	92.5	88.1	86.2	91.0	94.0	89.3	81.6	91.6	89.3
SW-846 6010C/D (mg/Kg dry) Metals Digestion														
ANTIMONY	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ARSENIC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BARIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BERYLLIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CHROMIUM (as +3)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
NICKEL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SELENIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SILVER	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
THALLIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
VANADIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ZINC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7471B (mg/Kg dry) Metals Digestion														
MERCURY	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 7196A (mg/Kg dry)														
CHROMIUM +6	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SM2580 A (mV)														
OXIDATION/REDUCTION POTENTIAL	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 9045C (pH Units)														
PH	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 6010C-D (mg/L) 1311 TCLP EXT														
CADMIUM	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
LEAD	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8082A (mg/Kg dry)														
PCB 1016	ND (0.12)	ND (0.10)	ND (1.1) *	ND (0.42)	ND (0.11)	NT	ND (0.11)	NT	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT
PCB 1221	ND (0.12)	ND (0.10)	ND (1.1) *	ND (0.42)	ND (0.11)	NT	ND (0.11)	NT	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT
PCB 1232	ND (0.12)	ND (0.10)	ND (1.1) *	ND (0.42)	ND (0.11)	NT	ND (0.11)	NT	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT
PCB 1242	ND (0.12)	ND (0.10)	ND (1.1) *	ND (0.42)	ND (0.11)	NT	ND (0.11)	NT	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT
PCB 1248	ND (0.12)	ND (0.10)	ND (1.1) *	ND (0.42)	ND (0.11)	NT	ND (0.11)	NT	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT
PCB 1254	ND (0.12)	ND (0.10)	**6.7**	**2.1**	ND (0.11)	NT	ND (0.11)	NT	**11**	0.63	ND (0.11)	NT	NT	NT
PCB 1260	ND (0.12)	ND (0.10)	ND (1.1) *	ND (0.42)	ND (0.11)	NT	ND (0.11)	NT	ND (2.2) *	0.12	ND (0.11)	NT	NT	NT
PCB 1262	ND (0.12)	ND (0.10)	ND (1.1) *	ND (0.42)	ND (0.11)	NT	ND (0.11)	NT	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT
PCB 1268	ND (0.12)	ND (0.10)	ND (1.1) *	ND (0.42)	ND (0.11)	NT	ND (0.11)	NT	ND (2.2) *	ND (0.11)	ND (0.11)	NT	NT	NT
TOTAL PCBs	ND (0.12)	ND (0.10)	**6.7**	**2.1**	ND (0.11)	NT	ND (0.11)	NT	**11**	0.75	ND (0.11)	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS													
	B-18 (5-10)	B-18 (10-15)	B-19 (0-5)	B-19 (5-10)	B-19 (10-15)	B-19 (15-17)	B-20 (0-5)	B-20 (5-8)	B-21 (0-5)	B-21 (5-10)	B-21 (10-13.5)	B-22 (10-15)	B-22 (15-20)	B-23 (5-9)
SW-846 8081B (mg/Kg dry)														
ALDRIN	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ALPHA-BHC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
BETA-BHC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DELTA-BHC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
GAMMA-BHC (LINDANE)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
CHLORDANE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDD	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
4,4'-DDT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DIELDRIN	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN I	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN II	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDOSULFAN SULFATE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
ENDRIN KETONE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEPTACHLOR EPOXIDE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
HEXACHLOROBENZENE	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
METHOXYCHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8081B (µg/L) 1311 TCLP EXT														
HEPTACHLOR	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
SW-846 8151A (mg/kg dry)														
2,4-D	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4-DB	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-TP (SILVEX)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2,4,5-T	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DALAPON	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DICAMBA	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DICHLOROPROP	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
DINOSEB	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MCPA	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
MCPP	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

NOTES:
1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regul. criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Bolded values exceed the Method 1 Cleanup Standards (exclusive of S-x/GW-1).
6. Italic values exceed MassDEP published background conc. for soils assoc. with fill containing coal ash or wood ash.

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS		
	B-26 (10-13)	B-27 (5-10)	B-28 (10-15)
Sampling Date	9/16/2016	9/16/2016	9/16/2016
Sample Depth During Investigative Event	10-13 Feet	5-10 Feet	10-15 Feet
Sample Depth or Disposition Relative to October 1, 2016	10-13 Feet	5-10 Feet	10-15 Feet
NOTES:			
MADEP-EPH-04-1.1 (mg/Kg dry)			
C9-C18 ALIPHATICS	NT	NT	NT
C19-C36 ALIPHATICS	NT	NT	NT
UNADJUSTED C11-C22 AROMATICS	NT	NT	NT
C11-C22 AROMATICS	NT	NT	NT
ACENAPHTHENE	NT	NT	NT
ACENAPHTHYLENE	NT	NT	NT
ANTHRACENE	NT	NT	NT
BENZO(A)ANTHRACENE	NT	NT	NT
BENZO(A)PYRENE	NT	NT	NT
BENZO(B)FLUORANTHENE	NT	NT	NT
BENZO(G,H,I)PERYLENE	NT	NT	NT
BENZO(K)FLUORANTHENE	NT	NT	NT
CHRYSENE	NT	NT	NT
DIBENZ(A,H)ANTHRACENE	NT	NT	NT
FLUORANTHENE	NT	NT	NT
FLUORENE	NT	NT	NT
INDENO(1,2,3-CD)PYRENE	NT	NT	NT
2-METHYLNAPHTHALENE	NT	NT	NT
NAPHTHALENE	NT	NT	NT
PHENANTHRENE	NT	NT	NT
PYRENE	NT	NT	NT
BIS(2-ETHYLHEXYL)PHTHALATE (see note 7)	NT	NT	NT
DIBENZOFURAN (see notes 7, 9)	NT	NT	NT
DI-N-BUTYLPHTHALATE (see note 7)	NT	NT	NT
MADEP-VPH-04-1.1 (mg/Kg dry)			
UNADJUSTED C5-C8 ALIPHATICS	NT	NT	NT
C5-C8 ALIPHATICS	NT	NT	NT
UNADJUSTED C9-C12 ALIPHATICS	NT	NT	NT
C9-C12 ALIPHATICS	NT	NT	NT
C9-C10 AROMATICS	NT	NT	NT
BENZENE	NT	NT	NT
ETHYLBENZENE	NT	NT	NT
METHYL TERT-BUTYL ETHER (MTBE)	NT	NT	NT
NAPHTHALENE	NT	NT	NT
TOLUENE	NT	NT	NT
M/P-XYLENE	NT	NT	NT
O-XYLENE	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS		
	B-26 (10-13)	B-27 (5-10)	B-28 (10-15)
SM 2540G (% Wt)			
% Solids	NT	NT	NT
SW-846 6010C/D (mg/Kg dry) Metals Digestion			
ANTIMONY	NT	NT	NT
ARSENIC	NT	NT	NT
BARIUM	NT	NT	NT
BERYLLIUM	NT	NT	NT
CADMIUM	NT	NT	NT
CHROMIUM (as +3)	NT	NT	NT
LEAD	NT	NT	NT
NICKEL	NT	NT	NT
SELENIUM	NT	NT	NT
SILVER	NT	NT	NT
THALLIUM	NT	NT	NT
VANADIUM	NT	NT	NT
ZINC	NT	NT	NT
SW-846 7471B (mg/Kg dry) Metals Digestion			
MERCURY	NT	NT	NT
SW-846 7196A (mg/Kg dry)			
CHROMIUM +6	NT	NT	NT
SM2580 A (mV)			
OXIDATION/REDUCTION POTENTIAL	NT	NT	NT
SW-846 9045C (pH Units)			
PH	NT	NT	NT
SW-846 6010C-D (mg/L) 1311 TCLP EXT			
CADMIUM	NT	NT	NT
LEAD	NT	NT	NT
SW-846 8082A (mg/Kg dry)			
PCB 1016	NT	NT	NT
PCB 1221	NT	NT	NT
PCB 1232	NT	NT	NT
PCB 1242	NT	NT	NT
PCB 1248	NT	NT	NT
PCB 1254	NT	NT	NT
PCB 1260	NT	NT	NT
PCB 1262	NT	NT	NT
PCB 1268	NT	NT	NT
TOTAL PCBs	NT	NT	NT

Table 1
Summary of Soil Analytical Data: 0-20 Foot Interval Soils in Courtyard

Parameter	SAMPLING LOCATIONS		
	B-26 (10-13)	B-27 (5-10)	B-28 (10-15)
SW-846 8081B (mg/Kg dry)			
ALDRIN	NT	NT	NT
ALPHA-BHC	NT	NT	NT
BETA-BHC	NT	NT	NT
DELTA-BHC	NT	NT	NT
GAMMA-BHC (LINDANE)	NT	NT	NT
CHLORDANE	NT	NT	NT
4,4'-DDD	NT	NT	NT
4,4'-DDE	NT	NT	NT
4,4'-DDT	NT	NT	NT
DIELDRIN	NT	NT	NT
ENDOSULFAN I	NT	NT	NT
ENDOSULFAN II	NT	NT	NT
ENDOSULFAN SULFATE	NT	NT	NT
ENDRIN	NT	NT	NT
ENDRIN KETONE	NT	NT	NT
HEPTACHLOR	NT	NT	NT
HEPTACHLOR EPOXIDE	NT	NT	NT
HEXACHLOROBENZENE	NT	NT	NT
METHOXYCHLOR	NT	NT	NT
SW-846 8081B (µg/L) 1311 TCLP EXT			
HEPTACHLOR	NT	NT	NT
SW-846 8151A (mg/kg dry)			
2,4-D	NT	NT	NT
2,4-DB	NT	NT	NT
2,4,5-TP (SILVEX)	NT	NT	NT
2,4,5-T	NT	NT	NT
DALAPON	NT	NT	NT
DICAMBA	NT	NT	NT
DICHLOROPROP	NT	NT	NT
DINOSEB	NT	NT	NT
MCPA	NT	NT	NT
MCPP	NT	NT	NT
NOTES:			
1. An asterisk (*) following a detection limit			
indicates that the minimum laboratory reporting			
limit exceeds one or more of the regul. criteria.			
2. ND = Not detected above the lab reporting			
limits shown in parenthesis.			
3. NT = Not tested.			
4. ~ = No Method 1 Standard or UCL available			
5. Bolded values exceed the Method 1 Cleanup			
Standards (exclusive of S-x/GW-1).			
6. Italic values exceed MassDEP published			
background conc. for soils assoc. with fill			
containing coal ash or wood ash.			

ATTACHMENT 9

Table 10: Summary of Soil Analytical Data: Composite Soil Samples

Lowell, MA

Table 10
Summary of Soil Analytical Data: Composite Soil Samples
Lowell, MA

Parameter	Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									
	RCS-1	RCS-2	S-1/GW-1	S-1/GW-2	S-1/GW-3	S-2/GW-1	S-2/GW-2	S-2/GW-3	S-3/GW-1	S-3/GW-2	S-3/GW-3	UCL
Sampling Date												
Sample Depth												
SM 2540G (% Wt)												
% Solids	~	~	~	~	~	~	~	~	~	~	~	~
SM21-22 2510B Modified (µmhos/cm)												
SPECIFIC CONDUCTANCE	~	~	~	~	~	~	~	~	~	~	~	~
SW-846 1030 (present/absent)												
IGNITABILITY	~	~	~	~	~	~	~	~	~	~	~	~
SW-846 6010C-D (mg/Kg dry) Metals Digestion												
ANTIMONY	20	30	20	20	20	30	30	30	30	30	30	300
ARSENIC	20	20	20	20	20	20	20	20	50	50	50	500
BARIUM	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
BERYLLIUM	90	200	90	90	90	200	200	200	200	200	200	2000
CADMIUM	70	100	70	70	70	100	100	100	100	100	10	1000
CHROMIUM	100	200	100	100	100	200	200	200	200	200	200	2000
LEAD	200	600	200	200	200	600	600	600	600	600	600	6000
NICKEL	600	1000	600	600	600	1000	1000	1000	1000	1000	1000	10000
SELENIUM	400	700	400	400	400	700	700	700	700	700	700	7000
SILVER	100	200	100	100	100	200	200	200	200	200	200	2000
THALLIUM	8	60	8	8	8	60	60	60	80	80	80	800
VANADIUM	400	700	400	400	400	700	700	700	700	700	700	7000
ZINC	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
SW-846 7471B (mg/Kg dry) Metals Digestion												
MERCURY	20	30	20	20	20	30	30	30	30	30	30	300
SW-846 8081B (mg/Kg dry)												
ALDRIN	0.08	0.5	0.08	0.08	0.08	0.5	0.5	0.5	3	3	3	30
ALPHA-BHC	50	500	~	~	~	~	~	~	~	~	~	~
BETA-BHC	10	100	~	~	~	~	~	~	~	~	~	~
DELTA-BHC	10	100	~	~	~	~	~	~	~	~	~	~
GAMMA-BHC (LINDANE)	0.003	0.5	0.003	0.1	0.5	0.003	2	0.5	0.003	2	0.5	600
CHLORDANE	5	30	5	5	5	30	30	30	60	60	60	600
4,4'-DDD	8	40	8	8	8	40	40	40	60	60	60	600
4,4'-DDE	6	30	6	6	6	30	30	30	60	60	60	600
4,4'-DDT	6	30	6	6	6	30	30	30	60	60	60	600
DIELDRIN	0.08	0.5	0.08	0.08	0.08	0.5	0.5	0.5	3	3	3	30
ENDOSULFAN I	0.5	1	0.5	300	1	0.5	500	1	0.5	500	1	5000
ENDOSULFAN II	0.5	1	0.5	300	1	0.5	500	1	0.5	500	1	5000
ENDOSULFAN SULFATE	~	~	~	~	~	~	~	~	~	~	~	~
ENDRIN	10	20	10	10	10	20	20	20	20	20	20	200
ENDRIN KETONE	~	~	~	~	~	~	~	~	~	~	~	~
HEPTACHLOR	0.3	2	0.3	0.3	0.3	2	2	2	10	10	10	100
HEPTACHLOR EPOXIDE	0.1	0.9	0.1	0.1	0.1	0.9	0.9	0.9	1	1	1	10
HEXACHLOROBENZENE	0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	8
METHOXYCHLOR	200	400	200	200	200	400	400	400	400	400	400	4000
SW-846 8082A (mg/Kg dry)												
PCB 1016	1	4	1	1	1	4	4	4	4	4	4	100
PCB 1221	1	4	1	1	1	4	4	4	4	4	4	100
PCB 1232	1	4	1	1	1	4	4	4	4	4	4	100
PCB 1242	1	4	1	1	1	4	4	4	4	4	4	100
PCB 1248	1	4	1	1	1	4	4	4	4	4	4	100
PCB 1254	1	4	1	1	1	4	4	4	4	4	4	100
PCB 1260	1	4	1	1	1	4	4	4	4	4	4	100
PCB 1262	1	4	1	1	1	4	4	4	4	4	4	100
PCB 1268	1	4	1	1	1	4	4	4	4	4	4	100
SW-846 8100 Modified (mg/Kg dry)												
TPH	1000	3000	1000	1000	1000	1000	3000	5000	1000	5000	5000	10000

Table 10
Summary of Soil Analytical Data: Composite Soil Samples
Lowell, MA

Parameter	Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									
	RCS-1	RCS-2	S-1/GW-1	S-1/GW-2	S-1/GW-3	S-2/GW-1	S-2/GW-2	S-2/GW-3	S-3/GW-1	S-3/GW-2	S-3/GW-3	UCL
SW-846 8151A (µg/kg dry)												
2,4-D	100000	1000000	~	~	~	~	~	~	~	~	~	~
2,4-DB	100000	1000000	~	~	~	~	~	~	~	~	~	~
2,4,5-TP (SILVEX)	100000	1000000	~	~	~	~	~	~	~	~	~	~
2,4,5-T	100000	1000000	~	~	~	~	~	~	~	~	~	~
DALAPON	~	~	~	~	~	~	~	~	~	~	~	~
DICAMBA	500000	5000000	~	~	~	~	~	~	~	~	~	~
DICHLOROPROP	~	~	~	~	~	~	~	~	~	~	~	~
DINOSEB	500000	5000000	~	~	~	~	~	~	~	~	~	~
MCPA	100000	1000000	~	~	~	~	~	~	~	~	~	~
MCPP	~	~	~	~	~	~	~	~	~	~	~	~
SW-846 8270D (mg/Kg dry)												
ACENAPHTHENE	4	3000	4	1000	1000	4	3000	3000	4	5000	5000	10000
ACENAPHTHYLENE	1	10	1	600	10	1	600	10	1	600	10	10000
ACETOPHENONE	1000	10000	~	~	~	~	~	~	~	~	~	~
ANILINE	1000	10000	~	~	~	~	~	~	~	~	~	~
ANTHRACENE	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
BENZO(A)ANTHRACENE	7	40	7	7	7	40	40	40	300	300	300	3000
BENZO(A)PYRENE	2	7	2	2	2	7	7	7	30	30	30	300
BENZO(B)FLUORANTHENE	7	40	7	7	7	40	40	40	300	300	300	3000
BENZO(G,H,I)PERYLENE	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
BENZO(K)FLUORANTHENE	70	400	70	70	70	400	400	400	3000	3000	3000	10000
BIS(2-CHLOROETHOXY)METHANE	500	5000	~	~	~	~	~	~	~	~	~	~
BIS(2-CHLOROETHYL)ETHER	0.7	0.7	0.7	0.7	8	0.7	0.7	3	0.7	0.7	80	800
BIS(2-CHLOROISOPROPYL)ETHER	0.7	0.7	0.7	0.7	30	0.7	0.7	100	0.7	0.7	1000	10000
BIS(2-ETHYLHEXYL)PHTHALATE	90	600	90	90	90	600	600	600	2000	2000	2000	10000
4-BROMOPHENYL PHENYL ETHER	100	1000	~	~	~	~	~	~	~	~	~	~
BUTYLBENZYLPHTHALATE	100	1000	~	~	~	~	~	~	~	~	~	~
4-CHLOROANILINE	1	3	1	100	3	1	100	3	1	100	3	3000
2-CHLORONAPHTHALENE	1000	10000	~	~	~	~	~	~	~	~	~	~
2-CHLOROPHENOL	0.7	100	0.7	100	100	0.7	100	300	0.7	100	300	3000
CHRYSENE	70	400	70	70	70	400	400	400	3000	3000	3000	10000
DIBENZ(A,H)ANTHRACENE	0.7	4	0.7	0.7	0.7	4	4	4	30	30	30	300
DIBENZOFURAN	100	1000	~	~	~	~	~	~	~	~	~	~
DI-N-BUTYLPHTHALATE	50	500	~	~	~	~	~	~	~	~	~	~
1,2-DICHLOROBENZENE	9	100	9	100	300	9	100	300	9	100	300	10000
1,3-DICHLOROBENZENE	3	200	3	100	100	3	200	500	3	200	500	5000
1,4-DICHLOROBENZENE	0.7	1	0.7	1	80	0.7	1	400	0.7	1	2000	10000
3,3'-DICHLOROBENZIDINE	3	20	3	3	3	10	10	10	100	100	100	1000
2,4-DICHLOROPHENOL	0.7	40	0.7	60	40	0.7	60	40	0.7	60	40	8000
DIETHYLPHTHALATE	10	200	10	200	300	10	200	300	10	200	300	10000
2,4-DIMETHYLPHENOL	0.7	100	0.7	100	500	0.7	100	1000	0.7	100	1000	10000
DIMETHYLPHTHALATE	0.7	50	0.7	50	600	0.7	50	600	0.7	50	600	10000
2,4-DINITROPHENOL	3	50	3	50	50	3	50	100	3	50	100	8000
2,4-DINITROTOLUENE	0.7	10	0.7	2	2	0.7	10	10	0.7	50	80	800
2,6-DINITROTOLUENE	100	1000	~	~	~	~	~	~	~	~	~	~
DI-N-OCTYLPHTHALATE	1000	10000	~	~	~	~	~	~	~	~	~	~
1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	50	500	~	~	~	~	~	~	~	~	~	~
FLUORANTHENE	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
FLUORENE	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
HEXACHLOROBENZENE	0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	8
HEXACHLOROBUTADIENE	30	100	30	30	30	100	100	100	100	100	100	1000
HEXACHLOROETHANE	0.7	3	0.7	3	50	0.7	3	200	0.7	3	200	2000
INDENO(1,2,3-CD)PYRENE	7	40	7	7	7	40	40	40	300	300	300	3000
ISOPHORONE	100	1000	~	~	~	~	~	~	~	~	~	~
2-METHYLNAPHTHALENE	0.7	80	0.7	80	300	1	80	500	1	80	500	5000
O-CRESOL	500	5000	~	~	~	~	~	~	~	~	~	~
M/P-CRESOL	500	5000	~	~	~	~	~	~	~	~	~	~
NAPHTHALENE	4	20	4	20	500	4	20	1000	4	20	3000	10000

Table 10
Summary of Soil Analytical Data: Composite Soil Samples
Lowell, MA

Parameter	Reportable Concentrations (RCs)		MCP - Method 1 Cleanup Standards									
	RCS-1	RCS-2	S-1/GW-1	S-1/GW-2	S-1/GW-3	S-2/GW-1	S-2/GW-2	S-2/GW-3	S-3/GW-1	S-3/GW-2	S-3/GW-3	UCL
NITROBENZENE	500	5000	~	~	~	~	~	~	~	~	~	~
2-NITROPHENOL	100	1000	~	~	~	~	~	~	~	~	~	~
4-NITROPHENOL	100	1000	~	~	~	~	~	~	~	~	~	~
PENTACHLOROPHENOL	3	10	3	3	3	3	20	10	3	70	10	700
PHENANTHRENE	10	1000	10	500	500	20	1000	1000	20	3000	3000	10000
PHENOL	1	20	1	50	20	1	50	20	1	50	20	10000
PYRENE	1000	3000	1000	1000	1000	3000	3000	3000	5000	5000	5000	10000
1,2,4-TRICHLOROBENZENE	2	6	2	6	700	2	6	3000	2	6	5000	10000
2,4,5-TRICHLOROPHENOL	4	600	4	1000	600	4	1000	600	4	100	200	10000
2,4,6-TRICHLOROPHENOL	0.7	20	0.7	20	20	0.7	20	20	0.7	20	20	4000
SW-846 9014 (mg/Kg)												
REACTIVE CYANIDE	~	~	~	~	~	~	~	~	~	~	~	~
SW-846 9030A (mg/Kg)												
REACTIVE SULFIDE	~	~	~	~	~	~	~	~	~	~	~	~
SW-846 9045C (pH Units)												
PH	~	~	~	~	~	~	~	~	~	~	~	~

NOTES:
1. An asterisk (*) following a detection limit indicates that the minimum laboratory reporting limit exceeds one or more of the regulatory criteria.
2. ND = Not detected above the lab reporting limits shown in parenthesis.
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Shaded values exceed the MCP Reportable Concentrations (RCs).
6. Bolded values exceed the Method 1 Cleanup Standards.
7. Con-Test Laboratory is not responsible for the regulatory content, data comparisons with regulations, or decisions made based on data comparisons shown in this deliverable. Please notify us should you be aware of any regulatory information that may not be correct or that h

Table 10
Summary of Soil Analytical Data: Composite Soil Samples
Lowell, MA

Parameter	SAMPLING LOCATION			
	Comp 2	**Comp 3**	**Comp 4**	**Comp1**
Sampling Date	9/16/2016 2:05:00 PM	9/16/2016 2:10:00 PM	9/16/2016 2:15:00 PM	9/16/2016 2:00:00 PM
Sample Depth	- Feet	- Feet	- Feet	- Feet
SM 2540G (% Wt)				
% Solids	78.6	79.1	82.4	77.9
SM21-22 2510B Modified (µmhos/cm)				
SPECIFIC CONDUCTANCE	27	18	20	16
SW-846 1030 (present/absent)				
IGNITABILITY	Present	Present	Present	Present
SW-846 6010C-D (mg/Kg dry) Metals Digestion				
ANTIMONY	ND (3.2)	ND (3.2)	ND (3.0)	ND (3.1)
ARSENIC	6.8	5.3	6.8	5.4
BARIUM	67	50	110	53
BERYLLIUM	0.33	ND (0.32)	0.31	ND (0.31)
CADMIUM	0.48	0.51	0.52	0.53
CHROMIUM	11	13	12	12
LEAD	19	19	14	22
NICKEL	13	14	13	16
SELENIUM	ND (6.4)	ND (6.3)	ND (5.9)	ND (6.3)
SILVER	ND (0.64)	ND (0.63)	ND (0.59)	ND (0.63)
THALLIUM	ND (3.2)	ND (3.2)	ND (3.0)	ND (3.1)
VANADIUM	42	43	44	44
ZINC	17	34	14	24
SW-846 7471B (mg/Kg dry) Metals Digestion				
MERCURY	ND (0.031)	ND (0.032)	ND (0.029)	ND (0.033)
SW-846 8081B (mg/Kg dry)				
ALDRIN	**ND (0.31) ***	**ND (0.32) ***	**ND (0.30) ***	**ND (0.31) ***
ALPHA-BHC	ND (0.31)	ND (0.32)	ND (0.30)	ND (0.31)
BETA-BHC	ND (0.31)	ND (0.32)	ND (0.30)	ND (0.31)
DELTA-BHC	ND (0.31)	ND (0.32)	ND (0.30)	ND (0.31)
GAMMA-BHC (LINDANE)	**ND (0.12) ***	**ND (0.13) ***	**ND (0.12) ***	**ND (0.13) ***
CHLORDANE	ND (1.2)	ND (1.3)	ND (1.2)	ND (1.3)
4,4'-DDD	ND (0.25)	ND (0.25)	ND (0.24)	ND (0.25)
4,4'-DDE	ND (0.25)	ND (0.25)	ND (0.24)	ND (0.25)
4,4'-DDT	ND (0.25)	ND (0.25)	ND (0.24)	ND (0.25)
DIELDRIN	**ND (0.25) ***	**ND (0.25) ***	**ND (0.24) ***	**ND (0.25) ***
ENDOSULFAN I	ND (0.31)	ND (0.32)	ND (0.30)	ND (0.31)
ENDOSULFAN II	ND (0.50)	**ND (0.51) ***	ND (0.49)	ND (0.50)
ENDOSULFAN SULFATE	ND (0.50)	ND (0.51)	ND (0.49)	ND (0.50)
ENDRIN	ND (0.50)	ND (0.51)	ND (0.49)	ND (0.50)
ENDRIN KETONE	ND (0.50)	ND (0.51)	ND (0.49)	ND (0.50)
HEPTACHLOR	**ND (0.31) ***	**ND (0.32) ***	ND (0.30)	**ND (0.31) ***
HEPTACHLOR EPOXIDE	**ND (0.31) ***	**ND (0.32) ***	**ND (0.30) ***	**ND (0.31) ***
HEXACHLOROBENZENE	ND (0.37)	ND (0.38)	ND (0.36)	ND (0.38)
METHOXYCHLOR	ND (3.1)	ND (3.2)	ND (3.0)	ND (3.1)
SW-846 8082A (mg/Kg dry)				
PCB 1016	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.13)
PCB 1221	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.13)
PCB 1232	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.13)
PCB 1242	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.13)
PCB 1248	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.13)
PCB 1254	0.26	**1.3**	0.17	0.34
PCB 1260	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.13)
PCB 1262	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.13)
PCB 1268	ND (0.12)	ND (0.13)	ND (0.12)	ND (0.13)
SW-846 8100 Modified (mg/Kg dry)				
TPH	**3200**	**3100**	**2100**	**2100**

Table 10
Summary of Soil Analytical Data: Composite Soil Samples
Lowell, MA

Parameter	SAMPLING LOCATION			
	Comp 2	Comp 3	Comp 4	Comp1
SW-846 8151A (µg/kg dry)				
2,4-D	ND (130)	ND (120)	ND (120)	ND (130)
2,4-DB	410	520	150	240
2,4,5-TP (SILVEX)	ND (13)	ND (12)	ND (12)	ND (13)
2,4,5-T	ND (13)	ND (12)	ND (12)	ND (13)
DALAPON	ND (310)	ND (310)	ND (300)	ND (320)
DICAMBA	ND (13)	ND (12)	ND (12)	ND (13)
DICHLOROPROP	ND (130)	ND (120)	ND (120)	ND (130)
DINOSEB	ND (63)	ND (62)	ND (59)	ND (63)
MCPA	ND (13000)	ND (12000)	ND (12000)	ND (13000)
MCPP	ND (13000)	ND (12000)	ND (12000)	ND (13000)
SW-846 8270D (mg/Kg dry)				
ACENAPHTHENE	**ND (4.2) ***	**ND (4.2) ***	**ND (4.1) ***	**ND (8.4) ***
ACENAPHTHYLENE	**ND (4.2) ***	**ND (4.2) ***	**ND (4.1) ***	**ND (8.4) ***
ACETOPHENONE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
ANILINE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
ANTHRACENE	ND (4.2)	ND (4.2)	ND (4.1)	ND (8.4)
BENZO(A)ANTHRACENE	ND (4.2)	ND (4.2)	ND (4.1)	**ND (8.4) ***
BENZO(A)PYRENE	**ND (4.2) ***	**ND (4.2) ***	**ND (4.1) ***	**ND (8.4) ***
BENZO(B)FLUORANTHENE	ND (4.2)	ND (4.2)	ND (4.1)	**ND (8.4) ***
BENZO(G,H,I)PERYLENE	ND (4.2)	ND (4.2)	ND (4.1)	ND (8.4)
BENZO(K)FLUORANTHENE	ND (4.2)	ND (4.2)	ND (4.1)	ND (8.4)
BIS(2-CHLOROETHOXY)METHANE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
BIS(2-CHLOROETHYL)ETHER	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
BIS(2-CHLOROISOPROPYL)ETHER	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
BIS(2-ETHYLHEXYL)PHTHALATE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
4-BROMOPHENYL PHENYL ETHER	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
BUTYLBENZYLPHTHALATE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
4-CHLOROANILINE	**ND (16) ***	**ND (16) ***	**ND (16) ***	**ND (33) ***
2-CHLORONAPHTHALENE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
2-CHLOROPHENOL	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
CHRYSENE	ND (4.2)	ND (4.2)	ND (4.1)	ND (8.4)
DIBENZ(A,H)ANTHRACENE	**ND (4.2) ***	**ND (4.2) ***	**ND (4.1) ***	**ND (8.4) ***
DIBENZOFURAN	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
DI-N-BUTYLPHTHALATE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
1,2-DICHLOROBENZENE	ND (8.4)	ND (8.5)	ND (8.3)	**ND (17) ***
1,3-DICHLOROBENZENE	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
1,4-DICHLOROBENZENE	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
3,3'-DICHLOROBENZIDINE	**ND (4.2) ***	**ND (4.2) ***	**ND (4.1) ***	**ND (8.4) ***
2,4-DICHLOROPHENOL	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
DIETHYLPHTHALATE	ND (8.4)	ND (8.5)	ND (8.3)	**ND (17) ***
2,4-DIMETHYLPHENOL	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
DIMETHYLPHTHALATE	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
2,4-DINITROPHENOL	**ND (16) ***	**ND (16) ***	**ND (16) ***	**ND (33) ***
2,4-DINITROTOLUENE	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
2,6-DINITROTOLUENE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
DI-N-OCTYLPHTHALATE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
FLUORANTHENE	ND (4.2)	ND (4.2)	ND (4.1)	ND (8.4)
FLUORENE	ND (4.2)	ND (4.2)	ND (4.1)	ND (8.4)
HEXACHLOROBENZENE	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
HEXACHLOROBUTADIENE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
HEXACHLOROETHANE	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
INDENO(1,2,3-CD)PYRENE	ND (4.2)	ND (4.2)	ND (4.1)	**ND (8.4) ***
ISOPHORONE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
2-METHYLNAPHTHALENE	**15**	**18**	**12**	**12**
O-CRESOL	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
M/P-CRESOL	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
NAPHTHALENE	**4.4**	**5.1**	**ND (4.1) ***	**ND (8.4) ***

Table 10
Summary of Soil Analytical Data: Composite Soil Samples
Lowell, MA

Parameter	SAMPLING LOCATION			
	Comp 2	**Comp 3**	**Comp 4**	**Comp1**
NITROBENZENE	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
2-NITROPHENOL	ND (8.4)	ND (8.5)	ND (8.3)	ND (17)
4-NITROPHENOL	ND (16)	ND (16)	ND (16)	ND (33)
PENTACHLOROPHENOL	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
PHENANTHRENE	**11**	**13**	10	**11**
PHENOL	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
PYRENE	12	13	13	12
1,2,4-TRICHLOROBENZENE	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
2,4,5-TRICHLOROPHENOL	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
2,4,6-TRICHLOROPHENOL	**ND (8.4) ***	**ND (8.5) ***	**ND (8.3) ***	**ND (17) ***
SW-846 9014 (mg/Kg)				
REACTIVE CYANIDE	ND (4.0)	ND (3.9)	ND (4.0)	ND (3.9)
SW-846 9030A (mg/Kg)				
REACTIVE SULFIDE	ND (20)	ND (20)	ND (20)	ND (20)
SW-846 9045C (pH Units)				
PH	9.0	9.6	9.0	8.6

NOTES:
1. An asterisk (*) following a detection limit indicate
2. ND = Not detected above the lab reporting limits
3. NT = Not tested.
4. ~ = No Method 1 Standard or UCL available
5. Shaded values exceed the MCP Reportable Conce
6. Bolded values exceed the Method 1 Cleanup Star
7. Con-Test Laboratory is not responsible for the regas changed.

ATTACHMENT 10

Tradebe Transfer Facility Permit

The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES

Thomas S. Burack, Commissioner

REGULAR MAIL
November 9, 2015

Mr. Sergio Nusimovich, President
Tradebe Environmental Services, LLC
1433 E 83rd Ave, Suite 200
Merrillville, IN 46410

Re: Issuance of Hazardous Waste Transfer Facility Permit No. DES-HW-TF-2015-01

Dear Mr. Nusimovich:

In accordance with RSA 147-A and Env-Hw 304.22 of the New Hampshire Hazardous Waste Rules (Rules), the Department of Environmental Services, Waste Management Division (Department) is issuing Hazardous Waste Transfer Facility Permit No. DES-HW-TF-2015-01. This Hazardous Waste Transfer Facility Permit was prepared on the basis of Tradebe Treatment and Recycling Northeast, LLC (Tradebe) Hazardous Waste Transfer Permit Application Information as provided to the Department on May 1, 2001 and supplemental permit application information received April 24, 2007; February 5, 2009; September 11, 2009; November 10, 2009; December 7, 2009; December 8, 2009; December 28, 2009; January 21, 2010; March 4, 2010; May 10, 2010; May 20, 2010; June 10, 2010; June 17, 2010; June 21, 2010; August 19, 2010; November 10, 2010; December 12, 2010; December 22, 2010; January 7, 2011; January 18, 2011; March 30, 2011; November 4, 2012; and January 29, 2013.

The Tradebe Hazardous Waste Transfer Facility is permitted to store for ten (10) days or less, bulk, and consolidate certain types of hazardous waste. Hazardous Waste Transfer Facility Permit No. DES-HW-TF-2015-01 is effective as of November 9, 2015 and is only valid by your facility's compliance with all conditions contained therein. The Hazardous Waste Transfer Facility Permit will expire on November 9, 2020.

If you have any questions on Hazardous Waste Transfer Facility Permit No. DES-HW-TF-2015-01, please contact Linda Birmingham, Waste Management Engineer, or me at (603) 271-2942.

Sincerely,

John J. Duclos, Administrator
Hazardous Waste Management Bureau
Waste Management Division

Enclosure: Permit No. DES-HW-TF-2015-01

cc: Town of Newington Planning Board
Board of Selectmen, Newington
Allen Brooks, Esq., NHDOJ
DES PIP: T. Drew
RCRA Tradebe Permit file
EPA Region I, S. Yee

ec: Michael Wimsatt, P.G., Director, WMD
Pamela Hoyt-Denison, P.E., Administrator, WMP
Tita LaGrimas, Tradebe Environmental Services, LLC.

HAZARDOUS WASTE TRANSFER FACILITY PERMIT

Issued by the NH Department of Environmental Services, Waste Management Division (Department) pursuant to RSA 147-A and Chapter Env-Hw 300 of the New Hampshire Hazardous Waste Rules (HW Rules)

I. **PERMIT/FACILITY IDENTIFICATION**:
Permit No.: DES-HW-TF-2015-01
EPA ID No.: NHD980521843
Permittee: Tradebe Treatment and Recycling Northeast, LLC.
Facility Name: Tradebe Treatment and Recycling Northeast, LLC.
Facility Location: 410 Shattuck Way, Newington, NH
Facility Type: Hazardous Waste Transfer Facility
Service Type: Commercial
Facility Description: The facility is a Hazardous Waste Transfer Facility permitted to store for ten (10) days or less, bulk, and consolidate certain types of hazardous waste that are in a transit mode. This permit does not allow treatment, storage for greater than ten (10) days, or disposal of hazardous waste.

II. **FILE REFERENCE/RECORD OF APPLICATION:**
Date(s) Received: The initial renewal application was received on May 1, 2006. Supplemental permit application information was received as identified in Part A.4 of the attached terms and conditions.

III. **TERMS AND CONDITIONS:** See attached conditions, pages 2 – 13, organized in parts as follows:
Part A: Applicability, Scope and Basis
Part B: Administrative Requirements
Part C: Authorized Hazardous Waste and Storage Limits
Part D: Facility Operating Requirements

IV. **EXPIRATION DATE**: In accordance with Env-Hw 304.22, this permit shall expire five (5) years from the issue date/date of signature shown below, and is subject to renewal in accordance with Env-Hw 304.31.

V. **AUTHORIZATION SIGNATURE:** Pursuant to RSA 147-A and Env-Hw 304.22 of the HW Rules, this permit is hereby issued to the Permittee, identified in Section I above, to authorize the operation of the Hazardous Waste Transfer Facility identified in Section I above, subject to the terms and conditions provided in Section III above.

BY EXERCISING ANY RIGHTS UNDER THIS AUTHORIZATION, THE PERMITTEE HAS AGREED TO ALL TERMS AND CONDITIONS OF THIS PERMIT. Failure to comply with the terms and conditions could result in administrative, civil, or criminal penalties, and suspension or revocation of the permit. No liability is incurred by the State of New Hampshire by reason of any approval of this hazardous waste transfer facility. Approval by the Department is based on plans, specifications and information provided by the Permittee, which if false, misleading or incomplete shall provide grounds for suspension or revocation of the permit. No warranty/guarantee is intended or implied by reason of any advice given by the Department or its staff.

Issuance of this permit does not eliminate the Permittee's obligation to obtain all requisite federal, state or local permits, licenses or approvals, or to comply with all other applicable federal, state, district and local permits, ordinances, laws, approvals or conditions relating to the location, construction, operation, or closure of the Hazardous Waste Transfer Facility.

Michael J. Wimsatt, P.G., Director
Waste Management Division

November 9, 2015
Date

Contact the Waste Management Division, 29 Hazen Drive, Concord, NH [telephone (603) 271-2942] if there are questions

SECTION III: TERMS AND CONDITIONS

PART A: APPLICABILITY, SCOPE, AND BASIS

A.1. Applicability: This permit applies to the operation of a hazardous waste transfer facility at 410 Shattuck Way, Newington, NH by Tradebe Treatment and Recycling Northeast, LLC, formerly United Oil Recovery, Inc. As used in this permit, the terms "hazardous waste transfer facility", "transfer facility" and "facility" are synonymous and, pursuant to Env-Hw 104.61, mean "all land and structures, including loading docks and parking, and other areas, where hazardous wastes in transit, are transferred from vehicle to vehicle, or are removed from a transport vehicle, and temporarily stored for ten (10) days or less".

A.2. Definitions: The definitions of terms provided in Parts Env-Hw 103 and Env-Hw 104 of the NH Code of Administrative Rules for Hazardous Waste Management (HW Rules) apply to this permit. Additionally, as used in this permit, the following definitions of terms apply:

a. "Back Operations Area" means the area so designated and shown on the Site Plan identified as Sheet #NH-1, dated 06-29-2010, stamped by Thomas Reilly, PE License #7377 that the Permittee submitted to the Department as part of the Permit Application identified in A.4 below.

b. "Bulk" means intentionally combining or co-mingling hazardous waste from any shipping container or tank with hazardous waste in another shipping container or tank, provided that it does not constitute treatment as defined in Env-Hw 104.67.

c. "Consolidate" means moving unopened drums and other U.S. Department of Transportation (DOT) containers from one truck or trucks to another truck, for efficiency of transport. The term does not include mixing, pumping, altering packaging or handling the containers in a manner that might cause the contents to be released.

d. "DOT" means the United States Department of Transportation.

e. "Hazardous Waste Transfer Dock" means the area so designated and shown on the Site Plan identified as Sheet #NH-1, dated 06-29-2010, stamped by Thomas Reilly, PE License #7377 that the Permittee submitted to the Department as part of the Permit Application identified in A.4 below.

A.3. Scope of Permitted Operations:

a. The scope of permitted operations at the transfer facility is as specified in Parts B, C, and D of these terms and conditions. Part B identifies permit administration requirements. Part C identifies the types and quantities of hazardous wastes that the facility is permitted to receive bulk or consolidate, and temporarily store, and the locations for doing so. Part D identifies facility operating requirements.

b. Nothing in this permit authorizes the Permittee to treat, store for longer than ten (10) days, or dispose of hazardous waste at the transfer facility.

A.4. Basis of Approval/Supporting Documentation: This permit is prepared pursuant to RSA 147-A and the HW Rules in Env-Hw 100-1100, and is based on information provided by the Permittee in the below listed permit renewal application documents, hereinafter referred to as the Permit Application:

a. Hazardous Waste Transfer Facility Renewal Permit Application document, received May 1, 2006.

b. Supplemental permit application information received: April 24, 2007; February 5, 2009; September 11, 2009; November 10, 2009; December 7, 2009; December 8, 2009; December 28, 2009; January 21, 2010; March 4, 2010; May 10, 2010; May 20, 2010; June 10, 2010; June 17, 2010; June 21, 2010; August 19, 2010; November 10, 2010; December 12, 2010; December 22, 2010; January 7, 2011; January 18, 2011; March 30, 2011; November 4, 2012; and January 29, 2013.

PART B: ADMINISTRATIVE REQUIREMENTS:

B.1. Regulatory Requirements: The Permittee must comply with RSA 147-A, the HW Rules, all other applicable state and federal regulations, and the terms and conditions of this permit, as amended. Further, the operation of this transfer facility is expected to conform to the proposal submitted in the Permit Application. If a conflict exists between the proposal presented in the Permit Application and the terms and conditions of this permit, the terms and conditions of this permit shall apply, subject to any clarification provided by the Department if necessary.

B.2. Permit Actions After Issue Date: This permit may be modified, revoked and reissued, suspended or terminated by the Department for cause pursuant to Env-Hw 304.26, Env-Hw 304.27, and Env-C 209.03. Additionally, the Permittee may request the Department to modify the permit pursuant to Env-Hw 304.25, terminate the permit pursuant to Env-Hw 304.27, transfer the permit pursuant to Env-Hw 304.28, or renew the permit pursuant to Env-Hw 304.31. Relative to any request filed by the Permittee to modify, terminate, or renew the permit, all terms and conditions of the permit shall remain in effect until the Department issues a final decision on such request.

B.3. Severability: The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstances is held

invalid, the application of such provision to other circumstances, unless the provision is held invalid under all circumstances, and the remainder of this permit shall not be affected thereby.

B.4. Duty to Mitigate: The Permittee shall take all reasonable steps to prevent releases of hazardous waste to the environment and adverse impacts on human health or the environment.

B.5. Duty to Provide Information: The Permittee shall furnish to the Department, within a reasonable time, information the Department requests to determine whether cause exists for modifying, suspending, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall furnish to the Department, upon request, copies of records required to be kept by this permit.

B.6. Inspection and Entry: The Permittee shall allow authorized representatives of the Department, at reasonable times and upon presentation of credentials and other documents as may be required by law, to:

a. Enter the transfer facility or other premises where the Permittee conducts its activities or keeps records under the conditions of this permit;

b. Have access to and copy any record kept under the conditions of this permit;

c. Inspect and photograph the facility, associated equipment including but not limited to monitoring and control equipment, appurtenances, practices, or operations regulated or required under this permit; and

d. Sample and monitor for the purpose of determining permit compliance or as otherwise authorized.

B.7. Planned Changes and Modification: In accordance with B.2 above, the Permittee shall not make any physical alterations or additions to the transfer facility and shall not manage hazardous waste in any modified portion of the transfer facility prior to being authorized to do so by a modification of this permit obtained in accordance with Env-Hw 304.25, inclusive of 40 CFR 270.42. The Department shall not authorize use of the modified transfer facility for the management of hazardous waste until:

a. The Permittee has submitted to the Department by certified mail or hand delivery a letter signed by the Permittee and stamped by a qualified professional engineer licensed to practice in New Hampshire stating that modifications made to the transfer facility comply with the modified permit and all applicable state statutes and rules; and

b. The Department has inspected the modified permitted transfer facility, and has notified the Permittee in writing that, based on available information, the Department is satisfied the modifications conform to the requirements of the modified permit and all applicable state statutes and rules.

B.8. Permit Renewal and Continuation of Expiring Permit: If the Permittee wishes to continue an activity authorized by this permit after the expiration date of this permit, the Permittee shall apply at least 270 days before the expiration date to have the permit renewed pursuant to Env-Hw 304.31. Pursuant to RSA 541-A:30 and Env-Hw 304.30, if a timely and sufficient application for permit renewal has been made in accordance with Env-Hw 304.31, this permit shall not expire until the Department has taken final action on the application for renewal.

B.9. Permit Transfer: Transfer of this permit to a new owner or operator is subject to RSA 147-A:4, IV-a and the HW Rules, including Env-Hw 304.28.

B.10. Property Rights: The issuance of this permit does not convey any property rights of any sort or any exclusive privilege. The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state, federal, or local laws or regulations.

B.11. Confidential Information: Claims of confidentiality relative to a trade secret are subject to the provisions of RSA 147-A:7, II and Env-Hw 203.

B.12. Additional Information: If the Permittee becomes aware that it failed to submit any relevant facts or that it submitted incorrect information in the Permit Application or in any report to the Department, it shall immediately notify the Department and submit the correct facts or information in writing.

B.13. Permit Availability: The Permittee shall keep a copy of this permit, including all permit application documents, at the transfer facility and make those documents available to the Department, facility employees, customers, and local officials when requested.

PART C: AUTHORIZED HAZARDOUS WASTE AND STORAGE LIMITS

C.1. Authorized Hazardous Waste: Subject to the prohibition stated in C.2 below, this permit authorizes the facility to receive the types of hazardous wastes specified in Table 1 below, provided that:

a. It is delivered to the facility by a transporter registered in accordance with Env-Hw 600 to transport hazardous waste in New Hampshire using a manifest in accordance with Env-Hw 604; and

b. When received, the waste is properly packaged, labeled and placarded in accordance with Env-Hw 603.05.

C.2. Prohibited Hazardous Waste: The Permittee is prohibited from receiving DOT Class I explosives.

TABLE 1—Authorized Hazardous Waste	
Names/ Descriptions of Hazardous Waste	EPA & State Hazardous Waste #
1. Hazardous Wastes identified as follows:	
a. Env-Hw 403.03 (Ignitability)	D001
b. Env-Hw 403.04 (Corrosivity)	D002 & NH02
c. Env-Hw 403.05 (Reactivity)	D003
d. Env-Hw 403.06 (Toxicity Characteristic)	D004-D043
2. Acutely Hazardous Wastes listed in Env-Hw 402.04	P waste code listed & NH03
3. Toxic Hazardous Wastes listed in Env-Hw 402.05	U waste code listed
4. Generic Industrial Process Wastes listed in Env-Hw 402.06	F waste code listed & NH01
5. Specific Industrial Process Wastes listed in Env-Hw 402.07	K waste code listed
6. Hazardous Waste Mixtures as defined in Env-Hw 404.01	Applicable EPA or NH code
7. Spills, Residues, and Contaminated Soil, Water, and Debris as defined in Env-Hw 404.02	Applicable EPA or NH code
8. Treatment Storage and Disposal Residues as defined in Env-Hw 404.03	Applicable EPA or NH code
9. Hazardous Waste Residues in Empty Containers as defined in Env-Hw 404.04	Applicable EPA or NH code
10. Used oil contaminated with Polychlorinated Biphenyls (PCBs) below 50 parts per million Toxic Substances Control Act (TSCA) levels	NH01
11. Universal Waste including lamps, cathode ray tubes, pesticides, thermostats, antifreeze, and batteries, as defined in Env-Hw 1100.	N/A

C.3. Authorized Handling: Subject to the location limitations specified in C.4 below and the capacity limits specified in C.5 below, this permit authorizes the Permittee to manage hazardous waste at the facility as follows.

a. The Permittee may store authorized hazardous waste for (ten) 10 days or less from the date the waste is received.

b. The Permittee may consolidate containers of the authorized hazardous wastes identified in Table 1, provided that the containers are unopened, properly labeled and in good condition, and the work is done in conformance with DOT compatibility requirements in 49 CFR 177.848.

c. The Permittee may bulk only those hazardous wastes identified in Table 2, below, except the Permittee shall not bulk reactive or incompatible wastes under any circumstance.

d. The Permittee shall not treat, store for longer than ten (10) days, or dispose of any hazardous waste at this facility.

TABLE 2—Hazardous Waste Approved for Bulking, Excluding Reactive or Incompatible Wastes	
Names/ Descriptions of Hazardous Waste	EPA & State Hazardous Waste #
1. Antifreeze contaminated with ignitability characteristic materials, process solvents listed in Env-Hw 402.06, organic solvents listed in Env-Hw 402.05, and/or characteristic metals and organics listed in Env-Hw 403.06	F001, F002, F003 and F005, U waste code listed, D001, and/or D004 to D043
2. Water soluble coolants contaminated with process solvents listed in Env-Hw 402.06, organic solvents listed in Env-Hw 402.05, and/or characteristic metals and organics listed in Env-Hw 403.06	F001, F002, F003 and F005, U waste code listed, and/or D004 to D043
3. Corrosive wastes, meeting the characteristics of Env-Hw 403.04, and/or contaminated with characteristic metals listed in Env-Hw 403.06	D002, NH02, and/or D004 to D011
4. Ignitable hazardous waste including mineral spirits, gasoline, aviation fuel, and/or paint-related wastes both contaminated and uncontaminated with process solvents listed in Env-Hw 402.06, organic solvents listed in Env-Hw 402.05, and/or characteristic metals and organics listed in Env-Hw 403.06	D001, F001, F002, F003 and F005, U waste code listed, and/or D004 to D043
5. Waters contaminated with process solvents listed in Env-Hw 402.06, organic solvents listed in Env-Hw 402.05, and/or characteristic metals and organics listed in Env-Hw 403.06	F001, F002, F003 and F005, U waste code listed, and/or D004 to D043
6. Used oil unsuitable for recycling under Env-Hw 807, contaminated with process solvents listed in Env-Hw 402.06, organic solvents listed in Env-Hw 402.05, and/or characteristic metals and organics listed in Env-Hw 403.06	NH01, F001, F002, F003 and F005, U waste code listed, and/or D004 to D043
7. Oily sludge contaminated with process solvents listed in Env-Hw 402.06, organic solvents listed in Env-Hw 402.05, and/or characteristic metals and organics listed in Env-Hw 403.06	NH01, F001, F002, F003 and F005, U waste code listed, and/or D004 to D043,
8. Universal Waste including lamps, cathode ray tubes, pesticides, thermostats, antifreeze, and/or batteries listed in Env-Hw 1100.	N/A

C.4. Authorized Handling and Storage Locations:

a. Receipt of authorized hazardous waste shall occur only at the Hazardous Waste Transfer Dock and the Back Operations Area.

b. All hazardous waste consolidation and bulking activities shall be conducted at the Hazardous Waste Transfer Dock in the paved hazardous waste transfer area

being shown on the Site Plan identified as Sheet #NH-1, dated 06-29-2010, stamped by Thomas Reilly, PE License #7377 that the Permittee submitted to the Department as part of the Permit Application.

c. The Back Operations Area shall be used only to temporarily store authorized hazardous waste in roll-off containers or other portable containers, including but not limited to frac tanks and vacuum trucks. Under no circumstance shall hazardous waste be consolidated or bulked in the Back Operations area.

d. Containers, tanker trucks, and other bulk containers holding hazardous waste shall be stored only in the designated areas shown on the Site Plan identified as Sheet #NH-1, dated 06-29-2010, stamped by Thomas Reilly, PE License #7377 that the Permittee submitted to the Department as part of the Permit Application.

e. Universal Waste, identified in Table 2 above, may be temporarily stored and consolidated or bulked at the Hazardous Waste Transfer Dock in the paved hazardous waste transfer area provided that those wastes are compatible with hazardous waste stored at the same location and are stored in compliance with the Universal Waste Rules in Env-Hw 1100.

f. Used Oil being managed under Env-Hw 807 may be temporarily stored and consolidated or bulked at the Hazardous Waste Transfer Dock in the paved hazardous waste transfer area provided that those wastes are compatible with hazardous waste stored at the same location.

g. Non-hazardous wastes, including solid wastes, oils, and PCB wastes (greater than or equal to 50 parts per million PCBs), not covered by this permit may also be temporarily stored and consolidated or bulked at the Hazardous Waste Transfer Dock provided that those wastes are compatible with hazardous waste stored at the same location and are stored in compliance with applicable requirements, including but not limited to the Solid Waste Facility Permit, Rules for Petroleum Storage in Env-Or 300, rules for storing regulated substances in Env-Wq 401, and TSCA PCB regulations at 40 CFR part 761.

C.5. <u>Storage Capacity and Time Limits</u>:

a. Subject to C.6 below, the combined total volume of hazardous and non-hazardous waste stored at the Hazardous Waste Transfer Dock, whether in containers, tank trucks, and other shipping containers, shall not exceed 38,720 gallons.

b. Subject to C.6 below, hazardous wastes stored in the Back Operation Area shall not exceed 300 cubic yards, whether in roll-off containers or other portable containers including but not limited to frac trucks and vacuum trucks.

c. Hazardous waste shall not be stored at the facility longer than ten (10) days from the date of receipt.

d. Loads of consolidated waste shall be removed from the transfer facility at or prior to any container in the load reaching its individual ten (10) day storage limit.

e. Bulked waste shall be removed from the transfer facility at or prior to the ten (10) day storage limit applicable to the component of that waste that was received earliest at the facility.

f. Non-hazardous waste stored at the facility shall be managed and removed in accordance with the Solid Waste Facility Permit DES-SW-TP-97-018 (and any subsequently issued Solid Waste Facility Permit), Rules for Petroleum Storage in Env-Or 300, rules for storing regulated substances in Env-Wq 401, regulations for storing PCB TSCA waste, and other applicable requirements.

C.6. Waste Excluded from Facility Storage Capacity Calculations: Hazardous waste that is located on a legally registered, properly insured vehicle that is in a condition for legal use on the highway and is in the possession of a Hazardous Waste Transporter registered in NH pursuant to Env-Hw 600, shall not be considered when calculating the volume of hazardous waste that is subject to the volumetric storage capacity limits specified in C.5 above.

PART D: FACILITY OPERATING REQUIREMENTS

D.1. General Operation Requirements: The Permittee shall comply with the following requirements and standards set forth in Env-Hw 708 including the operation requirements in Env-Hw 708.02 and the applicable Technical Standards in Env-Hw 708.03, as may be amended:

a. 40 CFR 264.12 - Required notices;

b. 40 CFR 264.14 - Security;

c. 40 CFR 264.15 - General inspection requirements;

d. 40 CFR 264.16 - Personnel training;

e. 40 CFR 264.17 - General requirements for ignitable, reactive, or incompatible wastes, including those wastes or materials listed in 40 CFR 264 Appendix V;

f. 40 CFR 264, Subpart C - Preparedness and prevention, for transfer facilities, aisle space requirements shall not apply to waste containers stored on vehicles used to transport that waste;

g. 40 CFR 264, Subpart D - Contingency plan and emergency procedures;

h. 40 CFR 264, Subpart G - Closure and Post-Closure;

i. 40 CFR 264, Subpart H - Financial Requirements; and

j. 40 CFR 264, Subpart I - Use and Management of Containers.

D.2. Additional Operational Requirements: The Permittee shall comply with the following requirements:

a. Subject to the limitations specified in Env-Hw 104.61, all hazardous wastes received at the facility, including hazardous wastes managed by third party transporters, shall be shipped within ten (10) days of receipt to an off-site permitted hazardous waste facility via a NH registered hazardous waste transporter using manifests in accordance with the provisions of Env-Hw 600.

b. The Permittee shall not accept any hazardous waste that has not been profiled as to its waste characterization or identification and pre-accepted by an off-site Treatment, Storage, or Disposal Facility (TSDF).

c. Except as may be modified by the terms and conditions of this permit, the Permittee shall operate the facility in accordance with the procedures described in the Permit Application, specifically: Section 6 [Facility Operations Plan]; Appendix 6A [General Operations Plan]; Appendix 6B [Waste Management Plan]; Appendix 6F [Procedures for Ignitable, Reactive, and Incompatible Wastes]; and Appendix 6K & 6L [Container Management].

d. The Permittee shall implement procedures to ensure that any hazardous wastes to be bulked are compatible and that no adverse chemical reactions will occur as a result of bulking operations. Hazardous wastes that are bulked shall be of the same DOT hazard class, EPA hazardous waste code, or chemical compatible group, and shall conform to the guidelines defined in the compatibility tables referenced in Appendix V of 40 CFR Part 264.

e. No hazardous waste shall be stored outside or at the Hazardous Waste Transfer Dock during non-business hours. During non-business hours, all hazardous waste at the facility shall be stored in secure DOT transportation vehicles or in the Permittee's secure trucks, trailers, and storage containers.

f. All vehicles used to store hazardous waste or transport hazardous waste from the facility shall be lawfully registered and inspected for use on NH highways, operated by a Hazardous Waste Transporter holding a valid registration to transport hazardous waste in NH pursuant to Env-Hw 600, inspected in accordance with DOT standards; and insured for highway use.

g. The Permittee shall inspect the transfer facility in accordance with procedures described in the Permit Application, specifically: Appendix 6D [Inspection Program] to ensure all hazardous wastes are stored safely (i.e., inspected daily Monday through Friday (excluding Holidays) for malfunctions, deterioration, operator errors, discharges, leaks etc.) and that the hazardous wastes are not

stored longer than ten (10) days. Inspection records shall be documented on the transfer facility's inspection log form, as required by Env-Hw 708.02 (a)(4) inclusive of 40 CFR Section 264.15 which is incorporated by reference therein.

D.3. Environmental and Health Requirements: Notwithstanding any provisions in Env-Hw 700, the Permittee shall operate the permitted transfer facility in a manner that:

a. Meets all surface water standards specified in the Federal Clean Water Act and RSA 485-A, and groundwater criteria established by the Federal Safe Drinking Water Act and Env-Or 600;

b. Meets all air emission limits specified in the Federal Clean Air Act and State implementation plans;

c. Prevents exposure of transfer facility workers to chemicals in violation of Occupational Safety and Health Administration regulations or New Hampshire RSA 277-A;

d. Prevents exposure of humans or the environment to harmful quantities of hazardous waste or its constituents;

e. Prohibits fugitive emissions of hazardous waste or constituents; and

f. Complies with the public notification requirements of Env-Hw 702.06.

D.4. Proper Operation and Maintenance: At all times, the Permittee shall properly operate and maintain all transfer facility storage containment and control systems and related appurtenances.

D.5. Spill Response/Discharge Clean-up: In the event of a spill or release of hazardous waste at the facility, the Permittee shall:

a. Comply with and undertake such investigation and remedial actions as required by Env-Hw 706 and Env-Or 600;

b. Immediately, not to exceed one hour from discovery of the release, report any discharge of hazardous waste, or any discharge of a material that becomes a hazardous waste when discharged or that poses a threat to human health or the environment, including but not limited to any discharge into the bermed containment area, interceptor trench drains, stormwater holding tanks, storm or sanitary sewers, or onto the land or into the air, groundwater or surface waters; and

c. Immediately collect and properly containerize hazardous waste spills or leaks, and decontaminate the impacted area. Hazardous waste generated from these events shall be managed in accordance with all applicable HW Rules.

D.6. Liability Coverage: The Permittee shall maintain liability coverage for sudden and accidental occurrences in the amount of at least one million dollars ($1,000,000) per occurrence with an annual aggregate of at least two million dollars ($2,000,000), exclusive of legal defense costs. The Permittee shall maintain the liability coverage by an approved liability coverage mechanism, as required by Env-Hw 708.02(a)(13), inclusive of 40 CFR Part 264, Subpart H that is incorporated by reference therein, until such time as the Department concurs that the transfer facility is permanently closed in accordance with the provisions of this permit.

D.7. Closure Requirements: The Permittee shall comply with the following facility closure requirements, as amended.

a. Env-Hw 708.02(12), inclusive of 40 CFR Part 264 - Subpart G;

b. All conditions of this permit; and

c. The provisions of the Closure Plan submitted as Appendix 6 I of the Permit Application.

D.8. Financial Assurance for Closure:

a. Pursuant to Env-Hw 708.02(a)(13), the Permittee shall provide adequate financial assurance to guarantee the cost of closing the facility in accordance with a Department approved closure plan that satisfies the requirements of 40 CFR Part 264.143, Subpart H, and is based on the cost to have an independent third party remove and dispose of all hazardous wastes the facility is authorized to manage under Section III. Part C of this permit.

b. Within 60 days of the issue date of this permit, the Permittee shall provide proof of such financial assurance using a Department approved financial assurance mechanism.

c. The Permittee shall continue to provide financial assurance until such time as the Department concurs in writing that the transfer facility is permanently closed in accordance with the provisions of this permit.

d. The Permittee shall update the closure cost estimate annually.

e. The Permittee shall submit the updated closure cost estimate and corresponding proof of the financial assurance to the Department in January of each year.

f. The Permittee shall not change the mechanism for providing financial assurance unless the change is approved by the Department in writing.

D.9. Notification of Bankruptcy Proceedings. The Permittee shall notify the Department by certified mail of the commencement of any voluntary or involuntary proceeding under the

United States Bankruptcy Code (Title 11, U.S. Code), naming the owner or operator as debtor, within ten (10) days after commencement of the proceeding.

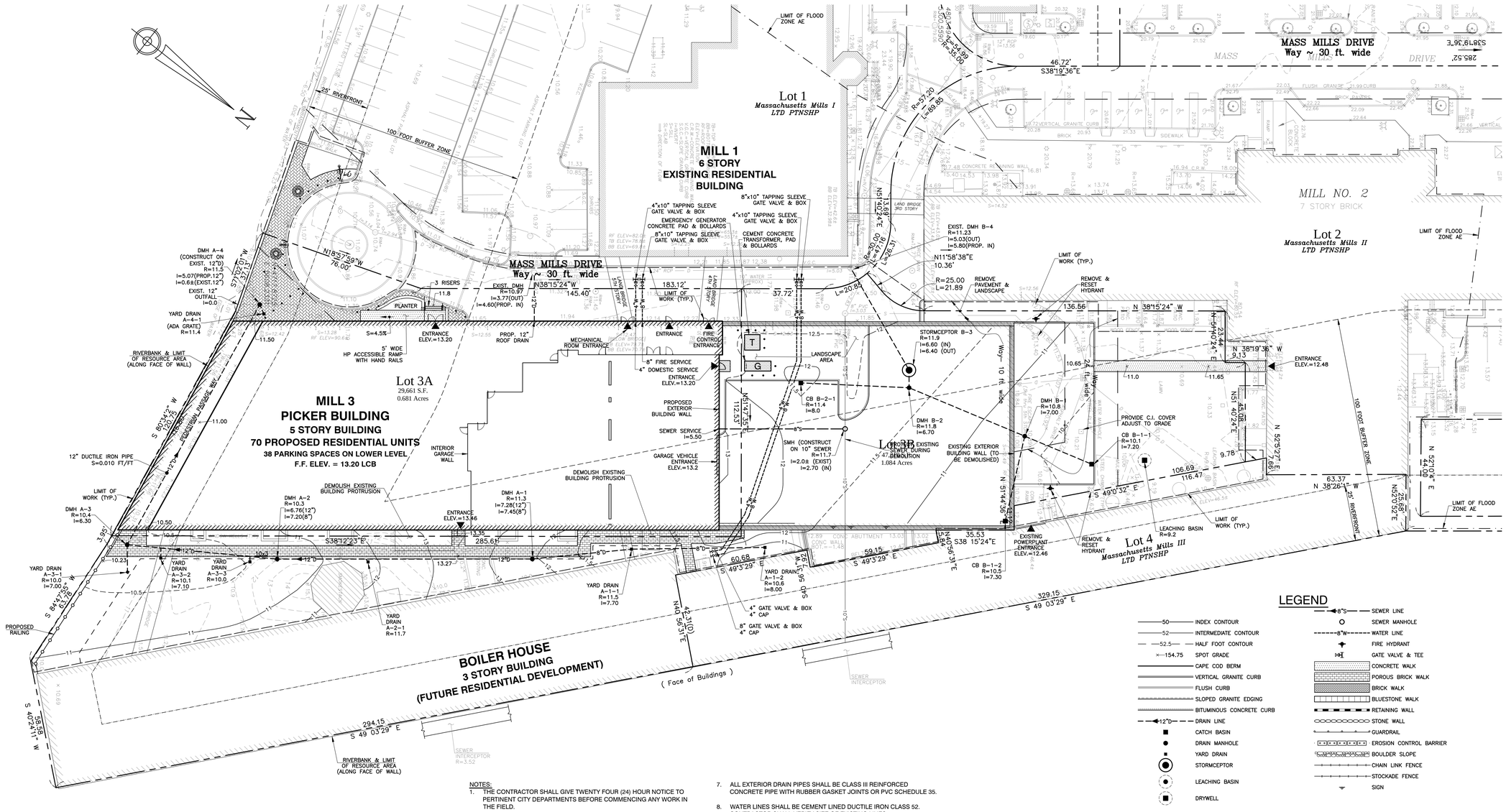
D.10. Recordkeeping and Reporting:

a. The Permittee shall maintain a copy the Permit Application and such other records required pursuant to Env-Hw 304.13.

b. The Permittee shall keep a written operating record and maintain the operating record at the facility in accordance with Env-Hw 705.

ATTACHMENT 11

Utility Corridor Information



LEGEND

- 50 — INDEX CONTOUR
- 52 — INTERMEDIATE CONTOUR
- 52.5 — HALF FOOT CONTOUR
- ×154.75 — SPOT GRADE
- CAPE COD BERM
- VERTICAL GRANITE CURB
- FLUSH CURB
- SLOPED GRANITE EDGING
- BITUMINOUS CONCRETE CURB
- 12"D — DRAIN LINE
- CATCH BASIN
- DRAIN MANHOLE
- YARD DRAIN
- STORMCEPTOR
- LEACHING BASIN
- DRYWELL
- 8"S — SEWER LINE
- SEWER MANHOLE
- 8"W — WATER LINE
- FIRE HYDRANT
- GATE VALVE & TEE
- CONCRETE WALK
- POROUS BRICK WALK
- BRICK WALK
- BLUESTONE WALK
- RETAINING WALL
- STONE WALL
- GUARDRAIL
- EROSION CONTROL BARRIER
- BOULDER SLOPE
- CHAIN LINK FENCE
- STOCKADE FENCE
- SIGN

NOTES:

1. THE CONTRACTOR SHALL GIVE TWENTY FOUR (24) HOUR NOTICE TO PERTINENT CITY DEPARTMENTS BEFORE COMMENCING ANY WORK IN THE FIELD.
2. ALL SITE WORK AND MATERIALS SHALL CONFORM WITH THE CITY OF LOWELL BUILDING REQUIREMENTS.
3. UNDERGROUND UTILITIES, AS SHOWN, WERE DERIVED FROM FIELD INVESTIGATION AND PLANS OF RECORD AND MAY NOT BE COMPLETE OR ACCURATE. CONTACT "DIG-SAFE" A MINIMUM OF 72 HOURS PRIOR TO COMMENCING SITE WORK.
4. ALL DISTURBED AREAS, NOT OTHERWISE DESIGNATED, SHALL BE COVERED WITH 4" OF LOAM AND SEEDED.
5. RIM ELEVATIONS OF DRAINAGE AND SANITARY SEWER MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH. ADJUST ALL OTHER RIM ELEVATIONS OF EXISTING MANHOLES, WATER GATES, GAS GATES AND OTHER UTILITIES TO FINISH GRADE WITHIN LIMITS OF SITE WORK.
6. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM AND OTHER PRIVATE UTILITIES BY THE RESPECTIVE UTILITY COMPANIES, AS REQUIRED.
7. ALL EXTERIOR DRAIN PIPES SHALL BE CLASS III REINFORCED CONCRETE PIPE WITH RUBBER GASKET JOINTS OR PVC SCHEDULE 35.
8. WATER LINES SHALL BE CEMENT LINED DUCTILE IRON CLASS 52. CONTRACTOR SHALL VERIFY SIZE OF EXISTING LINES
9. SEDIMENT TRACKED ONTO ADJACENT DRIVES SHALL BE SWEPT AT THE CONCLUSION OF EACH CONSTRUCTION DAY.
10. ANY AREAS OUTSIDE THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR THE IMPLEMENTATION AND COMPLIANCE WITH THE CONSERVATION COMMISSION'S ORDER OF CONDITIONS. A COPY OF THE ORDER MUST BE AT THE SITE AT ALL TIMES.
12. SEWER PIPE SHALL BE PVC CONFORMING TO ASTM D 3034-SDR35. FITTINGS SHALL BE RUBBER RING CONFORMING TO ASTM D 3212.
13. REFER TO LANDSCAPE PLANS FOR PAVING MATERIALS AND LAYOUT INFORMATION.

PLAN REFERENCES:

1. EXISTING CONDITIONS INCLUDING BUILDINGS, TOPOGRAPHY AND UTILITIES TAKEN FROM A PLAN TITLED TOPOGRAPHIC PLAN, "MASS MILLS", LOWELL MASS DATED OCTOBER 6, 2003 AND REVISED AUGUST 26, 2004 BY R. E. CAMERON & ASSOCIATES, INC. OF NORWOOD, MASSACHUSETTS.
2. PROPERTY LINE TAKEN FROM A PLAN TITLED "PLAN OF LAND, MASSACHUSETTS MILLS, 169.2 BRIDGE STREET, LOWELL, MASSACHUSETTS". PLAN PREPARED BY R. E. CAMERON & ASSOCIATES, INC. OF NORWOOD, MA AND DATED APRIL 22, 2014.

20 0 10 20 40
HORIZONTAL GRAPHIC SCALE IN FEET

hwmoore
ASSOCIATES, INC.
CIVIL ENGINEERING | LAND PLANNING
112 Shawmut Avenue, Boston, MA 02118-2227
tel: 617-357-8145 fax: 617-357-9495 web: hwmoore.com

R-M Developer LLC
Massachusetts Mills III - **PICKER BLDG**
Lowell, Massachusetts

Russell Scott Steedle & Capone Architects Inc.
18 Brattle Street Cambridge Massachusetts 02138 617-661-5880 Fax 661-0613

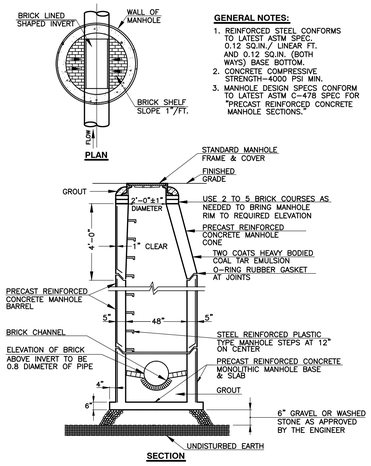
GRADING & UTILITY PLAN

Date: JULY 8, 2014
Rev:
Scale: 1"=20'

C-4

3302-S8.dwg Saved: 7/8/2014 11:51 AM Plotted: Jul 08, 2014 11:52:0am

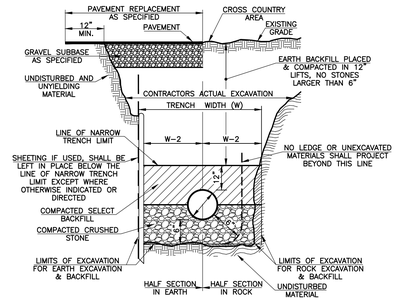
File Name: C:\3302\3302-S8.dwg Saved 7/8/2014 11:51 AM Plotted: Jul 08, 2014 11:52:00am
Rev. C4-ISR042802 File Style: 1BDGC.ctb Plotted By: John Gatewall



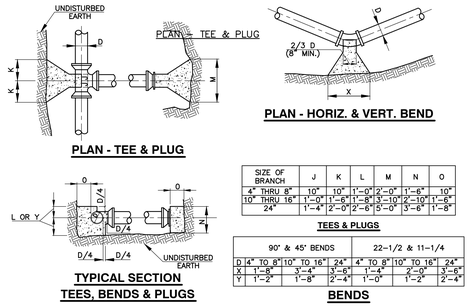
GENERAL NOTES:

1. REINFORCED STEEL CONFORMS TO LATEST ASTM SPEC. 0.12 SQ.IN./ LINEAR FT. AND 0.12 SQ.IN. (BOTH WAYS) BASE BOTTOM.
2. CONCRETE COMPRESSIVE STRENGTH–4000 PSI MIN.
3. MANHOLE DESIGN SPECS CONFORM TO LATEST ASTM C–478 SPEC FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."

PRECAST CONCRETE SEWER MANHOLE
(NOT TO SCALE)



TYPICAL TRENCH DETAIL FOR SEWER, DRAIN & WATER
(NOT TO SCALE)



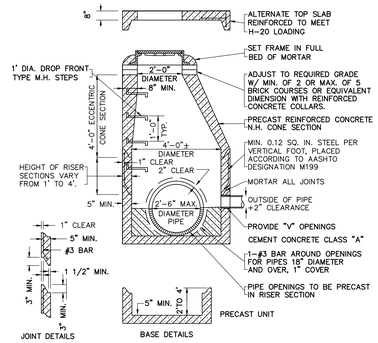
SIZE OF BRANCH	J	K	L	M	N	O
4" THRU 8"	10"	10"	1'–0"	2'–0"	1'–6"	10"
10" THRU 16"	1'–0"	1'–6"	1'–8"	3'–10"	2'–10"	1'–6"
24"	1'–4"	2'–0"	2'–6"	5'–0"	3'–6"	1'–8"

TEES & PLUGS

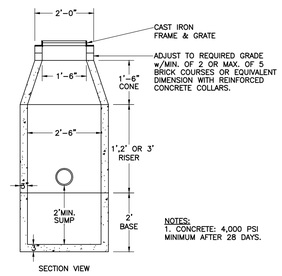
	90° & 45° BENDS			22–1/2 & 11–1/4		
D	4" TO 8"	10" TO 16"	24"	4" TO 8"	10" TO 16"	24"
X	1'–8"	3'–4"	3'–6"	1'–4"	2'–0"	3'–6"
Y	1'–2"	1'–8"	2'–4"	1'–0"	1'–2"	2'–4"

BENDS

THRUST BLOCK DETAILS
(NOT TO SCALE)

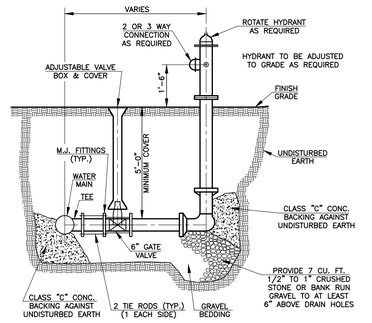


PRECAST CONCRETE DRAIN MANHOLE
(NOT TO SCALE)



NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.

DRAIN INLET
(NOT TO SCALE)



TYPICAL HYDRANT & VALVE
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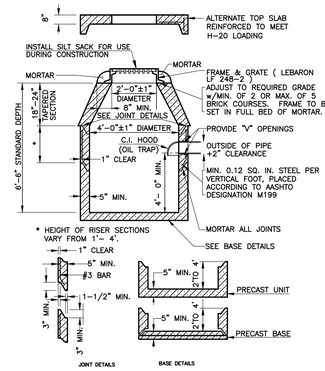
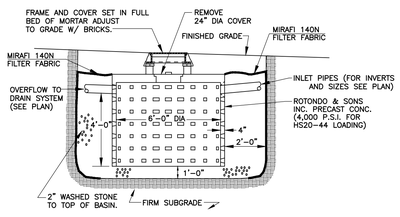
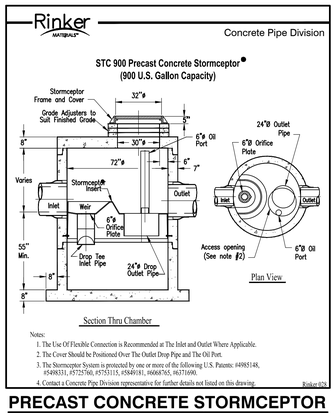


PRECAST CONCRETE CATCH BASIN
(NOT TO SCALE)



LEACHING BASIN
(NOT TO SCALE)



PRECAST CONCRETE STORMCEPTOR
(NOT TO SCALE)

hwmoore ASSOCIATES, INC.
CIVIL ENGINEERING | LAND PLANNING
112 Shawmut Avenue, Boston, MA 02118-2227
tel: 617-357-8145 fax: 617-357-9495 web: hwmoore.com

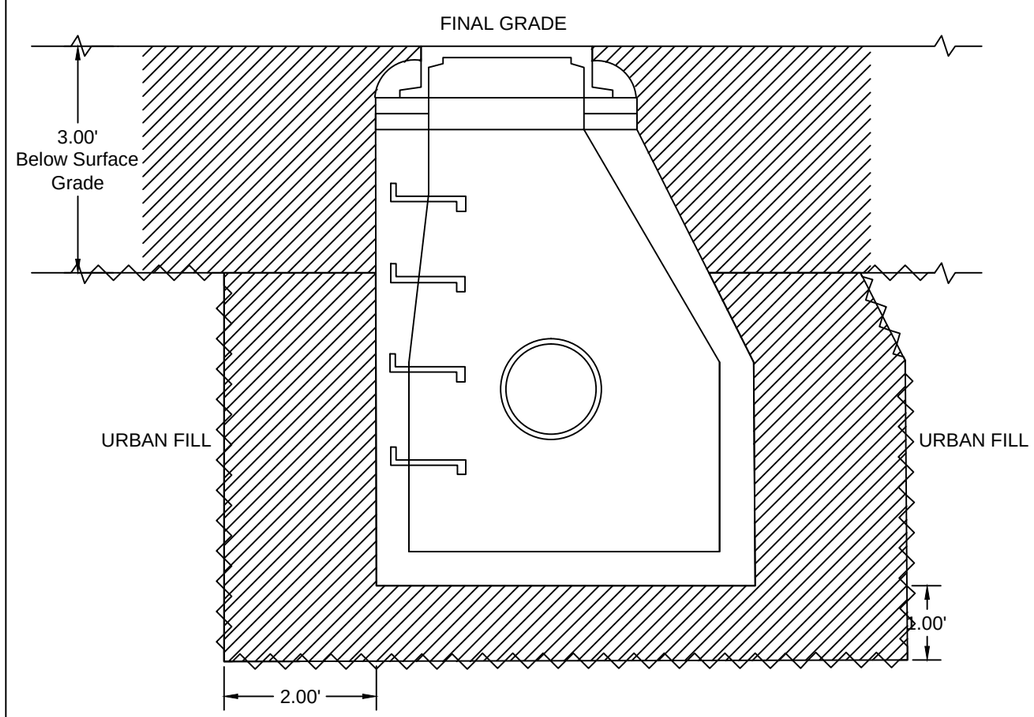
R-M Developer LLC
Massachusetts Mills III - **PICKER BLDG**
Lowell, Massachusetts

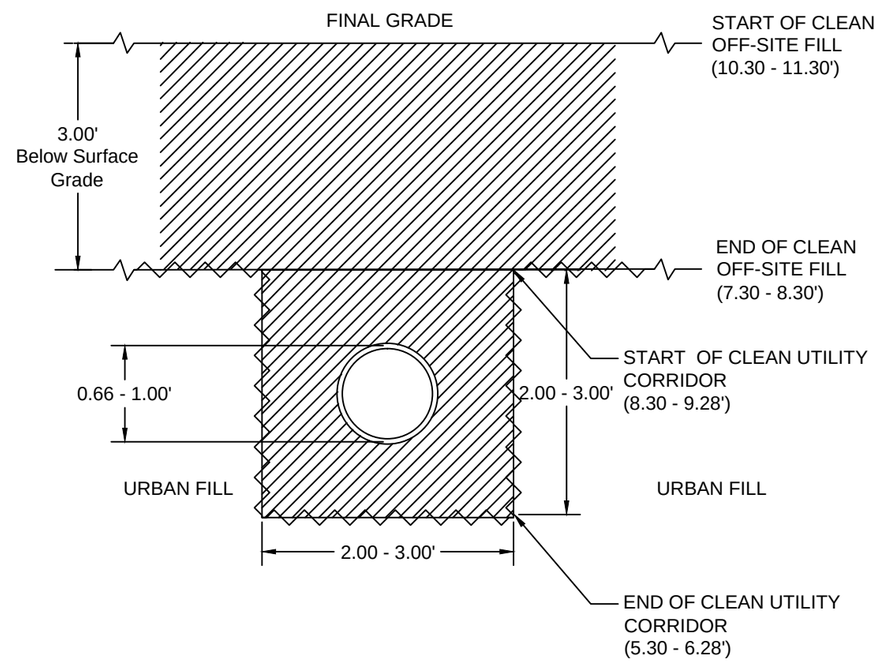
SITE DETAILS

Date: JULY 8, 2014
Rev:
Scale: AS NOTED

C-5

Russell Scott Steedle & Capone Architects Inc.
18 Brattle Street Cambridge Massachusetts 02138 617-661-5880 Fax 661-0613





Goldman Environmental Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
(781) 356-9140 Fax: (781) 356-9147
www.GoldmanEnvironmental.com

Legend

CLEAN OFF-SITE FILL

(10.30 - 11.30') ELEVATION RANGE - LOWELL CITY BASE (LCB)*

MARKER BARRIER/ LINER

*ALL ELEVATIONS PROVIDED BY HWMOORE ASSOCIATES, INC.'S SITE PLAN

Clean Utility Corridor Cross-Section

Mass Mills III
169.2 Bridge Street
Lowell, Massachusetts

1785-6070

Figure 13

SCALE

0 2 4

IN FEET

P:\Projects\1785-R-M Developer, LLC\Drawings