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March 26, 2017

Ms. Leah Schmalz
Program Director
Save the Sound
900 Chapel St., 2nd Fl.
New Haven, CT. 06510

Re: Plum Island Animal Disease Center

Dear Ms. Schmalz:

As per your request, Dermody Consulting has reviewed the data you provided related to environmental issues at the Plum Island Animal Disease Center (PIADC). The review was primarily focused on the “Draft Work Plan for Data Gaps at Former WMAs and AOPCs” (the “Work Plan”) prepared by Arcadis in February, 2016.

Based on information from the Work Plan and the “Final Environmental Impact Statement for the Sale of Plum Island” prepared jointly by the US General Services Administration and the US Department of Homeland Security (DHS), Plum Island is 840 acres in size and has been operated as an animal disease research facility since 1954. Prior to 1954, the island was used by the US Army as a Chemical Corps facility. The PIADC was operated by the US Department of Agriculture from 1954 to 2005. It was then transferred to the DHS, who currently oversee island activities.

Waste materials from PIADC operations were buried at numerous locations throughout the island. In 1999, 49 sites were evaluated for contamination. Those sites included 21 waste management areas (WMAs), 15 areas of potential concern (AOPCs), and 13 US Army structures that were used for storage/disposal (see Attachment A for the locations of the WMAs and AOPCs). The New York State Department of Environmental Conservation (NYSDEC) required no further action for most of the sites and 7 sites were determined to require additional investigation.

As per a 1994 US Environmental Protection Agency requirement, 87 sites were evaluated to determine if there was evidence of hazardous waste treatment, storage, or disposal at the PIADC. These sites included 72 buildings, 5 incinerators, and 10 former military

batteries. All of these sites were eventually closed under the Resource Conservation and Recovery Act (RCRA) and no further action was required.

A July, 2013 monitoring report prepared by Miller Environmental Group contained information documenting a significant subsurface petroleum release that occurred in the 1990s. The release occurred in the vicinity of Building 102 (near the west end of the island's north shore) and resulted in the presence of an extensive area of petroleum floating on the water table. In 2011, an oil recovery system was installed to remove the petroleum from the subsurface. As of 2013, approximately 10,000 gallons of petroleum had been recovered, however, significant quantities of petroleum remained present in the subsurface. 39 groundwater wells were installed in this area for periodic monitoring (see Attachment B for the locations of wells in the area of Building 102 and remaining areas of floating petroleum product as of June, 2013).

15 additional groundwater monitoring wells were installed at various locations throughout the island (see Attachment B for the locations of the 15 island-wide wells).

Based on the environmental history of the PIADC, a "Final Data Gap Analysis Report" was prepared in 2010 by MACTEC, and then the Work Plan was prepared by Arcadis in February, 2016. The Work Plan concluded that 7 sites required additional investigation and the existing 15 island-wide groundwater monitoring wells should be sampled (however, it was found that only 10 of those wells remain functional). The 7 sites include WMAs 10/11, 7/8, 16, and 26/27, and AOPCs 4, 10, and 14 (see Attachment B for the 7 areas requiring additional investigation).

These sites are to be further investigated to include soil sampling, groundwater well installation and sampling, well surveys and groundwater elevation measurements to determine the groundwater flow direction. The 10 remaining island-wide wells are to be sampled, surveyed, and used to determine the groundwater flow direction.

Since the Work Plan was submitted in February, 2016, there have been several rounds of NYSDEC comments and DHS responses to the work plan. The comments/responses relate to the adequacy of the investigation and sampling methodologies.

Based on Dermody Consulting's review of this information, we offer the following recommendations to assure that all impacted areas are properly characterized and, where necessary, remediated:

- The 1999 investigations included sampling of the WMAs and AOPCs. No further action was required for most of those sites. However, those previous sampling results were not included in the Work Plan and since 2007, there has been the promulgation of new soil cleanup objectives (SCOs) as per 6 NYCRR Part 375-6. Therefore, the previous results should be compared to the current SCOs to assure that all previous sampling results are in compliance with the current guidelines.

- Any groundwater sampling that was performed during the 1999 investigations should be evaluated to assure that all sample analyses included full baseline parameter sampling that is required for landfilled waste as per 6 NYCRR Part 360-2.11(d)(6). If the baseline sampling was not performed, the previous groundwater investigations are not in compliance with NYSDEC regulations. Also, the previous groundwater sampling results should be compared to current groundwater standards (6 NYCRR Part 703.5) to assure that the previous results are in compliance with current standards.
- Soil vapor intrusion has become a significant issue in New York State since the guidelines were introduced in 2006. Therefore, the 1999 sampling results should be evaluated by the New York State Department of Health (NYSDOH) to determine if there are residual volatile organic compounds (VOCs) present in the soil or groundwater that have the potential to generate vapors that may then create soil vapor intrusion at existing or future structures on the island.
- The island has a long history of chemical use that includes both the PIADC and the previous use by the US Army as a Chemical Corps facility. It would be necessary to document the procedures (test pitting, files/records, aerial photographs, geophysical investigations, etc.) that were used in the 1999 investigations to determine the locations of the WMAs and AOPCs. This would provide assurance that all areas of concern have been identified and that there are no WMAs/AOPCs that have yet to be discovered.
- The previous groundwater sampling results for the 15 island-wide wells should be provided to determine past groundwater conditions and to determine if any of the 5 wells that were destroyed contained contamination and, if so, those 5 wells should be replaced and sampled to determine current conditions.
- The groundwater monitoring well screened depth intervals should be determined to assure that they intersect the water table and will therefore allow accurate water table elevation measurements.
- There was a significant petroleum release near Building 102 that has resulted in the floating petroleum product on the water table. Dermody Consulting has submitted a Freedom of Information request to NYSDEC to obtain updated information regarding the petroleum release. The Work Plan should include information about the petroleum release that discusses the current conditions and projections for the completion of the remediation. This information should be available from the NYSDEC and Miller Environmental Group.
- Anecdotal information from a former employee at the PIADC was provided to Save the Sound that indicated that there was no decontamination performed within Building 257 and that this building was sealed with contamination remaining in place. Records should be obtained and reviewed to evaluate this issue further.

In summary, due to the potential sale of Plum Island, and the potential for residential development, a thorough evaluation of all of the 1999 sampling data should be performed to determine if all past results are within current standards and guidelines. Also, residual VOCs in the soil or groundwater that may have been within regulatory levels during the 1999 sample analyses may still have the potential to result in soil vapor intrusion at concentrations that may require mitigation.

Finally, in a letter dated June 15, 2016 from DHS to NYSDEC, the DHS stated that the intent of the Work Plan is to address data gaps and that "The objective is not to fully characterize each of the areas." However, the objective of this project must require compliance with all NYSDEC requirements and data gaps cannot be adequately addressed without presenting all data from previous investigations for each area and interpreting that data using current applicable NYSDEC and NYSDOH standards, regulations, and guidance for soil, soil vapor, and groundwater.

Should you have any questions, please feel free to contact me.

Very truly yours,



Peter Dermody, C.P.G.
Principal Hydrogeologist

enclosures

Attachment A

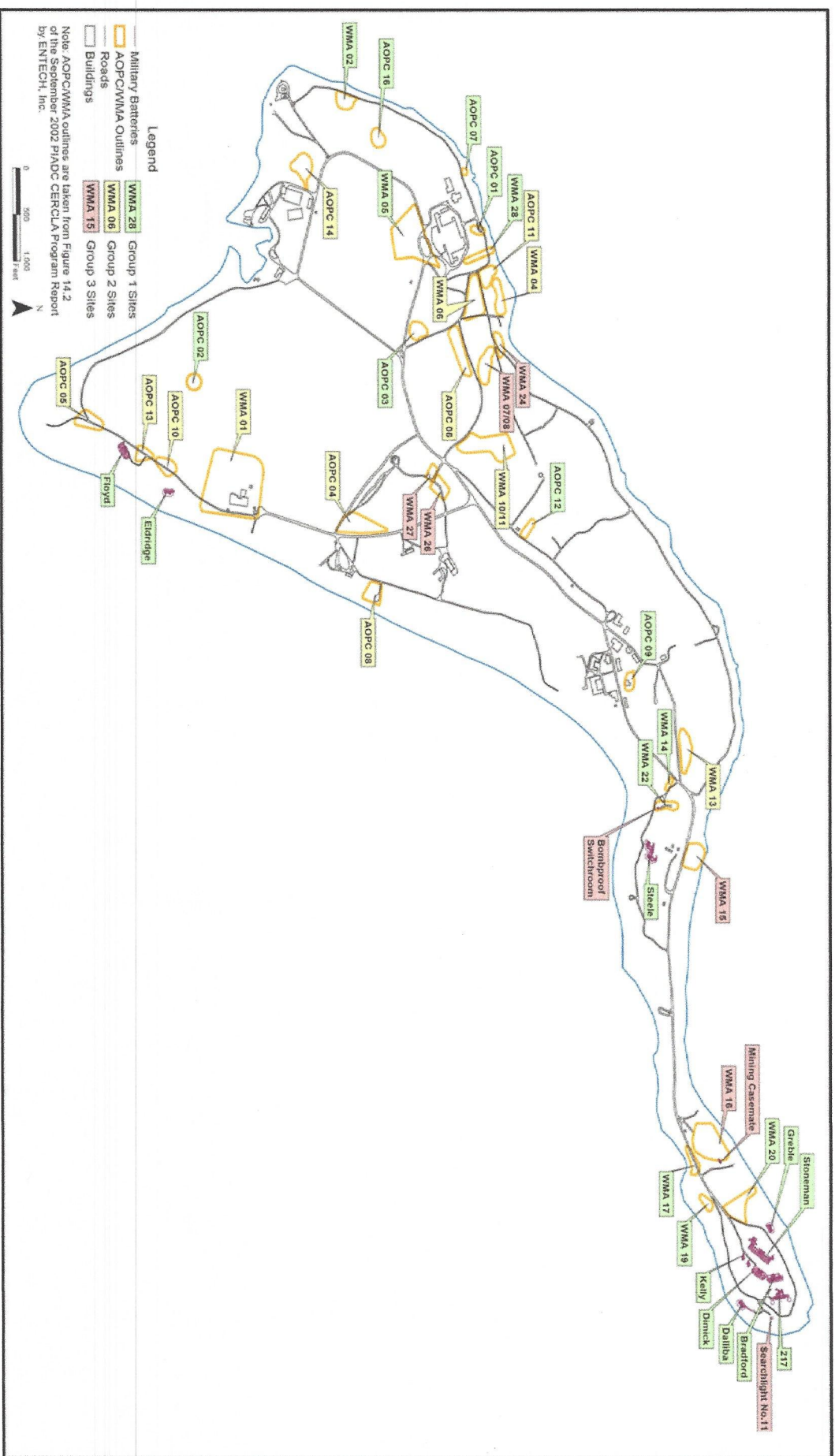


Figure 11. Locations of Areas of Potential Concern (AOPC) and Waste Management Areas (WMA)⁶

⁶ See EIS for more information on Group 1, Group 2, and Group 3 Sites identified in Figure 11.

Attachment B

REV#	REVISION	BY	DATE
1	WELL ADDITIONS AND LNAPL PRESENCE	DE	09/21/10



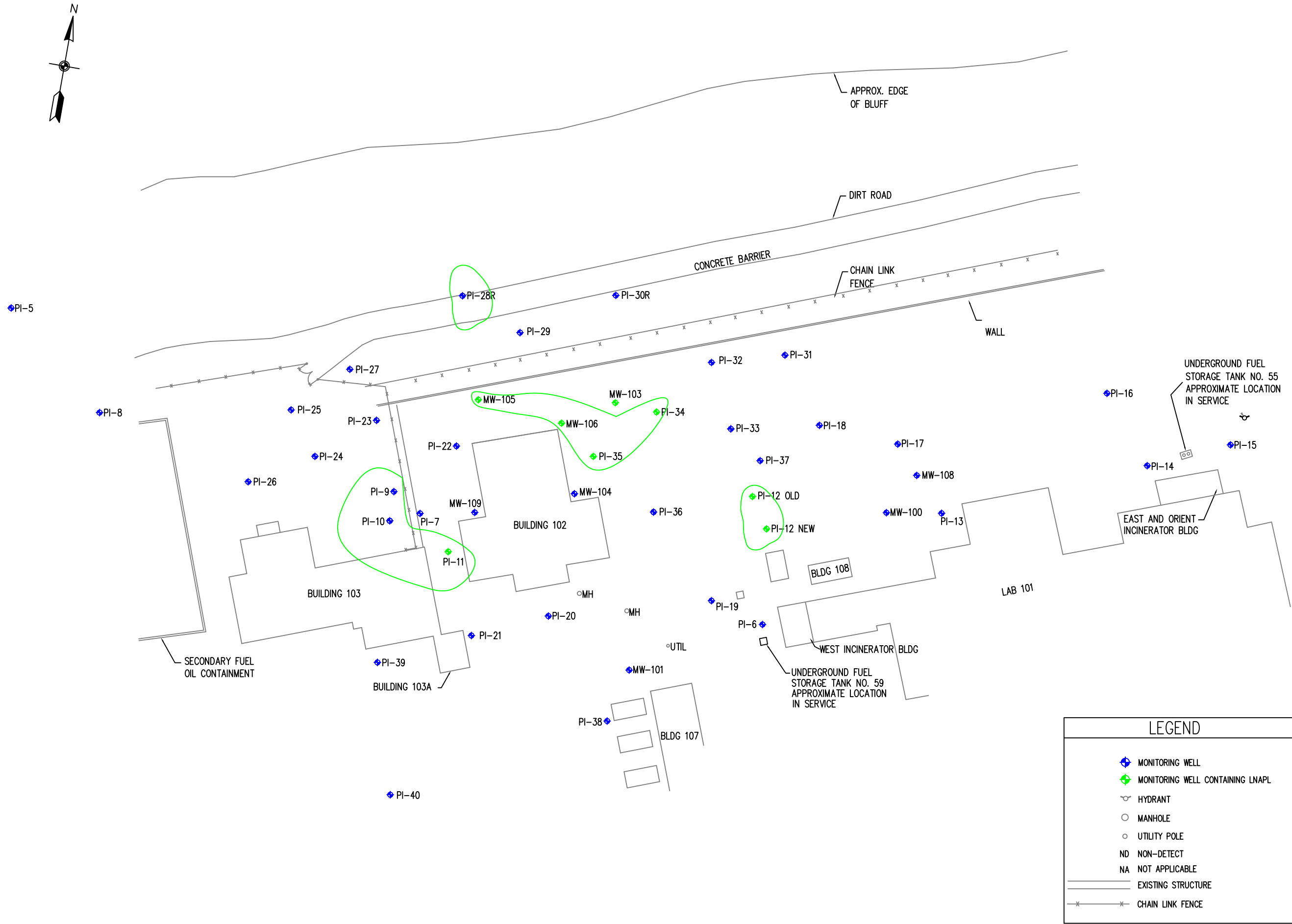
 **MILLER
ENVIRONMENTAL
GROUP**

538 Edwards Avenue
Calverton, NY 11933

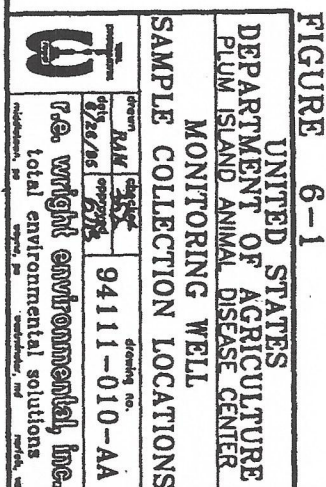
**WELLS EXHIBITING LNAPL
DURING MONTHLY MONITORING
EVENT ON 06/28/13**

PLUM ISLAND
ANIMAL DISEASE CENTER
PLUM ISLAND, NY

FIGURE#: 1	SCALE: NTS
DRAWN BY: NM	DATE: 11-08-11
DESIGNED BY: LN	APPROVED BY:



Attachment C

[illegible]

Attachment D

