

**NAVY RESPONSES TO THE USEPA's COMMENTS
(FEBRUARY 14, 1992) ON DRAFT "PLAN OF ACTION -
PIER 33 AND BERTH 16 - IR STUDY"
(AUGUST 1991, REVISED OCTOBER 1991)**

GENERAL COMMENTS

1. *The Plan of Action should present a plan for reviewing all historical documentation pertaining to these sites, including results of previous site investigations, aerial photographs, interviews with base personnel, and base records. Results of this review should be incorporated into this work plan. This should include summaries of analytical results, a description of soils found in the borings previously drilled near Pier 33 and Berth 16, information on the site-specific geology of these two sites, a map showing the depth of bedrock, and information on volumetric leak tests performed on the underground storage tanks at these two sites.*

Available historical information was reviewed prior to preparation of the work plan. The site background descriptions have been revised to describe the full scope of historical documentation reviewed. In addition to the original materials reviewed, Atlantic has been provided additional soil boring and analytical information by the Navy, and an analysis of aerial photography has been provided by USEPA. These additional materials have been reviewed and pertinent information has been incorporated into the work plan. Available analytical reports were appended, however, this data will be summarized in a table. Boring logs will be appended, geologic cross-sections will be prepared, and the general description of site soils will be expanded and include the depth to bedrock. Volumetric leak tests have only been performed on one of the underground storage tanks at these sites. Copies of this test will be included in the work plan.

A plan for reviewing any additional historical documentation that may become available prior to the start of field work has been incorporated into this work plan.

2. *The approximate (conceptual) direction of ground water flow in the areas of Pier 33 and Berth 16 should be shown on the figures in the report.*

The conceptual direction of ground water flow will be indicated in the appropriate figures.

3. *The direction of surface runoff and location of storm drains should also be indicated on these figures.*

Surface contour and storm drain locations will be added to the appropriate figures.

4. *There is no indication in the plan that any sediment sampling will take place during this investigation. In light of the fact that these two sites are adjacent to the Thames River and sediment contamination is a real possibility, sediment samples should be collected. These samples should be taken upstream, downstream, and adjacent to the site. In addition to TCL, TAL, and TPH analysis, TOC and grain size should also be performed on these samples.*

Sediment sampling will not be performed as part of this sampling for this specific site. A separate study of potential ecological impacts on the Thames River from various sites has been recommended and will be included in a supplemental work plan. This study will include sediment sampling.

5. *In addition, surface water bodies and sediments in storm drains that receive surface runoff from these two sites should be sampled. The very fine-grained sediments that accumulate in storm drains could be repositories for PCBs, particularly in the area of Building 173.*

The work plan has been revised to include sampling of storm drain sediments. There are no surface water bodies present except for the stream to the north of Building 175 which has been evaluated during the investigation of Area A.

6. *The soil gas survey procedure should be modified to state that the survey will not be conducted if the ground appears saturated, i.e., standing pools of water on the ground surface.*

The soil gas survey procedures will be modified to state that it will not be conducted if the ground appears to be saturated.

7. *In reference to the need for RCRA and CTDEP characterization requirements of soils for disposal, only TCLP metals are discussed in the work plan. The other aspects of characterization for disposal must also be evaluated. These include corrosivity, ignitability, and TCLP volatile and semi-volatile constituents.*

This parameter (TCLP metals) was included primarily to evaluate soils under CTDEPs soil cleanup guidelines. The ability to classify soils under RCRA is a secondary benefit. We do not feel it is necessary to completely classify soils under RCRA at this time. Measurement for pH are proposed for soils due to the potential for acid releases in this area. It is noted that solids cannot be defined as ignitable waste based on flash point measurements. It is anticipated that various VOC and SVOCs may be present. Based on analysis for TCL VOCs and SVOCs, estimates can be made as to whether or not TCLP regulatory levels may be exceeded. If it appears that soils may be hazardous due to organic TCLP constituents, further TCLP analysis will be performed during any Step II studies required at this site.

SPECIFIC COMMENTS

1. *Page 3, First ¶: This section should include a discussion on the scope and results of previous sampling and investigative efforts at these two sites. For example, analytical data for the borings shown on the site maps and geologic information (as well as geologic information from adjacent sites) should be reviewed and presented to support the activities proposed in this field investigation.*

Analytical information was appended, however, a table will be added, and a description of overburden deposits will be added. See response to general comment 1.

2. *Page 3, Fifth ¶: The area of stained soil, mentioned in the text, should be indicated on the site map.*

This area will be added to the appropriate figures.

3. *Page 7, Fifth ¶: The text states that personnel decontamination will be accomplished at the site trailer. It is not appropriate to decontaminate personnel at this location unless the trailer is adjacent to the work site. Decontamination should be performed at the boundary of the exclusion zone at the work site.*

The text will be revised to clarify the location of decontamination areas. The personnel decontamination area referred to on page 7 is not proposed to be used after leaving an investigation site.

4. *Page 11, First ¶: The soil gas grids should be expanded beyond the outlines shown on Figures 4-1 and 4-2 until a limit of contamination is detected.*

The text will be revised to indicate that soil gas sample points will be extended beyond the limits of any detected area of contamination.

5. *Page 13, First ¶: The text states that wells will be screened across the water table. The text should also indicate that the character of the soil will be considered in the placement of well screens, to ensure that screens are not installed across confining layers (if they exist).*

The text will be revised as suggested.

6. *Page 13, Second ¶: Monitoring wells should be tested for hydraulic conductivity utilizing pump or slug testing. This is especially important given that the hydraulic conductivity testing previously performed was not properly executed. It is important to obtain accurate hydraulic conductivity data to assess the integrity of the monitoring well and to evaluate the subsurface conditions. Estimation of hydraulic conductivity from grain size distribution is only reliable to several orders of magnitude.*

Hydraulic conductivity testing was not included in the work plan as this is a Step I

investigation. Should this site proceed to Step II and hydraulic conductivity information be required, it will be proposed at that time.

7. Page 13, Third ¶: *This paragraph states that only drill cuttings with visual contamination or with volatile organic readings above 10 ppm (monitored by an HNu or OVA) will be containerized. Since these screening instruments detect only VOCs, all drill cuttings should be containerized. The final decision on disposal should be based on final laboratory results from the applicable soil boring samples and/or a composite sample from each barrel or drill cuttings.*

All soils will be containerized and properly disposed after being properly characterized. If the characterization indicates that any soils are not contaminated, these soils will be used as fill around the boring they came from or elsewhere onsite. Contaminated soils will be disposed in a properly permitted disposal facility.

8. Page 14, Third ¶: *The text should clarify whether gas samples will be taken from beneath the site buildings. If not, the soil gas grid should be extended to the east. In addition, the soil gas methodology should be modified to ensure that the soil gas survey will be extended to adequately characterize any "hot spots" observed. The soil gas survey should not take place for 24-48 hours after a significant precipitation event (more than 0.2 inches).*

Soil gas readings will not be taken from beneath buildings. The soil gas grid will be expanded to the fence line.

9. Page 14, Fourth ¶: *A soil boring should be advanced in the area of the stained soils (as observed during Atlantic's site visit).*

The stained soils are located over the apparent location of the underground storage tank and a boring (19MW4) is proposed just downgradient of the underground storage tanks. The plan will be revised to collect a surficial soil sample in the area of oil stained soils.

10. Page 14, Sixth ¶: *A high lamp energy bulb (11.8 eV) PID should be used to screen the soil samples. There may be compounds that cannot be detected with a lower energy lamp.*

The rationale behind the selection of samples for analyses eliminates any inorganics criteria except for the default sample at the water table. Since the nature and extent of contamination is unknown, samples should be taken at specified depths and analyzed for parameters.

An 11.8 eV PID will be used to screen soil samples.

Approximately 50 percent of the sample locations included collection of a composite sample from the 0 to 4 foot depth, in addition to the sample collected based on the criteria described in the plan which has a default location at the water table. To address this comment, all sample locations will include collection of a shallow (0 to 4

feet) sample for analysis in addition to the sample collected based on the specified criteria.

11. *Page 17, Table 4-4: The indication that ground water samples are to be analyzed for TCLP metals is not consistent with Table 4-3 rationale. Please explain.*

At least one of the three borings/monitoring wells proposed for advancement through the acid trench (19TB4, 19MW2 or 19MW4, as shown on Figure 4-1) should be drilled and sampled to bedrock. If sulfuric acid contamination is detected in the deeper interval in one of these soil borings, the boring should be advanced to bedrock or confining layer since the specific gravity of sulfuric acid is 1.84 (possible DNAPL).

It is uncertain from the discussion presented how "high ground water elevation" will be determined relative to well screen placement.

The TCLP metals analysis and TAL inorganics analyzed for metals in water are essentially the same method. This is why the TCLP analysis was indicated. To avoid confusion, the indication that TCLP metals will be analyzed in ground water will be deleted.

Boring 19TB4 will be completed to bedrock and sampled at two foot increments, for total lead and pH. It should be noted that sulfuric acid is not a possible DNAPL as it is miscible in water.

Ground water elevations at this site are controlled primarily by the elevation of surface water in the Thames River. High ground water will be determined based upon the ground water elevation observed and adjusted based upon the corresponding river tidal stage. Based upon the tidal study performed at the Lower Subase, ground water elevations vary by approximately one foot during a tidal cycle.

12. *Page 18, Third ¶: Please clarify the reference to the TCLP sampling of ground water.*

See first paragraph to above response.

13. *Page 18, Fifth ¶: As previously discussed, samples should be obtained from within the storm drain system.*

As indicated in the response to general comment 5, samples will be taken in storm drains.

14. *Page 18, Tenth ¶: Samples should also be obtained from former source areas (the dumpster washing area, the incinerator, any loading docks, etc.). In addition, the soil gas survey should be expanded to encompass these former suspected source areas.*

This work plan will be expanded to include investigation of the former incinerator and dumpster washing facilities as potential sources of contamination. This incinerator

has been added as a Step I site.

15. *Page 19, Figure 4-2: Monitoring well 20MW1 has been designated as the "background" reference well. This location may not be truly representative of "background" conditions due to the fact that it is located downgradient of an active railroad bed. This sampling location should be chosen during a site visit prior to the commencement of field activities.*

The well will be relocated to the east of the railroad tracks.

16. *Page 20, Table 4-5: The indication that ground water samples are to be analyzed for TCLP metals is not consistent with Table 4-3 rationale. Please explain.*

See first paragraph of response to comment for Page 17, Table 4-4.

17. *Page 21, Third ¶: The rationale behind the selection of samples for analyses eliminates any inorganics criteria except for the default sample at the water table. Since the nature and extent of contamination at these sites is unknown, samples should be taken at specific depths and analyzed for all parameters.*

See second paragraph of response to comment for Page 14, Sixth ¶.

APPENDIX B

1. *No. 1020, Page 3: The last sentence on this page supports the rationale for sampling in the storm drains by stating that selection of sampling locations may be in "areas where water may have ponded during storm events".*

As previously indicated, storm drains will be sampled.

2. *No. 1023, Page 7: Samples taken for volatile analysis should not be collected with a peristaltic pump as stated as an option in No. 3. They should only be collected with a bailer. In addition, prior to each sampling event, each well should be inspected for the presence of free product.*

A minimum of two weeks must elapse between well development and the commencement of ground water sampling.

Please see Page 12, Table 4-2 regarding site-specific modifications to QA procedures. The plan as written specifies that a bailer will be used for VOC samples.

3. *No. 1070, Page 3: Twice the volume of water added to the formation must be removed prior to sampling when the well development technique of hydraulic jetting is used.*

Pages 6 and 7 - The "Air Development Method" and the "Jetting Development Method" must not be used in well development. These two methods can strip volatiles from the developing wells and cause clogging of the formation/filter pack. In addition, air lifting techniques can induce metallic oxide formation/precipitation. EPA recommends employing the surge block and pumping technique which is an effective, non-contaminating well development procedure. Please note that at least three to five well volumes, plus the volume of water lost to the formation during drilling must be removed. In addition, the pumping rate should be measured and recorded during well development to ensure that the well is not purged at a rate greater than the development rate.

Modifications to this SOP regarding volume of water removed during development will be made as specified in the comment.

The work plan will be modified to indicate that air development and jetting methods will not be used during this investigation.

QA/QC AND DATA MANAGEMENT PLAN

1. *Section 3.3, Page 8: "Three parameters will be measured in the field for all aqueous samples: pH, temperature, and conductivity". Turbidity should be added to this list.*

Turbidity will be added to this list.

2. *Section 5.0, Page 12: The CLP SOWs should be changed to SOW ILM01.0 for inorganics and SOW OLM01.8 for organics. In addition, the analytical methods which will be used for the TCLP metal extract must be identified.*

Please refer to the attached method for the analysis of TPH in soils. The analytical method which will be used for "oil type identification" should be identified.

The CLP SOW references will be revised and the analytical method for TCLP analysis will be identified.

The TPH method attached will be referenced and a method reference for the "fingerprint" or fluorescence spectroscopy methods will be included.

3. *Section 9.2, Page 23: "Sample Description" (e.g., color) should be added to the list of field observations.*

Sample description will be added to the list of field observations.

CTDEP's COMMENTS (DECEMBER 18, 1991)

1. Page 3, Section 2.1: Section 2.1 of the report notes that sulfuric acid was stored in aboveground storage tanks located in Building 175. These tanks were connected to the piers by underground pipes. It is not stated in the text whether the acid trench (depicted in Figure 2-1) housed the underground pipes. In addition, if documented spillages or leakages occurred within this system, construction details of the trench would become important for this investigation.

The text will be revised to indicate that the acid trench contained the underground pipes and that there are no known spills or leaks from this system. Drawings regarding construction details do not appear to exist, however, we will continue our efforts to locate any such drawings.

2. Page 3, Section 2.2: The site plan for Berth 16 (Figure 2-2) depicts the former location of the dumpster washing area and former incinerator. Section 2.2 should explain in greater detail activities associated with the incinerator. More specifically, what types of material were brought here to be incinerated and the fate of the incinerator ash.

The work plan will be expanded to include the incinerators and dumpster washing areas as sites to be investigated.

3. Page 6, Section 2.2: It is noted that Building 173 was formerly serviced by a septic tank. Indicate if the tank was connected to a leach field or pumped out on a periodic basis. Figure 2-2 should depict the leach field if it existed.

Based upon available information, the septic tank was connected to a leaching field. Both the location of the septic tank and leach field are not known. Atlantic and the Navy will continue with its efforts to locate any such drawings. Boring TB-2 is located where the septic system was likely to be located and monitoring well 20MW2 is downgradient of this area.

4. Page 17, Table 4-4: This table delineates the media and type of analysis that will be performed for each sample location at Pier 33. The following items should be revised: (1) it is unclear why TCLP metals and grain size analysis is proposed for ground water at sample locations labeled 19GW2, 19GW3 and 19GW4; (2) footnote #2 should reference Table 4-3, not Table 4-1; (3) although listed under the column labeled "Sample Location", no sampling is proposed for test boring 19TB4; (4) it may be advantageous to obtain a shallow soil sample underlying the acid trench to determine the impact that this system may have had on the site. (see comment #1).

(1) The TCLP metals analysis and TAL inorganics analysis for metals in water are essentially the same method. This is why the TCLP method was indicated. To avoid confusion, the indication that TCLP metals will be analyzed in ground water will be

detected. The indicators for grain size analysis refer to a soil sample from the monitoring well screened interval which may not be the same sample location as the sample for chemical parameters in soils. A note will be added to the table for clarification.

(2) Footnote reference will be changed as noted.

(3) The last entry in the sample designation column should read 19TB3 not 19TB4.

(4) The plan will be revised to include collection of shallow soil samples (0-4 feet) at all sample locations in addition to the sample collected based upon specific criteria.

5. *Page 18, Section 4.2.2: The multi-media inspection performed in April of 1991 found oil-stained concrete pads and leaking transformers containing PCBs within Buildings 173 and 157. Unless adequate determination was made from a prior investigation, the proposed investigation for this site should incorporate provisions to address any potential impact these conditions may have had on soils and ground water.*

This issue has been addressed in a November 29, 1991 letter to Lori Saliby in CTDEP's PCB Management Division. If additional documentation is required, this issue can be further discussed. It should be noted that PCBs will be analyzed for in most soil samples collected during implementation of this work plan.

6. *Page 18, Section 4.2.2: A description of the soil gas survey methodology for Berth 16 is presented in Section 4.1.2, not Section 4.1 as indicated.*

Text will be revised to include the specific subsection reference, i.e., Section 4.1.2 is part of Section 4.1.

7. *Page 20, Table 4-5: This table contains inconsistencies for Berth 16 that are similar to those addressed in comment #4 for Pier 33. The table should be revised as necessary.*

See response to comments for Page 17, Table 4-4.

8. *Page 25, Figure 7-1: The soil gas survey, as proposed under Section 4.1.2, is not depicted in the Preliminary Project Schedule. In addition, the schedule indicates that hydraulic conductivity tests will be performed. However, Section 4.1.4 notes that hydraulic conductivity will be estimated based on grain size analysis, published data, and from previous studies. The schedule should be revised as necessary.*

The schedule will be revised as noted.

TOWN OF WATERFORD'S COMMENT (NOVEMBER 18, 1991)

If possible, I would like a reference to previous studies conducted for the results of these samples, if they were in any of the documents which have been forwarded to me. In addition, will sediments samples be taken near Berth 16.

1. Existing Samples

All information regarding existing sample locations will be incorporated into the final plan of action.

2. Sediment Samples

Sediment sampling will not be performed as part of this sampling for this specific site. A separate study of potential ecological impacts on the Thames River from various sites has been recommended and will be included in a supplemental work plan. This study will include sediment sampling.