

ATLANTIC

ENVIRONMENTAL SERVICES, INC.

engineers
geologists
scientists

**MINUTES OF TECHNICAL REVIEW COMMITTEE (TRC)
AND PUBLIC MEETING
AUGUST 4, 1993**

TO: NSB-NLON TRC Members

FROM: Barry Giroux and Paul Burgess
of Atlantic Environmental Services, Inc. (Atlantic)

DATE: September 14, 1993

SUBJECT: Technical Review Committee and Public Meeting - August 4, 1993
Installation Restoration Study
Naval Submarine Base - New London
Groton, Connecticut
Contract No.: N62472-88-C1294

NOTE: *The next TRC meeting has been rescheduled and will be held on November 4, 1993, 1:00 p.m. at the Shepard of the Sea Chapel*

Attendees

The following people attended the meeting:

Deborah Jones	(Town of Groton)
Ronald Oschner	(Town of Ledyard)
Adam Sullivan	(CTDEP)
Paul Marchessault	(U.S. EPA)
Leo Kay	(Community Relations Coordinator, U.S. EPA)
Lt. Eric Odderstol	(Northern Division Naval Facilities Engineering Command)
Jane Connet	(TRC Environmental Corporation)
Commander E.O. Barfield	(Subase NLON)
David Miu	(Northern Division Naval Facilities Engineering Command)
Mark Krivansky	(Northern Division Naval Facilities Engineering Command)
Mark Leipert	(Northern Division Naval Facilities Engineering Command)
Barry Giroux	(Atlantic)
Erik Ness	(Atlantic)
William Mansfield	(Subase NLON)
Suzanne Berkman	(Subase NLON)
Dr. Jerry Cura	(Menzie-Cura & Associates, Inc.)
LCDR Ruth Noonan	(Submarine Group 2)
Susan Pezzullo	(Ledyard Resident)

Suzanne Berkman opened the meeting and welcomed all attendees.

Agenda

The basic agenda at the meeting included the following topics:

- Review of May 5, 1993 TRC Meeting Minutes
- Pier 33 and Berth 16 - Former Incinerator Site Presentation
- Background Soil Sampling Data Presentation - Questions and Answers
- Off-Site Residential Testing Results: Round 1 Presentation - Questions and Answers
- Building 31 Responsiveness Summary
- Discussion of Budget Constraints in Planned Work at the Subase (Questions and Answers)
- Conclusions and Information for the Next TRC Meeting
- Comments/Questions From the General Public
- Rescheduling of Next TRC Meeting
- Meeting

DATE: November 4, 1993

TIME: 1:00 p.m. (13:00)

PLACE: Shepherd of the Sea Chapel

- Adjournment

Review of May 5, 1993 TRC Minutes

Ms. Berkman reviewed the minutes from the previous TRC meeting. The following is a list of points regarding old business:

- She asked whether everyone received their copy of the minutes.
- She explained that Atlantic would give a presentation regarding new developments with the Pier 33 and Berth 16/Former Incinerator project.
- She indicated that Northern Division Facilities Engineering Commission would give a presentation regarding public comments to the four alternatives for the removal action at Building 31.
- She explained that Atlantic would give a presentation on the Background Sampling approach and the method for calculating values for the 95 percent confidence limit.

- She stated that a presentation on ecological risk assessment methodology was prepared in order to provide a forum for questions raised about the presentation given at the last TRC meeting.

Pier 33 and Berth 16 - Former Incinerator Site Presentation

Suzanne Berkman introduced Barry Giroux of Atlantic to give an update on the progress at these two sites.

Barry Giroux explained that the site field work was complete and that the laboratory results were back, but not completely validated at this time. He indicated that Atlantic was on schedule with regards to preparation of the Draft report, which is due to the Navy on August 31, 1993. Barry indicated that preliminary data indicate petroleum hydrocarbon and lead contamination is present at both sites. He also indicated that there is no free product at either of the sites.

The slide used for the presentation is included as Attachment 1 to these minutes. No questions were raised about the presentation.

Background Soil Sampling Data

Barry Giroux of Atlantic gave a presentation regarding the Background Soil Data and how it will be used to screen samples collected at the Subase. The slides used for this presentation are included as Attachment 2 to these minutes.

Questions Raised During the Presentation

Comment: CDR Barfield questioned what the Published Background was.

Response: Barry Giroux indicated that the published background data were provided by the U.S. Geological Society (USGS) and represented a compilation of data from across the United States.

Comment: William Mansfield asked if more soils would end up being considered in the Risk Assessment, based on the new calculated Background Levels.

Response: Barry Giroux explained that, yes, the values are lower than the previous values, and it is therefore likely that there will be more metals to be considered in the Risk Assessment.

Comment: Paul Marchessault stated that he thought the upper 95 percent confidence level had to be lower than the highest value.

Response: Barry Giroux indicated that, no, that was not true. He stated that we are using the upper 95th percentile value. Therefore, using this cut off, it would be expected that 5 percent of the data would be above this cutoff value.

Comment: A comment was raised regarding a typographical error on the overhead transparency which is corrected in Attachment 2 of these minutes. The mean value for vanadium was incorrectly indicated as 250 ppm. The actual value is 25.0 ppm.

Comment: A question was raised as to where the samples were collected on the base in order to represent background.

Response: Barry Giroux indicated that the points were screened to ensure that the areas were not impacted by past naval base activities. Also, off-base points were selected to further ensure that the samples were in undisturbed areas.

Comment: Sue Pezzullo asked which off-base sample had the low level of DDT detected.

Response: Barry indicated that the sample was TBB5.

Off-Site Residential Well Testing Results: Round 1

Barry Giroux gave a presentation regarding the latest results of the off-site residential well sampling. A copy of the overhead transparency used for this presentation is provided as Attachment 3.

Comment: CDR Barfield asked whether the results of the EPA split-samples could be made available for the next TRC meeting.

Response: Paul Marchessault indicated that the results will be made available.

Comment: Sue Pezzullo asked what the detection limit for cadmium is.

Response: The detection limit for cadmium with regard to the last sampling round for residential wells is 2.5 ppb.

Building 31 Responsiveness Summary

Mark Krivansky gave an overview of the comments received regarding the Building 31 Removal Action. Handouts provided for the presentation are included as Attachment 4 of these minutes.

No questions were raised about the presentation.

Discussion of Budget Constraints on Planned Work at the Subase

David Miu explained that for the Fiscal Year 1993, Congress cut back funding for the U.S. Department of Defense Environmental Programs by 300 million dollars. The Navy budget was therefore reduced by 80 million dollars. He explained that, due to cutbacks, the Navy has prioritized the projects from highest to lowest priority as follows:

- Cleanups
- Remedial Actions
- Remedial Design
- Continuous Study of Ongoing Projects
- New Sites or Study Areas

Based on the above prioritization, the Subase project will only receive approximately 40 percent of the funding necessary to accomplish the Phase II RI field work. The following sites will be targeted for award at this time with Fiscal Year 1993 Funds: Thames River, Area A, OBDA, DRMO, and Spent Acid.

Comment: Suzanne Berkman questioned if the ongoing work at Pier 33 and Berth 16/Former Incinerator would be funded.

Response: Mark Krivansky indicated that as of right now those projects are fully funded. However, the budget is very tight in terms of money for projects.

Suzanne Berkman indicated that a date had been set for next TRC meeting, which will be held on November 4, 1993. Suzanne indicated the following items would be discussed at the next TRC meeting:

- Address the projects that are scheduled for the Fiscal Year 1994 Budget.
- Status of the Phase II Remedial Investigation.
- Status of the Building 31 project.
- Status of the IRA projects.
- Update on residential well sampling.
- Status of the FFA.

At this time, the TRC meeting was concluded and Suzanne Berkman invited questions from the public.

Comments/Questions From the General Public

Comment: Gertrude Smith of 1037 Long Cove Road expressed concern that levels of inorganics were not detected in earlier rounds of sampling and now they are being detected in her groundwater. Specifically, she indicated concern with the levels of lead and boron in her well, detected during the last sampling round.

Response: Primarily it is likely that the result is due to variations in the testing.

Comment: Gertrude Smith asked whether the elevated lead levels at the Subase were causing her lead levels to be elevated.

Response: William Mansfield suggested that it is improbable that the lead is due to activity or conditions at the Subase.

Comment: Barry Giroux suggested that a very common source of lead would be from solder used to join the pipes.

Response: Suzanne Berkman suggested that we collect an initial draw sample at the well head before purging the water from the well, then collect another sample after purging to see whether there is the possibility of lead leaching from the hardware.

Comment: Sue Pezzullo suggested that prior to testing the piping system, we review the second round of test data and determine if lead was still high.

Response: Bill Mansfield agreed to do this.

Comment: Andrew Parrella of the City of Groton questioned whether there had been any study of lead in the Public Water System and comparison to groundwater in the area.

Response: Suzanne Berkman indicated that she didn't know of any such study.

Comment: A question was raised if the EPA had split-samples at 1037 Long Cove Road.

Response: Barry Giroux: no, there was no split-sample collected from that location for the last two rounds; however, we can make an effort to do a split at that location in the future.

Comment: Andrew Parrella questioned whether there were any studies of lead in drinking water at the Subase.

Response: Suzanne Berkman replied that several years ago, an extensive study was performed for drinking water supplied to buildings at the base and there was none detected.

Comment: Sue Pezzullo requested that the detection limit of the instrument replace the ND values given in tables of analytical results.

Response: Barry Giroux indicated that this could be done.

Adjournment

At this time, the meeting was adjourned. The next TRC meeting has been scheduled for 1:00 p.m., November 4, 1993, at the Shepherd of the Sea Chapel.

ATTACHMENT 1

SCHEDULE
PIER 33 AND BERTH 16/FORMER INCINERATOR

MOBILIZE/PERFORM SOIL GAS SURVEY **COMPLETE**

PERFORM SOIL BORINGS/INSTALL WELLS **COMPLETE**

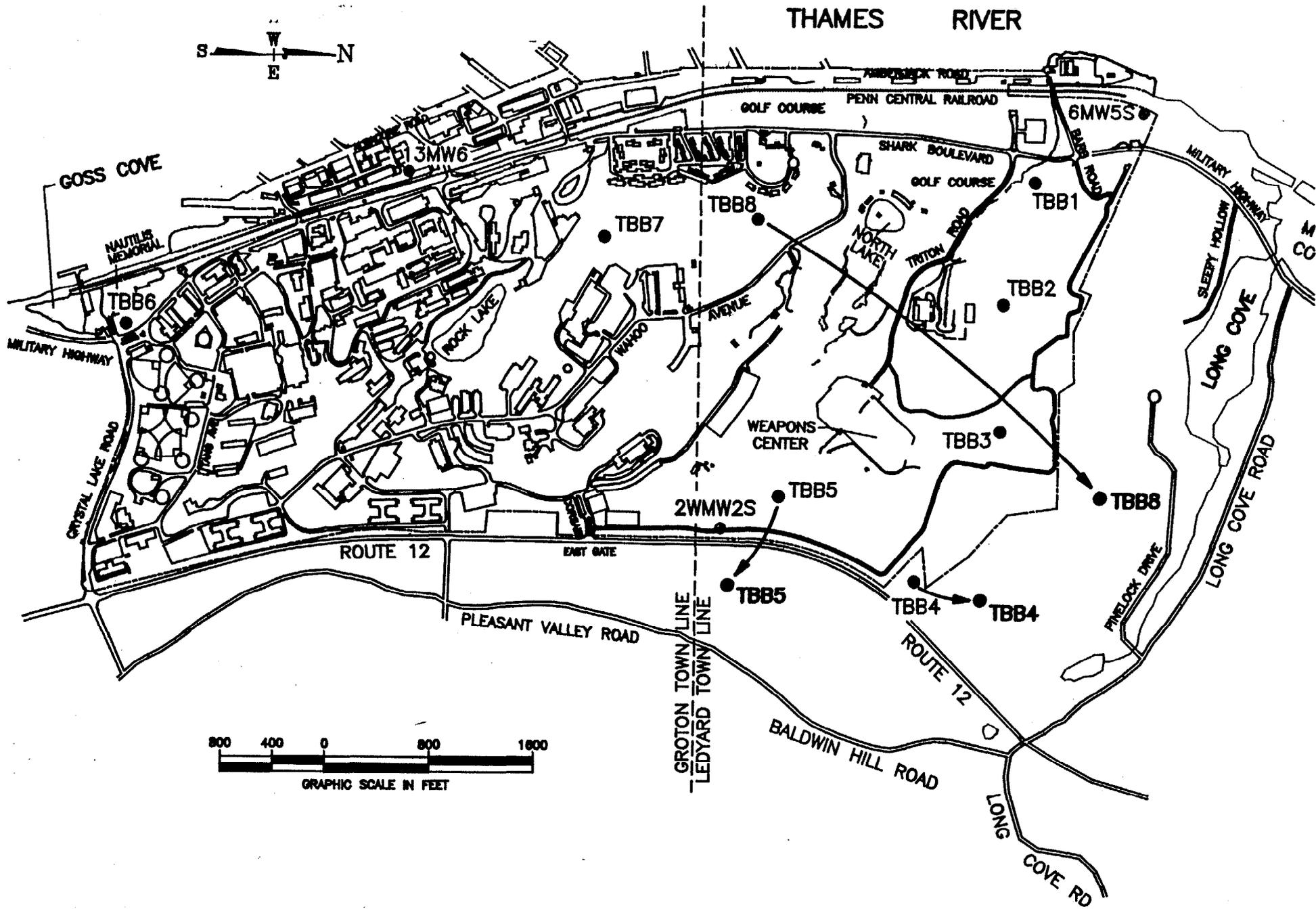
SAMPLE GROUNDWATER **COMPLETE**

VALIDATE DATA **20 JULY 1993**

PREPARE DRAFT REPORT FOR NAVY **31 AUGUST 1993**

PREPARE DRAFT FOR TRC **28 SEPTEMBER 1993**

ATTACHMENT 2

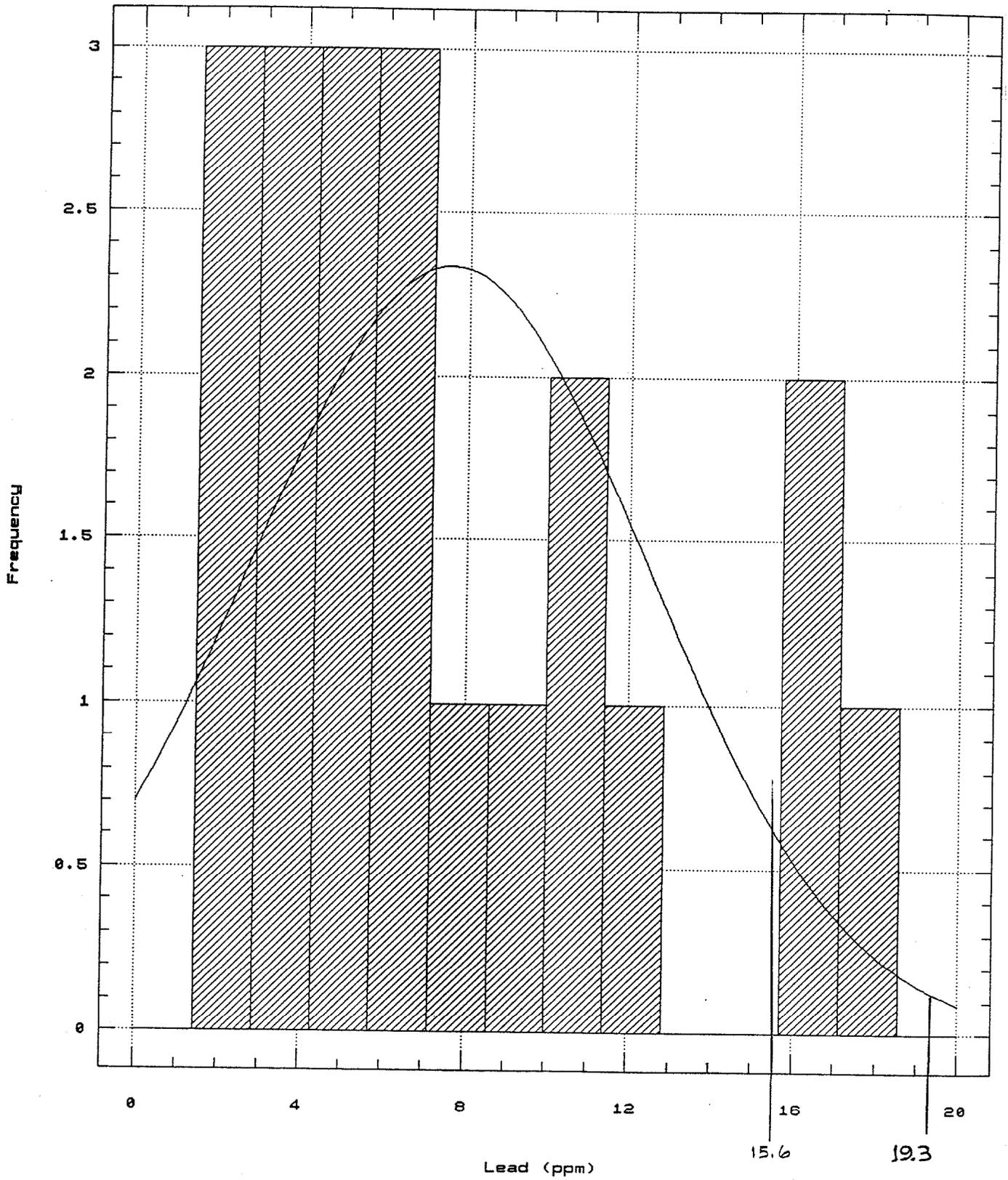


SITE-SPECIFIC BACKGROUND

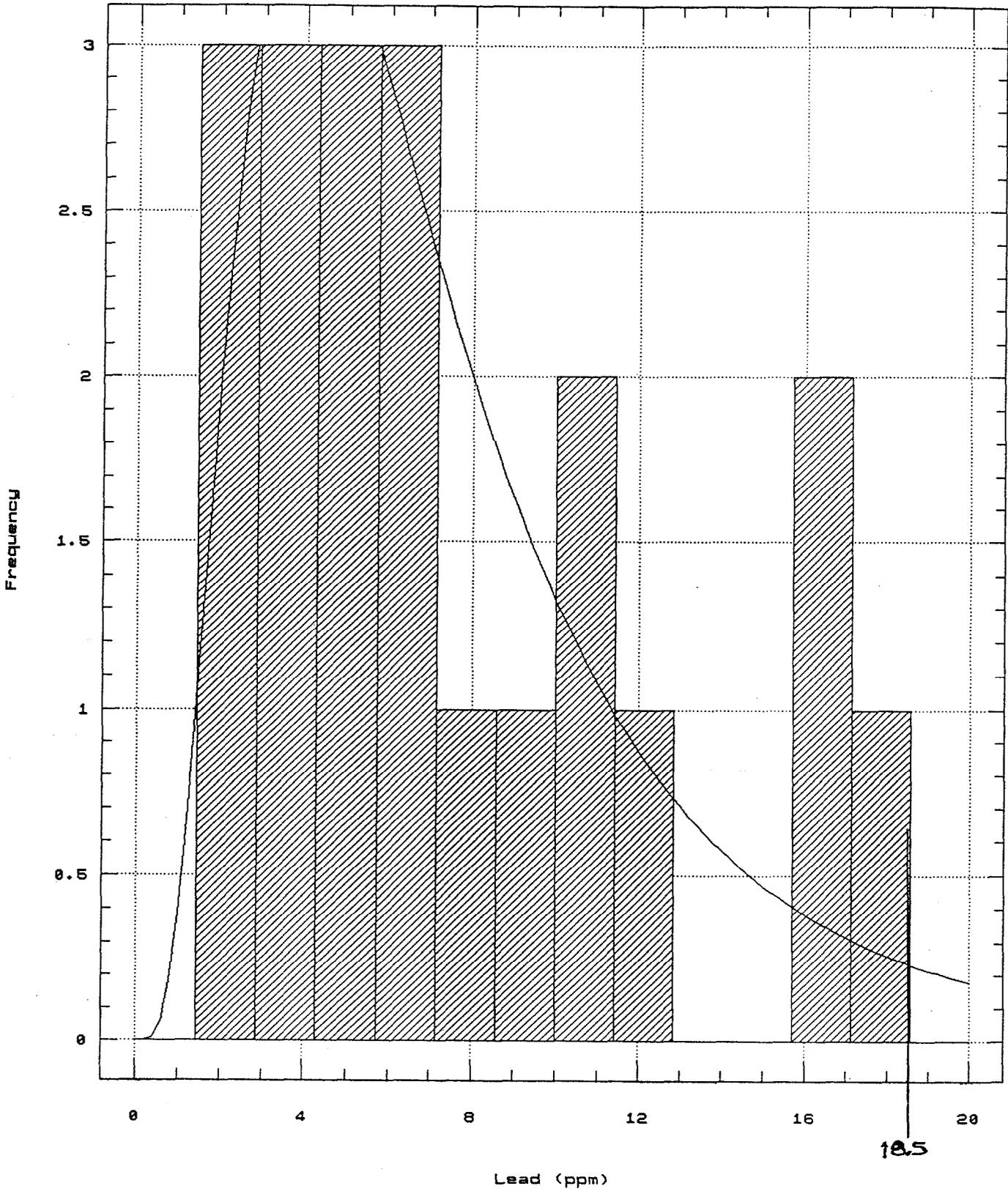
PARAMETER	PUBLISHED BACKGROUND	UTL	MEAN	HIGHEST
Aluminum	272,000	21,100	12,500	17,600
Antimony	2.95	2.40	0.205	4.1
Arsenic	31.5	4.60	2.14	3.6
Barium	1,600	69.1	33	69.8
Beryllium	3.52	1.01	0.496	0.77
Boron	109	6.31	3.47	6.2
Cadmium	7.0	4.54	0.6	6.9
Calcium	32,300	1,190	391	1,170
Chromium	223	25.3	15.5	21.5
Cobalt	39	11.3	6.20	12.8
Copper	102	34.5	13.5	32.8
Iron	115,000	20,500	12,900	17,200
Lead	53.2	19.3	7.57	17.5
Magnesium	26,500	5,620	2,620	6,990
Manganese	3,790	245	128	237
Mercury	0.51	0.0379	0.0045	0.05
Nickel	76.7	19.6	9.1	25.3
Potassium	12,000	3,040	962	2,650
Selenium	1.79	1.18	0.402	1.3
Silver	5	ND	ND	ND
Sodium	51,800	138	47.1	147
Thallium	5	0.209	0.0245	0.29
Vanadium	271	42.3	250 250	35.5
Zinc	178	83.6	27.4	125

Notes: 1. All results in ppm.
 2. UTL = Upper tolerance limit or the upper 95% confidence limit for the true 95th percentile.

TAL Lead / Normal Distribution Curve

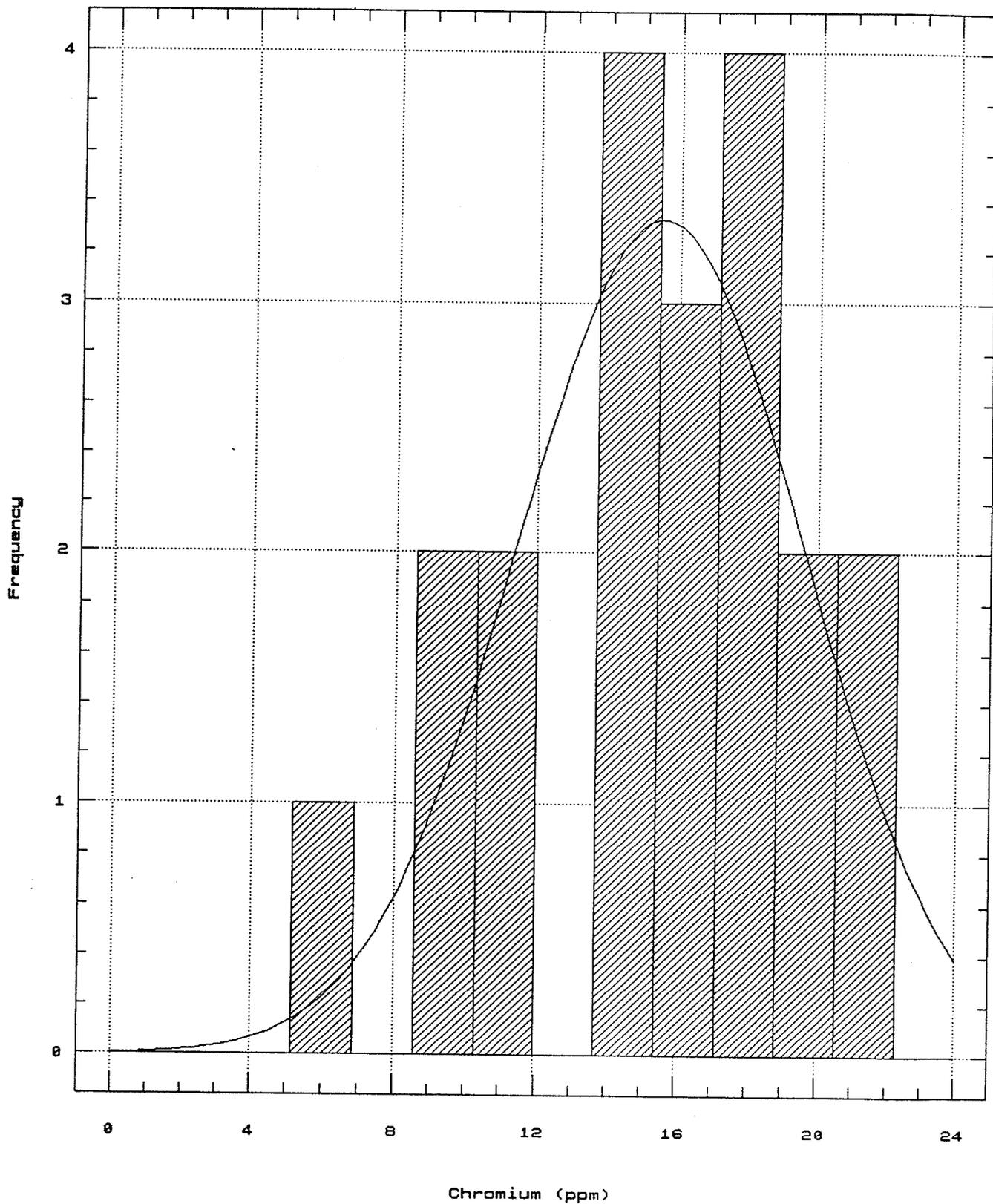


TAL Lead / Lognormal Distribution Curve



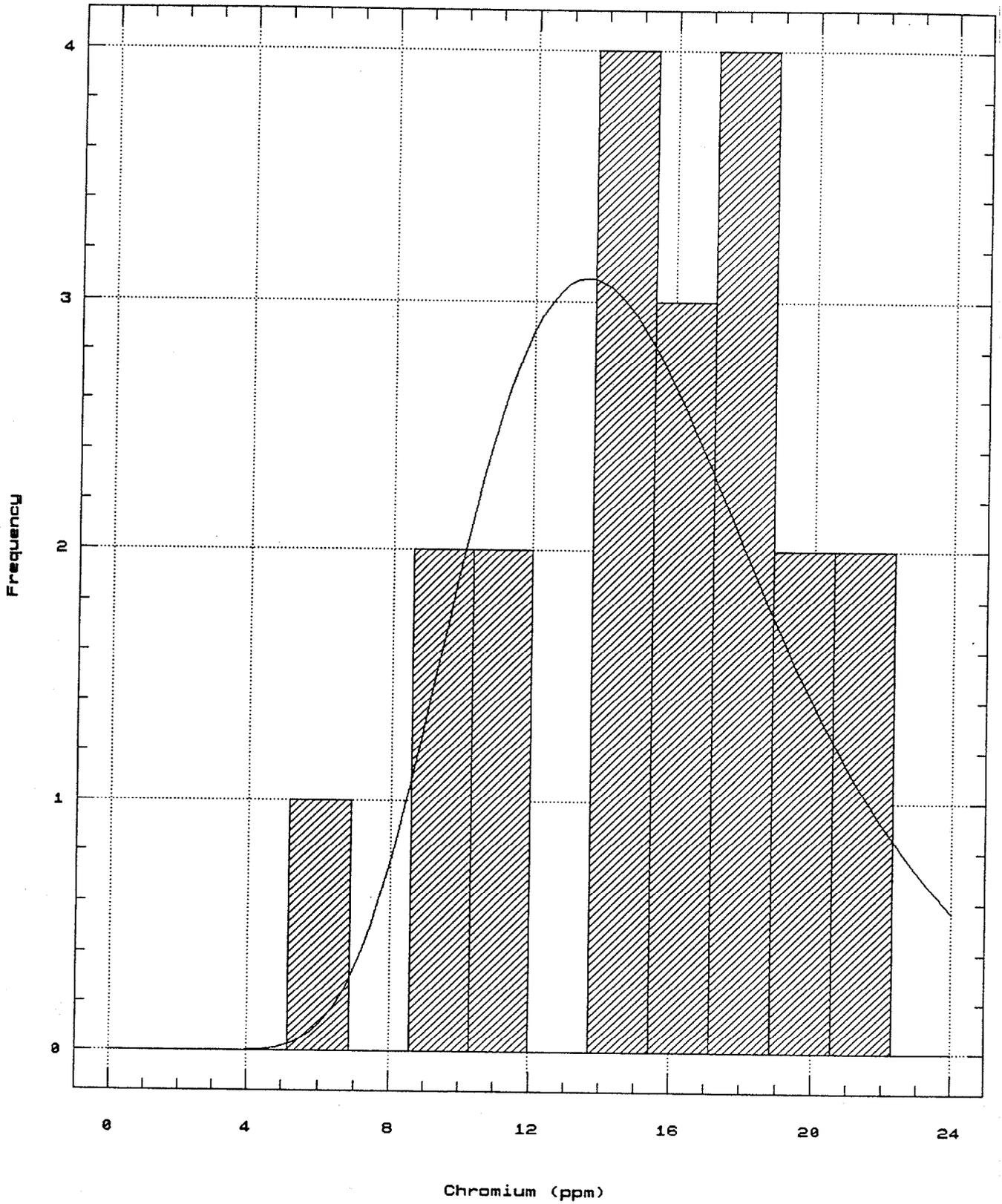
TAL Chromium / Normal

Distribution Curve



TAL Chromium / Lognormal

Distribution Curve



ATTACHMENT 3

NAVAL SUBMARINE BASE - NEW LONDON
OFFSITE RESIDENTIAL WELLS
SUMMARY OF WELL WATER ANALYTICAL DATA (INORGANICS)
SAMPLE COLLECTION DATE - MARCH 1993

PARAMETER	ARAR/TBC		SAMPLE IDENTIFICATION/LOCATION										
			OSW01	OSW02	OSW03	OSW05	OSW06	OSW07	OSW08	OSW09	OSW10	OSW11	OSW13
	VALUE	SOURCE	1488 Rte 12	6 Finelock Dr	1053 Long Cove Rd	1037 Long Cove Rd	1458 Rte 12	40 Finelock Dr	1292 Rte 12	1477 Rte 12	10 Sleepy Hollow Ptwy	18 Sleepy Hollow Ptwy	162 Military Hwy
TAL INORGANICS (ppb)													
Aluminum	200	SMCL	34.9	88.5	ND	ND	ND	181	35.9	25.4	514	241	ND
Antimony	6	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	50	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	1000	CTMCL	35.2	11.3	85.2	24.5	ND	8.8	183	14.2	23.7	ND	7
Beryllium	4	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	600	DHA	21.1	ND	ND	28	ND	34.8	ND	39.6	32.7	ND	27.4
Cadmium	5	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	--		9690	6070	28000	10800	7790	14300	35400	8310	3640	4120	28000
Chloride	250000	SMCL	57000	5000	95000	14000	16000	5000	180000	5000	10000	5000	26000
Chromium	50	CTMCL	ND	ND	ND	ND	ND	6.3	ND	ND	ND	ND	ND
Cobalt	--		ND	ND	2.6	ND	ND	2.6	ND	ND	2.9	ND	ND
Copper	1000	CTMCL	41	12.5	194	220	276	50.7	127	148	1.9	22.3	26.3
Iron	300	SMCL	32.1	30.6	105	48.9	ND	53.2	ND	54.8	25.3	ND	26.9
Lead	15	AL	1.1	6.5	ND	20.1	5.7 J	3	264 J	1.8	1.4	ND	ND
Magnesium	--		1560	1100	3690	1700	1750	1400	5580	1080	779	1020	1630
Manganese	200	DMCLG	4.8	11.6	891	5.4	ND	4.2	10.4	10.2	59.1	10.2	ND
Mercury	2	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	PMCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	--		731	598	17900	1500	931	1350	3740	522	346	ND	1280
Selenium	50	MCL	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	50	CTMCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	20000	DHA	37200	3640	29100	9210	9840	4810	97700	3730	5300	3370	17000
Thallium	2	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	20	DHA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	2000	HA	33.7	8.9	ND	23.8	21.8	11.5	196	10.8	11	ND	6.7
Cyanide (total)	200	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.2	ND

NAVAL SUBMARINE BASE - NEW LONDON (continued)
OPPSITE RESIDENTIAL WELLS
SUMMARY OF WELL WATER ANALYTICAL DATA (INORGANICS)
SAMPLE COLLECTION DATE - MARCH 1993

PARAMETER	ARAR/TBC		OSW14	OSW15	OSW21	OSW22	OSW23	OSW24	OSW25	OSW30	OSW33	OSW34
	VALUE	SOURCE		16 Sleepy	1140 N Pleasant	1130 N Pleasant	1198 N Pleasant	1298 N Pleasant		1319 Baldwin		
			48 Finlock Dr	Hollow Ptwy	Valley Rd	Valley Rd	Valley Rd	Valley Rd	1320 Rte 12	Hill Rd	150 Military Hwy	152 Military Hwy
Aluminum	200	SMCL	ND	ND	56.1	30.8	281	27.1	104	ND	42.6	394
Antimony	6	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	50	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	1000	CTMCL	114	2.9	37.9	26.7	43	31.7	32.5	9	17.3	74.4
Beryllium	4	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	600	DHA	24.3	22.2	22.7	20.1	ND	ND	79.6	ND	35.4	25.9
Cadmium	5	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	--		28500	21000	9080	12300	6800	8950	10900	4770	11500	9760
Chloride	250000	SMCL	6000	5000	27000	31000	26000	66000	10000	25000	55000	99000
Chromium	50	CTMCL	ND	ND	4.5	ND	ND	4.8	ND	ND	ND	6.7
Cobalt	--		ND	ND	ND	ND	ND	ND	ND	ND	ND	4.3
Copper	1000	CTMCL	10.7	12.9	104	512	398	66.4	15.2	125	28.4	55.9
Iron	300	SMCL	14.1	53.5	76.7	60.5	134	46.8	19.7	113	67.3	66.9
Lead	15	AL	3	ND	9.2	6.3	ND	3.7	1.4	5.9	2.5	6.6
Magnesium	--		1600	1770	2300	2850	2100	1850	2340	1170	3310	1530
Manganese	200	DMCLG	ND	2.7	18.7	5.4	50.9	13.3	89.4	13.7	95.1	56.5
Mercury	2	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	PMCL	ND	ND	ND	ND	ND	ND	89.2	ND	ND	ND
Potassium	--		745	1080	1930	2270	1930	1840	2300	446	1560	1470
Selenium	50	MCL	ND	ND	ND	ND	ND	4.1	ND	ND	ND	ND
Silver	50	CTMCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	20000	DHA	6710	8600	16100	16300	17900	37500	8240	16200	27100	53000
Thallium	2	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	20	DHA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	2000	HA	8	7.9	17.5	19.9	26.2	7	32.4	14.8	26.1	97.3
Cyanide (total)	200	MCL	ND	ND	15.5	2.3	ND	4.8	ND	1.9	ND	ND

Notes:

- ARAR/TBC indicates applicable or relevant and appropriate requirements/TBC indicates to be considered values.
- SMCL = Secondary Maximum Contaminant Level; MCL = Maximum Contaminant Level; CTMCL = Connecticut Maximum Contaminant Level; PMCL = Proposed Maximum Contaminant Level; AL = Action Level; HA = Health Advisory; DHA = Draft Health Advisory; and DMCLG = Draft Maximum Contaminant Level Goal.
- Shading indicates value above ARAR/TBC. Only MCL, CTMCL and AL are ARAR.
- ppb indicates concentrations of parts per billion.
- ND means not detected; less than detection limit.
- J indicates estimated value based on data validation.

ATTACHMENT 4



Halliburton NUS Corporation

FINAL RESPONSE TO COMMENT BY MR ERWIN M. COHEN

FINAL ACTION MEMORANDUM FOR BUILDING 31

Naval Submarine Base New London
Groton, Connecticut

July 8, 1993

Comment:

In the announcement published in the Norwich Bulletin on May 14, 1993, the Navy presented a stabilization and immobilization plan for the lead contaminated soil in the basement of building #31 on the Groton Sub Base. The published announcement also mentioned three alternative remediations. However, there was no mention of the remediation method broadly described as soil washing and extraction. Would you please comment on why this method is not being considered or mentioned.

The extraction method may reduce the contamination levels that currently exist. It also can result in separation of contaminated from non contaminated portions of the soil and could reduce the amount of soil that need to be remediated.

I believe there is some merit in reducing the amount and or concentration of the lead-soil mixture before returning it to the site even when stabilization method are ultimately of use.

Response:

Solidification/stabilization was selected for the treatment of the lead contaminated soil at Building 31 because it is the U.S.EPA's Best Demonstrated Available Technology (BDAT) for lead contaminated soil. Although this is not mentioned in the Final Action Memorandum as it is not meant to be a complete Feasibility Study, soil washing/ extraction was considered at the onset of the project and not pursued based on the evaluation of this technology for similar CERCLA (Superfund) sites.

The solvents which can be used to wash/extract lead from soil include EDTA and variety of acids. The use of EDTA as a solvent allows for lead recovery through sulfide precipitation or electrowining. However, EDTA extraction, when bench-scale tested at several CERCLA sites, including ILCO (Alabama), Lee's Farm (Wisconsin), and Sapp Battery (Florida), did not achieve remedial objectives. Use of hydrochloric or sulfuric acid is generally more effective for the removal of lead



but does not allow for easy lead recovery with the spent acid normally being neutralized with lime which precipitates the lead as an hydroxide. Use of fluosilicic acid as a solvent has not been fully demonstrated and it requires a carbonate pretreatment and possibly a nitric acid post-treatment but it may allow for lead recovery through electrowining.

In any case, treatment of the spent solvent and/or lead recovery significantly adds to the complexity and cost of the soil washing/extraction technology and considerably reduces its attractiveness when compared with solidification/stabilization, especially for sites with relatively small volumes of contaminated soil, such as Building 31.



greatly reduce the amount of soil that
need to be remediated.

I believe there is some merit in
reducing the amount and or concentration
of the lead-soil mixture before returning
it to the site. ~~particulates~~ ~~where~~ even
when stabilization methods are ultimately
of use.

Sincerely,

Erwin M. Cohen

Erwin M. Cohen
685 N. Main St
Norwich, Ct 06360

c/o EMCO Test'g + Engineering Co.



Halliburton NUS Corporation

FINAL RESPONSES TO U.S.EPA COMMENTS

FINAL ACTION MEMORANDUM FOR BUILDING 31

Naval Submarine Base New London
Groton, Connecticut

July 8, 1993

NOTE: Comment numbers are as shown in U.S.EPA letter of June 9, 1993 and reflect the numerical order of these comments as first made by U.S.EPA regarding the Draft Action Memorandum in their letter, dated April 20, 1993.

1. **EPA Comment #2:** EPA had queried in its April 20, 1993 comment letter that a comparison of soils data should be made to site-specific background data. During the April 30, 1993 conference call, it was stated that background concentrations would be derived from the Lower Subase. However the Final Action Memorandum does not state that site-specific background levels will be determined prior to performing confirmatory sampling. Without site-specific background samples, it will be impossible to confirm that appropriate clean-up concentrations have been achieved.

Response: As agreed during the April 30, 1993 phone conference, response to Comment #2 from U.S.EPA letter of April 20, 1993, presented a comparison of Building 31 contaminated soil metal concentrations as compared to site-specific background values obtained from Lower Subase. This comparison showed that, other than lead, only antimony and zinc exceeded background values. In addition, the response stated that maximum copper concentration was found to exceed a literature value for "typical Eastern U.S. soils" and that the selected action would stabilize antimony, zinc, and copper at the same time as lead. The Final action Memorandum does not state that site-specific background levels will be determined prior to performing confirmatory sampling because the clean-up goal is to treat all soil with a total lead concentration of 500 mg/kg or more rather than all soil with a total lead concentration greater than background.

2. **EPA Comment #6:** In its aforementioned comment letters, EPA was concerned that air monitoring was not discussed in the text of the proposed removal action. The Navy responded that text would be added to Section 5.1.1.1 to address air monitoring. Although the text of the May 1993 version has been modified since the April 9 submission, it does not address any of the concerns raised in EPA's May 6, 1993 correspondence. Please explain.



Issue 1

It appears from the discussion regarding the presence of a "direct reading carbon monoxide monitor" that NUS will be operating an internal combustion engine inside Building 31 during implementation of the proposed removal activities. If so, the Navy will need to have exhaust hoses installed (like those employed in parking garages) to adequately ventilate and remove the carbon monoxide inside the building before it reaches levels that can be detected by a CO monitor.

Issue 2

The text states that a real time total airborne particulate monitor will be used to estimate the concentration of airborne lead in the work area. What will be the basis for estimating airborne lead concentrations based on a measurement of total particulates?

Issue 3

Because work will initially be performed in an area of uncertain risk, i.e. a "potentially-contaminated area", it is strongly recommended that workers in the exclusion zone don the highest level of respiratory protection, i.e. Level C, until it can be determined that airborne contaminants are not present at the site. Workers should be in the highest level of protection at the outset of potentially hazardous work and downgrade to the next level of protection, i.e. Level D, if deemed appropriate.

Response: The three above issues raised by U.S.EPA in their May 6, 1993 correspondence were not addressed either in the May 1993 Final Action Memorandum or in the May 7, 1993 responses to comments on the Draft Action Memorandum as they were received too late to do so. Responses to these issues are as follows:

Issue 1

Ventilation hoses will be provided. Although it is not specifically mentioned in the Final Action Memorandum, this provision is part of the Remedial Design and is specified in Section 2096-Safety, Health, and Emergency Response, paragraph 1.3, page 3. of the Technical Specifications.

Issue 2

The correlation between airborne particulates and lead concentrations is based on the conservative assumption that all airborne particulates contain 10,000 mg/kg of lead, i.e., an airborne particulate concentration of 3.0 mg/m³ would correspond to an airborne lead concentration of 30 µg/m³.



Issue 3

Initial use of the highest level of respiratory (and PPE) protection with subsequent downgrading as allowed by existing conditions is appropriate where current conditions at a site are unknown but suspected to be hazardous. Building 31 existing current conditions are known to only require Level D PPE protection for entry and inspection-type activities. Once the remedial action starts, potential Health and Safety risks to construction workers will be associated with inhalation of lead-contaminated airborne particulates and CO emissions. These risks will be minimized by implementing dust control and ventilation measures and by monitoring of airborne particulates and CO emissions. Halliburton NUS thus feels that it is appropriate to specify an initial Level D PPE protection with potential upgrade since existing current conditions within Building 31 are known to only require Level D PPE protection and since, during the remedial action, appropriate measures will be taken to prevent conditions from deteriorating and to provide adequate warning if they do.

3. **EPA Comment #15:** The Action Memorandum proposes to solidify the majority of the contaminated soils, which will restrict migration of contaminants from the site into the Thames River via ground water discharge to surface water. Also, the Navy has previously agreed to investigate ground water contamination during the Study Area Screening Evaluation. However, the Action Memorandum still has not acknowledged the fact that ground water discharge to surface water is a potential migration pathway for contaminant migration. Please clarify.

Response: The reason for which the Action Memorandum does not acknowledge that ground water discharge to surface water is a potential contaminant migration pathway is that, as stated in the May 7, 1993 response to U.S.EPA Comment #15: "A complete exposure pathway to surface water has not been identified." The groundwater beneath Building 31 is apparently contaminated with relatively low levels of lead (avg. 117 µg/l, max. 392 µg/l) but, since this lead is almost exclusively in the particulate rather than dissolved form, there is little likelihood of this lead migrating to the Thames River. Also, there is some doubt as to whether the elevated lead levels measured in the groundwater may have resulted from contaminated soil particulate entrainment during sampling and an additional round of groundwater sampling will be performed in August 1993 using slow purging techniques to test this possibility. In conclusion, as stated in Section 3.2, page 3-6, third paragraph, last two sentences of the May 1993 Final Action Memorandum: "It would be difficult to relate elevated lead concentrations in the Thames River to Building 31 in particular, as the Thames is a large tidally-influenced body of water. A source the size of Building 31 could not be related to any measured lead levels without a detailed hydraulic study."



4. **EPA Comment #21:** During the April 30, 1993 conference call, NUS stated that strength testing of the solidified material could be included in the specifications put out to bidders as part of the treatment standards. However, the inclusion of strength testing in the treatability study has not been mentioned in the Action Memorandum. Please clarify.

Response: The requirement for testing the strength of the solidified material is indicated in Section 5.1.1.1, page 5-2, first paragraph, last sentence of the May 1993 Final Action Memorandum.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J.F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203-2211

June 9, 1993

David Mui
Environmental Restoration Branch
Naval Facilities Engineering Command
U.S. Department of the Navy
10 Industrial Way
Mail Stop 82
Lester, PA 19113-2090

Dear Mr. Mui:

On May 12, 1993 EPA received four copies of the final Action Memorandum for Building 31 at the Naval Submarine Base New London (NSBNL), Groton, Connecticut. EPA conducted a review of the revised Action Memorandum to ensure that items discussed during our April 30, 1993 conference call were addressed in the final document. Those issues raised in EPA's April 20, 21 and May 6, 1993 comment letters which have not been adequately addressed are outlined below:

- EPA Comment #2

EPA had queried in its April 20, 1993 comment letter that a comparison of soils data should be made to site-specific background data. During the April 30, 1993 conference call, it was stated that background concentrations would be derived for the Lower Subbase. However, the final Action Memorandum does not state that site-specific background levels will be determined prior to performing confirmatory sampling. Without site-specific background samples, it will be impossible to confirm that appropriate clean-up concentrations have been achieved.

- EPA Comment #6

In its aforementioned comment letters, EPA was concerned that air monitoring was not discussed in the text of the proposed removal action. The Navy responded that text would be added to Section 5.1.1.1 to address air monitoring. Although the text in the May 1993 version has been modified since the April 9 submission, it does not address any of the concerns raised in EPA's May 6, 1993 correspondence. Please explain.





- EPA Comment #15

The Action Memorandum proposes to solidify the majority of contaminated soils, which will restrict migration of contaminants from the site into the Thames River via ground water discharge to surface water. Also, the Navy has previously agreed to investigate ground water contamination during the Study Area Screening Evaluation. However, the Action Memorandum still has not acknowledged the fact that ground water discharge to surface water is a potential migration pathway for contaminant migration. Please clarify.

- EPA Comment #21

During the April 30, 1993 conference call, NUS stated that strength testing of the solidified material could be included in the specifications put out to bidders as part of the treatment standards. However, the inclusion of strength testing in the treatability study has not been mentioned in the Action Memorandum. Please clarify.

Should you have any questions in regards to the above items, please do not hesitate to contact me at (617) 573-5764. Thank you in advance for your assistance in this matter.

Sincerely,

Carol A. Keating
Remedial Project Manager
Federal Facilities Superfund Section

cc: William Mansfield, NSBNL
Adam Sullivan, CTDEP
Dale Weiss, TRC