



DEPARTMENT OF THE NAVY
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT 06349-5000

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25 August 2003

From: Commanding Officer, Naval Submarine Base New London
To: Distribution

Subj: RESTORATION ADVISORY BOARD (RAB) MEETING

Encl: (1) Proposed Agenda
(2) Draft 26 February 03 RAB Minutes

1. The next RAB meeting has been scheduled for September 9, 2003 at 6:30 pm, at the Best Western Olympic Inn, 360 Route 12, Groton, CT (860) 445-8000.
2. The local press and public are invited to attend this meeting. Questions from the public are welcome during this meeting.
3. Enclosure (1) is the meeting agenda. Enclosure (2) is the draft minutes from the previous RAB meeting. Please contact me at (860) 694-5176, if you have any questions.

A handwritten signature in black ink, appearing to read "Richard D. Conant".

RICHARD D. CONANT
Environmental Director
By direction of
the Commanding Officer

**SUBMARINE BASE NEW LONDON
RESTORATION ADVISORY BOARD
MEETING**

6:30 PM September 9, 2003

Best Western Olympic Inn
360 RT. 12, Groton, CT

AGENDA

- | | | |
|----|---|------------|
| 1. | Review of Minutes From Last Meeting
<i>Dick Conant, SUBASE New London</i> | 10 Minutes |
| 2. | SUBASE Groundwater OU
Mr. Corey Rich, <i>Tetratech</i> | 35 minutes |
| 3. | Landfill Inspection Reports
Mr. Darren Gainer, EEC | 35 minutes |
| 4. | Set Future Meeting Date
<i>Dick Conant, SUBASE New London</i> | 10 Minutes |

Enclosure (1)

Subj: RESTORATION ADVISORY BOARD (RAB) MEETING

Distribution:

SUBASENLON (Commanding Officer)
EFANE (Mark Evans)
CTDEP (Mark Lewis)
CINCLANTFLT (Mark Dussia)
USEPA (Kymberlee Keckler)
NE Region PAO
NE Region REC (Andy Stackpole)
New London Health Dept. (Brain Savageau)
Ledgelight Health District (Felix Prokop III)
Uncas Health District (Arthur Cohen)
Town of Waterford (Thomas Wagner)
ATSDR (Carole Hossam)
Town of Groton (Deborah Jones)
City of New London (Pamela Kilbey-Fox)
CT Dept. of Agriculture (Jim Citak)
NOAA (Kenneth Finkelstein, Ph.D.)
Groton City Conservation Commission (L.J. Chmura, Chairman)
Groton City Conservation Commission (Dave Paskausky)
Tetra Tech NUS (Corey Rich)
Foster Wheeler (Joe Fischl)
Foster Wheeler (Larry Kahrs)
Foster Wheeler (Patricia Ghoring)
Connecticut College/Botany Dept.
NCIS (Mr. Richard Dawelius)
EPA Region 1 Community Relations Coordinator (Ms. Pam Harting-Barrat PhD)
EA Engineering (Mr. Charles McLeod)
New London Day (Mr. Robert Hamilton)
Mr. Bernard Boylan
Mr. Steve Cicoria
Mr. Bart Pearson
Mr. Noah Levine
Mr. Larry Gibson
Mrs. Deborah Motycka Downie
Mr. Andrew Parrella
Ms. Susan Orill
Mr. Norman Richards
Mr. Harry Watson
Mr. John Vitkevich
Batelle Corporation (Ms. Patty White)
Mr. John Nugent (CT College Government Dept.)
Mr. Brian Gainer (ECC)

Meeting Minutes

Restoration Advisory Board Installation Restoration Program Naval Submarine Base New London Groton, Connecticut

26 February 2003

Attendees:

Sue Orrill (RAB Member)
Mark Evans (EFANE)
Dick Conant (NLSB)
Noah Levine (RAB Member)
Deborah Downie (RAB Community Co-Chair)
Corey Rich (Tetra Tech NUS)
Jason Speicher (EFANE)
Patty Ghoring (FWC)
Joe Fischl (FWC)
Larry Gibson (Public)
Melissa Griffin (NLSB)

1. Mr. Dick Conant opened the RAB meeting at 6:35 PM. The meeting began with a review of the minutes from the last meeting held on 31 July 02 at SUBASE. Hearing no objections or changes, the 31 July 02 minutes were accepted.

2. Mr. Corey Rich of Tetra Tech presented the initial data from the Base-wide Groundwater OU data gap investigation, see attached presentation. Mr. Rich indicated that the investigation showed sporadic low-level "hits" for volatiles at various locations including the "New Source" area adjacent to Stream 5 and Triton Avenue. The New Source area may potentially be contributing to the "hits" of volatiles. Detectable levels of VOCs, SVOCs, PAHs, PCBs, Pesticides and metals were found at the New Source area.

Site 15 (Spent Acid) had originally shown high levels of metals and chlorinated solvents in the first round of groundwater sampling. The data gap investigation did not confirm detectable levels of volatiles and showed only low levels of metals. Mr. Rich conjectured that the observed difference in the data might be due to variation in sampling technique or the time lapse between sampling rounds.

Sampling at the Weapons Complex (Site 20) revealed only very low level or non-detect results. Conclusion is that groundwater at this site is not contaminated to any appreciable level.

Enclosure (2)

3. Ms Patty Ghoring and Mr. Joe Fischl from Foster Wheeler presented the draft Year 2 Long-term Monitoring report for the Wetland Restoration at Area A Downstream, report available upon request. They indicated that herbaceous vegetation had established well at the site from the time of the 1st year monitoring report. Benthic community sampling indicated generally good recolonization of the site with some noted variability between the aquatic systems. This variability may be due to drought conditions affecting hydrology in select systems during the summer months. Corrective action were taken to pull cat-tails, treat phragmites with herbicide, protect saplings from deer browse with application of a deer repellent, and conduct limited replanting of trees on-site. The 3rd year monitoring investigation and report are scheduled for fall 2003.

4. Mr. Speicher from EFANE presented on the proposed Rapid Sediment Characterization (RSC) of Thames River sediments at Piers 15/17, Piers 2/4, and adjacent to Pier 1 at the former Marine Railway site where an investigation in 2000 by SAIC confirmed potentially elevated levels of metals, PCBs and VOCs. Mr. Speicher's presentation is attached. The RSC is intended as a Phase 1 field investigation of the sites. If risk is assessed then the investigation goes to a data validation process potentially leading to a Phase II investigation using Data Quality Objectives. The initial fieldwork for the RSC is schedule for early summer 2003.

5. The next RAB has been scheduled for 6:30 PM on 9 September 2003 at the Best Western. Having no further business, Mr. Conant closed the RAB meeting at 8:10 PM.

Basewide Groundwater Operable Unit Data Gap Investigation

Restoration Advisory Board Meeting
Naval Submarine Base-New London
Groton, Connecticut
February 26, 2003



INTRODUCTION

- Purpose – Fill remaining site-specific data gaps for sites included in the Basewide Groundwater Operable Unit Remedial Investigation (BGOURI).
- Results of investigation will be used in conjunction with BGOURI results to complete RIs/Feasibility Studies (FSs) for the sites.
- Sites included in data gap investigation were Site 3 (Area A Downstream), Site 15 (Spent Acid Storage and Disposal Area), and Site 20 (Area A Weapons Center).



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SITE 3 – AREA A DOWNSTREAM

- Data Gaps
 - Investigate newly identified source area (soil and groundwater).
 - Confirm nature and extent of groundwater contamination.



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SITE 3 – AREA A DOWNSTREAM

■ **Proposed Field Work**

- Soil Borings/Temporary Wells [4 locations with surface/subsurface soil sample pairs at each 3 locations (Full Analytical Suite)]
- Hand Augering/Soil Sampling [3 locations with surface/subsurface soil sample pairs at each location (Full Analytical Suite)].
- Groundwater sampling [5 existing wells (VOCs, SVOCs, and Metals) and 4 temporary wells (Full Analytical Suite)].



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SITE 3 – AREA A DOWNSTREAM

■ **Preliminary Results**

- Field Work - Unable to collect subsurface soil samples at two locations and one temporary well location was dry.
- New Source Area
 - Soil - VOCs, SVOCs (PAHs), Pest/PCBs, Metals
 - Groundwater - VOCs, SVOCs (PAHs), Metals
 - Unlikely that new area is source of VOCs in groundwater. Possible that new area is source of SVOCs (PAHs) in groundwater
 - Currently evaluating human health and ecological risks
- Existing Monitoring Wells
 - Concentrations of previous risk drivers (VOCs and metals) generally decreased between sampling events (Year 2000 to Year 2002)



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SITE 15 – SASDA

■ **Data Gaps**

- Verify completeness of Time-Critical Removal Action (TCRA).
- Confirm the nature and extent of groundwater contamination.



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SITE 15 – SASDA

- **Proposed Field Work** [REDACTED]
- **Soil Boring/Temporary Wells** [3 temporary wells and 3 soil borings with shallow and deep soil samples at each (VOCs and Metals)].
- **Groundwater Sampling** [3 permanent wells and 3 temporary wells (VOCs and Metals)].

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SITE 15 – SASDA

- **Preliminary Results**
 - All field work completed as proposed.
 - **Soil**
 - VOCs (acetone and methylene chloride only) and Metals
 - Results indicate TCRA removed majority of source.
 - **Groundwater**
 - VOCs (chloroform only) and Metals
 - Concentrations of previous risk drivers (TCE and metals) were significantly lower/non-detect (Year 2002 versus 2000).
 - Reviewing causes of significant decreases.
 - Currently evaluating human health risks.

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SITE 20 – AREA A WEAPONS CENTER

- **Data Gaps**
 - Confirm nature and extent of groundwater contamination.

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SITE 20 – AREA A WEAPONS CENTER

- Proposed Field Work [REDACTED]
- Groundwater sampling [2 existing monitoring wells (Metals)].



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SITE 20 - AREA A WEAPONS CENTER

- Preliminary Results
 - All field work completed as proposed.
 - Groundwater
 - Low concentrations of metals
 - Currently evaluating human health risks.



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PROJECT SCHEDULE

- Final Work Plan (October 2002 - Complete)
- Field Work (October 2002 - Complete)
- Rough Draft Feasibility Study (March 2003)
- Draft Feasibility Study (April 2003)

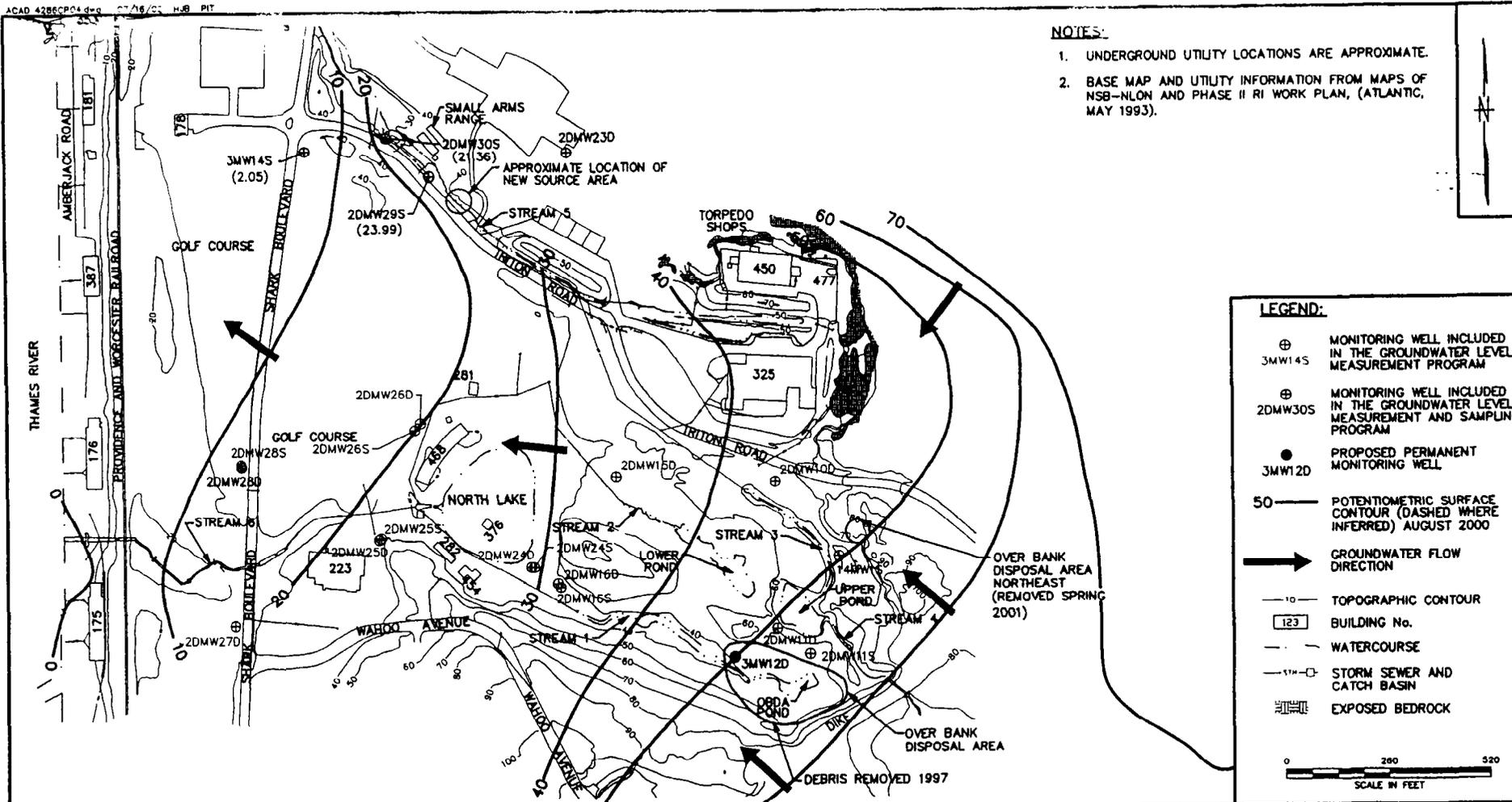


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NOTES:

1. UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE.
2. BASE MAP AND UTILITY INFORMATION FROM MAPS OF NSB-NLON AND PHASE II RI WORK PLAN, (ATLANTIC, MAY 1993).



LEGEND:

- ⊕ MONITORING WELL INCLUDED IN THE GROUNDWATER LEVEL MEASUREMENT PROGRAM
- ⊕ MONITORING WELL INCLUDED IN THE GROUNDWATER LEVEL MEASUREMENT AND SAMPLING PROGRAM
- PROPOSED PERMANENT MONITORING WELL
- POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED) AUGUST 2000
- GROUNDWATER FLOW DIRECTION
- TOPOGRAPHIC CONTOUR
- 123 BUILDING No.
- WATERCOURSE
- STORM SEWER AND CATCH BASIN
- ⊞ EXPOSED BEDROCK

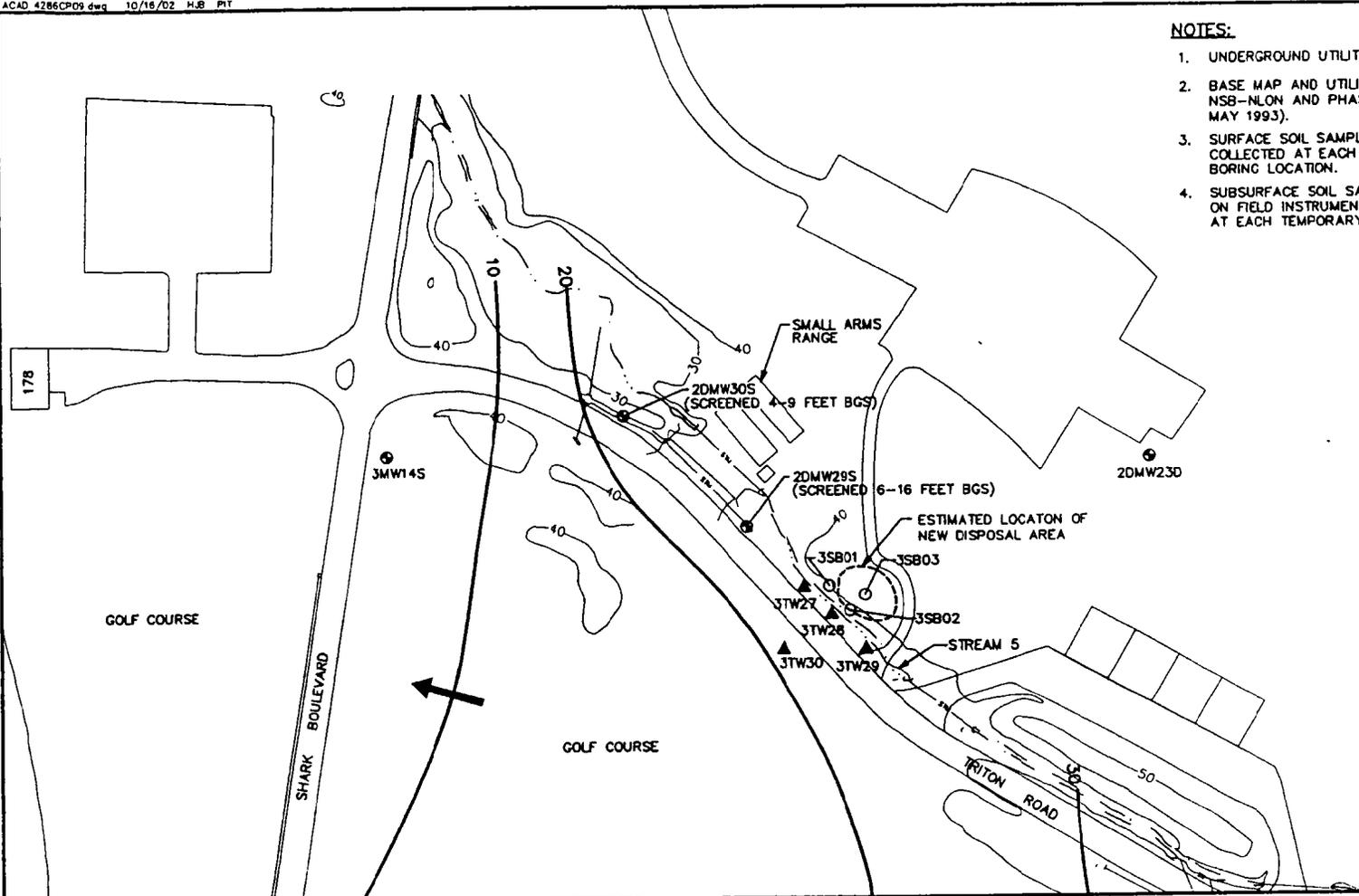
0 200 500
SCALE IN FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY	DATE	Tetra Tech NUS, Inc.	CONTRACT NO.	OWNER NO.
							HJB	7/9/02		4286	0841
							CHECKED BY	DATE		APPROVED BY	DATE
								7/19/02		CAR	7/19/02
							COST/SCHED-AREA			APPROVED BY	DATE
							SCALE			DRAWING NO	REV.
							AS NOTED			FIGURE 2-1	0

FORM CADD NO. 11NUS, 11NDG - REV. 0 - 1/20/98

NOTES:

1. UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE.
2. BASE MAP AND UTILITY INFORMATION FROM MAPS OF NSB-NLON AND PHASE II RI WORK PLAN, (ATLANTIC, MAY 1993).
3. SURFACE SOIL SAMPLES (0-1 FEET BGS) TO BE COLLECTED AT EACH TEMPORARY WELL AND SOIL BORING LOCATION.
4. SUBSURFACE SOIL SAMPLES (DEPTH DEPENDANT ON FIELD INSTRUMENT READINGS.) TO BE COLLECTED AT EACH TEMPORARY WELL AND SOIL BORING LOCATION.



LEGEND:

- ⊕ EXISTING MONITORING WELL LOCATION
JMw145
- ▲ PROPOSED TEMPORARY WELL LOCATION
JTW27
- PROPOSED SOIL BORING LOCATION
JSB01
- 10 — POTENTIOMETRIC SURFACE CONTOUR (DASHED WHERE INFERRED) AUGUST 2000
- GROUNDWATER FLOW DIRECTION
- 10— TOPOGRAPHIC CONTOUR
- 123 BUILDING NUMBER
- WATERCOURSE
- STW—□ STORM SEWER AND CATCH BASIN

0 100 200
SCALE IN FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

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COST/SCHED-AREA			
SCALE			
AS NOTED			

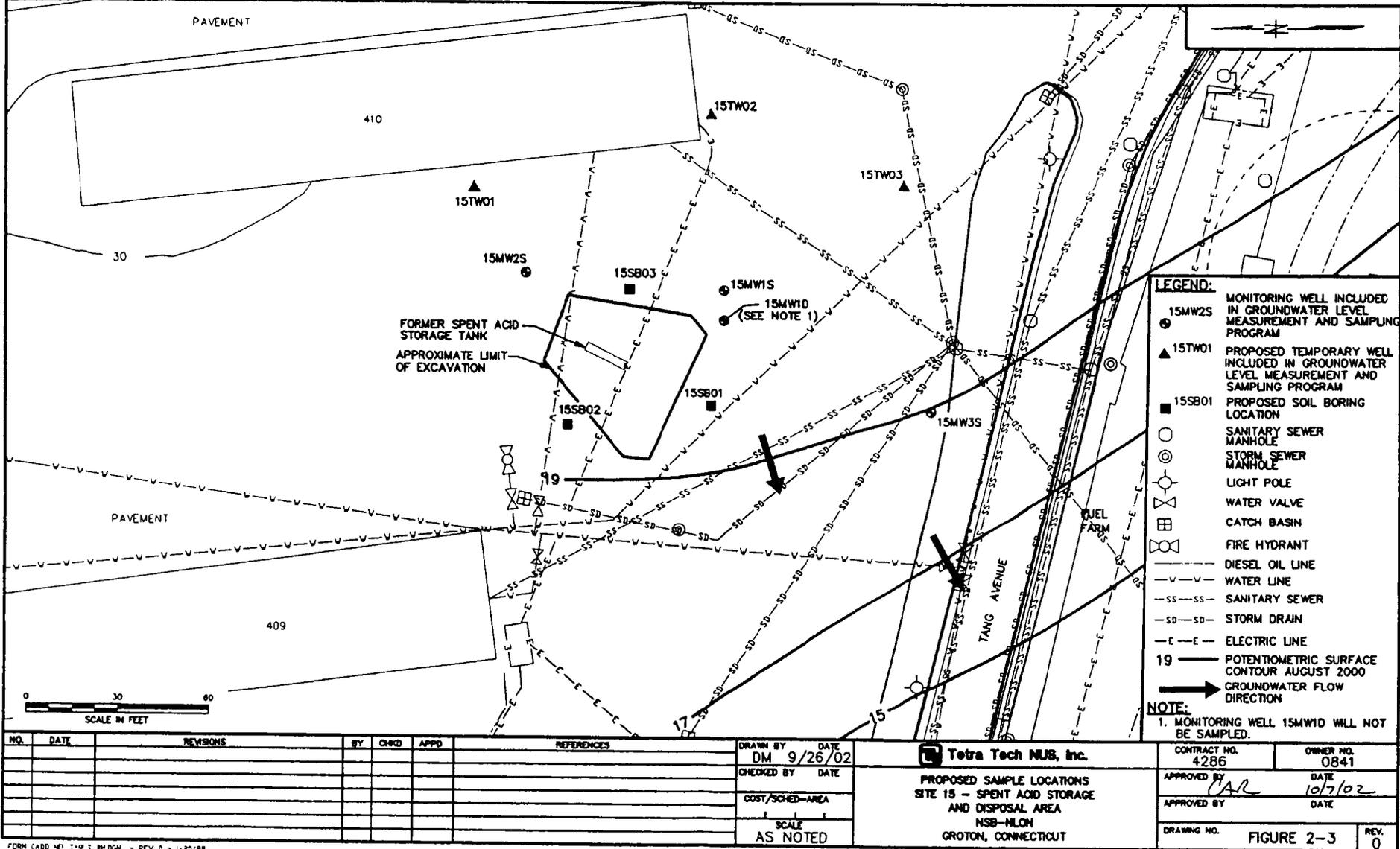
Tetra Tech NUS, Inc.

PROPOSED SAMPLING LOCATIONS
SITE J - NEW DISPOSAL AREA
NSB-NLON
GROTON, CONNECTICUT

CONTRACT NO.	4286	OWNER NO.	0841
APPROVED BY	<i>CAR</i>	DATE	10/16/02
APPROVED BY		DATE	
DRAWING NO.	FIGURE 2-2	REV.	0

FORM CADD NO. T14NUS_BM001 - REV 1 - 1/28/98

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NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	DRAWN BY	DATE	CONTRACT NO.	OWNER NO.
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							COST/SCHED-AREA			
							SCALE			
							AS NOTED			

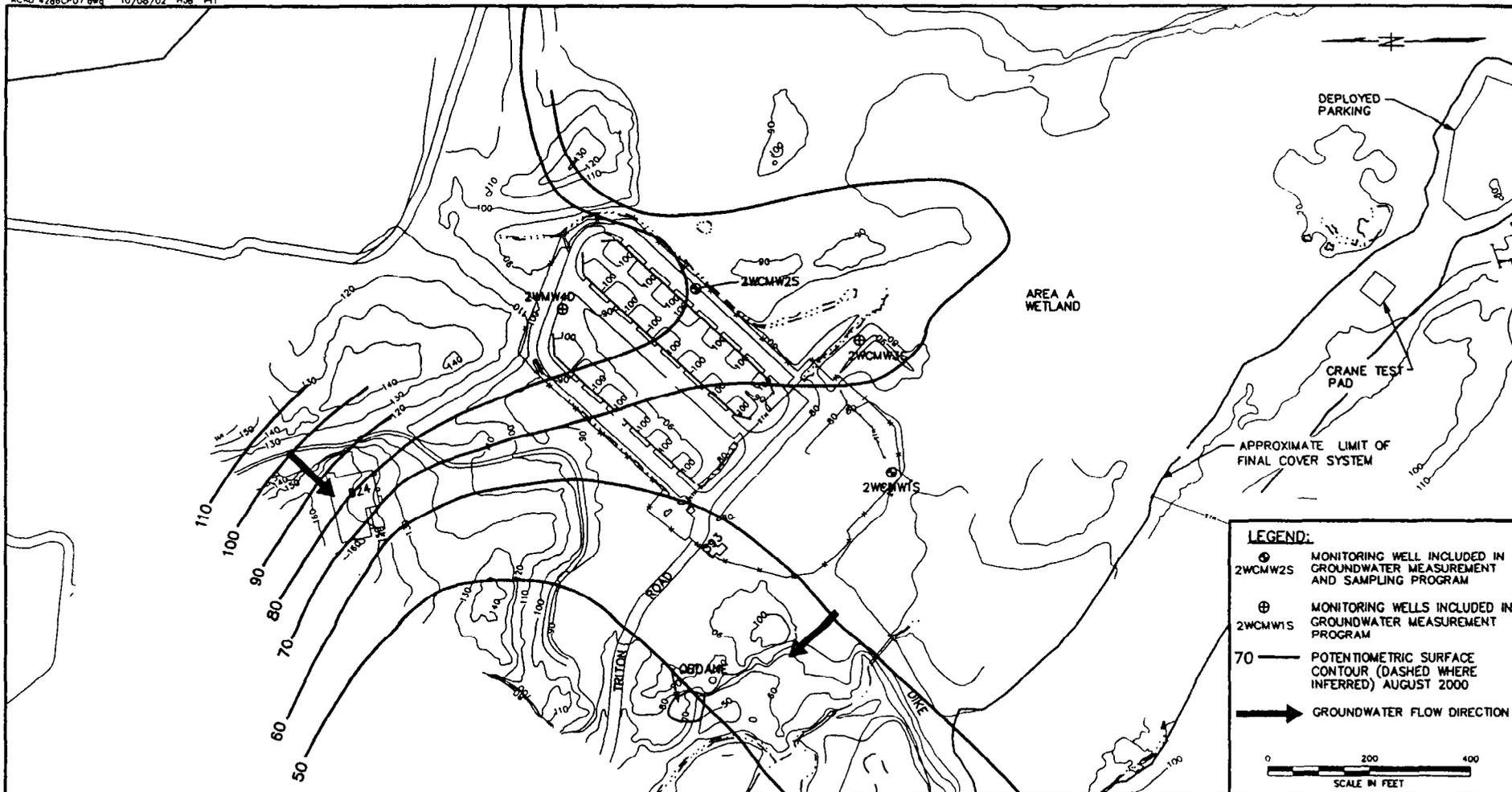
Tetra Tech NUS, Inc.

**PROPOSED SAMPLE LOCATIONS
SITE 15 - SPENT ACID STORAGE
AND DISPOSAL AREA
NSB-NLON
GROTON, CONNECTICUT**

APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	REV.
FIGURE 2-3	0

FORM CADD NO. 1-M 1, 24-DGH - REV 0 - 1/20/98

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NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJB	DATE 7/10/02	Tetra Tech NJS, Inc.	CONTRACT NO. 4286	OWNER NO. 0841
CHECKED BY	DATE		APPROVED BY <i>LAJ</i>	DATE 10/8/02
COST/SCHED-AREA		PROPOSED SAMPLING LOCATIONS SITE 20-AREA A WEAPONS CENTER NSB-NLON GROTON, CONNECTICUT		
SCALE AS NOTED		DRAWING NO. FIGURE 2-4		
			REV. 0	

FORM CADD NO TETRA, BLDG - REV 0 - 1/25/96



Approach for Validation/Investigation Study in the Thames River

Jason Speicher

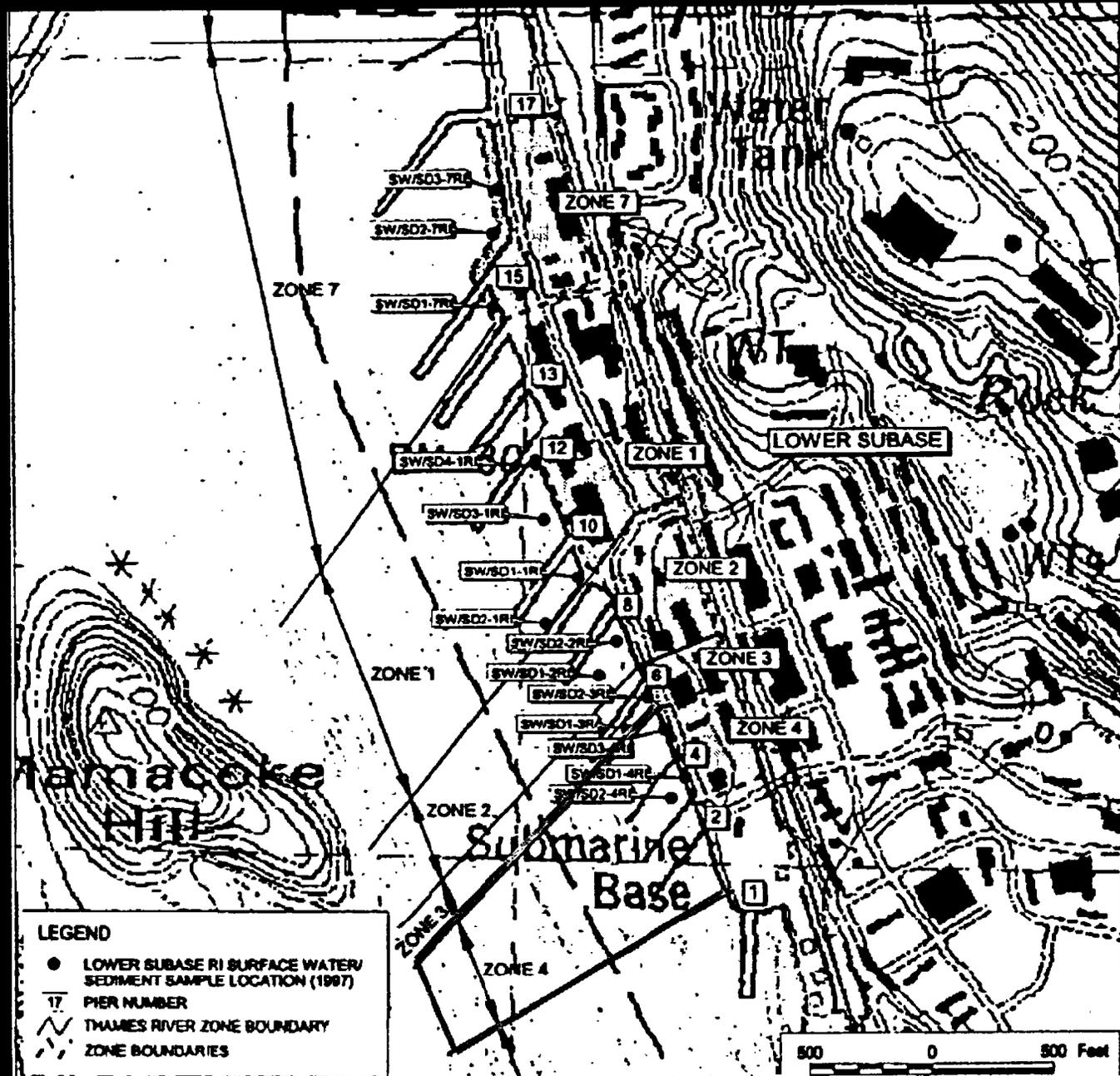
Engineering Field Activity Northeast



Overview of Presentation

- Background on need for additional validation/investigative studies
 - Zone 4
 - Zone 7
 - Pier I
- Team completing work
- Approach to completing work
 - Use of Rapid Sediment Characterization (RSC) tools coupled with laboratory analytical analysis
 - Developing Validation/Investigation Work Plan using the Data Quality Objectives process.

Zone 4

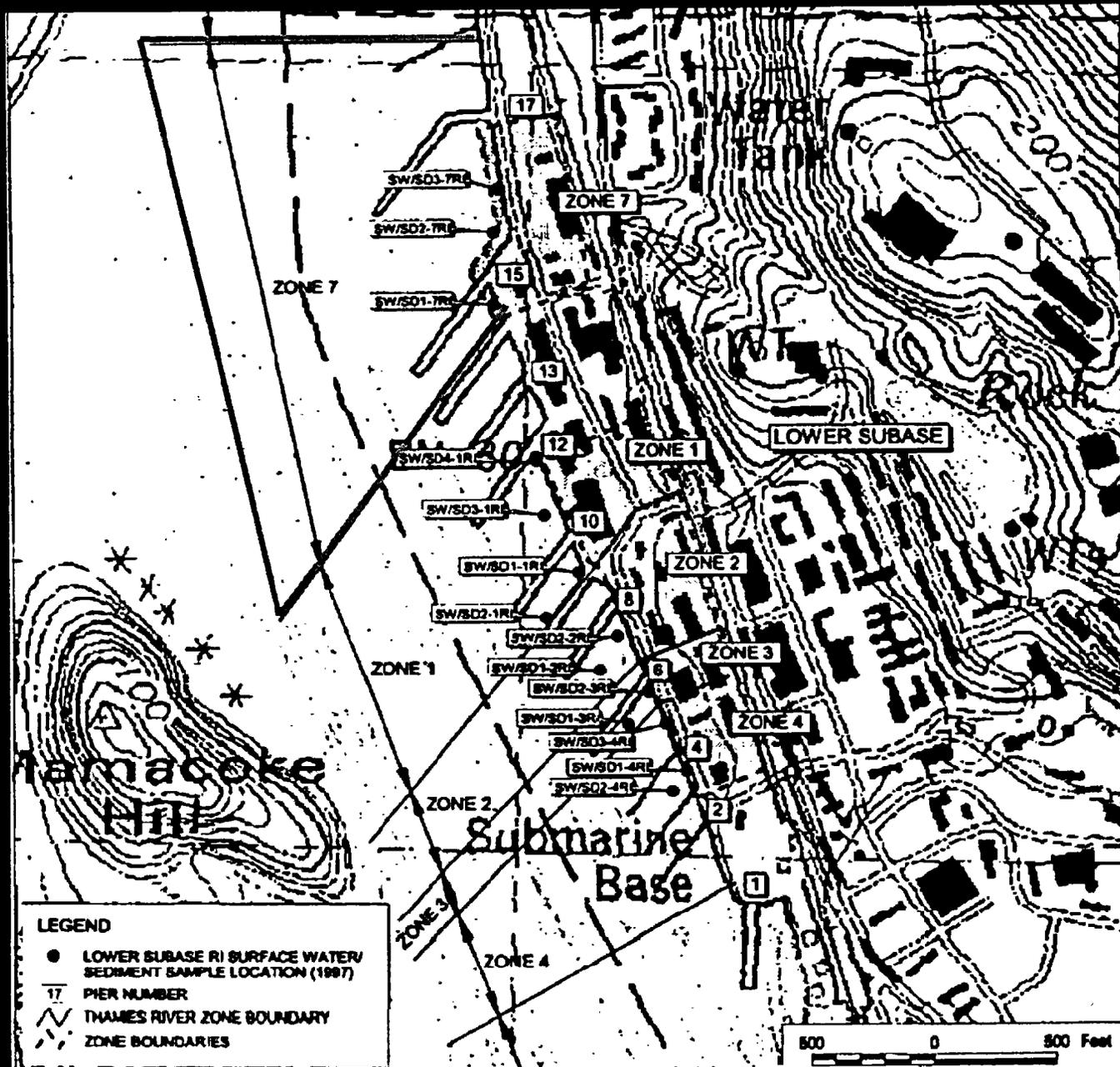




Background on Zone 4 in Thames River

- Onshore RI included following Sites/Areas
 - Site 13 – Building 79 Waste Oil Pit
 - Site 19 – Solvent Storage Area (Building 316)
 - Quay Wall Study Area
- Lower Subbase RI concluded Low to Moderate potential ecological risks in sediments
- However, further data collection was recommended by RI to further evaluate and validate potential ecological risks associated with sediment

Zone 7

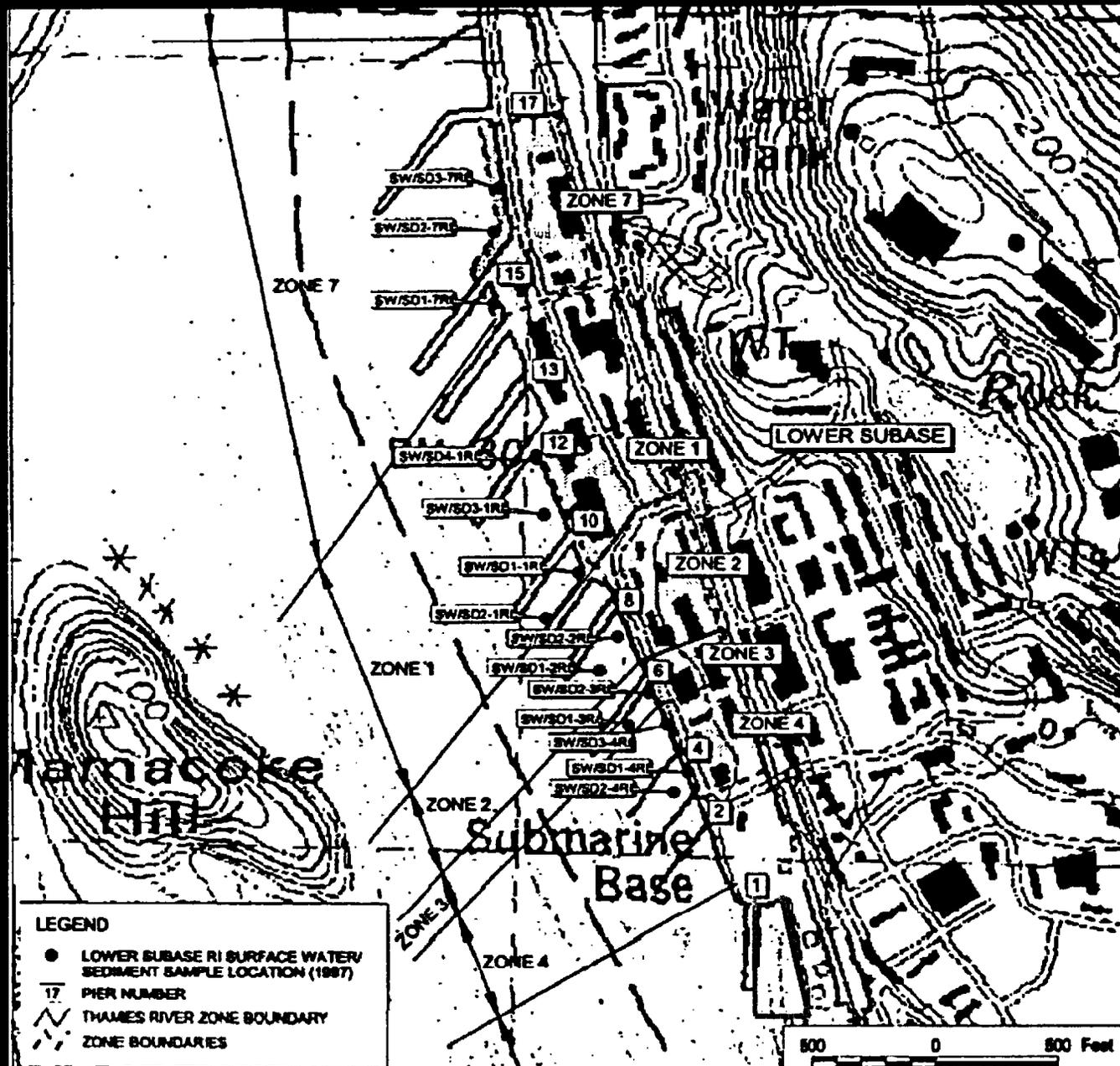




Background on Zone 7 in Thames River

- Onshore Lower Subbase RI included following Sites/Areas
 - Site 21 – Berth 16
 - Site 25 – Classified Materials Incinerator
 - Transformers at Building 157
- A substantial portion of Zone 7 was dredged as part of the Thames River dredging effort in 1996, including separate efforts related to the replacement of Pier 17 and dredging adjacent to Pier 15.
- RI concluded Low to Moderate potential ecological risks in sediments, but recommend additional sampling to validate findings because of sediments being dredged

Pier I Area





Purpose of Additional Validation/Investigation

■ Zone 4 Sediments

- Collect additional data to validate findings and conclusions from RI and proceed with FS if determined necessary

■ Zone 7 Sediments

- Collect additional data to examine post dredging conditions
- Confirm if conclusions from RI are still valid and proceed with FS if determined necessary

■ Pier I

- Further characterize extent of elevated levels in area
- Characterize potential ecological risks



Team to Complete Work

- Navy Team
 - Subbase and EFANE staff
 - Battelle Memorial Institute
 - Neptune and Company, Inc.
 - SPAWAR System Center, San Diego
 - Will complete RSC analysis
- Development of Data Quality Objectives (DQOs) and Work Plans will be coordinated with EPA and CTDEP



Approach to Complete Work

- Uses a scientifically methodical approach completed in two phases
 - Phase I – Pilot Study
 - Utilizes RSC analysis coupled with a percentage of laboratory confirmation analysis to give idea of current conditions based on chemistry
 - Phase II – Validation/Investigation Study
 - Uses results of Pilot Study and previous data (e.g. Lower Subbase RI) to proceed through DQO process to develop scientifically supportable Work Plan (as determined necessary)
 - Approach successfully used in recent sediment validation/investigation studies completed at the former Hunters Point Naval Shipyard, CA and at the Quantico Marine Corps Base, VA

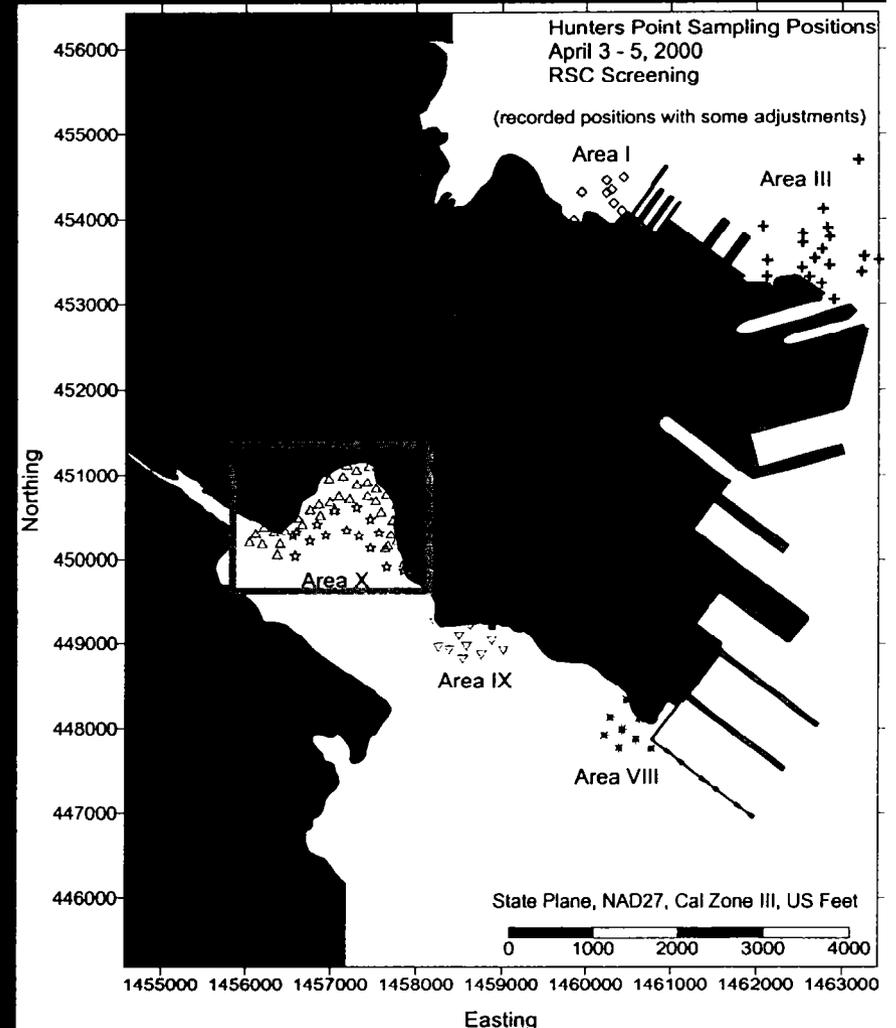


Phase I - Pilot Study

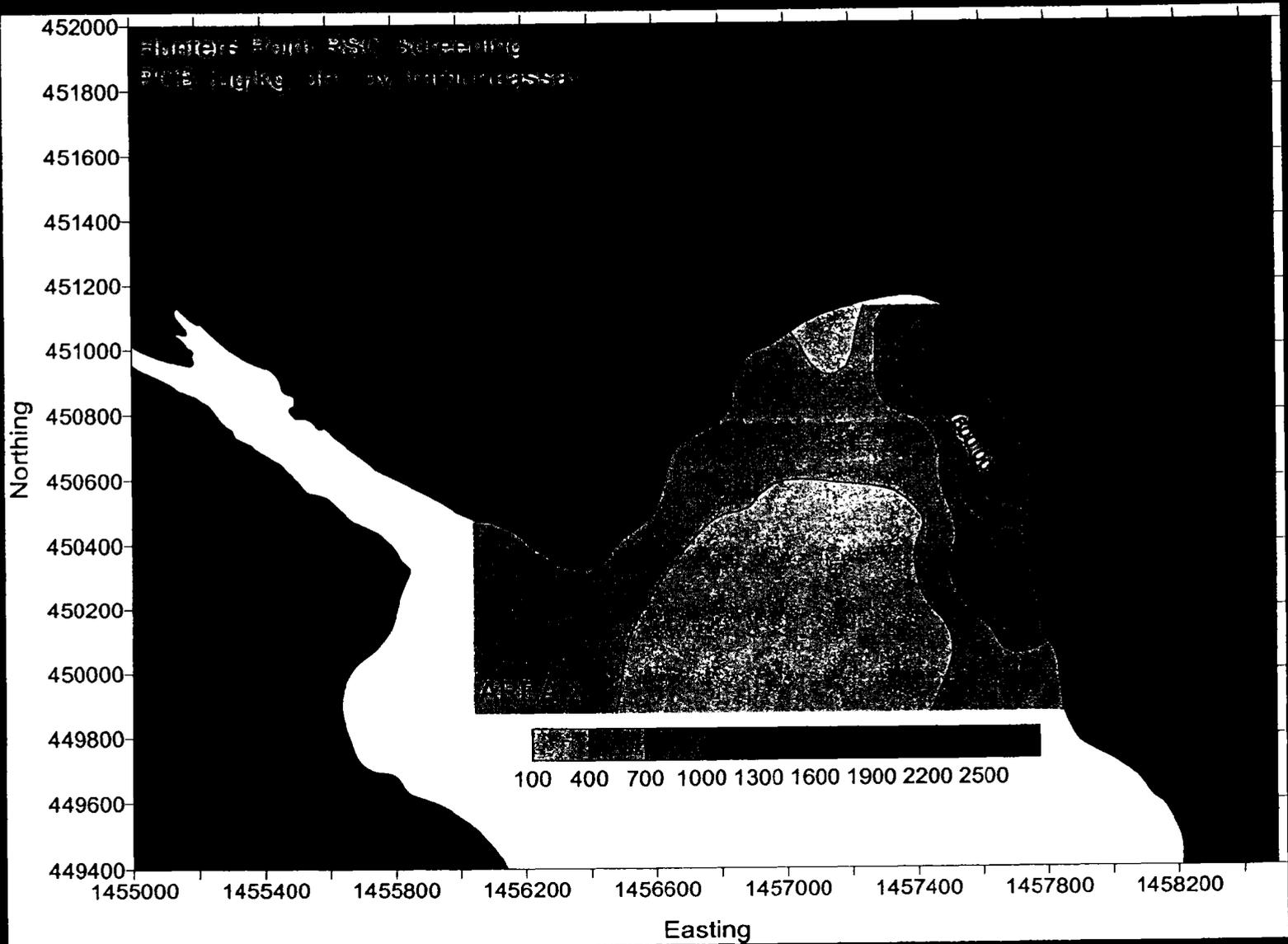
- Will use Rapid Sediment Characterization Tools
 - Utilizing X-Ray Fluorescence (XRF) Technology for Metals (e.g. Cu, Pb, Zn)
 - Utilizing Immunoassay Technique for Organics (e.g., PAHs and PCBs)
- Will use standard laboratory analysis on certain percentage (e.g. 15% or more) of samples to correlate with RSC results and evaluate need for Phase II -Validation/Investigation Study.

Why Complete a Pilot Study?

- Provides near-real time data for sediment in a cost-effective manner
- Provides chemical characterization of current conditions and confirmation of chemical conceptual site model
- Assists in making better decisions and developing Work Plans for more extensive investigation

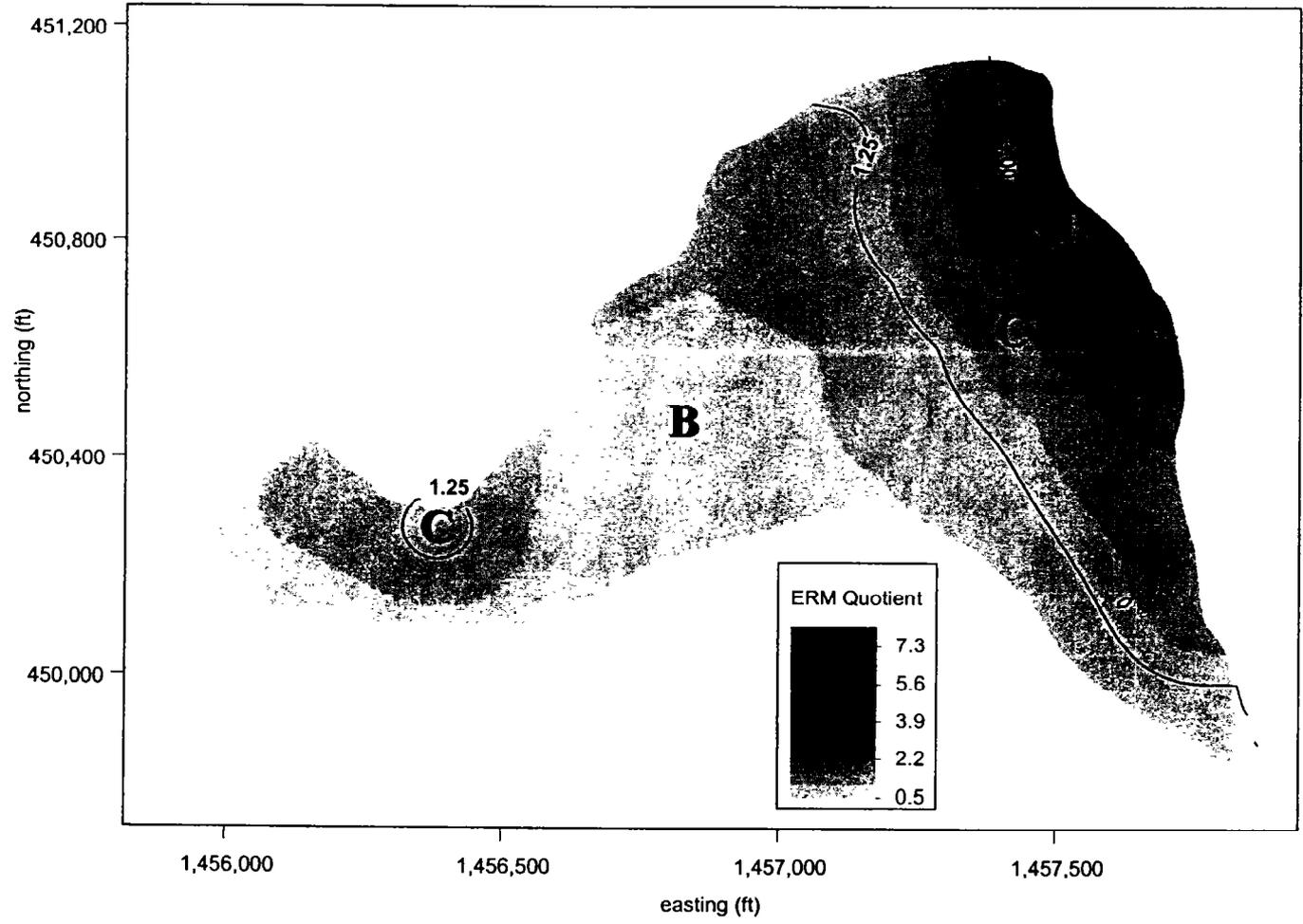


Example of Pilot Study Results





Example of Identifying Sampling Strata





Phase II Continued – Developing the Work Plan for Validation/Investigation Study

- Utilizing the identified DQOs a Work Plan and Quality Assurance Project Plan (QAPP) will be developed
 - The Work Plan documents the DQOs as well as how samples will be collected and processed.
 - The QAPP documents the quality of data that is needed to meet the DQOs and the Standard Operation Procedures that will be used.



Schedule of Work

- Final Pilot Study Work Plan – Early May 2003
- Pilot Study Field Work – Late May 2003
- Draft [Design Specifications (DQOs)] for Validation/Investigative Work – July 2003
- Final Work Plan for Validation/Investigative Study – October 2003



Summary

- Additional information is needed in Zones 4 & 7 in the Thames River to characterize current conditions and to confirm or refine conclusions of Lower Subase RI.
- Additional information is needed in Pier I to further characterize chemical concentrations, their spatial extent, and potential ecological risks.
- The scientific approach to address these informational needs will be completed in two phases.
 - Phase I Pilot Study – Characterize chemical concentrations using RSC tools coupled with standard laboratory analytics
 - Phase II Validation/Investigation Study (if deemed necessary) – Utilize DQO process to develop work plan to identify what data is needed, how that data will be evaluated, and what decisions can be made from the information gathered



QUESTIONS??

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