



DEPARTMENT OF THE NAVY

NORTHERN DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
10 INDUSTRIAL HIGHWAY  
MAIL STOP, #82  
LESTER, PA 19113-2090

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NWS EARLE  
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IN REPLY REFER TO

5090  
Ser 1742/1821/GFH

OCT 15 1992

U. S. Environmental Protection Agency  
Attn: Paul Ingrisano  
J. Javits Federal Building  
New York, NY 10278

Re: INSTALLATION RESTORATION PROJECT, NWS EARLE, NJ

Dear Mr. Ingrisano:

The Navy and Weston have reviewed EPA's comments dated 2 September 1992 pertaining to the NWS Earle Draft RI Report, Baseline Risk Assessment and Initial Technology Screening. We have also reviewed NJDEPE's comments dated 20 May 1992. It is the Navy's intention to be fully responsive to EPA's review of these documents. Many of the comments received are of a straightforward technical or editorial nature and can be answered directly, either separately or through changes in the document text. However, as we discussed by telephone, there are a significant number of technical comments that require more discussion in order for us to be fully responsive to your concerns. These fall under the following headings:

- \* Areas where we all agree that data gaps exist. Further discussion is required to plan an acceptable approach to complete the data requirements.
- \* Areas where interpretation of the data is problematic.
- \* Comments from reviewers on the validity of the sampling approach that we feel is not an issue since this approach was established in the RI Work Plan that was approved by the EPA.
- \* Areas where the EPA reviewers appear to offer conflicting views and have not developed a consensus among themselves.

We strongly feel that we cannot be fully responsive by simply providing written responses to EPA comments and that this approach by itself will not enable the project to move forward. We recommend a meeting to discuss and resolve the major issues to be attended by representatives from the Navy, Weston, NJDEPE, and EPA. To assure a productive outcome, the meeting should be attended by people from all parties familiar with the project and able to make decisions.



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We do not ask that EPA have present each reviewer, only those people who can fully represent the EPA's position on the major issues. We will follow these same guidelines in selecting our attendees. We also suggest that the number of attendees be kept to a minimum to facilitate decision making. We realize that some compromises may be required in order to provide enough people to make decisions while at the same time not assembling so many people that discussion is difficult. We should discuss attendance among ourselves prior to the meeting. We think it is in the best interest of the project to hold the meeting at your offices so that you are close to your resources.

Enclosed is a technical memorandum that provides some background on the project and is intended as a supporting document outlining the major issues to discuss at the meeting.

Please contact Mr. John Kolicius at (215) 595-0556 to discuss your thoughts and possible dates for the meeting

Sincerely,



GERALD F. HOOVER

Remedial Project Manager

By direction of the Commanding Officer

Copy to: w/encl  
NJDEP, Joseph Freudenberg  
NWS Earle, Gus Hermanni  
EPA Region II, Bob Wing



## Technical Memorandum

**Subject: BACKGROUND AND DEVELOPMENT OF STRATEGY FOR COMPLETION OF THE RI/FS AT NAVAL WEAPONS STATION EARLE, COLTS NECK, NEW JERSEY**

### PURPOSE

In March, 1992 the Navy submitted Draft Remedial Investigation Report for 11 Sites at NWS Earle, prepared by Roy F. Weston, INC. (WESTON), to the EPA Region II. A baseline Risk Assessment and Initial Screening of Technologies were submitted to EPA in May 1992. EPA provided review comments to these reports in a letter to the Navy dated 2 September 1992. While most of these comments were of a straightforward technical or editorial nature, others addressed more fundamental issues that require additional discussions with the Agency before adequate response can be given by the Navy.

This memorandum has been prepared in order to facilitate discussion of the RI Report and EPA's review comments. The objective is to reach agreement on the requirements to finalize the draft RI Report (March 1992) and continue to the next phase of actions leading to a Record of Decision (ROD) for NWS Earle. In conformance with the CERCLA process, the next action would be the completion of the Feasibility Study to be followed by the selection of remedy and of signing the ROD. This process, at NWS Earle, is complicated by the presence of multiple sites with varying levels of contamination and risk.

This memorandum summarizes the outstanding technical issues raised in EPA's letter of 2 September and proposes a strategic approach toward resolving those issues within the shortest time frame.

### BACKGROUND

In order to place the current effort and the RI report in context, some discussion of the background and evolution of CERCLA driven efforts at NWS Earle is appropriate. As shown on Figure 1, in 1982 an Initial Assessment Study (Preliminary Assessment) was completed which identified 27 sites of concern. These sites were identified as potential threats to the environment based on interviews, records search, field inspections and air photo review; there was no intrusive field investigation or sampling effort conducted at this time. On the basis of these data, eleven sites were identified for further investigation.

In 1985, a Confirmation Study Work Plan was prepared and approved by NJDEP. The Confirmation Study was focused on investigating the eleven sites to determine whether or not the eleven sites did in fact present a threat to the environment. The field investigation and Report were completed in 1986. The results of the study in our opinion



showed no major release of contaminants from any of the sites, however, some contamination was present and additional sampling was recommended to complete the site characterization. These recommendations are summarized in Table 1.

As a result of listing NWS Earle on the NPL (1990) and signing the FFA (1991), it became necessary to initiate the RI/FS process rather than continuing with a Confirmation Study. An RI/FS Work Plan generally followed the recommendation of the 1986 Confirmation Study Report but included additional sampling points and an expanded list of parameters in order to:

- provide more comprehensive data.
- characterize the on-site waste.
- meet EPA validation requirements for analytical results.

Except for confirmation sampling of groundwater, the Remedial Investigation was completed as a single phase of activity. Because of the FFA schedule for submission of the RI Report, the work scope was intended to complete the site characterization. However, it was also recognized in practice that additional sampling may be required to address potential data gaps.

## **ISSUES IDENTIFICATION**

The issues that remain to be resolved at this point fall into several categories and there is some overlap between the categories. These issues are based on the results of the RI and the necessity to complete characterization of some sites. For convenience the results of the RI are summarized on Table 2.

### **General Technical Issues**

As shown on Table 2, there are two general technical issues which are described below:

- Background Groundwater Quality - Based on the comments from EPA and an examination of the data, there is currently no agreement as to the concentrations of inorganic constituents in groundwater and the range of variability in these concentrations. EPA's preference for analyzing unfiltered samples adds to the difficulty in interpreting these data which are from shallow monitor wells, not from developed production wells. There also appears to be a lack of consensus between EPA reviewers regarding the interpretation of the data. It is WESTON's opinion that the data as an indication of contaminant release from the sites, are inconclusive. However, taking the results at face value, WESTON's risk assessment identified eight sites (out of 9) where interpretation of these data affect the specific risk levels.



- Contaminant Definition - The majority of sites on the facility show some analytical results which indicate that the sites have had contaminant releases to shallow groundwater. Organic contaminants are generally not present consistently, nor at very high levels, leading one to conclude that contamination is localized and source strength is low. Low source strength is consistent with available historical information presented in the Confirmation Study. Conservative risk assessment calculations, however, do indicate that the contaminants present could pose an unacceptable risk. These risks are based on direct ingestion of the shallow groundwater at the sites, an extremely unlikely scenario as noted by EPA reviewers. This leads to an apparent conflict between the severity of contamination and the level of risk, and the implications for future action.
- Interpretation of metal concentrations requires additional definition of background concentrations of select metals.

### **Procedural Issues**

There is one procedural issue which must be addressed; the Agency's comments on the RI report. The comments fall into several categories as shown on Figure 2. Most of the technical comments relate to the issues described above. Many of the comments can be addressed directly without further discussion. "Out of scope" comments refer to those items which are identified by reviewers as gaps, but which were not included in the scope of work in the RI work plan (approved by EPA and NJDEPE) as appropriate actions for the sites.

### **RECOMMENDED STRATEGY**

Contaminant definition issues are addressed by the suggested areas of additional sampling outlined on Table 3.

In order to proceed to the identification of the appropriate action for the sites, it will be necessary to determine the significance of the occurrence of inorganic constituents in groundwater since it is primarily the inorganics that drive the risk assessment.

Eight of the nine sites where groundwater was sampled showed elevated risks in groundwater due to concentrations of metals. Interpretation of these data is problematic and both the source and mobility of the constituents in the groundwater is questionable.

We recommend that EPA comments be addressed at a discussion meeting at which the Navy would present a proposed plan of action for filling data gaps and resolving technical issues. The results of the additional investigation would be presented in an addendum to the RI which EPA would review. At that time, we request that EPA relook at the RI comments to determine if any comments are still applicable. The Navy would then formally respond to all comments that are still outstanding.

**TABLE 1**

**Summary of Recommendations of the 1986 Confirmation Study**

<u>Recommendation</u>	<u>Sites</u>
Additional Well Installation to Assure Adequate Downgradient Coverage	3, 5, 11
No Further Action	20, 22
Resample to Confirm Absence of Contamination	2, 26
Resample to Further Characterize Contamination to Inconclusive Results	4, 7, 10, 11, 19



TABLE 2

Summary of RI Results

Site Number	Summary
2	<ul style="list-style-type: none"> <li>- Low concentrations of explosives in groundwater in round 1 only.</li> <li>- Metals in soils, sediment and groundwater.</li> <li>- Benzene in one well at low concentrations.</li> </ul>
3	<ul style="list-style-type: none"> <li>- Trace levels of semi-VOC in test pit sample.</li> <li>- Scattered VOC and semi-VOCs in groundwater.</li> <li>- Pesticides in groundwater in two out of three sampling rounds.</li> <li>- Elevated metal concentration in groundwater samples.</li> </ul>
4	<ul style="list-style-type: none"> <li>- Elevated iron in groundwater samples.</li> <li>- TCE and DCE in samples from one well.</li> </ul>
5	<ul style="list-style-type: none"> <li>- Low level VOCs in groundwater.</li> <li>- Elevated metals in downgradient wells.</li> </ul>
7	<ul style="list-style-type: none"> <li>- Elevated metals in groundwater samples.</li> <li>- VOCs present in groundwater samples.</li> </ul>
11	<ul style="list-style-type: none"> <li>- Residues of TPH and Nitrates in soils.</li> <li>- Elevated metals in groundwater samples.</li> </ul>
19	<ul style="list-style-type: none"> <li>- Elevated metals in soils, sediments and downgradient wells.</li> <li>- Trace levels of semi-VOCs in three (round 1) groundwater samples.</li> </ul>
20	<ul style="list-style-type: none"> <li>- Elevated metals in soil and sediment.</li> <li>- Elevated metals in waste samples.</li> <li>- Trace levels of semi-VOCs in soil and sediment.</li> </ul>
22	<ul style="list-style-type: none"> <li>- Semi-VOCs detected in waste samples.</li> <li>- Trace 4,4-DDT in one waste sample.</li> <li>- Semi-VOCs detected in soil and sediment samples at trace levels.</li> </ul>
26	<ul style="list-style-type: none"> <li>- Elevated lead in soil.</li> <li>- TCE in one groundwater sample.</li> <li>- Elevated metals in groundwater samples.</li> </ul>



Table 3

**Potential Areas of Additional Sampling To Address Findings of The Remedial Investigation at NWS Earle**

The findings of the remedial investigation at 11 sites at NWSE indicate that additional data will be required in order to address the following areas:

Occurrence of TCE in monitor wells at Sites 4 and 7 (landfills) and Site 26. TCE was detected at one well at each site.

Establishing "background" concentrations of metals in soils. The risk assessment identified nine metals at four site exceeding risk levels of  $10E-4$ . Establishing background involves a relatively simple sampling program, agreed to in advance with EPA. The statistical approach and number of samples necessary to obtain representative background data from the geologic units encountered at each site should be agreed upon.

A number of EPA comments mentioned the possible vertical movement of contaminants. At an earlier Technical Review Committee (TRC) meeting, DEPE suggested establishing one deep well downgradient of each site to confirm the absence of deep contamination. Where groundwater quality in shallow wells is not impacted, the deep well would serve to confirm that the site as a whole has not impacted groundwater. This was agreed to in principle by the TRC without specific reference to what constitutes "deep." Where groundwater contamination appears to be an issue, further investigation will proceed, as necessary, to characterize the site. We cannot make a final decision on this until we agree on where groundwater is impacted.

Delineating wetland areas that may be involved in remedial action to adjacent sites. This may be possible from existing maps, or require specific field delineation at certain sites.

BTXE compounds detected at Site 3 landfill necessitate resampling of "dry" wells if there has been recharge. If the wells are still dry there may be a need to sample below the clay.

There are eight sites where metals in groundwater show elevated risk. Some are common earth elements (iron and aluminum) and there are no drinking water standards for others (Be, Sb, V). The pattern of occurrence does not seem to be related to past site activities. Two issues need to be addressed for reasonable interpretation of the data: 1), could observed patterns in groundwater quality be the results of natural changes in soil chemistry resulting in removal of vegetation from the sites, and 2), how do the results using unfiltered groundwater samples relate to measuring actual mobility of the constituents in the groundwater?

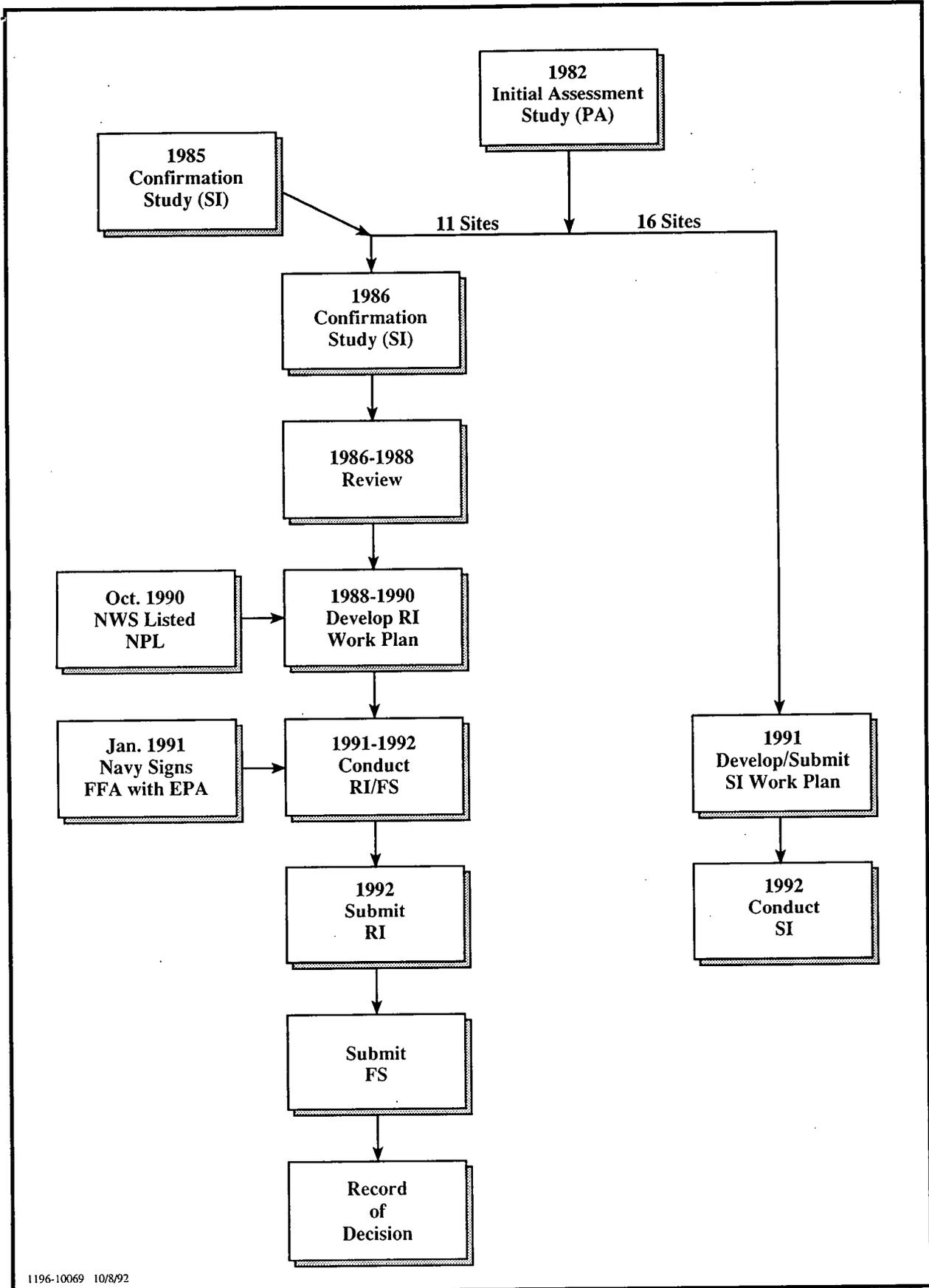


FIGURE 1

