

**Response to Comments on the Remedial  
Investigation Work Plan for 11 Sites,  
NWS Earle**

**Prepared for:**

**Technical Review Committee Meeting**

**NWS Earle, Colts Neck, New Jersey**

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**Response to Comments to RI Work Plan for  
NWS Earle, October 1989**

The Navy, and their contractor Roy F. Weston, have reviewed comments submitted by NJDEP and USEPA on the RI work plan for Earl NWS. This document addresses those comments item by item. Based on our discussions at the TRC meetings and the content of the comments it is apparent that the change in key personnel on the project from the Navy, WESTON and the agencies has resulted in a general shift in technical approach. As the result of this the purpose of some original items on the work scope has been obscured or nullified. Conversely the general addition of some items is called for. As a result, we feel that the program will be better focused if these general changes are made:

As suggested by NJDEP, the groundwater sampling will be made more comprehensive and will include, at a minimum, full TCL and TAL analytes for the first round. Analysis for explosive compounds will also be done at ordnance disposal sites. This is addressed in response to Comment 1 and subsequent site specific comments. In addition two confirmation sampling rounds are proposed for target compounds. These compounds will be identified after the completion of the first round of analyses. We also recommend that general indicator analysis such as TOX and TOC be eliminated since their correlation with specific compound analysis is questionable. Field measured parameters such as pH and conductance will be maintained in the program.

All soil borings will be continuously sampled with split spoons. Soil boring samples will be taken at discrete intervals above the water table.

Since continuous split spoon sampling will be used to characterize borehole lithologies we plan to drop the occasional gamma logging previously proposed.

A single "synoptic" round of water levels for all site monitor wells will be done prior to the well sampling.

Two monitor wells per site will be slug tested to obtain estimates of hydraulic conductivity (k) for the upper aquifer.



**Response to NJDEP Comments to RI Work Plan  
for Earle NWS (October, 1989)**

1. The Navy will expand all groundwater analysis for the initial round of sampling to include all TCL and TAL analytes. Additional analysis of samples for explosive compounds will be addressed as requested by NJDEP, on a site by site basis. In general, the work plan will be changed to include the same analysis for each well at a given site.

We have also proposed to add a second round of target compounds to be determined after the review of the initial data. This will enable a better evaluation of the significance of results regarding very low concentrations of contaminants.

The Navy does not feel that full scan analyses are necessary for soils because where soil sampling is proposed, site histories are fairly well known. Conversely, sampling of landfill areas is not proposed because of their inherent inhomogeneity.

Revised proposed sampling tables for each site are included in this submission and discussed further in the following paragraphs.

2. It was already resolved in the TRC meeting that 100% of the first round of sampling data will be validated by a contractor other than the one doing the analysis. QA/QC will be done under CLP guidelines. Because of the data validation requirements, the data packages provided will adhere to CLP format. USEPA protocol is being used because the sites may be listed on the NPL.
3. A limited geophysics investigation was completed previously at most of the landfill sites. GPR does delineate boundaries of the disturbed area. However, aerial photographs also do this so that a broad sweep type survey was not recommended. The monitoring well placement for these sites will monitor the perimeter of the disturbed areas.
4. The Navy will provide TRC members with the contractor's interim technical reports that are submitted during the course of this work.



5. Vapor detection meter readings will be included in the field logs. Readings will be taken on the opened spoon and from the headspace in the sample jars or bags.
6. Sampling will be conducted according to the project QAPP, since as noted above this site could be included on the NPL. However, we see no problem with including in the QAPP specific protocol from the NJDEP field sampling manual as requested by NJDEP, as long as it is consistent with USEPA protocol. For instance, we plan to use dedicated laboratory cleaned bailers for groundwater sampling as required.
7. Well construction diagrams are found in the Interim Report (December 1986) and are included in this submission.
8. These comments are noted and will be included in any revisions. As a point of information the Navy does not agree that MCLs always apply as cleanup standards. ARARs can be developed from the risk assessment.
9. The revised sampling protocol included in this submission includes discrete interval soil sampling.
10. Comment Noted.
11. Comment Noted.
12. WESTON is using the magnetometer to screen drilling sites for buried metal. The area is very limited (10x'10') and the sweep will be on a fine grid. WESTON recognizes that cultural features and diurnal fluctuations need to be accounted for in interpreting these data.
13. Comment Noted.
14. As noted above laboratory decontaminated bailers will be used.
15. A drilling and well installation will follow NJDEP permit requirements.
16. (b) Well screens will be 15 feet long with a 5 foot extension above the water table. Where groundwater surface is shallow, the top of screen will be adjusted to permit an adequate surface seal.

- (c) See Comment response 15.
  - (d) The purpose and construction of the deep well will be discussed at the TRC meeting (April 10).
  - (e) See Above.
  - (f) Prior to the groundwater sampling, the Navy will plan to obtain water levels at all sites within a short period of time (such as 30 hours) during stable weather conditions.
17. The revised work plan proposes to eliminate temporary piezometers. In some cases additional monitor wells are proposed. In all cases existing and proposed monitor wells will provide the necessary water level information. A one year period of time was proposed for the temporary piezometers because it is felt that some reasonable time limit is important to the temporary nature. This could be reconsidered prior to closure; however, we think that some specific time limit is essential to ensure proper closure of the piezometers.
18. (a) Samples will be taken later than 14 days after well development.
- (b) See Comment Response 6.
  - (c) See Comment Response 1.

Site Specific Comments

- 1. Comment Noted.
- 2. Revised site specific sampling tables are included in this submission which address NJDEP comments.
- 3. See Comment Response 9.
- 4. See Comment Response 1.
- 5. This submission includes groundwater elevations and contour maps included in the 1986 report.
- 6. Comment Noted.



### Section 5.3, Site 2

1. Soil borings will be drilled to the water table and samples recovered for analysis will be collected at 1-2 feet and just above the groundwater table (5-10 feet BGS). A revised table of analyses is attached (Table 5-7).
2. See revised tables 5-7 and 5-8.
3. The four existing monitor wells and the proposed wells are adequate to define the groundwater flow direction so no new piezometers are proposed. A revised Figure 5-1 is attached. The outlying well originally proposed north of the site has been dropped; if no contamination is found in the perimeter wells, we do not feel that this outlying well will be necessary. If contamination is found the proposed location of additional wells will depend on the results.
4. Additional note: Three additional surface sediment samples are proposed for Site 2. See Figure 5-1 and Table 5-7.
5. See Response Comment 1 and the revised Tables 5-7 and 5-8.

### Section 5.4, Site 3

1. Depth to groundwater at Site 3 is approximately 10 feet. Well screens will be 15 feet, set 10 feet into the groundwater table.
- 2.1 The aerial photograph of the site shows clearly the surrounding hardwood forest, a ring of pine growth and a bare area at the center of the site. This is shown on the attached revised Figure 5-2. GPR was previously done and confirmed that soils were disturbed in the barren area but landfill was not distinguished from disturbed soils. The proposed monitor wells complete a ring around the site which sufficiently monitors the entire area.
- 2.2 Previously TOX was found in all Site 3 wells at levels of 12-35 mg/l, with duplicates also showing the range of variability. No VOCs were detected in any of the wells. No additional downgradient wells are proposed until a full confirmation sampling is completed.



2.3 See comment response 2.1.

**Section 5.5 Site 4**

- 1a. The base map (Figure 3-3) has been revised based on the recent site visit and an examination of aerial photographs to better show the site configuration.
- 1b. Presently available aerial photographs do not show trench burial areas. Historical photographs will be sought prior to the start of field work and if the trench features are visible, they will be considered in locating sampling points in the field. However, we do feel that the well placement provides sufficient coverage for the whole area as proposed.

**Additional Notes:** Based on the recent site visit the Navy and WESTON recommend the following scope change: In place of the piezometers in the eastern corner, a single monitor well is proposed in the area. This well will be sampled along with the springs which are downslope.

- 1c. Groundwater and sediment will be sampled from three spring locations and the swale running along the eastern corner of the site.
2. Groundwater was originally suspected to flow towards Lake Earle (NNW). It is apparently more to the northeast. This is not particularly surprising when considering the steep slope bordering the east side of the site discharge area indicated by the springs.
3. Proposed spring water and sediment sampling analytes are presented in the revised Table 5-13.
4. Proposed groundwater analytes are presented in revised Table 5-14.
5. An existing aerial photograph of the site shows an area of sparse vegetation. This is shown on the revised Figure 5-3.

**Section 5.6.1 Site 5**

1. All the RI soil borings will be sampled continuously. Sample descriptions and vapor detector readings will be logged in the field.



- 2a. Because of site regrading, the exact landfill boundaries are not known. Review of historical aerial photographs prior to the start of the field program may provide more information. However, the photos available on base were not informative. The proposed monitor well placement is along the edge of the disturbed area and we feel they will supply sufficient coverage.
  - 2b. It is proposed that one of the proposed wells be placed adjacent to the drainage swale shown on the site map. This is the preferred surface drain path but is not so significant as to be called an intermittent stream.
3. See general response comment 5.

**Section 5.7, Site 7**

- 1a. It is proposed that the deep well not be installed at this time since contamination has not been confirmed in the shallow water bearing zone.
  - 1b. The tank is not visible and suspected to be an UST for fuel oil used at a residence formally on the site. A magnetometer survey will be done to identify the tanks location. The tank will subsequently be removed. Confirmation sampling will follow.
  - 1c. Based on the recent site visit, WESTON did not see any soils around the scrap that appeared contaminated, and the scrap material appeared benign. Therefore no sampling is recommended.
  - 1d. Comment noted.
  - 2a. See response to Comment 7a. As discussed the deep aquifer will not be addressed at this time.
  - 2b. Comment noted.
  - 2c. Groundwater flow at Site 7 appears relatively simple, and we are not sure what piezometers would accomplish. Note that two additional perimeter wells will provide more piezometric data. Also, the small pines probably overlay the old landfill.
3. See response to Comment 1.6.

4. See Comment 1a.
5. See the Revised Proposed Sampling Table.
- 6a. Compton Creek is approximately 2,000 feet north of the site. A drainage way leaving the site is depicted on the revised map in the northern portion of Site 7. This is based on aerial photographs and needs to be field checked.
- 6b. "Seepage points" need to be field checked.
- 6c. Sediment sampling will be added to the stream sampling.

**Section 5.8, Site 10**

- 1a. The groundwater flow should be adequately defined by the three existing and four new monitor wells. No piezometers are planned.
- 1b. Revised Tables 5-22. Also see response to general comment number 1.

**Section 5.9.1.3, Site 11**

1. Monitor well 11-1 is evidently located within the former activity area as broadly defined by the tree line. Since the activity was ordnance burning, we do not expect to arrive at a more precise site definition. However, historical aerial photographs, if available, will be reviewed prior to the start of field work.

The proposed monitoring wells provide immediate downgradient site coverage. No further wells are planned prior to the completion of a full round of sampling.

2. See previous comment response paragraph 1.

**Section 5.10, Site 19**

**Section 5.10.12**

- 1a. Investigation of metals contamination at Site 19 includes an extensive sampling for laboratory analysis. We feel that the results of this sampling will be conclusive in determining whether metals contamination is extensive. At this stage of activity



it appears that field screening would not contribute very much to the program. The drainage pathway is well defined, and given the small size of the site, field screening is not cost effective.

- 1b. Discharge history at Building S-34 indicates that wash was discharged to an unpaved depression adjacent to the barricade, as this area drains via a culvert under the road to the wetland. This flow path will be shown on the site map.
- 1c. Stream identified on map as requested.
- 1d. All soil boring samples will be taken above the G.W.T.
- 1e. Specific soil sampling intervals are specified on the revised table. Samples for metals analysis will be taken at 0-2 feet and just above the groundwater table at a depth of approximately 8-10 feet. Samples for VOC analysis will be taken at 2-4 feet and 8-10 feet. The three boring locations in the drainage depression will be sampled at 0-2 and 2-4 feet since the groundwater table is shallow. This will be done with a hand auger if other access is not possible.
- 1f. See previous response (d.)
- 1g. Three additional sediment samples are proposed in the drainageway near 19B.

Other responses: Based on observations made during the site visit in January 1990, the proposed monitor well locations have been changed to avoid encroaching the wetlands and more closely monitoring the site perimeter. Also, the proposed monitor well upgradient of 19-1 has been moved to the northern perimeter of the site. The previous sampling results should be confirmed before any outlying wells are proposed.

- 2. The revised monitor well locations include a proposed well adjacent to the depression. This addresses NJDEP's comment.

**Section 5.11, Site 20**

1. In response to NJDEP the proposed sampling will include two composite samples of the waste piles ( The material appears very homogeneous). Eight additional samples will be taken along the drainageway where waste is not visually obvious to establish the extent of distribution of the waste. All samples will be analyzed for full TAL metals and CN.

**10. Section 5.12, Site 22**

- a. Specific sampling intervals are proposed for this site: eight surface and four subsurface samples at 1-2 feet. Analysis will be for TAL metals, CN and TPH.

**11. Site 26**

The site plan has been revised based on observations made at the site visit. The terminus of the tile drain and the settling basin appear to be the same. Surface and subsurface samples are planned in the basin. The basin is bowl-shaped depression which allowed drainage to seep into the ground. There is no evident sludge and the depression is covered in the vegetation.