

EA Engineering, Science,  
and Technology, Inc.

3 August, 2000

TO: Charles Basham, USACE-Baltimore District (4 copies)  
Ray Pilon, USACE-Buffalo District (13 copies)  
Gordy Porter, EA Engineering Project Manager  
Jeff Smith, EA Engineering, Site Manager

FROM: Sandra Staigerwald, EA Engineering, Task Manager

RE: Expansion of LOOW Phase II RI (Response to Phase II RI Letter 01)

Reference is made to the letter dated 20 July, 2000 from the USACE. Subject: Phase II RI Letter 01.

Preliminary results from the field screening analysis program described in **Final Addendum** to the Work Plan for Phase I RI for the LOOW, Niagara County, New York, **for Phase II Remedial Investigation** (dated June 2000) indicate the presence of chemical constituents at concentrations exceeding the NYSDEC TAGM values, or exhibiting an increasing trend in concentration at the following areas of investigation:

Area 2 Grid CO  
Area 20 Grid B500  
Area 20 Grid C500  
Area 7/1 1 Grid H100

Due to the reported constituents, it was recommended that the sampling at these grids be expanded. As per the letter dated 20 July 2000 (see Attachment 1), approval was issued by Mr. Charles Basham, Design Team Leader, USACE-Baltimore, to add additional points to the referenced grids to further delineate the reported constituents.

In addition, a decision was made to add PAHs to the list of analysis for background soil samples. This change was also approved in the letter dated 20 July 2000.

It was also decided that three additional direct push borings would be installed to assess impact from the rubble pile west of Building 30 on Component 2. Approval for this is also cited in the letter dated 20 July 2000.

Attached is the approval letter from the USACE dated 20 July 2000, as well as inserts for each section of the **Final Addendum** to the Site Specific Sampling and Analysis Plan for the Phase I RI at the Former LOOW Niagara County, New York **for Phase II Remedial Investigation**. Each of the inserts describe the approved additions to the sampling and analysis plan for each

area, and should be inserted into the readers copy of the Final Plan. The inserts present a summary of the changes that may affect the text, tables, and figure within each of the SAPs. Currently, replacement of the affected text, tables, or figures within each of the SAPs is not proposed.

Attachments:

- Attachment 1 -Approval letter dated 20 July, 2000 from USACE
- Attachment 2-Additions to the Sampling and Analysis Plan (SAP) B-4, Areas 2 and 20
- Attachment 3-Additions to the SAP B-5, Areas 4, 7, 8, 11
- Attachment 4-Simplified SAP for Area 30
- Attachment j-Additions to the SAP B-14, Background Sampling



**DEPARTMENT OF THE ARMY**  
**BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS**  
P.O. Box 1715  
Baltimore, MD 21203-1715

20 July 2000

Civil HTRW Section  
Engineering Division

Mr. H. Gordon Porter  
EA Engineering, Science, and Technology, Inc.  
15 Loveton Circle  
Sparks, Maryland 21152

SUBJECT: Phase II RI Letter 01

Dear Mr. Porter:

Reference is made to Delivery Order 0115, Lake Ontario Ordnance Works (LOOW) Site Wide Remedial Investigation Phase 2 under your contract DACA31-94-D-0015.

The Government has identified the need to include testing for Polycyclic Aromatic Hydrocarbons (PAH) in the background samples at LOOW. You are requested to amend the final work plans accordingly. The cost associated for this testing shall be accounted for in accordance with the Scope of Work, paragraph 5.e. "Variations in Estimated Quantities (Analytical)".

Based on results of preliminary field investigations, the Government has identified the need for additional soil borings at LOOW. Specifically, the following amendments to the final work plans are approved:

- a) Five additional boring at the North-West corner of Grid C500, Area 20.
- b) Three additional borings on the South side of Grid B500, Area 20.
- c) Four additional borings on the West and South side of Grid CO, Area 2.
- d) Two additional borings on the South-West side of Grid H100, Areas 7/11.
- e) Three additional borings on the West side of Building 30, Process Area 30A, in the vicinity of the debris pile.

You are requested to amend the final work plans to reflect these adjustments. The costs associated for this work shall be accounted for in accordance with the Scope of Work, paragraph 5.d. "Variations in Estimated Quantities (Field Days, Monitoring Wells, and Transportation)".

I consider that all of the above work is in accordance with the Scope of Work. Please contact me immediately should clarification on the above is required.

Sincerely,

**Charles E. Basham, P.E.**  
Design Team Leader

Copy Furnished:  
US Army Corps of Engineers- Buffalo District  
ATTN: CELRB-PM (Mr. Ray Pilon)  
1776 Niagara Street  
Buffalo, NY 14203

Attachment 2 (reference letter dated 3 Aug 2000 and USACE letter dated 20 July 2000)

## 20 JULY 2000 ADDITIONS TO THE SAMPLING AND ANALYSIS PLAN (SAP) FOR AREAS 2 AND 20

INSERTION LOCATION: Insert page between Table B-4-1 and B-4-2

### CHANGES TO ORIGINAL SAP:

#### Phase II Investigation at Area 2 Grid CO

Due to elevated chlorinated solvent concentrations in original grid locations A1 and A2, four additional locations will be added to assess the horizontal extent of the reported constituents. The locations will be designated and placed as follows (see figure B-4-1 for location of CO grid within Area 2):

New location A99 shall be placed 25 ft west of C0A1

New location Z1 shall be placed 25 ft south of C0A1

New location Z2 shall be placed 25 ft south of COA2

New location Z3 shall be placed 25 ft south of COA3

In accordance with the original sampling strategy for the CO grid (see Table B-4-2), one subsurface soil sample will be collected from each of the new locations and will be screened for PAHs, TNT, PCB, and VOCs. The sample interval shall be 11 to 12 ft bgs, or at the discretion of the field geologist based on possible observations of elevated organic vapor concentrations or soil staining.

#### Phase II Investigation at Area 20 Grid B500

Due to the elevated PAH concentrations reported in the soil samples collected from location A3, three additional locations will be added to assess the horizontal extent of PAHs. The locations will be designated and placed as follows (see Figure B-4-1 for location of B500 grid within Area 20):

New location Z3 shall be placed 25 ft south of B500A3

New location Z4 shall be placed 35 ft southeast of B500A3

New location A4 shall be placed 25 ft east of B500A3

In accordance with the original sampling strategy for the B500 grid (see Table B-4-2), one surface and one subsurface soil sample will be collected from each of the new locations and will be screened for PAHs. The subsurface sample interval shall be 2 to 3 ft bgs, or at the discretion of the field geologist based on possible observations of elevated organic vapor concentrations or soil staining.

#### Phase II Investigation of Area 20 Grid C500

Due to elevated concentrations of chlorinated solvents reported in the soil samples collected from locations B 1, C 1, and C2, five additional locations will be added to assess the horizontal extent of VOCs. The locations will be designated and placed as follows (see Figure B-4-1 for the location of the C500 grid in Area 20):

New location B99 shall be placed 25 ft west of C500B1  
New location C99 shall be placed 2.5 ft west of C500C1  
New location D99 shall be placed 35 ft northwest of C500C1  
New location D1 shall be placed 25 ft north of C500C1  
New location D2 shall be placed 25 ft north of C500C2

In accordance with the original sampling strategy for the C500 grid (see Table B-4-2), one surface and two subsurface soil samples will be collected from each of the new locations to assess the horizontal extent of VOCs, TNT, PCBs, and PAHs. The subsurface soil sample intervals shall be 3.5 to 4 ft bgs and 9 to 10 ft bgs.

Attachment 3 (reference letter dated 3 Aug 2000 and USACE letter dated 20 July 2000)

20 JULY 2000 ADDITIONS TO THE SAP FOR AREAS 4, 7, 8, and 11.

INSERTION LOCATION: Insert page between Table B-5-1 and B-5-2

CHANGES TO ORIGINAL SAP:

Phase II Investigation at Area 7/11 Grid H100

Due to elevated PAH concentrations in original grid locations A2 and A3, two additional locations will be added to assess the horizontal extent of the reported constituents. The locations will be designated and placed as follows (see figure B-5-1 for location of the H100 grid within Area 4/11):

New location Z2 shall be placed 25 ft south of H100A2

New location Z3 shall be placed 25 ft south of H100A3

In accordance with the original sampling strategy for the H100 grid (see Table B-5-2), one surface soil and one semi-subsurface soil sample will be collected from each of the new locations and will be screened for VOCs and PAHs. The semi-subsurface soil sample interval shall be approximately 2.5 ft bgs or at the discretion of the field geologist based on possible observations of elevated organic vapor concentrations or soil staining.

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Attachment 4 (reference letter dated 3 Aug 2000 and USACE letter dated 20 July 2000)

20 JULY 2000 ADDITIONS TO THE SAP FOR AREA 30.

INSERTION LOCATION: Insert pages between Table B-1 1-2 and B- 1 1-3.

AREA 30 WAS NOT INCLUDED IN THE ORIGINAL INVESTIGATION. THIS WILL SUBSTITUTE AS THE ORIGINAL SAP FOR AREA 30:

Because Area 30 was not included in the original Phase II investigation, a SAP does not currently exist. Area 30 was not included in the original scope of the Phase II RI due to previous use of Building 30-1 for storage by the current land owner. However, a debris pile west of the building appears to be a relict from decommissioning of AFP-68. An investigation of the debris pile was approved by the USACE in the letter dated 20 July 2000. The investigation shall include the following:

A reconnaissance of the debris pile will be performed to evaluate whether there appears to be debris not associated with the decommissioning of the AFP-68. This evaluation will be qualitative and will be made by assessing the relative age of the material based on weathering, potential dated material, potentially recovered model numbers of debris pile constituents. A photograph log will also be completed for the debris pile. If the age evaluation indicates that the debris is not recently deposited, but may have been deposited during decommissioning of the plant, three sampling locations will be established (see revised Figure B- 1 1- 1).

A direct push rig will be used to collect a surface soil sample (0 to 0.5 ft bgs), a semi-subsurface soil sample (4 to 5 ft bgs), and a subsurface soil sample (near the upper tills, Glaciolacustrine Clay contact). The sample intervals may be changed at the discretion of the field geologist based on possible observations of elevated organic vapor concentrations or soil staining.

The samples will be field screened for total PAHs, total PCBs, TNT, and VOCs in accordance with SOPs established for the Phase II RI. The location exhibiting the highest concentration of constituents, based on the results of the field screening, will be re-sampled for laboratory confirmatory information. During the re-sampling, a surface soil sample (for to aid in evaluation of risk assessment) and the subsurface soil sample, from the interval exhibiting the highest concentrations of constituents, will be submitted to the laboratory for analysis of full suite parameters as listed in Table B-1 1-3.

The table below summarizes the sampling plan for the Area 30 debris pile.

Attachment 4, continued.

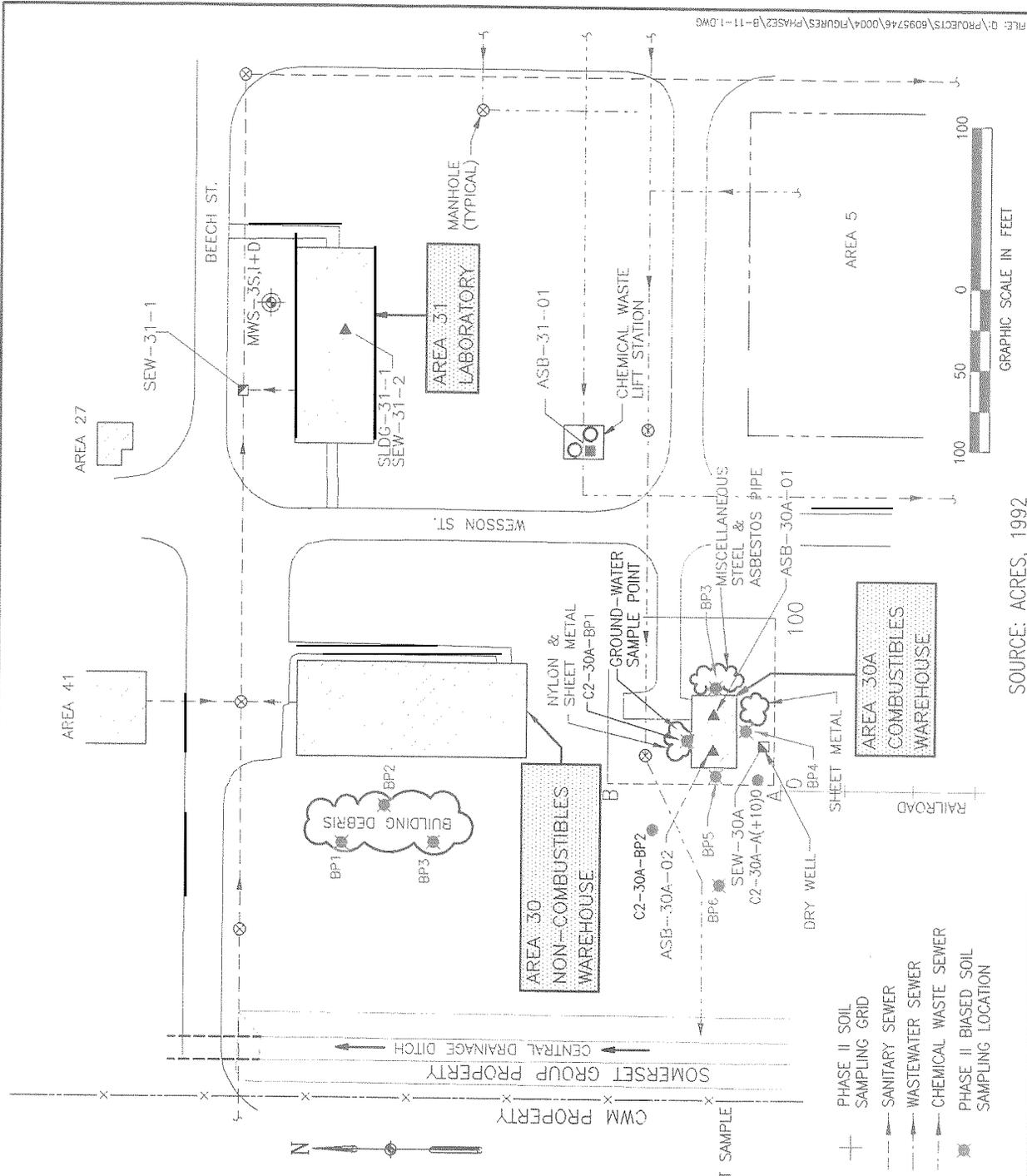
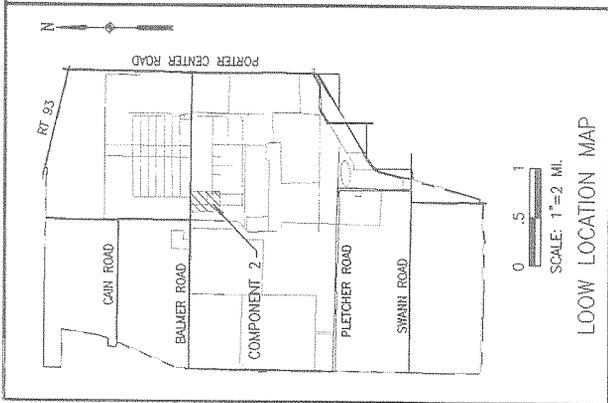
**ADDENDUM TO TABLE B-11-2  
SUMMARY OF PHASE II SAMPLING LOCATIONS FOR FORMER AFP-68 PROCESS AREA 30**

Sampling Location	SOIL (FIELD SCREENING)			SOIL (LABORATORY ANALYSIS)			GROUND WATER	
	Number of Grid Locations	Number of Samples / Location	Field Screening Analysis	Number of Locations	Number of Samples / Location	Analysis	Number of Wells	Analysis
BP1 (north end of debris pile)	None	3* (0 to 0.5 ft, 4 to 5 ft bgs, GLC)	PAHs, TNT, PCBs, VOCs <sup>1</sup>	1 (from the locations exhibiting the highest concentration of constituents)	2 (surface and subsurface)	Full Suite <sup>2</sup>	None	None
BP2 (mid-point of debris pile)	None	3* (0 to 0.5 ft, 4 to 5 ft bgs, GLC)	PAHs, TNT, PCBs, VOCs				None	None
BP3 (south end of debris pile)	None	3* (0 to 0.5 ft, 4 to 5 ft bgs, GLC)	PAHs, TNT, PCBs, VOCs				None	None

<sup>1</sup> PAH by field immunoassay method E4035. TNT by field immunoassay method E4050. PCB by field immunoassay method E4020. VOC by field gas chromatography.

<sup>2</sup> Full Suite – full TCL/TAL analysis plus boron, lithium, and explosives.

\* Sample interval will be based upon field observation of potential impact from **COPC** (e.g., staining, elevated organic vapor, historical site use). In the absence of such observations, sample will be collected at the designated depth interval.



- LEGEND**
- AFP-68 BUILDINGS
  - EXISTING MONITORING WELL
  - 1992 ASBESTOS SAMPLE LOCATION
  - 1992 SEWAGE AND SLUDGE SAMPLE
  - 1992 SEWAGE SAMPLE ONLY
  - 1992 SLUDGE SAMPLE ONLY
  - 1992 UNKNOWN LIQUID/OIL SAMPLE
  - 1992 SURFACE WATER AND SEDIMENT SAMPLE
  - 1992 SURFACE WATER SAMPLE ONLY
  - 1992 SEDIMENT SAMPLE ONLY
  - 1992 SURFACE SOIL SAMPLE
  - 1998 PHASE I BIASED SOIL SAMPLING LOCATION
  - 1998 PHASE I GRID SAMPLING LOCATION
  - ACTUAL SAMPLE LOCATION WAS OFFSET FROM GRID
  - 1998 PHASE I SAMPLING LOCATION OFFSET FROM GRID
  - PHASE II SOIL SAMPLING GRID
  - SANITARY SEWER
  - WASTEWATER SEWER
  - CHEMICAL WASTE SEWER
  - PHASE II BIASED SOIL SAMPLING LOCATION

<b>EA</b> EA ENGINEERING, SCIENCE, AND TECHNOLOGY	LAKE ONTARIO ORDINANCE WORKS NIAGARA COUNTY, NEW YORK	COMPONENT 2 (SOMERSET GROUP) PROCESS AREA 30 & 30A, PHASE II SAMPLING LOCATIONS	DESIGNED BY SMS	CHECKED BY SMS	DRAWN BY FDV	PROJECT MGR. HGP	DATE AUGUST 2000	PROJECT NO. 60957.46
							SCALE AS SHOWN	FIGURE B-11-1

FILE: G:\PROJECTS\6095746\004\FIGURES\PHASE2\B-11-1.DWG

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Attachment 5 (reference letter dated 3 Aug 2000 and USACE letter dated 20 July 2000)

20 JULY 2000 ADDITIONS TO THE SAP FOR THE BACKGROUND SAMPLING

INSERTION LOCATION: Insert before Table B- 14- 1.

CHANGES TO ORIGINAL SAP:

Due to the prevalence of PAHs across the LOOW site, PAH analysis has been added to the proposed background samples.

Table B-14-1 is hereby amended to include 15 surface soil samples and 15 subsurface soil samples for analysis of PAHs by method E4035 (field screening) and method SW846 83 10. Therefore, those samples already proposed for collection and analysis of metals and total organic carbon will also be analyzed for PAHs.

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