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Indian Head, Maryland 20640

FAX 743-4180 6749  
Mr. Shawn Jorgenson  
Attention Code 046C  
Indian Head Division  
Naval Surface Warfare Center  
101 Strauss Avenue  
Indian Head, MD 20640-5035

August 14, 1998

REF: IR Site 57, Remedial Investigation Work Plan

Dear Mr. Jorgensen:

In reviewing the Investigation Work Plan for Site 57 I have the following comments:

1. The Executive Summary identifies in ES-1 some 30 water samples to be taken with respect to the storm sewer system and 6 for sediment samples. Table 3-2, however sites only one (1) sample each for assessing:
  - a. "stormwater at the discharge" -- outfall of the 36' pipe at the Mattawoman Creek (S57SW009 and S57SD005)
  - b. "Sediment at the discharge"--50 ' downstream from the outfall to Mattawoman Creek (S57SW010 and S57SD006)
  - c. "Examining for other contaminants"--at the discharge of the concrete channel to Mattawoman Creek(S57SW016 and S57SD012)

Does this represent a total of three or six samples?

**In any event this is not an adequate sampling for measuring contaminants at what has to be a primary point of consideration. One of our primary objectives in this investigative work must be to assure ourselves that there is no discharge of contaminants from site 57 by whatever source into the Mattawoman Creek.**

The proposed sampling at the above discharge points into the Mattawoman Creek should be significantly increased and scheduled over a period of time so that we can have confidence in the results.

2. As a related item to any investigative work relating to an assessment of Mattawoman contamination whether it be for site 57 or any other restoration project I strongly urge that regular sampling be done (either by the Fish and Wildlife Service or by private contractor) to make certain that the fish and shellfish in the Mattawoman are safe to eat and if not to make certain that the NSWC is not the source of contamination. **This should be a primary objective of the RAB.**

Thank you for the opportunity of commenting. If you have any questions please give me a call.

Sincerely,

  
Elmer S. Biles

**ENCLOSURE(1)**

TABLE 3-2  
 INVESTIGATION MATRIX  
 SITE 57 - FORMER DRUM LOADING AREA  
 INDIAN HEAD DIVISION, NSWC  
 INDIAN HEAD, MARYLAND  
 PAGE 2 OF 7

STUDY BOUNDARY			INVESTIGATION OBJECTIVES			IDENTIFY INPUTS TO THE DECISION						DECISION RULE
Population: Contaminant Source/ Media/Fish	Special	Temporal	Human Health Risk	Ecological Risk	Engineering	Investigative Technique	Location	Work Plan Figure	Quantity of Samples	Matrix	Analytical Parameter	
			Determine vadose zone modeling parameters. Determine Aquifer modeling parameters (deep confining unit and confining lens)  Determine total organic concentration (TOC) in aquifer soils for transport modeling.		Determine geotechnical (e.g., permeability) characteristics of the soil.  Estimate the leachability of contamination from subsurface soil.  Determine the soil characteristics with respect to RCRA requirements.	Collect "undisturbed" (Shearby sub) subsurface soil sample for geotechnical analyses.  Collect soil samples from the screened interval of monitoring wells for estimating the partition coefficient (Kd) for the soil contaminants.  Review regulations and estimate soil RCRA characteristics by evaluating soil sample analytical results.	Collect samples at locations S57SB002/S57MW003 and S57SB005/S57MW009. Samples collected from the unsaturated zone, at the shallow (approximately 10 feet deep) confining unit, and the deeper (approximately 40 feet deep) confining unit.  Collect samples at locations S57SB002, S57SB004, S57SB005, S57SB015.	4-1	6	Soil	Modeling parameters (Permeability for vertical hydraulic conductivity, moisture content, TOC, bulk density, grain size, and specific gravity).  TCL VOC (including ethyl ether), TOC	If regulations and an evaluation of RCRA characteristics indicate the need, appropriate disposal options will consider the soils as hazardous waste.
	Downgradient from Study Area	Same as Site Area.	Determine if VOC contamination exists in the subsurface soils down gradient from the site.			Subsurface soil samples to determine if down gradient site-related contamination exists.  Examine for other contamination.	Collect samples at approximately the 2 to 4 foot and 10 to 12 foot depth interval from S57SB004 and S57SB015.  Collect samples at soil boring location S57SB005.	4-1	4	Soil	TCL VOCs (including ethyl ether)	If VOC contamination is detected in the down gradient surface soil samples, then an additional round of sampling will be necessary to determine the extent of contamination.
	Hot Spot Soil	Near the southern corner of Building 292	Sampling conducted in association with surface and subsurface sampling.  Identify if an immediate threat to human health or the environment exists.		Determine the concentration of VOC contamination which constitutes a hot spot.  Determine the limits of the VOC hot spot.  Determine the soil characteristics with respect to RCRA requirements.  Determine if any structures or physical barriers exist which would effect implementation of remedial actions.  Determine the configuration of the foundation of Building 292 at the south corner.	Evaluate samples from location S57MW003 with respect to human health risk and ecological risk.  Human health risk assessment and Ecological risk assessment.  Compare "hot spot" contamination concentrations to levels found over the site area.  Review regulations and estimate soil RCRA characteristics by evaluating soil sample analytical results.  Visual inspection and review facility utility maps.  Examine construction drawings available from the facility.	The hot spot is in the approximate location of S57SB002 and S57SB007. Sampling discussed in the surface and subsurface rows above.	4-1	Samples listed above	Soil	Samples will be analyzed as identified in surface and subsurface site area sections.	If it is determined based on analytical results obtained from the soil sampling event that an immediate threat to human health at the environment exists, then a removal action will be considered.  If regulations and an evaluation of RCRA characteristics indicate the need, appropriate disposal options will consider the soils as hazardous waste.  If subsurface soil contamination extends below the foundation of building 292, it may not be possible to cost effectively remove "hot spot" soil located at elevations below the foundation.
Groundwater	Upgradient from Study Area	Same sampling episode as potable wells.	Determine if VOC contamination exists in the groundwater up gradient of the site.			Install upgradient monitoring wells and sample groundwater to determine if upgradient groundwater contamination exists.	Upgradient of site area near western corner of Bldg. 292. One well cluster (1 deep surficial equifer, 1 shallow surficial equifer) at locations S57MW001 & S57MW002.	4-2	2	Water	TCL VOCs (including ethyl ether)	If VOC contamination is detected in the groundwater up gradient of the site, then an additional round of sampling may be necessary to verify analytical results, and a field investigation will be necessary if the source is to be determined.

ENCLOSURE(2)

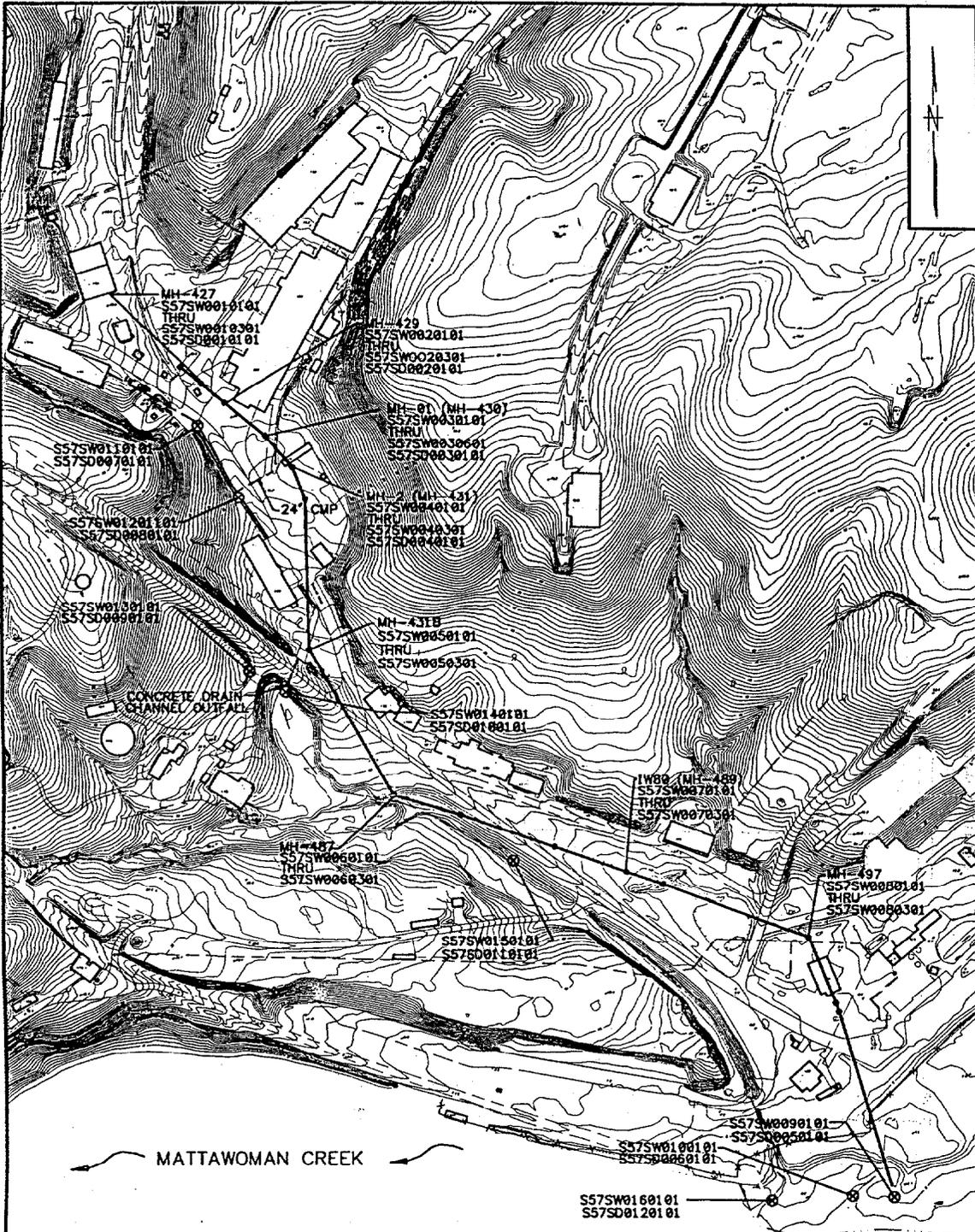
TABLE 3-2  
 INVESTIGATION MATRIX  
 SITE 57 - FORMER DRUM LOADING AREA  
 INDIAN HEAD DIVISION, NSWC  
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 PAGE 4 OF 7

STUDY BOUNDARY			INVESTIGATION OBJECTIVES			IDENTIFY INPUTS TO THE DECISION						DECISION RULE
Population/Contaminant Source/Media/Path	Special	Temporal	Human Health Risk	Ecological Risk	Engineering	Investigative Technique	Location	Work Plan Figure	Quantity of Samples	Matrix	Analytical Parameter	
				Determine if site-related groundwater contamination is entering Mattawoman Creek.		Site inspection and sampling of visible seeps.	To be determined in the field	Not Shown	5	Water	TCL VOCs (including ethyl ether)	If no visual evidence of seeps is found, the samples will not be collected.
							To be determined in the field	Not Shown	5	Sediment	TCL VOCs (including ethyl ether)	If no visual evidence of seeps is found, the samples will not be collected.
Storm Sewer Trench and Bedding	Study area and downgradient of the Study Area		Determine if VOC contamination exists in the groundwater along the storm sewer trench bedding down gradient of the site.		Determine the depth to groundwater.	Install temporary wells. Collect samples to determine the presence of contamination.	Locations: S57TW001, S57TW002, S57TW003	4-4	3	Water	TCL VOCs (including ethyl ether)	If analytical results indicate the presence of contamination, additional field investigations may be required. If groundwater is not encountered collect a soil sample from the depth of the pipe bedding.
					Determine if the storm sewer or the trench bedding material affect local groundwater flow patterns.	Water level measurements	All Temporary Wells					
					Determine if the storm sewer trench pipe bedding material is acting as a preferential pathway for contaminated groundwater.	When groundwater is not encountered during the installation of an initial temporary well, collect a soil sample from the depth estimated for the pipe bedding.	Temporary wells where groundwater is not encountered.	4-4	3	Soil	TCL VOCs (including ethyl ether)	
						Evaluate based on water level measurements						
						Evaluate based on analytical results and water level measurements						
Storm Sewer	Upgradient of the Study Area	Same as Site Area.	Determine if VOC contamination exists in the storm sewer water and/or sediment upgradient of the site.  Determine if other site-related contamination is present			Collect stormwater samples	Manhole MH-427. (Assume 2 inlets and one outlet) Sample all inlets and outlet. S57SW001 three samples.	4-3	3	Water	TCL VOCs (including ethyl ether)	If VOC contamination is detected in the stormwater up gradient of the site, then an additional round of sampling will be necessary to verify the contamination and additional field investigation will be necessary to determine the source of contamination.
						Collect stormwater samples	Manhole MH-429. (Assume 2 inlets and one outlet) Sample all inlets and outlet. S57SW002 three samples	4-3	3	Water	TCL VOCs (including ethyl ether), TCL SVOCs, TCL Pesticides, TAL metals (including cyanide), Explosives (including nitrocellulose, nitroguanidine and nitroglycerine)	If contamination is detected in the stormwater up gradient of the site, then an additional round of sampling will be necessary to verify the contamination and additional field investigation will be necessary to determine the source of contamination.
						Collect sediment sample from the bottom of the manhole	Manhole MH-427 invert. S57SD001	4-3	1	Sediment	TCL VOCs (including ethyl ether)	If VOC contamination is detected in the sediment up gradient of the site, then an additional round of sampling will be necessary to verify the contamination and additional field investigation will be necessary to determine the source of contamination.
						Collect sediment sample from the bottom of the manhole	Manhole MH-429 invert. S57SD002	4-3	1	Sediment	TCL VOCs (including ethyl ether), TCL SVOCs, TCL Pesticides, TAL metals (including cyanide), Explosives (including nitrocellulose, nitroguanidine and nitroglycerine)	If contamination is detected in the sediment up gradient of the site, then an additional round of sampling will be necessary to verify the contamination and additional field investigation will be necessary to determine the source of contamination.
	Study Area	Collect samples when sufficient flow exists, but no sooner than 3 days following the last storm event.	Determine the concentration of VOC contamination in the storm sewer water in the site area.			Collect storm water samples	Manhole MH-01 (430) in 24" VC pipe (Assume 5 inlets). S57SW003	4-3	5	Water	TCL VOCs (including ethyl ether)	

TABLE 3-2  
 INVESTIGATION MATRIX  
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 PAGE 6 OF 7

STUDY BOUNDARY			INVESTIGATION OBJECTIVES			IDENTIFY INPUTS TO THE DECISION						DECISION RULE
Population/ Contaminant Source/ Media/Path	Special	Temporal	Human Health Risk	Ecological Risk	Engineering	Investigative Technique	Location	Work Plan Figure	Quantity of Samples	Matrix	Analytical Parameter	
Concrete Drain Channel	Up gradient of concrete drain channel at 10' CMP pipe outlet.	Same as Site Area.	Determine if VOC contamination exists in the storm water or the sediment in the concrete channel up gradient of the site.			Stormwater and sediment sample collection.	At 10' CMP outlet into concrete channel. S57SW011 and S57SD007	4-3	1	Sediment	TCL VOCs (including ethyl ether), TOC, AVS/SEM	If VOC contamination is detected in the stormwater up gradient of the site, then an additional round of sampling will be necessary to verify and an additional investigation will be needed to determine the source of contamination.
	Concrete drain channel in the Site Area by the 24' CMP outlet.	Collect samples when surface flow exists, but no sooner than 3 days following the last storm event.	Determine if VOC contamination exists in the storm water or the sediment in the concrete channel in the area of the site.			Stormwater and sediment sample collection in the concrete drain channel.	At outlet of 24' CMP. S57SW012	4-3	1	Water	TCL VOCs (including ethyl ether)	
						Determine the dimensions, slope, and depth below grade of the concrete drain channel.  Determine the surface water run-off flow path with respect to the concrete channel.	At outlet of 24' CMP. S57SD008	4-3	1	Sediment	TCL VOCs (including ethyl ether)	
Down gradient of the Study Area.	Same as Site Area.	Determine if VOC contamination exists in the storm water and/or sediments in the channel down gradient of the site.		Determine the concentration of ecological parameters in the drainage swale which discharges to Mattawoman Creek.		Stormwater and sediment sample collection.	50 feet up gradient of outfall in swale. S57SW013 and S57SD008	4-3	1	Water	TCL VOCs (including ethyl ether)  Ecological Parameter (Turbidity, TDS, TSS, chloride, fluoride, nitrate/nitrite, sulfate, salinity, and dissolved oxygen).	If VOC contamination is detected in the up gradient stormwater, then an additional round of sampling may be necessary to verify the extent of contamination.
					Visual inspection and field measurements					Sediment	TCL VOCs (including ethyl ether), TOC, AVS/SEM	
					Inspection of topographic mapping and visual field inspection	Example for other contaminants: At outlet of concrete channel. S57SW014 and S57SD010	4-3	1	Water	TCL VOCs (including ethyl ether), TCL SVOCs, TCL Pests/PCBs, TAL metals (including cyanide), Explosives (including nitrocellulose, nitroguanidine and nitroglycerine)		
				Determine the concentration of ecological parameters in the drainage swale which discharges to Mattawoman Creek.		In the stream, directly south of Build. 157. S57SW015 and S57SD011	4-3	1	Water	TCL VOCs (including ethyl ether)  Ecological Parameter (Turbidity, TDS, TSS, chloride, fluoride, nitrate/nitrite, sulfate, salinity, and dissolved oxygen).		
										Sediment	TCL VOCs (including ethyl ether), TOC, AVS/SEM	

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**LEGEND**

- ⊗ SEDIMENT AND/OR STORM WATER SAMPLE LOCATION
- ==== LOCATION OF CONCRETE DRAIN CHANNEL
- LOCATION OF STORM SEWER MAIN LINE
- MANHOLE LOCATION STORM SEWER SYSTEM
- - - - - INTERMITTENT STREAM
- x - x - CHAIN LINK FENCE

0 200 400  
SCALE IN FEET

DRAWN BY	DATE
HJP	2/12/98
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE	
AS NOTED	

**Brown & Root Environmental**

PROPOSED STORM WATER AND  
SEDIMENT SAMPLING FROM STORM WATER  
SEWER SYSTEM AND CONCRETE DRAIN  
CHANNEL LOCATION MAP  
SITE 57-FORMER DRUM LOADING AREA  
INDIAN HEAD DIVISION NSWC  
INDIAN HEAD, MARYLAND

CONTRACT NO.	OWNER NO.
7129	0245
APPROVED BY	DATE
<i>[Signature]</i>	7/2/99
APPROVED BY	DATE
DRAWING NO.	REV.
FIGURE 4-3	0

DRAFT FINAL

ENCLOSURE(3)