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Site Characterization Report
for
Site 8 - Nitroglycerin Plant Office
Indian Head Division
Naval Surface Warfare Center

Indian Head, Maryland

Volume I of II - Report

Northern Division
Naval Facilities Engineering Command

Contract Number N62472-90-D-1298

Contract Task Order 0064

January 1993

HALLIBURTON NUS
Environmental Corporation

R-49-9-92-12

REVISED FINAL
SITE CHARACTERIZATION REPORT
SITE 8 - NITROGLYCERIN PLANT OFFICE
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

VOLUME I OF II - REPORT

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Chesapeake Division
Environmental Branch, Code 18
Naval Facilities Engineering Command
Washington Navy Yard, Building 212
Washington, D.C. 20374-2121

Submitted by:
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Contract Number N62472-90-D-1298
Contract Task Order 0064

January 1993

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1.0 INTRODUCTION

The Northern Division of the Naval Facilities Engineering Command has issued Contract Task Order Number 0064 (CTO 64) to HALLIBURTON NUS Environmental Corporation (HALLIBURTON NUS), under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract No. N62472-90-D-1298. CTO 64 is for environmental investigative work at the Navy Installation Restoration Program Site 8 - Nitroglycerin Plant Office (Installation Restoration Site 8), at the Indian Head Division, Naval Surface Warfare Center, (IHDIVNAVSURFWARCEN or NSWC) in Indian Head, Maryland. IHDIVNAVSURFWARCEN is in the Chesapeake Division (CHESDIV) of the Naval Facilities Engineering Command. CTO 64 consists of tasks to (1) investigate mercury contamination in the sediment/soils and surface water in and around Installation Restoration Site 8 to define the extent of contamination and support interim removal action if necessary, and (2) develop a Biomonitoring Plan to assess the extent of mercury contamination in the biota of the Installation Restoration Site 8 marsh and tidal pond as well as evaluate the potential ecological impacts of any interim removal action.

HALLIBURTON NUS has prepared this Site Characterization Report to present the results of sampling and analysis that was recently performed at Installation Restoration Site 8. This sampling and analysis was performed in accordance with the Abbreviated Field Sampling Plan (HALLIBURTON NUS, August 1992). The objective of the sampling and analysis was to further define the extent of mercury contamination at Site 8. Actual field sampling was performed at the site from August 24, 1992 to September 2, 1992 by HALLIBURTON NUS. Analytical work was performed by General Physics Environmental Corporation.

1.1 PROJECT BACKGROUND

The Indian Head NSWC consists of the main area and the Stump Neck Annex. The main area of the NSWC contains approximately 2,500 acres. Slightly less than 1,000 additional acres are located across Mattawoman Creek at the Stump Neck Annex. The Indian Head NSWC is located approximately 25 miles southwest of Washington, D.C., in the northwestern section of Charles County, Maryland. The main area of the NSWC is located on a peninsula bounded by the Potomac River to the northwest and Mattawoman Creek to the south and southeast. As shown on Figure 1-1, Installation Restoration Site 8 (Site 8) is located in the central portion of the main area of Indian Head NSWC; water from Site 8 discharges into Mattawoman Creek.

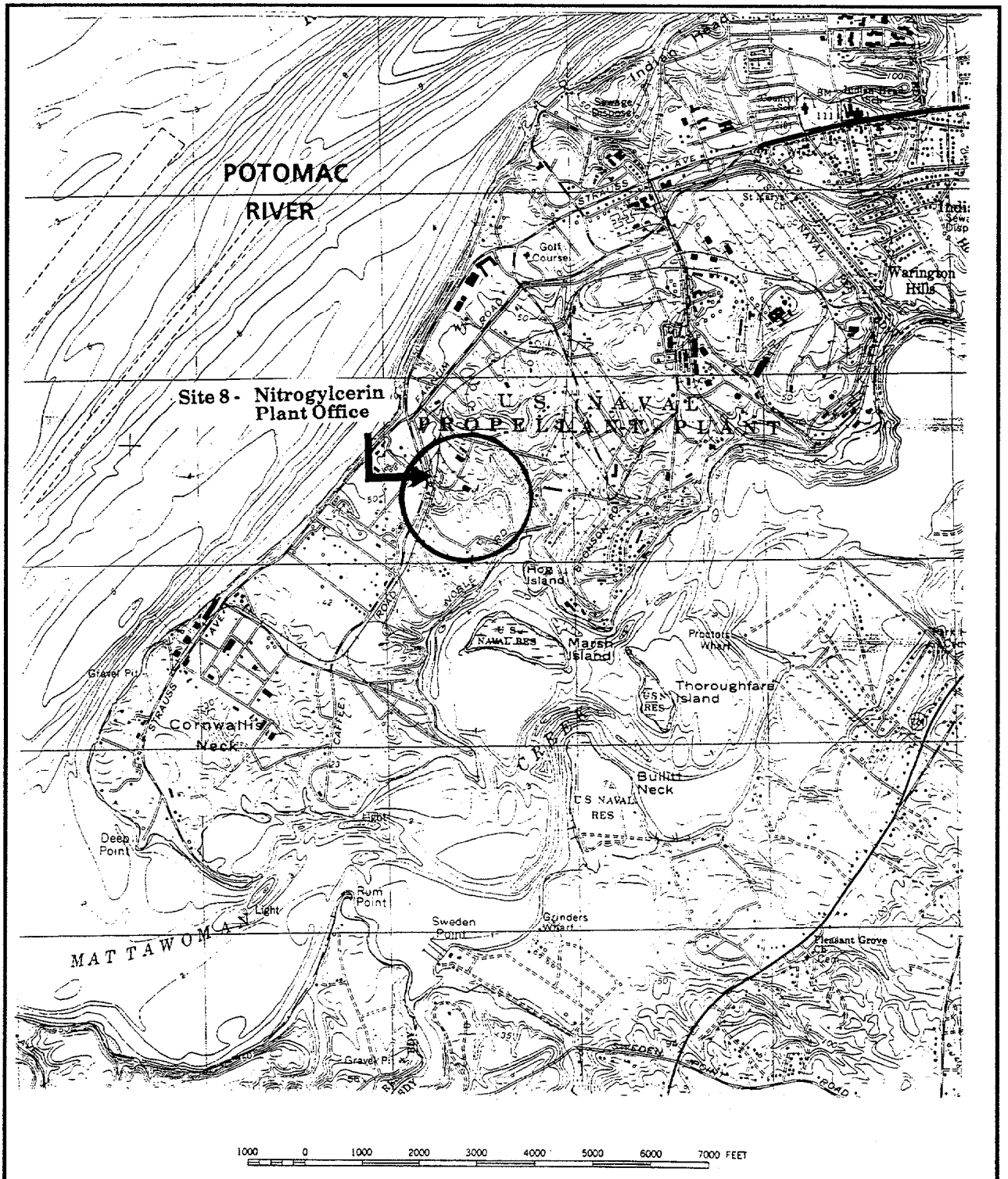

FIGURE 1-1
SITE LOCATION MAP
INSTALLATION RESTORATION PROGRAM
SITE 8 - NITROGLYCERIN PLANT OFFICE

HALLIBURTON NUS
Environmental Corporation

Source: 7.5 Minute USGS Quad Indian Head, MD-VA 1966 Photo Revised 1978

Site 8 - Nitroglycerin Plant Office consists of the following: Building 766, a 3-inch drain pipe from Building 766 to a manhole (Manhole A), a concrete pipe that conveys water from Manhole A under railroad tracks to a stream, approximately 1,300 feet of stream, and a tidal pond/marsh area. The tidal pond/marsh area is approximately 700 feet long and 200 feet wide; it includes both a marsh and open water area. The tidal pond outlets through a culvert under Noble Road and into Mattawoman Creek.

Building 766 was constructed in 1953. Building 766 was originally the Nitroglycerin (NG) Plant Office and Nitroglycerin (NG) Plant laboratory. It is no longer the NG Plant Office; it was recently renovated and the entire building is now a laboratory. From 1953 to 1981, mercury used in laboratory tests in Building 766 was inadvertently disposed through drains and discharged into Site 8. Since 1981, the drains have been sealed and the practice discontinued. Environmental investigative work began at Site 8 after mercury contamination was discovered in 1981. In 1984, a contractor inadvertently broke the drain pipe from Building 766 to Manhole A; mercury was observed leaking into the soil. The drain pipe, Manhole A, and approximately 200 drums (55-gallon capacity) of mercury contaminated soil were excavated and removed from the site. After the excavation was completed, the drain pipe and manhole were replaced. Uncontaminated backfill material was used to replace the excavated area. The removal and subsequent replacement action were performed with oversight from the enforcement staff of the State of Maryland.

Previous environmental investigative work at Site 8 has indicated that sediments in the stream, and tidal pond/marsh are contaminated with mercury; however, the actual extent of mercury contamination was not defined. The extent of contamination must be known in order to assess the need for removal action (or other remediation), no further action, or further investigation.

1.2 OBJECTIVE

The objective of the sampling and analysis work, performed by HALLIBURTON NUS under this CTO, was to define the extent of mercury contamination at Site 8. The purpose of this Site Characterization Report is to present the results of that work.

1.3 SUMMARY

Sampling and analysis at Site 8 was performed in two phases. The initial phase (Phase I) samples were collected throughout the site and analyzed to identify mercury contaminated areas. A total of 159 environmental samples (153 sediment/soil and 6 surface water) and 26 field QA/QC samples (duplicates, rinsate blanks, and field blanks) were collected and analyzed in Phase I. All Phase I samples were analyzed for mercury. Based on the results of Phase I, Phase II sampling was

performed to better define the extent of contamination at Site 8 and to address data gaps in the Phase I results. A total of 54 environmental samples (51 sediment/soil and 3 surface water) and 10 field QA/QC samples (duplicates, rinsate blanks, and field blanks) were collected and analyzed in Phase II. All Phase II samples were analyzed for mercury. In addition, three Phase II samples were analyzed for TCLP and TAL metals.

1.4 REPORT ORGANIZATION

Section 1.0 of this Site Characterization Report contains an introduction and background information. Section 2.0 describes the environmental setting of Site 8. Section 3.0 outlines the sampling and analysis procedures and methods utilized during this project. Section 4.0 presents the actual analytical results. Additional support information is included in the appendices which are attached separately and included in Volume II of this report.

2.0 ENVIRONMENTAL SETTING

Site 8 is located in the central portion of the Indian Head Division, NSWC. The site primarily consists of a stream and tidal pond/marsh area. Within the site, water flows from the Building 766 Area to Mattawoman Creek. This section discusses the component areas that make up Site 8.

Site 8 extends from Building 766 - Former Nitroglycerin Plant Office to Mattawoman Creek. It is bounded on the upstream end by the inlet of a concrete pipe under Caffee Road and downstream by Mattawoman Creek. Site 8 is made up of the following areas:

- Building 766 Area
- Upper Section of Stream
- Mid Section of Stream
- Lower Section of Stream
- Marsh /Stream Transition Area
- Tidal Pond/Marsh Area
- Area Downstream of Noble Road
- Tributaries and Spring
- Town Gut Landfill Area

The locations of these areas are shown on Figure 2-1. Each of these areas are interrelated but have different features that affect how they may have been impacted by mercury contamination. During field work, environmental sediment/soil samples were collected from each of the areas. Environmental surface water samples were also collected from two sampling locations. In addition, field QA/QC samples (duplicates, rinsates, and field blanks) were also collected.The number of environmental sediment/soil samples (excluding QA/QC samples) are listed in this section.

Also, in order to assess background levels of mercury, a total of five background sediment/soil samples were collected from

- A small stream on the opposite (northwest corner) of the NSWC (2 samples).
- Mattawoman Creek upstream of Site 8 (3 samples).

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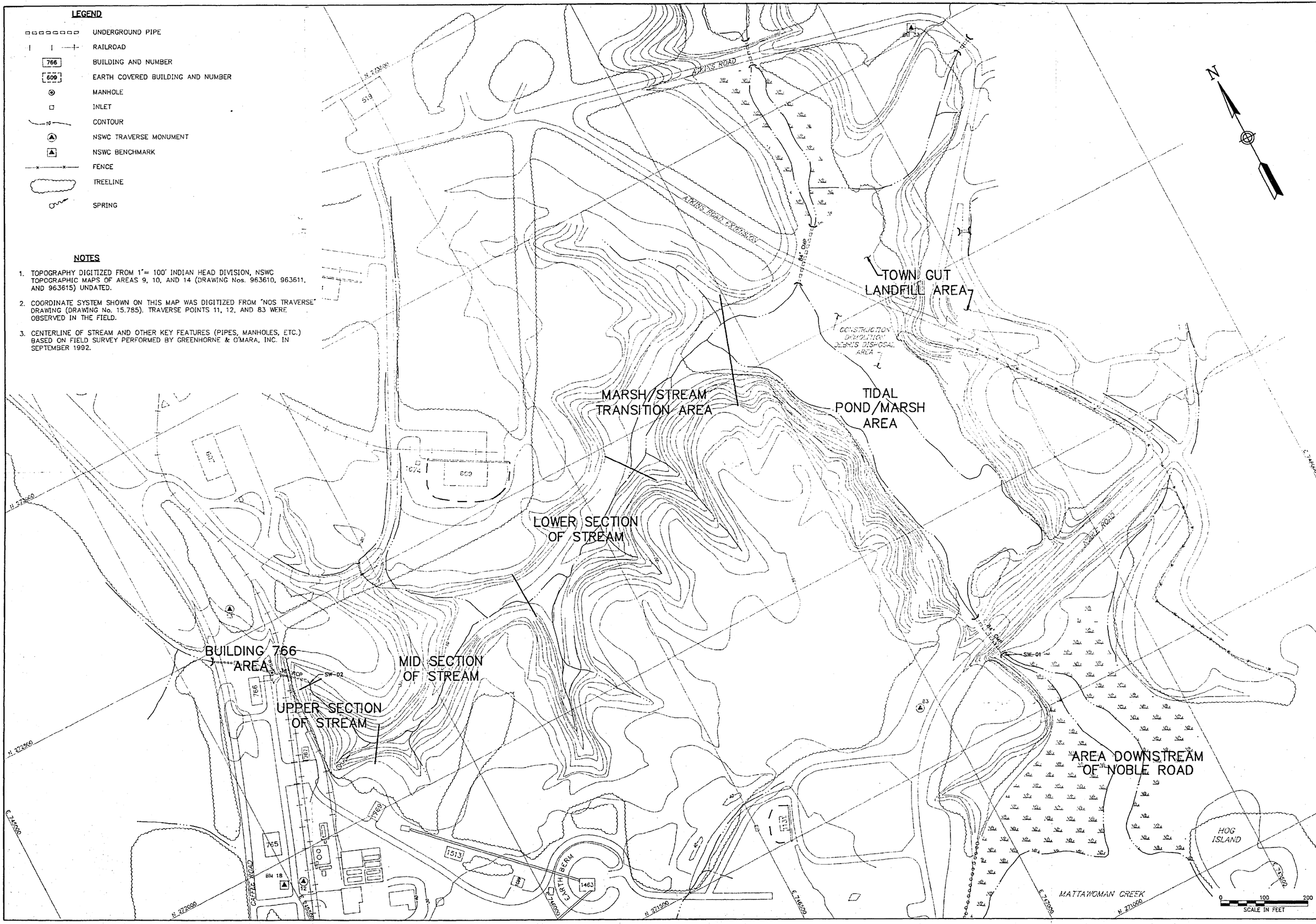
LEGEND

- UNDERGROUND PIPE
- RAILROAD
- 766 — BUILDING AND NUMBER
- 609 — EARTH COVERED BUILDING AND NUMBER
- MANHOLE
- INLET
- 10 — CONTOUR
- NSWC TRAVERSE MONUMENT
- NSWC BENCHMARK
- FENCE
- TREELINE
- SPRING

NOTES

1. TOPOGRAPHY DIGITIZED FROM 1"= 100' INDIAN HEAD DIVISION, NSWC TOPOGRAPHIC MAPS OF AREAS 9, 10, AND 14 (DRAWING Nos. 963610, 963611, AND 963615) UNDATED.
2. COORDINATE SYSTEM SHOWN ON THIS MAP WAS DIGITIZED FROM "NOS TRAVERSE" DRAWING (DRAWING No. 15.785). TRAVERSE POINTS 11, 12, AND 83 WERE OBSERVED IN THE FIELD.
3. CENTERLINE OF STREAM AND OTHER KEY FEATURES (PIPES, MANHOLES, ETC.) BASED ON FIELD SURVEY PERFORMED BY GREENHORNE & O'MARA, INC. IN SEPTEMBER 1992.



HALLIBURTON NUS Environmental Corporation
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PPC: ON:
OFFICER IN CHARGE APPROVED DATE

PREP BY DATE APPRVD

REV.	DESCRIPTION

NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON, DC

DEPARTMENT OF THE NAVY
WASHINGTON NAVY YARD

CHESAPEAKE DIVISION

INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
SITE 8 – NITROGLYCERIN PLANT OFFICE
SITE PLAN

NORTHDIV FOR COMMANDER, NAVFAC

APPROVED DATE

SEAL AREA

SAT TO	DATE
CODE I.D. NO.	80091
SCALE :	AS SHOWN
SPEC. NO. 04 –	NA
CONSTRN. CONTR. NO.	NA
NAVFAC DRAWING NO.	NA
SHEET 1 OF 1	
SIZE: D	DIS. SH. NO. FIGURE 2–1

2.1 BUILDING 766 AREA

The Building 766 Area is located on the western side of the site. Building 766, the source of mercury contamination at Site 8 is located in this area. This area extends from Caffee Road to the outlet of a 36-inch-diameter pipe. The pipe extends underneath a series of railroad tracks and discharges into the Upper Section of Stream. The area immediately adjacent to Building 766 is open and grassed. Near the center of this area is Manhole A. Manhole A is approximately 30 feet east of Building 766.

A 36-inch-diameter concrete pipe conveys water from above Caffee Road, through Manhole A and into the upper section of stream. A 12-inch-diameter concrete pipe that collects surface water runoff from the area north of Building 766 also drains into Manhole A. A 3-inch drain line also enters Manhole A from the direction of Building 766.

The existing Manhole A and 3-inch drain line were installed after the source of mercury contamination was removed. Previously, a 3-inch drain line from Building 766 conveyed flows from the sink and floor drains in Building 766 to Manhole A; this 3-inch line was the source of mercury contamination at Site 8. The original 3-inch drain line and Manhole A were removed in 1984 when mercury contamination was observed in the soils during a construction project. Approximately 200 drums (55-gallon capacity) of contaminated soil were also excavated and removed from the area.

The 36-inch-diameter concrete pipe that conveys flow from Manhole A under the railroad tracks to the upper section of the stream was in place when mercury was released into Site 8. The 36-inch pipe discharges into a pool of water located approximately 3 feet below the outlet invert of the pipe. This pool then spills over into the Upper Section of Stream.

During Phase I and II sampling, 12 environmental sediment/soil samples (plus 3 duplicates) were collected from the Building 766 Area.

2.2 UPPER SECTION OF STREAM

The Upper Section of Stream is approximately 300 feet long. It begins at the pool located at the outlet of the pipe under the railroad tracks and extends in a southerly direction generally parallel to the railroad tracks. The Upper Section of Stream flows through a moderately vegetated wooded area and drops approximately 16 feet in elevation. The stream bed varies from 1 to 2 feet wide and has steep overbanks.

During Phase I and II sampling, 42 environmental sediment/soil samples (plus 5 duplicates) were collected in this section of the stream.

2.3 MID SECTION OF STREAM

The Mid Section of Stream is located downstream of the Upper Section of Stream. It is approximately 350 feet long and generally flows in an easterly direction. This section of stream flows through a moderately vegetated wooded area with and drops approximately 3 feet in elevation. The stream bed varies in width from 1 to 3 feet and has wide, shallow overbanks.

During Phase I and II sampling, 18 environmental sediment/soil samples (plus 2 duplicates) were collected in this section of the stream.

2.4 LOWER SECTION OF STREAM

The Lower Section of Stream is located downstream of the Mid Section of Stream. It is approximately 600 feet long and generally flows in a northeasterly direction. This section of the stream flows through a moderately vegetated wooded area. The topography in this area is flat with approximately a 1-foot drop in elevation. The stream bed varies in width from 2 to 3 feet with extremely wide, shallow overbanks. Some older abandoned stream channels are located in this part of the site. Apparently the stream formerly flowed through these older channels.

During Phase I and II sampling, 20 environmental sediment/soil samples (plus 3 duplicates) were collected in this section of the stream.

2.5 MARSH/STREAM TRANSITION AREA

The Marsh/Stream Transition Area is located downstream of the Lower Section of Stream and is approximately 300 feet long. The stream transitions into a marsh through this area. Generally, water flows through this area in a westerly direction. The area is wooded and heavily vegetated. It is very flat and the stream splits into two channels through parts of the area; abandoned stream channels (some are dry and others contain stagnant water) are also located in this area. The stream varies in width from 2 to 5 feet.

During Phase I and II sampling, 16 environmental sediment/soil samples (plus 1 duplicate) were collected in this area.

2.6 TIDAL POND/MARSH AREA

The Tidal/Pond Marsh Area is located north of Noble Road and west of Atkins Road Extension. This area is approximately 700 feet long and varies from 50 feet wide at the upstream end to 200 feet at the downstream end. The Site 8 stream discharges into the back of the Tidal Pond/Marsh Area from the west and a second larger tributary discharges into the area from the north. The area adjacent to the west side of the tidal pond/marsh is steep and heavily wooded. The area adjacent to the east side of the tidal pond contains both a wooded and a grassed area. The east wooded area appears to be located along the original shoreline. The grassed area on the east side appears to be a construction demolition debris disposal area. Concrete, rebar, wooden timbers, chunks of asphalt paving, and other construction wastes were observed in the Area.

The Tidal Pond/Marsh Area discharges through an 84-inch-diameter corrugated metal (CMP) pipe under Noble Road and into Mattawoman Creek. For years, a beaver dam was located at the upstream end of the 84-inch pipe and maintained the pool elevation of the Tidal Pond/Marsh Area approximately 4 feet above the upstream invert elevation of the CMP. The beaver dam was removed during the summer of 1992, and the pool level was lowered by approximately 4 feet. During field sampling, the water generally varied from 1 to 2 feet deep. A weir that will regulate flow from the tidal pond and restore the pond to its previous level is scheduled to be installed on the outlet pipe in the fall of 1992.

During Phase I and II sampling, 57 environmental sediment/soil samples (plus 6 duplicates) were collected from the Tidal Pond/Marsh Area.

2.7 AREA DOWNSTREAM OF NOBLE ROAD

The Tidal Pond/Marsh Area outlets through an 84-inch CMP and discharges downstream of Noble Road and into Mattawoman Creek. The Area Downstream of Noble Road is tidally influenced. During low tide, a defined stream channel is readily observable. The channel varies in width from 10 feet to 40 feet. It is bounded on both sides by thick patches of swamp grasses.

During Phase I and II sampling, 12 environmental sediment/soil samples were collected in this area.

2.8 TRIBUTARIES AND SPRING

Eight major tributaries outlet into the stream and Tidal Pond/Marsh Area throughout Site 8. As shown on Figure 2-1, one tributary and one spring are located on the south side of the Upper Section of Stream. One tributary enters the Mid Section of Stream from the south; two tributaries from the north,

and three from the south enter the Lower Section of Stream. One tributary from the north discharges into the back of the Tidal Pond/Marsh Area.

During Phase I and II sampling, 18 environmental sediment/soil samples (plus 2 duplicates) were collected from these areas.

2.9 TOWN GUT LANDFILL AREA

The Town Gut Landfill Area is located adjacent to, and northeast of the Tidal Pond/Marsh Area. A tributary flows from the area north/northeast of Site 8 through this area and into the Tidal Pond/Marsh. The stream varies from 2 feet to 5 feet wide.

During Phase I and II sampling, 4 environmental sediment/soil samples were collected from the tributary that flows through the Town Gut Landfill Area.

3.0 SAMPLING TECHNIQUES AND ANALYTICAL METHODS

This section describes sample collection and handling procedures that were utilized during field sampling at Site 8. It also contains an analytical program summary and describes the quality assurance/quality control (QA/QC) field sampling program. For more information pertaining to sampling techniques and analytical methods refer to the Abbreviated Field Sampling Plan, (HALLIBURTON NUS, August 1992).

3.1 SAMPLING METHODS

Both sediment/soil and surface water environmental samples were collected from Site 8. This section details the site-specific methodology used to obtain the environmental samples.

3.1.1 Sediment/Soil Sampling

Sediment/soil samples were collected from each of the nine project areas identified in Section 2.0. Generally, two samples were collected from each sampling location--one shallow (0 to 6 inches deep) and one deep (6 to 12 inches). However, at some locations, deeper samples (at depths greater than 12 inches) were collected, and at some locations only a shallow sample was collected. The sampling locations and the number of samples collected at each location are described in Section 4.0 of this Site Characterization Report. Sample log sheets for each sediment/soil sample collected are presented in Appendix A.

Sediment/soil samples were collected from the Building 766 Area, the existing stream channel, the tidal pond/marsh area, stream overbank deposits, abandoned stream channels (now inactive), tributaries to the main stream, and the area below Noble Road where the tidal pond discharges to Mattawoman Creek. Sediment/soil samples were collected using the following tools:

- Stainless steel and disposable trowels
- Shovel
- Split-spoon sampler
- Metal tube sampler
- Acrylic clear plastic tubes

The collected samples were placed into precleaned sample bottles using trowels. All nondisposable equipment was decontaminated between collection of samples from different locations. All pertinent field data was recorded on the sample log sheets and the field book.

Sediment/soil samples were collected in the open water portion of the Tidal Pond /Marsh Area from a boat provided by the Navy. The samples were collected along transect lines that were delineated by ropes. The ropes were attached to fixed points (trees, snags, etc.) on each shore. Sediment/soil samples from the marsh portion were collected using chest waders. Most of the samples collected in the Tidal Pond/Marsh Area (at the transects) were collected using the 2-inch-diameter clear acrylic tubes. The tubes were pushed by hand into the bottom sediment/soils. They were [illegible] twisted, capped, and removed. A plugged, smaller diameter plastic pipe was then used to extrude [illegible] sample. Although "baskets" were used to retain the sample in the tube, poor sample recovery was a problem at some sampling locations; in these locations, the same location was sampled multiple times to obtain an adequate sample volume. Also, the acrylic tube sampling technique may have compacted the samples. In some areas the sample tube was pushed 2 feet into the pond bottom; however only 1 foot of sample was actually retained in the tube.

Where practical, sediment/soil sampling locations were marked in the field with flagging or pin flags. Within the Tidal Pond/Marsh Area transect end points were marked on both shorelines. Remote sampling locations (not readily accessible by foot) were measured from control points that were flagged. The sampling locations, transect end points, and control points were surveyed and located in accordance with the NSWC coordinate system and are shown on the Contaminant Occurrence and Distribution Maps contained in Section 4.0.

3.1.2 Surface Water Sampling

Surface water samples were obtained from two locations within Site 8. One location (SW01) was the outfall of the Tidal Pond/Marsh Area into Mattawoman Creek (located on the downstream side of Noble Road). The second location (SW02) was at the outfall of the 36-inch pipe into the pool at the Upper Section of Stream. Samples were obtained by using the direct fill method of sample acquisition. The sample bottle (unpreserved) was placed in the direct flow of water with the sample bottle mouth pointed directly up stream. Sample log sheets for each surface water sample are presented in Appendix B.

Two surface water samples (SW02-03 and SW02-04) at sampling location SW02 were collected to provide information on the residue lining the invert of the 36-inch pipe. The residue in the invert of the pipe was scraped with a stiff brush and allowed to become suspended in the water. The water with the suspended residue was then collected for subsequent analysis.

In addition, field measurements were obtained on the surface water samples during sample collection. These field measurements are:

- pH
- Specific conductance
- Temperature

Color and turbidity were also noted on the sample log form for each surface water sample.

All surface water samples were analyzed for total (unfiltered) and dissolved (filtered) mercury. Dissolved mercury analysis was performed on samples that were field filtered through a 0.45 filter immediately after sampling. Surface water samples were poured directly from the sampling container into the appropriate sample bottles for analysis. For those samples requiring filtering, the initial sample bottle was unpreserved. Once filtered, and for those samples undergoing analysis for total mercury, the surface water samples were then preserved with HNO_3 to a pH <2.

3.2 SAMPLE HANDLING

Sample handling was performed in accordance with the Abbreviated Field Sampling Plan (AFSP) (HALLIBURTON NUS, August 1992), the EPA User's Guide to the Contract Laboratory Program (EPA, December 1986), and the Federal Register (EPA, October 26, 1984).

3.2.1 Sampling Identification System

Each sample collected was assigned a unique sample tracking number. The sample tracking number consisted of a three-segment, alpha-numeric code that identifies the sample medium and location, sample depth (sediment/soils) or sampling round (surface water), and QA designation. All sediment/soil samples were designated as SS samples and surface water samples were designated as SW. Other pertinent information regarding sample identification was recorded in the field log books. The samples were numbered in accordance with the AFSP.

3.2.2 Sample Packaging and Shipping

Samples were packaged, placed in coolers, and packed with ice and vermiculite. The samples were picked up at the end of each day by a courier from the laboratory and delivered to the laboratory.

3.23 Sample Custody

Sample custody was documented on chain-of-custody forms in accordance with the AFSP.

3.3 ANALYTICAL METHODS

The analytical work performed on the samples collected during the field work is summarized on Table 3-1. Both Phase I and Phase II samples are identified on Table 3-1.

All samples collected during Phase I and Phase II were sent to an offsite laboratory for rapid turnaround mercury analysis. Sediment/soil samples were analyzed for total mercury on a dry weight basis and surface water samples were analyzed for both total and dissolved mercury. The actual moisture content of each sediment/soil sample was also determined and provided with the analytical results. Verbal results were provided within 24 or 48 hours (as specified) after they were received at the laboratory.

During Phase II, three sediment/soil samples that contained high concentrations of mercury were analyzed for Target Analyte List (TAL) metals (23 metals) and Toxic Characteristic Leaching Procedure (TCLP) metals (8 metals including mercury).

3.4 QUALITY ASSURANCE/QUALITY CONTROL

In addition to regular calibration of field equipment and appropriate documentation, field Quality Assurance/Quality Control (QA/QC) samples were collected or generated during environmental sampling activities. QA/QC samples include field duplicates, field blanks, and equipment rinsate blanks. The number of field QA/QC samples are shown on Table 3-1.

- Field Duplicates - Field duplicates were: (1) independently collected at a sampling location in the case of surface water; or (2) a single sample split into two portions in the case of sediment/soil. Duplicates were obtained during a single act of sampling and are used to assess the overall precision of the sampling and analysis program. Ten percent of all samples for each media (water and soil/sediment) were field duplicates. Duplicates were analyzed for the same parameters in the laboratory.

- Equipment Rinsate Blanks - Equipment rinsate blanks were obtained under representative field conditions by running analyte-free water through sample collection equipment (trowel, shovel, pail, etc.) after decontamination and placing it in the appropriate sample containers

TABLE 3-1

ANALYTICAL PROGRAM SUMMARY

Parameter	Method	Detection Limit	Sample Matrix	Environmental Samples(1) (I/II)	Equipment Rinsate Blanks(2) (I/II)	Field Blanks (I/II)	Duplicates (I/II)	Total Samples (I/II)
Mercury (dry weight basis)	SW 846/7471	0.1 mg/kg (ppm)(3)	Sediment/Soil	155/49	3/2	1/1	16/6	173/60
Mercury(4) (Total)	SW 846/7470	0.2 µg/L (ppb)	Surface Water	6/3	1/0	1/0	1/0	9/3
Mercury(5) (Dissolved)	SW 846/7470	0.2 µg/L (ppb)	Surface Water	6/3	1/0	0/0	1/0	8/3
TAL Metals(6)	6010/7000 CLP/SOW 3/90	NA	Sediment/Soil	0/3	0/0	0/0	0/0	0/3
TCLP Metals(7)	1311 6010/7000	NA	Sediment/Soil	0/3	0/0	0/0	0/0	0/3
			Subtotal	167/61	5/2	2/1	18/6	190/72
			TOTAL	228	7	3	24	262

(1) I/II - Phase I Totals/Phase II Totals
(2) Equipment Rinsate Blanks - Additional equipment rinsate blanks were collected. Number reflects actual number of analysis performed.
(3) Detection Limit for Sediment/Soil samples on a wet weight basis.
(4) Total - For the determination of total mercury the sample is not filtered before acidification.
(5) Dissolved - For the determination of dissolved mercury the sample was field filtered through a 0.45 micron filter before acidification.
(6) TAL Metals - Target analyte list of 23 metals.
(7) TCLP Metals - Toxicity Characteristics Leaching Procedure Metals (8 metals including mercury).

for analysis. Equipment blanks were used to assess the effectiveness of decontamination procedures. Equipment blanks were collected for each type of non-dedicated sampling equipment used and were submitted at a frequency of one per day per media. Equipment blanks were analyzed every other day. Those not analyzed were retained by the laboratory until completion of field activities. It was the responsibility of the FOL to communicate to the laboratory whether an equipment blank was, or was not, to be analyzed as stated above. Equipment blanks for a solid matrix (soils and sediments) were analyzed for total mercury only. Equipment blanks for surface water samples were analyzed for total and dissolved mercury.

- Field Blanks - Field blanks were obtained by sampling the potable and analyte-free water used for decontamination during the field investigation. Field blanks were used to confirm the effectiveness of decontamination procedures, and to determine if the analyte-free water may be contributing to sample contamination. Field blanks were collected and submitted at a frequency of one per sampling event per media.

4.0 ANALYTICAL RESULTS

During Phase I and Phase II a total of 204 sediment/soil plus 22 duplicates, 18 surface water (9 total and 9 dissolved) plus 2 duplicates and 10 other QA/QC samples were collected and analyzed for mercury. In addition, 3 sediment/soil samples were analyzed for TAL and TCLP metals. Results of Phase I and Phase II analysis are presented in this section of the report. All analytical data was validated by HALLIBURTON NUS. Data validation summaries are presented in Appendix C of this report.

4.1 SEDIMENT/SOIL RESULTS

Sediment/soil samples were collected from the following 10 areas:

- Building 766 Area
- Upper Section of Stream
- Mid Section of Stream
- Lower Section of Stream
- Marsh/Stream Transition Area
- Tidal Pond/Marsh Area
- Area Downstream of Noble Road
- Tributaries and Spring
- Town Gut Landfill Area
- Background

The first nine areas listed above are within Site 8. The tenth area (Background) consists of samples that were collected in the vicinity of, but outside of Site 8. Two of the 3 sediment/soil samples that were analyzed for TAL and TCLP metals were collected from the Upper Section of Stream. The third sample was collected from the Tidal Pond/Marsh area.

The results of the mercury analysis performed on the sediment/soil samples is presented on Figure 4-1. Figure 4-1 consists of two sheets--Sheet 1 presents the analytical data for the west side of Site 8 (Building 766 Area through Lower Section of Stream). Sheet 2 presents the analytical data from the east side of Site 8 (Marsh/Stream Transition Area to the Area Downstream of Noble Road).

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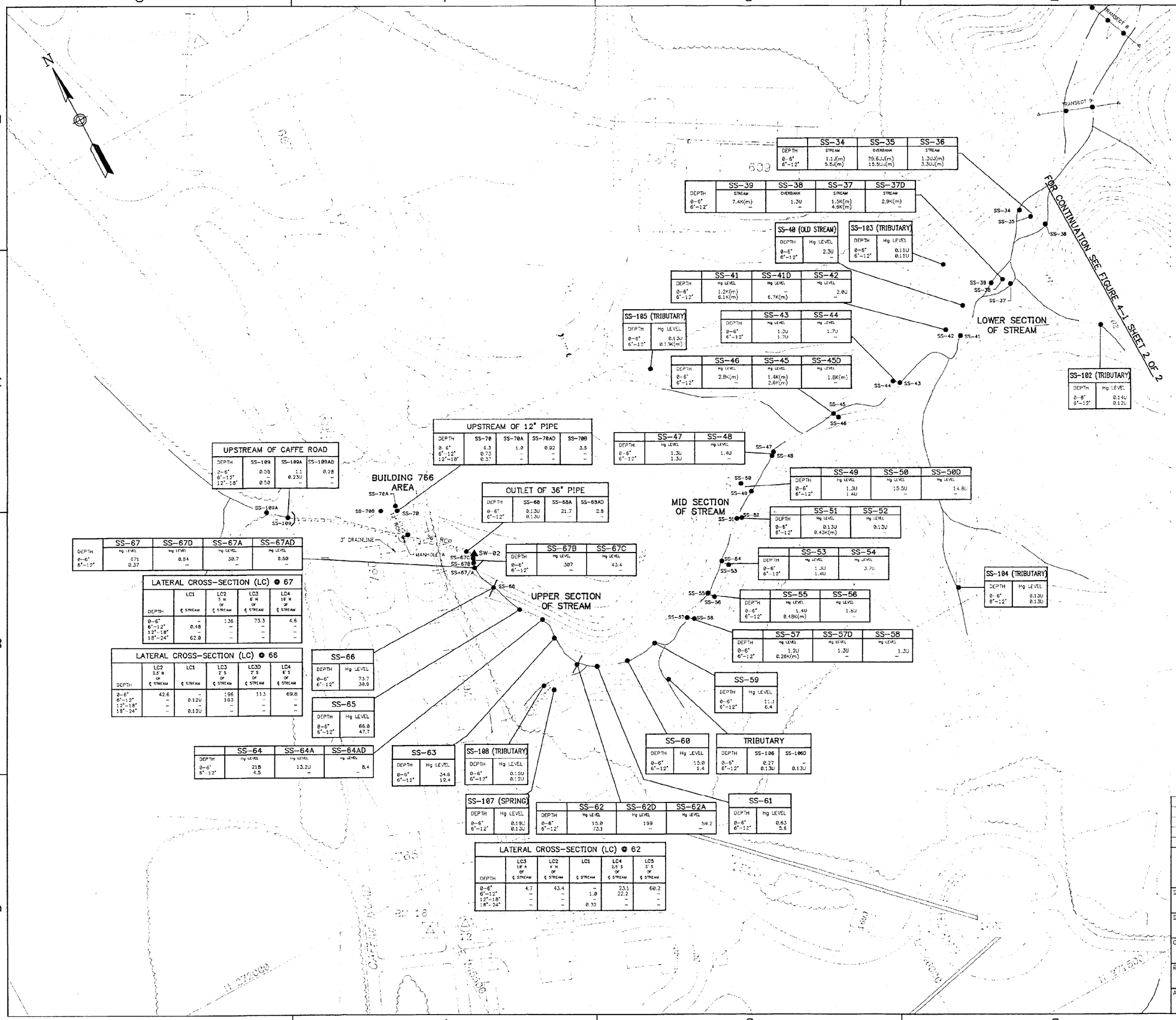


	SS-34	SS-35	SS-36
DEPTH	STREAM	OVERBANK	STREAM
0-6"	1.1J(m)	29.6JJ(m)	1.3UJ(m)
6"-12"	5.5J(m)	15.5UJ(m)	3.3UJ(m)

	SS-39	SS-38	SS-37	SS-37D
DEPTH	STREAM	OVERBANK	STREAM	STREAM
0-6"	7.4K(m)	1.3U	1.5K(m)	2.9K(m)
6"-12"	–	–	4.6K(m)	–

SS-40 (OLD STREAM)	
DEPTH	Hg LEVEL
0-6"	2.3U
6"-12"	–

SS-103 (TRIBUTARY)	
DEPTH	Hg LEVEL
0-6"	0.11U
6"-12"	0.11U

	SS-41	SS-41D	SS-42
DEPTH	Hg LEVEL	Hg LEVEL	Hg LEVEL
0-6"	1.2K(m)	–	2.0U
6"-12"	6.1K(m)	6.7K(m)	–

SS-105 (TRIBUTARY)	
DEPTH	Hg LEVEL
0-6"	0.13U
6"-12"	0.13K(m)

	SS-43	SS-44
DEPTH	Hg LEVEL	Hg LEVEL
0-6"	1.3U	1.7U
6"-12"	1.7U	–

	SS-46	SS-45	SS-45D
DEPTH	Hg LEVEL	Hg LEVEL	Hg LEVEL
0-6"	2.8K(m)	1.4K(m)	1.8K(m)
6"-12"	–	2.6K(m)	–

SS-102 (TRIBUTARY)	
DEPTH	Hg LEVEL
0-6"	0.14U
6"-12"	0.12U

UPSTREAM OF 12" PIPE				
DEPTH	SS-70	SS-70A	SS-70AD	SS-70D
0-6"	6.3	1.0	0.92	3.5
6"-12"	0.73	–	–	–
12"-18"	0.37	–	–	–

	SS-47	SS-48
DEPTH	Hg LEVEL	Hg LEVEL
0-6"	1.3U	1.4U
6"-12"	1.3U	–

UPSTREAM OF CAFFE ROAD			
DEPTH	SS-109	SS-109A	SS-109AD
0-6"	0.58	1.1	0.28
6"-12"	–	0.23U	–
12"-18"	0.50	–	–

OUTLET OF 36" PIPE			
DEPTH	SS-68	SS-68A	SS-68AD
0-6"	0.13U	21.7	2.8
6"-12"	0.13U	–	–

	SS-49	SS-50	SS-50D
DEPTH	Hg LEVEL	Hg LEVEL	Hg LEVEL
0-6"	1.3U	15.5U	14.8U
6"-12"	1.4U	–	–

	SS-51	SS-52
DEPTH	Hg LEVEL	Hg LEVEL
0-6"	0.13U	0.13U
6"-12"	0.43K(m)	–

	SS-67	SS-67D	SS-67A	SS-67AD
DEPTH	Hg LEVEL	Hg LEVEL	Hg LEVEL	Hg LEVEL
0-6"	671	0.84	30.7	0.50
6"-12"	0.37	–	–	–

	SS-67B	SS-67C
DEPTH	Hg LEVEL	Hg LEVEL
0-6"	307	43.4
6"-12"	–	–

	SS-53	SS-54
DEPTH	Hg LEVEL	Hg LEVEL
0-6"	1.3U	3.7U
6"-12"	1.4U	–

SS-104 (TRIBUTARY)	
DEPTH	Hg LEVEL
0-6"	0.13U
6"-12"	0.13U

LATERAL CROSS-SECTION (LC) @ 67				
DEPTH	LC1 ℄ STREAM	LC2 3' N OF ℄ STREAM	LC3 6' N OF ℄ STREAM	LC4 18' N OF ℄ STREAM
0-6"	–	1.36	73.3	4.6
6"-12"	0.48	–	–	–
12"-18"	–	–	–	–
18"-24"	62.0	–	–	–

	SS-55	SS-56
DEPTH	Hg LEVEL	Hg LEVEL
0-6"	1.4U	1.6U
6"-12"	0.48K(m)	–

	SS-57	SS-57D	SS-58
DEPTH	Hg LEVEL	Hg LEVEL	Hg LEVEL
0-6"	1.2U	1.3U	1.3U
6"-12"	0.26K(m)	–	–

LATERAL CROSS-SECTION (LC) @ 66					
DEPTH	LC2 2.5' N OF ℄ STREAM	LC1 ℄ STREAM	LC3 2' S OF ℄ STREAM	LC3D 2' S OF ℄ STREAM	LC4 8' S OF ℄ STREAM
0-6"	42.6	–	196	11.3	69.8
6"-12"	–	0.12U	163	–	–
12"-18"	–	–	–	–	–
18"-24"	–	0.12U	–	–	–

SS-66	
DEPTH	Hg LEVEL
0-6"	73.7
6"-12"	30.0

SS-65	
DEPTH	Hg LEVEL
0-6"	66.0
6"-12"	47.7

SS-59	
DEPTH	Hg LEVEL
0-6"	11.1
6"-12"	6.4

	SS-64	SS-64A	SS-64AD
DEPTH	Hg LEVEL	Hg LEVEL	Hg LEVEL
0-6"	21.8	13.2U	–
6"-12"	4.5	–	8.4

SS-63	
DEPTH	Hg LEVEL
0-6"	34.6
6"-12"	12.4

SS-108 (TRIBUTARY)	
DEPTH	Hg LEVEL
0-6"	0.13U
6"-12"	0.13U

SS-60	
DEPTH	Hg LEVEL
0-6"	15.0
6"-12"	1.4

TRIBUTARY		
DEPTH	SS-106	SS-106D
0-6"	0.27	–
6"-12"	0.13U	0.13U

SS-107 (SPRING)	
DEPTH	Hg LEVEL
0-6"	0.19U
6"-12"	0.13U

	SS-62	SS-62D	SS-62A
DEPTH	Hg LEVEL	Hg LEVEL	Hg LEVEL
0-6"	15.0	199	59.2
6"-12"	73.1	–	–

SS-61	
DEPTH	Hg LEVEL
0-6"	0.63
6"-12"	5.6

LATERAL CROSS-SECTION (LC) @ 62					
DEPTH	LC3 18' N OF ℄ STREAM	LC2 4' N OF ℄ STREAM	LC1 ℄ STREAM	LC4 2.5' S OF ℄ STREAM	LC5 5' S OF ℄ STREAM
0-6"	4.7	43.4	–	23.1	60.2
6"-12"	–	–	1.0	22.2	–
12"-18"	–	–	–	–	–
18"-24"	–	–	0.32	–	–

LEGEND

- UNDERGROUND PIPE
- RAILROAD
- 766 BUILDING AND NUMBER
- 609 EARTH COVERED BUILDING AND NUMBER
- MANHOLE
- INLET
- CONTOUR
- NSWC TRAVERSE MONUMENT
- NSWC BENCHMARK
- FENCE
- TREELINE
- SEDIMENT/SOIL SAMPLING LOCATION
- SURFACE WATER SAMPLING LOCATION
- SPRING

GENERAL NOTES

1. TOPOGRAPHY DIGITIZED FROM 1"= 100' INDIAN HEAD DIVISION, NSWC TOPOGRAPHIC MAPS OF AREAS 9, 10, AND 14 (DRAWING Nos. 963610, 963611, AND 963615) UNDATED.
2. COORDINATE SYSTEM SHOWN ON THIS MAP WAS DIGITIZED FROM "NOS TRAVERSE" DRAWING (DRAWING No. 15.785). TRAVERSE POINTS 11, 12, AND 83 WERE OBSERVED IN THE FIELD.
3. CENTERLINE OF STREAM AND OTHER KEY FEATURES (PIPES, MANHOLES, ETC.) BASED ON FIELD SURVEY PERFORMED BY GREENHORNE & O'MARA, INC. IN SEPTEMBER 1992.
4. FIVE BACKGROUND SEDIMENT/SOIL SAMPLES WERE COLLECTED AT SITE 8. THREE SAMPLES WERE COLLECTED UPSTREAM OF SITE 8 IN MATTAWOMAN CREEK. THE REMAINING TWO SAMPLES WERE COLLECTED FROM A STREAM CHANNEL LOCATED AT THE NORTHWESTERN CORNER OF THE BASE, AWAY FROM SITE 8.
5. ALL MERCURY CONCENTRATIONS ARE SHOWN IN mg/kg. DUPLICATE SAMPLES ARE IDENTIFIED WITH A "D" SUFFIX.
6. DATA VALIDATION QUALIFIERS ARE AS FOLLOWS:

   – – NO SAMPLE TAKEN

   U – VALUE IS NONDETECT AS REPORTED BY THE LABORATORY.

   K(m) – POSITIVE RESULTS ARE ESTIMATED AND BIASED HIGH DUE TO HIGH MATRIX SPIKE RECOVERY.

   J(m) – VALUE IS ESTIMATED DUE TO MATRIX SPIKE NONCOMPLIANCES. BIAS CANNOT BE DETERMINED.

   UJ(m) – NONDETECT IS ESTIMATED DUE TO MATRIX SPIKE NONCOMPLIANCE. BIAS CANNOT BE DETERMINED.

   UJ(d) – NONDETECTED IS ESTIMATED DUE TO LABORATORY DUPLICATE IMPRECISION. BIAS CANNOT BE DETERMINED.

   J(d) – VALUE IS ESTIMATED DUE TO LABORATORY DUPLICATE IMPRECISION. BIAS CANNOT BE DETERMINED.

0 50 100
SCALE IN FEET

Symbol	Revisions	Date	Approved
1	DATA VALIDATION QUALIFIERS ADDED	JAN 93	APK

HALLIBURTON NUS
Environmental Corporation

Designed by:
Drawn by: M. Jannet (01/05/93)
Checked by:
Reviewed by:
Approved by:

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
CHESAPEAKE DIVISION
WASHINGTON NAVY YARD — WASHINGTON, DC

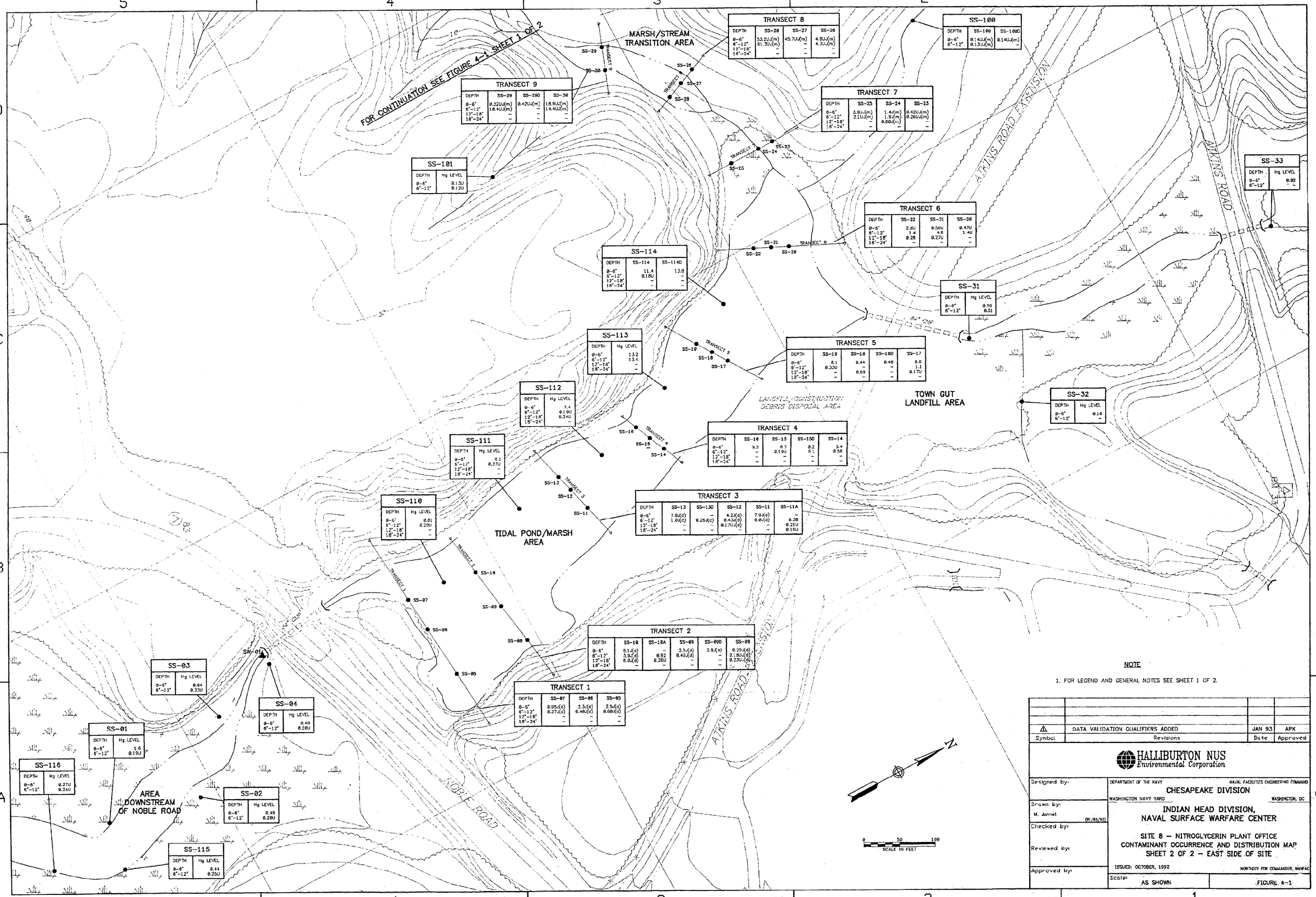
INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER

SITE 8 – NITROGLYCERIN PLANT OFFICE
CONTAMINANT OCCURRENCE AND DISTRIBUTION MAP
SHEET 1 OF 2 – WEST SIDE OF SITE

ISSUED: OCTOBER, 1992
NORTHDIV FOR COMMANDER, NAVFAC

Scale: AS SHOWN

FIGURE 4-1



TRANSECT 8			
DEPTH	SS-28	SS-27	SS-26
0-6"	53.2UJ(m)	45.7UJ(m)	4.8UJ(m)
6"-12"	61.3UJ(m)	–	4.3UJ(m)
12"-18"	–	–	–
18"-24"	–	–	–

SS-100		
DEPTH	SS-100	SS-100D
0-6"	0.14UJ(m)	0.14UJ(m)
6"-12"	0.13UJ(m)	–

TRANSECT 9			
DEPTH	SS-29	SS-29D	SS-30
0-6"	0.32UJ(m)	0.42UJ(m)	18.9UJ(m)
6"-12"	18.4UJ(m)	–	14.4UJ(m)
12"-18"	–	–	–
18"-24"	–	–	–

TRANSECT 7			
DEPTH	SS-25	SS-24	SS-23
0-6"	3.9UJ(m)	1.4J(m)	0.42UJ(m)
6"-12"	2.1UJ(m)	1.9J(m)	0.26UJ(m)
12"-18"	–	0.60J(m)	–
18"-24"	–	–	–

SS-101	
DEPTH	Hg LEVEL
0-6"	0.13U
6"-12"	0.12U

SS-33	
DEPTH	Hg LEVEL
0-6"	0.92
6"-12"	–

TRANSECT 6			
DEPTH	SS-22	SS-21	SS-20
0-6"	2.8U	0.56U	0.47U
6"-12"	1.4	4.6	1.4U
12"-18"	0.28	0.27U	–
18"-24"	–	–	–

SS-114		
DEPTH	SS-114	SS-114D
0-6"	11.4	13.8
6"-12"	0.18U	–
12"-18"	–	–
18"-24"	–	–

SS-31	
DEPTH	Hg LEVEL
0-6"	0.59
6"-12"	0.51

SS-113	
DEPTH	Hg LEVEL
0-6"	13.2
6"-12"	13.4
12"-18"	–
18"-24"	–

TRANSECT 5				
DEPTH	SS-19	SS-18	SS-18D	SS-17
0-6"	8.1	0.44	0.48	6.6
6"-12"	0.33U	–	–	1.1
12"-18"	–	0.69	–	0.17U
18"-24"	–	–	–	–

SS-112	
DEPTH	Hg LEVEL
0-6"	7.4
6"-12"	0.19U
12"-18"	0.24U
18"-24"	–

SS-32	
DEPTH	Hg LEVEL
0-6"	0.16
6"-12"	–

TRANSECT 4				
DEPTH	SS-16	SS-15	SS-15D	SS-14
0-6"	9.2	8.3	8.2	3.4
6"-12"	–	0.19U	6.1	0.58
12"-18"	–	–	–	–
18"-24"	–	–	–	–

SS-111	
DEPTH	Hg LEVEL
0-6"	6.1
6"-12"	0.27U
12"-18"	–
18"-24"	–

TRANSECT 3					
DEPTH	SS-13	SS-13D	SS-12	SS-11	SS-11A
0-6"	7.8J(c)	–	4.2J(d)	7.9J(d)	–
6"-12"	1.6J(c)	0.25J(c)	0.43J(d)	0.65J(d)	0.38
12"-18"	–	–	0.170J(d)	–	0.21U
18"-24"	–	–	–	–	0.18U

SS-110	
DEPTH	Hg LEVEL
0-6"	0.81
6"-12"	0.20U
12"-18"	–
18"-24"	–

TRANSECT 2				
DEPTH	SS-10	SS-10A	SS-09	SS-09D	SS-08
0-6"	5.1J(d)	–	2.5J(d)	2.8J(d)	0.29J(d)
6"-12"	3.8J(d)	0.92	0.49J(d)	–	2.1UJ(d)
12"-18"	6.3J(d)	0.26U	–	–	0.23UJ(d)
18"-24"	–	–	–	–	–

TRANSECT 1			
DEPTH	SS-07	SS-06	SS-05
0-6"	0.95J(d)	2.3J(d)	2.5J(d)
6"-12"	0.27J(d)	0.48J(d)	0.60J(d)
12"-18"	–	–	–
18"-24"	–	–	–

SS-03	
DEPTH	Hg LEVEL
0-6"	0.94
6"-12"	0.23U

SS-04	
DEPTH	Hg LEVEL
0-6"	0.40
6"-12"	0.20U

SS-01	
DEPTH	Hg LEVEL
0-6"	1.6
6"-12"	0.19U

SS-116	
DEPTH	Hg LEVEL
0-6"	0.27U
6"-12"	0.24U

SS-02	
DEPTH	Hg LEVEL
0-6"	0.49
6"-12"	0.20U

SS-115	
DEPTH	Hg LEVEL
0-6"	0.44
6"-12"	0.25U

NOTE

1. FOR LEGEND AND GENERAL NOTES SEE SHEET 1 OF 2.

Symbol	Revisions	Date	Approved
4	DATA VALIDATION QUALIFIERS ADDED	JAN 93	APK

HALLIBURTON NUS Environmental Corporation

Designed by:
Drawn by: M. Jonnet (01/05/93)
Checked by:
Reviewed by:
Approved by:

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND
CHESAPEAKE DIVISION
WASHINGTON NAVY YARD — WASHINGTON, DC

INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER

SITE 8 – NITROGLYCERIN PLANT OFFICE
CONTAMINANT OCCURRENCE AND DISTRIBUTION MAP
SHEET 2 OF 2 – EAST SIDE OF SITE

ISSUED: OCTOBER, 1992 — NORTHDIV FOR COMMANDER, NAVFAC

Scale: AS SHOWN — FIGURE 4-1

4.1.1 Building 766 Area

The Building 766 Area is located on the northwest side of Site 8. The Building 766 Area and sampling locations are shown on Sheet 1 of 2 of Figure 4-1. The analytical results from this area are presented on Table 4-1. As shown on Table 4-1, 12 environmental samples (plus 3 duplicates) were collected from 6 sampling locations.

Ten sediment/soil samples (including 3 duplicates) were collected from a depth of 0 to 6 inches, three from 6 to 12 inches, and two from 12 to 18 inches. The 10 samples collected from 0 to 6 inches contained mercury concentrations ranging from nondetect (identified as U on Table 4-1) to 21.7 mg/kg. Two of the samples collected from a depth of 6 to 12 inches were nondetect (U) and one had a mercury concentration of 0.73 mg/kg. The two samples collected from a depth 12 to 18 inches had mercury concentrations of 0.37 mg/kg and 0.50 mg/kg of mercury.

There is mercury contamination throughout the area. The highest concentrations detected were in the grassed area at the inlet to the 12-inch pipe (6.3 mg/kg) and at the outlet of the 36-inch pipe (21.7 mg/kg).

4.1.2 Upper Section of Stream

The Upper Section of Stream is located downstream of Building 766 Area and upstream of the Mid Section of Stream. This area consists of approximately 300 feet of stream flowing through a steep inclined wooded area. The Upper Section of Stream is shown on Sheet 1 of 2 of Figure 4-1. The analytical results are presented in Table 4-2. A total of 42 environmental samples (plus 5 duplicates) were collected from 24 sampling locations. Three sets of samples (at points SS-62, SS-66 and SS-67) were collected in the form of lateral cross-sections (LC). Analysis of samples collected from the lateral cross-sections was used to define the extent of mercury contamination beyond the stream channel.

Fifteen sediment/soil samples (plus 4 duplicates) were collected in the stream channel at a depth of 0 to 6 inches; the mercury concentrations ranged from nondetect (U) to 671 mg/kg. Mercury concentrations in nine of these samples ranged from 10 to 100 mg/kg and four samples ranged from 100 to 671 mg/kg. Eighteen sediment/soil samples (plus one duplicate) were collected from three lateral cross-sections (LC) perpendicular to the center of the stream. The lateral cross section samples were collected from 13 sampling locations. They were collected up to 10 feet from the centerline of the stream and exhibited varying levels of mercury contamination. Ten sediment/soil samples (plus one duplicate) were collected at a depth of 0 to 6 inches. Five samples were collected at a depth of 6 to 12 inches and three from a depth of 18 to 24 inches. Generally, the deeper samples contained

TABLE 4-1

SEDIMENT/SOIL ANALYTICAL RESULTS
BUILDING 766 AREA
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)		
		0 to 6 inches	6 to 12 inches	12 to 18 inches
SS-68	Outlet of 36-inch Concrete Pipe (Clay)	0.13 U	0.13 U	---
SS-68A	Outlet of 36-inch Concrete Pipe (Sand)	21.7(1)	---	---
SS-68A-D	Outlet of 36-inch Concrete Pipe (Sand)	2.8(1)	---	---
SS-70	Soil Inlet of 12-Inch Pipe	6.3	0.73	0.37
SS-70A	5 Feet Upstream of SS-70	1.0	---	---
SS-70A-D	5 Feet Upstream of SS-70	0.92	---	---
SS-70B	20 Feet Upstream of SS-70	3.5	---	---
SS-109	Upstream of Caffee Road	0.58	---	0.50
SS-109A	20 Feet Upstream of SS-109	1.1	0.23 U	---
SS-109A-D	20 Feet Upstream of SS-109	0.28	---	---

(1) Sample taken from a depth of 0 to 4 inches.
---- No sample collected
U Value is nondetect as reported by the laboratory.

TABLE 4-2

SEDIMENT/SOIL ANALYTICAL RESULTS
UPPER SECTION OF STREAM
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)		
		0 to 6 inches	6 to 12 inches	18 to 24 inches
SS-59	Stream Sediments	11.1	6.4	---
SS-60	Stream Sediments	15.0	1.4	---
SS-61	Stream Sediments	0.63	5.6	---
SS-62	Stream Sediments	15.0	73.1	---
SS-62A	Stream Sediments	59.2	---	---
SS-62-D	Stream Sediments	199	---	---
SS-62LC1	Centerline of Stream	---	1.0	0.32
SS-62LC2	4 Feet North of 62LC1	43.4	---	---
SS-62LC3	10 Feet North of 62LC1	4.7	---	---
SS-62LC4	2.5 Feet South of 62LC1	23.1	22.2	---
SS-62LC5	5 Feet South of 62LC1	60.2	---	---
SS-63	Stream Sediments	34.6	12.4	---
SS-64	Stream Sediments	218	4.5	---
SS-64A	Stream Sediments	13.2 U	---	---
SS-64A-D	Stream Sediments	8.4	---	---
SS-65	Stream Sediments	66.0	47.7	---
SS-66	Stream Sediments	73.7	30.9	---
SS-66LC1	Centerline of Stream	---	0.12 U	0.12 U
SS-66LC2	2.5 Feet North of 66LC1	42.6	---	---
SS-66LC3	2.0 Feet South of 66LC1	196	163	---
SS-66LC3-D	2.0 Feet South of 66LC1	113	---	---
SS-66LC4	6.0 Feet South of 66LC1	69.8	---	---
SS-67	Stream Sediments	671	0.37	---
SS-67-D	Stream Sediments	0.84	---	---

TABLE 4-2
SEDIMENT/SOIL ANALYTICAL RESULTS
UPPER SECTION OF STREAM
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND
PAGE TWO

Sample Number	Location Description	Mercury (mg/kg)		
		0 to 6 inches	6 to 12 inches	18 to 24 inches
SS-67A	Stream Sediments	30.7(1)	---	---
SS-67A	Stream Sediments	0.14 U	---	---
SS-67A-D	Stream Sediments	0.50	---	---
SS-67B	10 Feet Upstream of SS-67	307	---	---
SS-67C	20 Feet Upstream of SS-67	43.4	---	---
SS-67LC1	Centerline of Stream	---	0.48	62.0
SS-67LC2	3 Feet North of 67LC1	136	---	---
SS-67LC3	6 Feet North of 67LC1	73.3	---	---
SS-67LC4	10 Feet North of 67LC1	4.6	---	---

(1) Sample taken from a depth of 0 to 4 inches.
---- No sample collected.
U Value is nondetect as reported by the laboratory.

lower concentrations of mercury but there were sampling locations that contained higher concentrations of mercury at deeper depths.

The Upper Section of Stream is contaminated with mercury. Although contamination was detected throughout the area, the concentrations vary widely. Samples and duplicates (respectively) had the following levels: 15.0 and 199; 13.2 and 8.4; 196 and 113; 671 and 0.84; and, 0.14 U(nondetect) and 0.50 (all in mg/kg). This variation between samples and duplicates may be due to elemental mercury in the sample matrix; elemental mercury may not have been evenly distributed throughout the sample.

4.1.3 Mid Section of Stream

The Mid Section of Stream is located downstream of the Upper Section of Stream and upstream of the Lower Section of Stream. This area comprises of approximately 350 feet of stream flowing through a mostly flat wooded area. This area is shown on Sheet 1 of 2 of Figure 4-1. Eighteen sediment/soil samples (plus two duplicates) were collected from 12 sampling locations. The results of the analysis are shown on Table 4-3.

Mercury was not detected in the fourteen samples (including two duplicates) collected from a depth of 0 to 6 inches. Three of the six samples collected from a depth of 6 to 12 inches were also nondetect; the other three samples had reported mercury concentrations of 0.26, 0.43 and 0.48 mg/kg. However, the reported mercury concentrations detected in those three samples were qualified (with a K) during data validation. The data were qualified with a "K" because the Matrix Spike (MS) percent recovery for mercury in the soil matrix failed to meet the upper quality control limit. Positive sample results for mercury are potentially biased high. Nondetects are unaffected.

4.1.4 Lower Section of Stream

The Lower Section of Stream is located downstream of the Mid Section of Stream and upstream of the Marsh/Stream Transition Area. This area comprises approximately 500 feet of stream flowing through a mostly flat, wooded area. This area is shown on Sheet 1 of 2 of Figure 4-1. Twenty sediment/soil samples (plus 3 duplicates) were collected from 13 sampling locations. The results of the analysis are shown on Table 4-4.

Fifteen samples (including two duplicates) were collected from a depth of 0 to 6 inches and had mercury concentrations varying from nondetect (U) to 7.4 mg/kg. The remaining eight samples

TABLE 4-3

SEDIMENT/SOIL ANALYTICAL RESULTS
MID SECTION OF STREAM
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)	
		0 to 6 inches	6 to 12 inches
SS-47	Stream Sediments	1.3 U	1.3 U
SS-48	Overbank	1.4 U	---
SS-49	Stream Sediments	1.3 U	1.4 U
SS-50	Overbank	15.5 U	---
SS-50-D	Overbank	14.8 U	---
SS-51	Stream Sediment	0.13 U	0.43 K(m)
SS-52	Overbank	1.3 U	---
SS-53	Stream Sediments	1.3 U	1.4 U
SS-54	Overbank	3.7 U	---
SS-55	Stream Sediments	1.4 U	0.48 K(m)
SS-56	Overbank	1.5 U	---
SS-57	Stream Sediments	1.2 U	0.26 K(m)
SS-57-D	Stream Sediments	1.3 U	---
SS-58	Overbank	1.3 U	---

--- No sample collected.
U Value is a nondetect as reported by the laboratory.
K(m) Positive results is estimated and biased high due to high matrix spike recovery.

TABLE 4-4

SEDIMENT/SOIL ANALYTICAL RESULTS
LOWER SECTION OF STREAM
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)	
		0 to 6 inches	6 to 12 inches
SS-34	North Overbank	1.1 J(m)	5.5 J(m)
SS-35	Mid-Overbank	29.6 UJ(m)	15.5 UJ(m)
SS-36	South Overbank	1.3 UJ(m)	3.3 UJ(m)
SS-37	Stream Sediments	1.5 K(m)	4.6 K(m)
SS-37-D	Stream Sediments	2.9 K(m)	---
SS-38	Overbank	1.3 U	---
SS-39	Former Stream Channel	7.4 K(m)	---
SS-40	Former Stream Channel	2.3 U	---
SS-41	Stream Sediments	1.2 K(m)	6.1 K(m)
SS-41-D	Stream Sediments	---	6.7 K(m)
SS-42	Overbank	2.0 U	---
SS-43	Stream Sediments	1.3 U	1.7 U
SS-44	Overbank	1.7 U	---
SS-45	Stream Sediments	1.4 K(m)	2.6 K(m)
SS-45-D	Stream Sediments	1.8 K(m)	---
SS-46	Overbank	2.8 K(m)	---

--- No sample collected.
U Value is a nondetect as reported by the laboratory
J(m) Value is estimated due to matrix spike noncompliances. Bias cannot be determined.
UJ(m) Nondetect is estimated due to matrix spike noncompliance. Bias cannot be determined.
K(m) Positive result is estimated and biased high due to high matrix spike recovery.

(including one duplicate) were collected from a depth of 6 to 12 inches and had mercury concentrations varying from nondetect to 6.7 mg/kg.

4.1.5 Marsh/Stream Transition Area

The Marsh/Stream Transition Area is located downstream of the Lower Section of Stream and upstream of the Tidal Pond/Marsh Area. This area comprises of approximately 250 feet of lightly wooded stream and marsh area. This area is shown on Sheet 2 of 2 on Figure 4-1, 16 soil samples (plus one duplicate) were collected from eight sampling locations. The results of the analysis are shown on Table 4-5.

Mercury was not detected in eight of the nine samples (including one duplicate) collected from a depth of 0 to 6 inches. The remaining sample collected from a depth of 0 to 6 inches had a mercury concentration of 1.4 mg/kg; however that concentration was reported as an estimate. Seven samples were collected from a depth of 6 to 12 inches; six of those samples were nondetect and one had an estimated concentration of 1.9 mg/kg. The one sample collected from a depth of 12 to 18 inches and had an estimated mercury concentration of 0.80 mg/kg.

4.1.6 Tidal Pond/Marsh

The Tidal Pond/Marsh Area is located downstream of the Marsh/Stream Transition Area and north of Noble Road. The Tidal Pond/Marsh Area is shown on Sheet 2 of Figure 4-1. Fifty-seven sediment/soil samples (plus six duplicates) were collected from 23 sampling locations. The results of the analysis are shown on Table 4-6.

Twenty-seven samples (including four duplicates) were collected from a depth of 0 to 6 inches and had mercury concentrations ranging from nondetect (U) to 13.8 mg/kg. Twenty-five samples (including two duplicates) were collected from a depth of 6 to 12 inches with mercury concentrations ranging from nondetect (U) to 13.4 mg/kg. Ten samples were collected from 12 to 18 inches and had mercury concentrations ranging from nondetect (U) to an estimated value of 6.0 mg/kg. Mercury was not detected in the one sample collected from a depth 18 to 24 inches.

4.1.7 Downstream of Noble Road

The Area Downstream of Noble Road is shown on Sheet 2 of Figure 4-1. Twelve sediment/soil samples were collected from six sampling locations. The results of the analysis are shown on Table 4-7.

TABLE 4-5

SEDIMENT/SOIL ANALYTICAL RESULTS
MARSH/STREAM TRANSITION AREA
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)		
		0 to 6 inches	6 to 12 inches	12 to 18 inches
SS-23	Transect 7 - North	0.42 UJ(m)	0.26 UJ(m)	---
SS-24	Transect 7 - Middle	1.4 J(m)	1.9 J(m)	0.80 J(m)
SS-25	Transect 7 - South	3.9 UJ(m)	2.1 UJ(m)	---
SS-26	Transect 8 - North	4.8 UJ(m)	4.3 UJ(m)	---
SS-27	Transect 8 - Middle	45.7 UJ(m)	---	---
SS-28	Transect 8 - South	53.2 UJ(m)	61.3 UJ(m)	---
SS-29	Transect 9 - North	0.32 UJ(m)	18.4 UJ(m)	---
SS-29-D	Transect 9 - North	0.42 UJ(m)	---	---
SS-30	Transect 9 - South	18.9 UJ(m)	14.4 UJ(m)	---

--- No sample collected.
U Value is a nondetect as reported by the laboratory.
J(m) Value is estimated due to matrix spike noncompliances. Bias cannot be determined.
UJ(m) Nondetect is estimated due to matrix spike noncompliances. Bias cannot be determined.

TABLE 4-6

SEDIMENT/SOIL ANALYTICAL RESULTS
TIDAL POND/MARSH AREA
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)			
		0 to 6 inches	6 to 12 inches	12 to 18 inches	18 to 24 inches
SS-05	Transect 1 - East	2.5 J(d)	0.80 J(d)	---	---
SS-06	Transect 1 - Middle	2.3 J(d)	0.48 J(d)	---	---
SS-07	Transect 1 - West	0.95 J(d)	0.27 J(d)	---	---
SS-110	Between Transects 1 and 2 - West	0.81	0.29 U	---	---
SS-08	Transect 2 - East	0.29 J(d)	0.18 UJ(d)	0.23 UJ(d)	---
SS-09	Transect 2 - Middle	2.5 J(d)	0.49 J(d)	---	---
SS-09-D	Transect 2 - Middle	2.8 J(d)	---	---	---
SS-10	Transect 2 - West	5.1 J(d)	3.9 J(d)	6.0 J(d)	---
SS-10A	Transect 2 - West	---	0.92	0.26 U	---
SS-111	Between Transects 2 and 3 - West	6.1	0.27 U	---	---
SS-11	Transect 3 - East	7.9 J(d)	6.0 J(d)	---	---
SS-11A	Transect 3 - East	---	0.38	0.21 U	0.16 U
SS-12	Transect 3 - Middle	4.2 J(d)	0.43 J(d)	0.17 UJ(d)	---
SS-13	Transect 3 - West	7.0 J(d)	1.0 J(d) (1)	---	---
SS-13-D	Transect 3 - West	---	0.26J(d)(1)	---	---
SS-112	Between Transects 3 and 4 - West	7.4	0.19 U	0.24 U	---
SS-14	Transect 4 - East	5.4	0.50	---	---
SS-15	Transect 4 - Middle	8.3	0.19 U	---	---
SS-15-D	Transect 4 - Middle	8.2	6.1	---	---
SS-16	Transect 4 - West	9.2	---	---	---
SS-113	Between Transects 4 and 5 - West	13.2	13.4	---	---

TABLE 4-6
SEDIMENT/SOIL ANALYTICAL RESULTS
TIDAL POND/MARSH AREA
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND
PAGE TWO

Sample Number	Location Description	Mercury (mg/kg)			
		0 to 6 inches	6 to 12 inches	12 to 18 inches	18 to 24 inches
SS-17	Transect 5 - East	6.6	1.1	0.17 U	---
SS-18	Transect 5 - Middle	0.44(2)	---	0.69(3)	---
SS-18-D	Transect 5 - Middle	0.48(2)	---	---	---
SS-19	Transect 5 - West	8.1(4)	0.33 U(5)	---	---
SS-114	Between Transects 5 and 6 - West	11.4	0.18 U	---	---
SS-114-D	Between Transects 5 and 6 - West	13.8	---	---	---
SS-20	Transect 6 - East	0.47 U	1.4 U	---	---
SS-21	Transect 6 - Middle	0.56 U	4.6(6)	0.27 U(7)	---
SS-22	Transect 6 - West	2.8 U	1.4	0.28	---

(1) Sample taken from a depth of 6 to 16 inches.
(2) Sample taken from a depth of 0 to 10 inches.
(3) Sample taken from a depth of 10 to 18 inches.
(4) Sample taken from a depth of 0 to 4 inches.
(5) Sample taken from a depth of 4 to 12 inches.
(6) Sample taken from a depth of 8 to 14 inches.
(7) Sample taken from a depth of 14 to 20 inches.

--- No sample collected.
U Value is a nondetect as reported by the laboratory.
J(d) Value is estimated due to laboratory duplicate imprecision. Bias cannot be determined.
UJ(d) Nondetect is estimated due to laboratory duplicate imprecision. Bias cannot be determined.

TABLE 4-7

SEDIMENT/SOIL ANALYTICAL RESULTS
AREA DOWNSTREAM OF NOBLE ROAD
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)	
		0 to 6 inches	6 to 12 inches
SS-04	Outlet of Culvert Under Noble Road	0.40	0.20 U
SS-03	110 Feet Downstream of Noble Road - West	0.94	0.23 U
SS-02	225 Feet Downstream of Noble Road - East	0.48	0.20 U
SS-01	320 Feet Downstream of Noble Road - West	1.6	0.19 U
SS-115	370 Feet Downstream of Noble Road - East Bank	0.44	0.25 U
SS-116	430 Feet Downstream of Noble Road - East Bank	0.27 U	0.24 U

--- No sample collected.
U Value is a nondetect as reported by the laboratory.

Two samples were collected at each sampling location, one from a depth of 0 to 6 inches and the other from 6 to 12 inches. Mercury concentrations in samples collected from the 0- to 6-inch depth ranged from nondetect (U) to 1.6 mg/kg; mercury was not detected in the samples collected from a depth of 6 to 12 inches.

4.1.8 Tributaries and Spring

The Tributaries are located throughout the length of the stream and marsh areas. The Spring is located at the downstream end, on the south side, of the Upper Section of Stream. They are shown on both Sheets 1 and 2 of Figure 4-1. Eighteen sediment/soil samples (plus two duplicates) were collected from nine sampling locations. The results of the analysis are shown on Table 4-8.

Ten samples (including one duplicate) were collected from a depth of 0 to 6 inches. Mercury was not detected in nine of the ten samples; one of the samples collected at a depth of 0 to 6 inches had a mercury concentration of 0.27 mg/kg. The remaining ten samples (including one duplicate) were collected from a depth of 6 to 12 inches. Mercury was not detected in nine of the ten samples; one of the samples collected from a depth of 6 to 12 inches had an estimated mercury concentration of 0.13 mg/kg.

4.1.9 Town Gut Landfill Area

The Town Gut Landfill Area is located to the northeast of the Tidal Pond/Marsh Area. This area is shown of Sheet 2 of Figure 4-1. Four sediment/soil samples were collected from three sampling locations. The results of the analysis are shown on Table 4-9.

Three samples were collected from a depth of 0 to 6 inches and had mercury concentrations ranging from 0.16 mg/kg to 0.92 mg/kg. One sample was collected from a depth of 6 to 12 inches; the mercury concentration in this sample was 0.51 mg/kg.

4.1.10 Background

Five background sediment/soil samples were collected from areas in the vicinity of, but outside the area influenced by Site 8. Two samples (SS-200 and SS-201) were collected in another stream on the NSWC, approximately 8,000 feet north of Site 8. The other three samples were collected in Mattawoman Creek upstream of Site 8. The results of the analysis are shown on Table 4-10.

TABLE 4-8

SEDIMENT/SOIL ANALYTICAL RESULTS
TRIBUTARIES AND SPRING
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)	
		0 to 6 inches	6 to 12 inches
SS-100	North Tributary - Tidal Pond/Marsh	0.14 UJ(m)	0.13 UJ(m)
SS-100-D	North Tributary - Tidal Pond/Marsh	0.14 UJ(m)	---
SS-101	South Tributary - Lower Section of Stream	0.13 U	0.12 U
SS-102	South Tributary - Lower Section of Stream	0.14 U	0.12 U
SS-103	North Tributary - Lower Section of Stream from Building 609	0.11 U	0.11 U
SS-104	South Tributary - Lower Section of Stream @ NPDES Discharge Point	0.13 U	0.13 U
SS-105	North Tributary - Mid Section of Stream	0.13 U	0.13 K(m)
SS-106	South Tributary - Upper Stream of Stream	0.27	0.13 U
SS-106-D	South Tributary - Upper Stream of Stream	---	0.13 U
SS-107	Spring @ Upper Section of Stream	0.19 U	0.13 U
SS-108	South Tributary - Upper Stream of Stream	0.15 U	0.12 U

--- No sample collected.
U - Value is a nondetect as reported by the laboratory.
UJ(m) - Nondetect is estimated due to matrix spike noncompliances. Bias cannot be determined.
K(m) - Positive result is estimated and biased high due to high matrix spike recovery.

TABLE 4-9

SEDIMENT/SOIL ANALYTICAL RESULTS
TOWN GUT LANDFILL AREA
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)	
		0 to 6 inches	6 to 12 inches
SS-31	Inlet of Culvert Under Atkins Road Extension	0.59	0.51
SS-32	100 Feet Upstream of Main Channel in East Tributary	0.16	---
SS-33	Inlet of Culvert Under Atkins Road	0.92	---

---- No sample collected.

TABLE 4-10

SEDIMENT/SOIL ANALYTICAL RESULTS
BACKGROUND
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury (mg/kg)
		0 to 6 inches
SS-200	300 Feet Upstream of Jackson Road	0.12 UJ(d)
SS-201	300 Feet Upstream of Jackson Road	0.14 UJ(d)
SS-202	300 Feet Upstream of Route 225 in Mattawoman Creek	0.18 U(1)
SS-203	500 Feet Upstream of NSWC property in Mattawoman Creek and downstream of Indian Head POTW	0.34 (1)
SS-204	Upstream of Indian Head POTW in Mattawoman Creek	0.17 U

(1) Sample taken from a depth of 0 to 4 inches.

---- No sample collected.
U - Value is a nondetect as reported by the laboratory.
UJ(d) - Nondetect is estimated due to laboratory duplicate imprecision. Bias cannot be determined.

As shown on Table 4-10, mercury was detected in only one sample (SS-203). This sample contained a mercury concentration of 0.34 mg/kg. It was collected at a depth of 0 to 4 inches from the sediments upstream of the NSWC property line but downgradient of the Indian Head Publically Owned Treatment Works (POTW)

4.1.11 TCLP and TAL Metal Results

Three sediment/soil samples were collected from Site 8 and were analyzed for TCLP (toxicity characteristic leaching procedure) and TAL (target analytic list) metals. Two of the samples were from the Upper Section of Stream; the third sample was from the Tidal Pond/Marsh Area. The results of the TCLP metal analysis are presented on Table 4-11, the results of the TAL metal analysis are presented in Table 4-12.

TCLP metal analysis was performed to determine if the mercury contaminated soil would be classified as a hazardous waste if it was sent offsite for disposal. The results of the TCLP metal analysis are compared to the hazardous waste concentrations on Table 4-11. As shown in Table 4-11, the sediment/soil from the site would not be classified as hazardous based on TCLP metal analysis.

TAL metal analysis was performed to assist in potential classification of the waste and to obtain additional information about metal contamination of Site 8. TAL metal analytical results are presented in Table 4-12.

4.2 SURFACE WATER

Surface water samples were collected from two locations at Site 8 (SW-01 and SW-02) and analyzed for both total and dissolved mercury. Location SW-01 was the outfall of the Tidal Pond/Marsh Area into Mattawoman Creek and the second is the outfall of the 36-inch reinforced concrete pipe (RCP) from Manhole A into the Upper Section of Stream. The results of the surface water analysis are shown in Table 4-13.

As shown on Table 4-13, mercury was only detected in the surface water at the outfall of the 36-inch RCP after the lining of the pipe was scraped.

4.3 SUMMARY OF MERCURY CONTAMINATION AT SITE 8

As described in Section 4.1 of this report, sediment/soils in certain areas of Site 8 are contaminated with mercury. However, the levels of mercury concentrations vary substantially through the site.

TABLE 4-11

SEDIMENT/SOIL ANALYTICAL RESULTS
TCLP METALS
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Analyte	Hazardous Waste Concentration (µg/L)	Sediment/Soil Sample		
		SS-62-0006 (µg/L)	SS-64-0006 (µg/L)	SS-113-0006 (µg/L)
Arsenic	5,000	276 U	276 U	276 U
Barium	100,000	837	26.0 U	588
Cadmium	1,000	18.0 U	18.0 U	18.0 U
Chromium	5,000	25.0 U	25.0 U	25.0 U
Lead	5,000	282 U	282 U	282 U
Mercury	200	20.0 U	20.0 U	29.6 R(q)
Selenium	1,000	167 U	167 U	167 UL(n)
Silver	5,000	45.0 U	45.0 U	45.0 U

U - Value is a nondetect as reported by the laboratory.
UL(n) - Nondetect is considered to be biased low due to poor instrument performance (i.e., negative laboratory method blank concentrations).
R(q) - Result is a rejected value. Result is considered to be a false positive based on questionable quantitation.

TABLE 4-12

SEDIMENT/SOIL ANALYTICAL RESULTS
TAL METALS
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Analyte	Sediment/Soil Sample		
	SS-62-0006 mg/kg	SS-64-0006 mg/kg	SS-113-0006 mg/kg
Aluminum	3,180	3,950	15,400
Antimony	4.1 R(m,n)	5.7 R(m,n,p)	14.6 L(m,n)
Arsenic	0.95 R(m)	1.3 R(m)	36.7 L(m)
Barium	28.8	39.4	143
Beryllium	0.69	0.99	0.92
Cadmium	0.62 U	0.86 U	1.6 U
Calcium	452	252	2,480
Chromium	11.5	11.4	41.6
Cobalt	5.9	8.2 U	22.6
Copper	4.4 UL(n)	6.2 UL(n)	70.2 L(n)
Iron	16,800	9,390	32,800
Lead	10.5	9.6	442
Magnesium	416	285	1,690
Manganese	173 L(m)	69.6 L(m)	300 L(m)
Mercury	15.0	218	13.2
Nickel	7.4 U	10.3 U	30.5
Potassium	227 L(n)	107 UL(n)	206 UL(n)
Selenium	1.1 R(m)	1.5 R(m)	3.0 R(m,p)
Silver	0.18 UL(m,n)	0.25 UL(m,n)	2.3 L(m,n)
Sodium	48.6 UL(n)	67.6 UL(n)	130 UL(n)
Thallium	0.93 U	1.3 U	2.5 U

TABLE 4-12
SEDIMENT/SOIL ANALYTICAL RESULTS
TAL METALS
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND
PAGE TWO

Analyte	Sediment/Soil Sample		
	SS-62-0006 mg/kg	SS-64-0006 mg/kg	SS-113-0006 mg/kg
Vanadium	13.8	14.2	54.5
Zinc	109	44.4	287

U - Value is a nondetect as reported by the laboratory.
UL(n) - Nondetect is considered to be biased low due to poor instrument performance (i.e., negative laboratory method blank concentrations).
UL(m,n) - Nondetect is considered to be biased low due to poor instrument performance (i.e., negative laboratory method blank concentrations) and low MS recovery.
L(n) - Positive value is considered to be biased low due to poor instrument performance (i.e., negative laboratory method blank concentrations).
L(m) - Positive value is considered to be biased low due to low matrix spike recovery.
L(m,n) - Positive value is considered to be biased low due to low matrix spike recovery and poor instrument performance (i.e., negative laboratory method blank concentrations).
R(m) - Nondetect is rejected due to extremely low MS recovery.
R(m,p) - Nondetect is rejected due to extremely low MS recovery and low graphite furnace PDS recovery.
R(m,n) - Nondetect is rejected due to extremely low MS recovery and poor instrument performance (i.e., negative laboratory method blank concentrations).
R(m,n,p) - Nondetect is rejected due to extremely low MS recovery, low graphite furnace PDS recovery, and poor instrument performance (i.e., negative laboratory method blank concentrations).

TABLE 4-13

SURFACE WATER ANALYTICAL RESULTS
INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
INDIAN HEAD, MARYLAND

Sample Number	Location Description	Mercury	
		Total (µg/l)	Dissolved (µg/l)
SW-01-01	Outfall of Tidal Pond/Marsh into Mattawoman Creek.	0.20 U	0.20 U
SW-01-02		0.20 U	0.20 U
SW-01-03		0.20 UJ(m)	0.20 UJ (m)
SW-01-04		0.20 U	0.20 U
SW-01-05		0.20 U	0.20 U
SW-02-01	Outfall of 36-inch RCP into Upper Section of Stream	0.20 U	0.20 U
SW-02-02		0.20 UJ(m)	---
SW-02-03(1)		10.6 J(d)	3.2 J(d)
SW-02-04(1)		111	1.7

(1) Sample collected after sludge lining the invert of RCP was scraped and suspended into the surface water.

--- No sample collected.
U - Value is a nondetect as reported by the laboratory.
J(d) - Value is estimated due to laboratory duplicate imprecision. Bias cannot be determined.
UJ(m) - Nondetect is estimated due to matrix spike noncompliances. Bias cannot be determined.

Establishment of an action and/or cleanup level for this site is outside the scope of this report; however, the areas with detected mercury concentrations above 10 mg/kg are shown on Figure 4-2.

4.3.1 Building 766 Area

As shown in Table 4-1, sandy sediment at the outlet of the 36-inch pipe contains mercury concentrations of 21.7 mg/kg. However, other parts of the area did not contain mercury concentrations above 10 mg/kg.

Also, the surface water samples collected at the outlet of the 36-inch pipe that contained residue from the bottom of the pipe also contained comparatively elevated levels of mercury. These results indicate that there is mercury in the sludge that lines the pipe.

4.3.2 Upper Section of Stream

As shown on Table 4-2, the entire 300 feet of the Upper Section of Stream contains elevated levels of mercury. Mercury concentrations are as high as 671 mg/kg. Mercury was detected at a depth of 18 to 24 inches (62 mg/kg) and as far as 6 feet from the center of stream (73.3 mg/kg).

4.3.3 Tidal Pond/Marsh Area

As shown in Table 4-6, mercury concentrations above 10 mg/kg were detected at two locations in the Tidal Pond/Marsh Area. Mercury was detected at the first location in the sample collected from the 0- to 6-inch depth (13.2 mg/kg) and the sample collected from the 6- to 12-inch depth (13.4 mg/kg). Mercury was detected at the second location in the sample collected from the 0- to 6-inch depth only (11.4 mg/kg in the sample and 13.8 mg/kg in the duplicate). Mercury was not detected in the sample collected at the second location at a depth of 6 to 12 inches.

4.4 CONCLUSION

The purpose of this report was to summarize and present the results of sampling and analysis work at Site 8. The analysis will be subsequently interpreted and incorporated into an EE/CA (Engineering Evaluation/Cost Analysis) Report during the next phase of this project.

REV DESCRIPTION

PREP BY DATE APPRVD

REVISED TITLE

M Jonnet JANUARY 1993 APK

HALLIBURTON NUS ENVIRONMENTAL CORPORATION
PITTSBURGH, PA. 15205

DSGN DRC CHK.
SUPV CH ENG.
SUBMITTED BY (TITLE)
CHECKED (TITLE)
FILE NO.
FPO NO.
CDR NO.
OFFICER IN CHARGE
APPROVED
DATE

NAVAL FACILITIES ENGINEERING COMMAND WASHINGTON, DC

CHESAPEAKE DIVISION

DEPARTMENT OF THE NAVY
WASHINGTON NAVY YARD

INDIAN HEAD DIVISION, NAVAL SURFACE WARFARE CENTER
SITE 8 – NITROGLYCERIN PLANT OFFICE
AREAS OF ELEVATED MERCURY CONCENTRATIONS IN SEDIMENTS/SOILS

ISSUED OCTOBER 6 1992

NORFOLK FOR COMMANDER, NAVFAC

SEAL AREA

SAT TO DATE

CODE I.D. NO. 80091

SCALE AS SHOWN

SPEC. NO. 84 – NA

CONSTRN. CONTR. NO. NA

NAVFAC DRAWING NO. NA

SHEET 1 OF 1

SIZE D

DWG. SH. NO.

FIGURE 4-2

REFERENCES

ABB Environmental Services (ABB-ES), 1992a. Biomonitoring Work Plan: Site 8 - Nitroglycerin Plant Office (Final Document).

ABB Environmental Services (ABB-ES), 1992b. Engineering Evaluation and Cost Analysis Report: Site 8 - Nitroglycerin Plant Office.

HALLIBURTON NUS Environmental Corporation (HALLIBURTON NUS), August, 1992. Abbreviated Field Sampling Plan: Site 8 - Nitroglycerin Plant Office, Indian Head, Maryland.

Jordan, E. C., 1987. NIRP Feasibility Study and Remedial Design. Task 2 - Supplemental Site Characterization Report, Naval Ordnance Station, Indian Head, Maryland.

Site Characterization Report

for

Site 8 - Nitroglycerin Plant Office
Indian Head Division
Naval Surface Warfare Center

Indian Head, Maryland

Volume II of II - Appendices

Northern Division
Naval Facilities Engineering Command

Contract Number N62472-90-D-1298

Contract Task Order 0064

January 1993

HALLIBURTON NUS
Environmental Corporation

APPENDIX A

SAMPLE LOG SHEETS FOR SEDIMENT/SOIL SAMPLES

NUS CORPORATION

SAMPLE LOG SHEET
TABLE OF CONTENT

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
SS05-0006	8/25/92	Sta.5, TRANSECT 1; ROUTINE 0-6"	1
SS05-0612		Sta.5 6-12"	2
SS06-0006		Sta.6 0-6"	3
SS06-0612		Sta.6 6-12"	4
SS07-0006		Sta.7 0-6"	5
SS07-0612		Sta.7 6-12"	6
SS08-0006		Sta.8 ; TRANSECT 2; 0-6"	7
SS08-0612		Sta.8 6-12"	8
SS08-1218		Sta.8 12-18"	9
SS09-0006		Sta.9 0-6"	10
SS09-0006-D		Sta.9 0-6" DUPLICATE	11
SS09-0612		Sta.9 6-12" ROUTINE	12
SS10-0006		Sta.10 0-6"	13
SS10-0612		Sta.10 6-12"	14
SS10-1218		Sta.10 12-18"	15
SS10-E		RINSATE TO ANALIZE	16
SS11-0006		Sta.11 ; TRANSECT 3 ; ROUTINE	17
SS11-0612		Sta.11 6-12"	18
SS12-0006		Sta.12 0-6"	19
SS12-0612-M		Sta.12 6-12" ROUTINE + (LAB QA/QC)	20
SS12-1218		Sta.12 12-18" ROUTINE	21
SS13-0006		Sta.13 0-6"	22
SS13-0616		Sta.13 6-16"	23
SS13-0616-D		Sta.13 6-16" DUPLICATE	24
SS200-0006		STA.200 0-6" ROUTINE BACKGROUND	25
SS201-0006		STA.201 0-6" ROUTINE BACKGROUND	26
SS14-0006	8/26/92	Sta.14 ; TRANSECT 4; ROUTINE	27

NUS CORPORATION

SAMPLE LOG SHEET
TABLE OF CONTENTS

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
SS14-0612	8/26/92	Sta. 14; TRANSECT 4; ROUTINE 6-12"	28
SS15-0006			29
SS15-0006-D		DUPLICATE	30
SS15-0612		ROUTINE	31
SS15-0612-D		DUPLICATE	32
SS16-0006		ROUTINE	33
SS202-0004		Sta 202 0-4" ROUTINE BACKGROUND	34
SS203-0004		Sta. 203 0-4" ROUTINE BACKGROUND	35
SS04-0006		Sta. 4 0-6" ROUTINE	36
SS04-0612		Sta. 4 6-12"	37
SS03-0006-M		Sta. 3 0-6" ROUTINE + (LAB QA/QC)	38
SS03-0612		Sta. 3 6-12" ROUTINE	39
SS02-0006		Sta. 2 0-6"	40
SS02-0612		Sta. 2 6-12"	41
SS01-0006		Sta. 1 0-6"	42
SS01-0612		Sta. 1 6-12"	43
SS16-E		RINSATE TO HOLD	44
SS17-E	8/27/92	RINSATE TO ANALIZE	45
SS31-0006		Sta. 31 0-6" ROUTINE	46
SS31-0612		Sta. 31 6-12"	47
SS32-0006		Sta. 32 0-6"	48
SS33-0006		Sta. 33 0-6"	49
SS17-0006		Sta. 17; TRANSECT 5; 0-6"	50
SS17-0612		Sta. 17 6-12"	51
SS17-1218		Sta. 17 12-18"	52
SS18-0010		Sta. 18 0-10"	53
SS18-0010-D		Sta. 18 0-10" DUPLICATE	54

NUS CORPORATION

SAMPLE LOG SHEET
TABLE OF CONTENT.

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
SS18-1018	8/27/92	Sta. 18; TRANSECT 5; ROUTINE 10-18"	55
SS19-0004		Sta. 19 0-4"	56
SS19-0412-M		Sta. 19 4-12" ROUTINE+ (LAB QA/QC)	57
SS22-0006		Sta. 22, TRANSECT 6; ROUTINE 0-6"	58
SS22-0612		Sta. 22 6-12"	59
SS22-1218		Sta. 22 12-18"	60
SS21-0006		Sta. 21 0-6"	61
SS21-0814		Sta. 21 8-14"	62
SS21-1420		Sta. 21 14-20"	63
SS20-0006		Sta. 20 0-6"	64
SS20-0612		Sta. 20 6-12"	65
SS100-0006	8/28/92	Sta. 100 0-6"	66
SS100-0006-D		Sta. 100 0-6" DUPLICATE	67
SS100-0612		Sta. 100 6-12" ROUTINE	68
SS23-0006		Sta. 23 TRANSECT 7; 0-6"	69
SS23-0612		Sta. 23 6-12"	70
SS24-0006		Sta. 24 0-6"	71
SS24-0612		Sta. 24 6-12"	72
SS24-1218		Sta. 24 12-18"	73
SS25-0006		Sta. 25 0-6"	74
SS25-0612		Sta. 25 6-12"	75
SS26-0006		Sta. 26; TRANSECT 8; 0-6"	76
SS26-0612		Sta. 26 6-12"	77
SS27-0006		Sta. 27 0-6"	78
SS28-0006		Sta. 28 0-6"	79
SS28-0612		Sta. 28 6-12"	80
SS29-0006		Sta. 29; TRANSECT 9; 0-6"	81

NUS CORPORATION

SAMPLE LOG SHEET
TABLE OF CONTENTS

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
SS29-0006-D	8/28/92	Sta. 29; TRANSECT 9; DUPLICATE 0-6"	82
SS29-0612		Sta. 29 6-12" ROUTINE	83
SS30-0006		Sta 30 0-6"	84
SS30-0612		Sta 30 6-12"	85
SS34-0006		STA. 34 0-6"	86
SS34-0612		STA. 34 6-12"	87
SS35-0006		STA 35 0-6"	88
SS35-0612		STA. 35 6-12"	89
SS36-0006-M		STA 36 0-6" (ROUTINE + LAB QA/QC)	90
SS36-0612		STA. 36 6-12" ROUTINE	91
SS36-E		RINSATE TO HOLD	92
SS101-0006	8/29/92	STA. 101 0-6" ROUTINE	93
SS101-0612		STA. 101 6-12"	94
SS38-0006		STA 38 0-6"	95
SS39-0006		STA 39 0-6"	96
SS37-0006		STA 37 0-6"	97
SS37-0006-D		STA 37 0-6" DUPLICATE	98
SS37-0612		STA 37 6-12" ROUTINE	99
SS40-0006		STA 40 0-6"	100
SS102-0006		STA 102 0-6"	101
SS102-0612		STA. 102 6-12"	102
SS103-0006		STA. 103 0-6"	103
SS103-0612		STA. 103 6-12"	104
SS41-0006		STA. 41 0-6"	105
SS41-0612		STA. 41 6-12"	1[illegible]
SS41-0612-D		STA. 41 6-12" DUPLICATE	107
SS42-0006		STA. 42 0-6" ROUTINE	108

NUS CORPORATION

SAMPLE LOG SHEET
TABLE OF CONTENT.

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
SS104-0006	8/29/92	STA. 104 0-6" ROUTINE	109
SS104-0612		STA 104 6-12"	110
SS43-0006		STA. 43 0-6"	111
SS43-0612		STA 43 6-12"	112
SS44-0006		STA 44 0-6"	113
SS45-0006-M		STA 45 0-6" ROUTINE + (LAB QA/QC)	114
SS45-0006-D		STA 45 0-6" DUPLICATE	115
SS45-0612		STA 45 6-12" ROUTINE	116
SS46-0006		STA 46 0-6"	117
SS105-0006		STA 105 0-6"	118
SS105-0612		STA 105 6-12"	119
SS47-0006		STA 47 0-6"	120
SS47-0612		STA 47 6-12"	121
SS48-0006		STA 48 0-6"	122
SS49-0006		STA 49 0-6"	123
SS49-0612		STA 49 6-12"	124
SS50-0006		STA 50 0-6"	125
SS50-0006-D		STA 50 0-6" DUPLICATE	126
SS51-0006		STA 51 0-6" ROUTINE	127
SS51-0612		STA 51 6-12"	128
SS52-0006		STA 52 0-6"	129
SS53-0006		STA 53 0-6"	130
SS53-0612		STA 53 6-12"	131
SS54-0006		STA 54 0-6"	132
SS55-0006		STA 55 0-6"	133
SS55-0612-M		STA 55 6-12" ROUTINE + (LAB QA/QC)	134
SS56-0006		STA 56 0-6" ROUTINE	135

NUS CORPORATION

SAMPLE LOG SHEET
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SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
SS57-0006	8/29/92	STA 57 0-6" ROUTINE	136
SS57-0006-D		STA 57 0-6" DUPLICATE	137
SS57-0612		STA 57 6-12" ROUTINE	138
SS58-0006		STA 58 0-6"	139
SS58-E		RINSATE TO ANALIZE	140
SS59-B	8/30/92	FIELD BLANK	141
SS59-E		RINSATE TO HOLD	142
SS106-0006		STA 106 0-6" ROUTINE	143
SS106-0612		STA 106 6-12"	144
SS106-0612-D		STA 106 6-12" DUPLICATE	145
SS59-0006		STA 59 0-6" ROUTINE	146
SS59-0612		STA 59 6-12"	147
SS60-0006		STA 60 0-6"	148
SS60-0612		STA. 60 6-12"	149
SS61-0006		STA. 61 0-6"	150
SS61-0612		STA. 61 6-12"	151
SS107-0006		STA. 107 0-6"	152
SS107-0612		STA. 107 6-12"	153
SS108-0006		STA. 108 0-6"	154
SS108-0612		STA. 108 6-12"	155
SS62-0006		STA 62 0-6"	156
SS62-0006-D		STA 62 0-6" DUPLICATE	157
SS62-0612		STA 62 6-12" ROUTINE	158
SS63-0006-M		STA 63 0-6" ROUTINE + (LAB QA/QC)	159
SS63-0612		STA 63 6-12" ROUTINE	160
SS64-0006		STA 64 0-6"	161
SS64-0612		STA 64 6-12"	162

NUS CORPORATION

SAMPLE LOG SHEET
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SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
SS65-0006	8/30/92	STA 65 0-6" ROUTINE	163
SS65-0612		STA 65 6-12"	164
SS66-0006		STA 66 0-6"	165
SS66-0612		STA 66 6-12"	166
SS67-0006		STA 67 0-6"	167
SS67-0006-D		STA 67 0-6" DUPLICATE	168
SS67-0612		STA 67 6-12" ROUTINE	169
SS68-0006		STA 68 0-6"	170
SS68-0612-M		STA 68 6-12 ROUTINE + (LAB QA/QC)	171
SS70-0006		STA 70 0-6" ROUTINE	172
SS109-0006		STA 109 0-6"	173
SS67A-0004	8/31/92	STA 67A 0-4"	174
SS68A-0004		STA 68A 0-4"	175
SS68A-0004-D		STA 68A 0-4" DUPLICATE	176
SS114-0006		STA 114 0-6" ROUTINE	177
SS114-0006-D		STA 114 0-6" DUPLICATE	178
SS114-0612		STA 114 6-12" ROUTINE	179
SS113-0006		STA 113 0-6"	180
SS113-0612		STA 113 6-12"	181
SS112-0006		STA 112 0-6"	182
SS112-0612		STA 112 6-12"	183
SS112-1218		STA 112 12-18"	184
SS11A-0612		STA 11A 6-12"	185
SS11A-1218		STA 11A 12-18"	186
SS11A-1824		STA 11A 18-24"	187
SS11-E		RINSATE TO ANALIZE	188
SS111-0006	9/01/92	STA 111 0-6" ROUTINE	189

NUS CORPORATION

SAMPLE LOG SHEET
TABLE OF CONTENTS

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
SS111-0612	9/01/92	STA 111 6-12" ROUTINE	190
SS10A-0612		STA 10A 6-12"	191
SS10A-1218		STA 10A 12-18"	192
SS110-0006		STA 110 0-6"	193
SS110-0612		STA 110 6-12"	194
SS204-0006		STA 204 0-6"	195
SS62LC-E		RINSATE TO HOLD	196
SS62LC1-0612-M		STA 62LC1 6-12" ROUTINE + (LAB QA/QC)	197
SS62LC1-1824		STA 62LC1 18-24" ROUTINE	198
SS62LC2-0006		STA 62LC2 0-6"	199
SS62LC3-0006		STA 62LC3 0-6"	200
SS62LC4-0006		STA 62LC4 0-6"	201
SS62LC4-0612		STA 62LC4 6-12"	202
SS62LC5-0006		STA 62LC5 0-6"	203
SS62A-0006		STA 62A 0-6"	204
SS115-0006-M	9/02/92	STA 115 0-6" ROUTINE + (LAB QA/QC)	205
SS115-0612		STA 115 6-12" ROUTINE	206
SS116-0006		STA 116 0-6"	207
SS116-0612		STA 116 6-12"	208
SS64A-E		RINSATE TO ANALIZE	209
SS64A-B		FIELD BLANK	210
SS64A-0006		STA 64A 0-6" ROUTINE	211
SS64A-0006-D		STA 64A 0-6" DUPLICATE	212
SS66LC1-0612		STA 66LC1 06-12" ROUTINE	213
SS66LC1-1824		STA 66LC1 18-24"	214
SS66LC2-0006		STA 66LC2 0-6"	215
SS66LC3-0006		STA 66LC3 0-6"	216

NUS CORPORATION

SAMPLE LOG SHEET
TABLE OF CONTENT

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME		PAGE NO.
SS66LC3-0006-D	9/02/92	STA 66LC3 0-6"	DUPLICATE	217
SS66LC3-0612		STA 66LC3 6-12"	ROUTINE	218
SS66LC4-0006		STA 66LC4 0-6"		219
SS67LC1-0612		STA 67LC1 6-12"		220
SS67LC1-1824		STA 67LC1 18-24"		221
SS67A-0006		STA 67A 0-6"		222
SS67A-0006-D		STA 67A 0-6"	DUPLICATE	223
SS67LC2-0006		STA 67LC2 0-6"	ROUTINE	224
SS67LC3-0006		STA 67LC3 0-6"		225
SS67LC4-0006		STA 67LC4 0-6"		226
SS67B-0006-M		STA 67B 0-6"	ROUTINE + (LAB QA/QC)	227
SS67C-0006		STA 67C 0-6"	ROUTINE	228
SS70-0612		STA 70 6-12"		229
SS70-1218		STA 70 12-18"		230
SS70B-0006		STA 70B 0-6"		231
SS70A-0006		STA 70A 0-6"		232
SS70A-0006-D		STA 70A 0-6"	DUPLICATE	233
SS109-1218		STA 109 12-18"	ROUTINE	234
SS109A-0006		STA 109A 0-6"		235
SS109A-0006-D		STA 109A 0-6"	DUPLICATE	236
SS109A-0612		STA 109A 6-12"	ROUTINE	237

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [x] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS05 - 0006 Source Location STA 5 TRANSECT 1

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/25/92 0930 HRS.

Sampled By: FWR / T.R.

Signature(s): [signature]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, (Wet), etc.)
Blackish	Organic Rich Mat,

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [x] Lagoon / Pond
- [ ] Other _____

Page 2 of 237

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 05 - 0612 Source Location STA. 5 ; TRANSECT 1

Sample Method: SEE NOTES	Composite Sample Data
Depth Sampled: 6 - 12"	
Sample Date & Time: 8 / 25 / 92 0930 HRS.	
Sampled By: FWR / TR	
Signature(s): Tony Grab / Fred Walker	

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black/Grey	Silty Clay (More Cohesive) + organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS06-0006 Source Location STA 6, TRANSECT 1

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/25/92 1030 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 06 - 0612 Source Location STA 6 ; TRANSECT 1

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/25/92 1030 HRS.

Sampled By: FWR/TR

Signature(s): [illegible] [illegible]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black/Grey	Silty Clay (more Cohesive) + organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS07-0006 Source Location STA 7 ; TRANSECT 1

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/25/92 1130 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS07-0612 Source Location Sta 7 ; TRANSECT 1

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/25/92 1130 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black/Gray	Silty Clay (more cohesive) + Organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 08-0006 Source Location STA. 8; TRANSECT 2

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/25/92 1300 HRS.

Sampled By: FWR/TR

Signature(s): Tony Rizzuto

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS08-0012 Source Location Sta. 8 ; TRANSECT 2

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/25/92 1300 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black/Grey	Silty Clay (More Cohesive) Humanics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 08-1218 Source Location STA 8 - TRANSECT 2

Sample Method: SEE NOTES

Depth Sampled: 12-18"

Sample Date & Time: 8/25/92 1300 HRS.

Sampled By: FWR / TR

Signature(s): [illegible]

Composite Sample Data

Sample	Time	Color / Description

N/A

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Greyish Bl. / Blackish Grey	Silty Clay (More Cohesive than 6-12") Some ORGANICS

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS09 - 0006 Source Location SHA 9 : TRANSECT 2

Sample Method: SEE NOTES

Depth Sampled: 0 - 6"

Sample Date & Time: 9/25/92 1315 HRS.

Sampled By: FWR/TR

Signature(s): [signature]

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS09-0006-D Source Location Sta. 3, TRANSECT 2

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/25/92 1315 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube.

*DUPLICATE OF SS09-0006

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS09 - 0612 Source Location STA. 9 · TRANSECT 2

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/25/92 1315 HRS.

Sampled By: FWR/HR

Signature(s): [illegible]

Type of Sample (CHECK IF TAKEN)

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black/Grey	Silty Clay (More Cohesive) + organics

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS10-0006 Source Location STA. 10 ; TRANSECT 2

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 8/25/92 1328 HRS.	
Sampled By: FWR/TR	
Signature(s):	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL (✓)
- DISPOSABLE TROWEL ( )
- SPLIT SPOON ( )
- SEDIMENT SAMPLER ( )
- OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS10-0612 Source Location Site 10; Transect 2

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 8/25/92 1328 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blk/Gray	Silty Clay (More Cohesive) + organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 10 — 1218 Source Location Sta 10; Transect 2

Sample Method: SEE NOTES

Depth Sampled: 12-18"

Sample Date & Time: 8/25/92 1328 HRS.

Sampled By: FWR/TR

Signature(s): [signature]

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet etc.)
Blackish Grey / Greyish Bl.	Silty Clay (more cohesive than 6-12" some organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☒ Other RINSATE

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS10-E Source Location RINSATE

Sample Method: SEE NOTES	
Depth Sampled: —	
Sample Date & Time: 8/25/92 1430 HRS.	
Sampled By: FWR / TR	
Signature(s): Terry Hazel / Fred Rumsey	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	AQUEOUS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

Run Steam Distilled H_2O through an 5
Lot # 10791 *TO ANALIZE*

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS11-0006 Source Location STA. 11 ; TRANSECT 3

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 8/25/92 1515 HRS.	
Sampled By: FWR/TRI	
Signature(s): [signature] Fred Ramos	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS11-0612 Source Location STA. 11 ; TRANSECT-3

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/25/92 1515 HRS.

Sampled By: FWR/TR

Signature(s): [signature]

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black/Grey	Silty Clay (More cohesive) + organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 12 - 0006 Source Location STA. 12; TRANSECT 3

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/25/92 1525 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible] Fred W. Ramsey			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 12 · 0612 - M Source Location STA. 12, TRANSECT 3

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/25/92 1525 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Type of Sample (CHECK IF TAKEN)

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black/Grey	Silty Clay (More Cohesive) + organics

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

DO LAB QA/QC

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS12 - 1218 Source Location STA 12 ; TRANSECT 3

Sample Method: SEE NOTES

Depth Sampled: 12 - 18"

Sample Date & Time: 8/25/92 1525 HRS.

Sampled By: TR/FRW

Signature(s): Terry Taylor
Fred Ramos

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color: Blackish Grey / Greyish Black

Description: (Sand, Clay, Dry, Moist, Wet, etc.) Silty Clay (More cohesive than b 12 some organic

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS13-0006 Source Location STA. 13, TRANSECT 3

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/25/92 1535 HRS.

Sampled By: FWR/TR

Signature(s): Terry Rogal, Fred Ramos

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	Organic Rich Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 13 - 0616 Source Location Sta 13 ; Transect 3

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-16"			
Sample Date & Time: 8/25/92 1535 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Bl./Gray	Silty Clay (more cohesive) + Organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL (✓)
- DISPOSABLE TROWEL ( )
- SPLIT SPOON ( )
- SEDIMENT SAMPLER ( )
- OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 13 - 0016-D Source Location STA 13; TRANSECT 3

Sample Method: SEE NOTES

Depth Sampled: 6-16"

Sample Date & Time: 8/25/92 1535 HRS.

Sampled By: FWR / TR

Signature(s): Tony Rozak
Fred W. Ramsey

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Bl/Gray	Silty Clay (more cohesive) + organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

* DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS200 - 0006 Source Location 300' DOWNSTREAM OF JACKSON RD BACKGROUND

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/25/92 1555 HRS.			
Sampled By: S.H		N/A	
Signature(s): Steve Hirstdahl			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS201-0006 Source Location 300' UPSTREAM OF JACKSON RD BACKGROUND

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 8/25/92 1600 HRS.	
Sampled By: SH	
Signature(s): Steve Hierrdahl	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS14 - 0006 Source Location STA. 14; TRANSECT 4

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/26/92 0950 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature] Fred W. Ramsey			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black	Organic Rich Mat

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL (→)
- DISPOSABLE TROWEL ( )
- SPLIT SPOON ( )
- SEDIMENT SAMPLER ( )
- OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS14 - 0612 Source Location STA. 14; TRANSECT 4

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 8/26/92 0950 HRS.			
Sampled By: FWR / TR		N/A	
Signature(s): [illegible] Fred W. Ramer			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BROWNISH GRAY	CLAY (STIFF) W/ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic TUBE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS15-0006 Source Location STA. 15, TRANSECT 4

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/26/92 1000 HRS.

Sampled By: FWR/TR

Signature(s): [signature]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ ~~Grab~~ TR
- ■ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLACK	ORGANICS W/SOME CLAY

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: (2) ACRYLIC TUBES

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 15-0006-D Source Location Sta 15, TRANSECT 4

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/26/92 1000 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab (TC)
- [x] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLACK	ORGANICS w/ SOME CLAY

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: (2) ACRYLIC TUBES

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS15-0612 Source Location STA 15 · TRANSECT 4

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6 12"			
Sample Date & Time: 8/26/92 1000 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature] Fred Rimmer			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	stiff ~~primary~~ (TR) clay primarily

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER (✓)
OTHER: _____

~~BRAVE SLIDE~~ (TR)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS15-0012-D Source Location STA. 15 TRANSECT 4

Sample Method: SEE NOTES	
Depth Sampled: 6-12"	
Sample Date & Time: 8/26/92 1000 HRS.	
Sampled By: FWR/TR	
Signature(s): [signature] [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLACK (STAIN)	w/ some brown clay SAT.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

DUPLICATE / *Replicate

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS16-0006 Source Location Sta 16; Transect 4

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/26/92 1010 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLACK	sloppy muck (no/little cohesion) SAT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 202 - 0004 Source Location BACKGROUND - 300' UPSTREAM OF RTE 225 IN MATTAWOMAN

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 4"			
Sample Date & Time: 8/26/92 1100 HRS.			
Sampled By: S H		N/A	
Signature(s): Steve Hirschfeld			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	SANDY SILT, MUDDY (SAT)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL (✓)
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☒ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS203-0004 Source Location BACKGROUND - 500' UPSTREAM OF NUS (RTE 225) IN MATTAWOMAN

Sample Method: SEE NOTES

Depth Sampled: 0-4"

Sample Date & Time: 8/26/92 1105 HRS.

Sampled By: S.H.

Signature(s): Steve Hoedah

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAT
BRN	MUDDY SAND

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL (→)
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS04 - 0006 Source Location STA 4 - S. OF CULVERT & NOBLE Rd.

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/26/92 1440 HRS.

Sampled By: TR

Signature(s): [signature]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

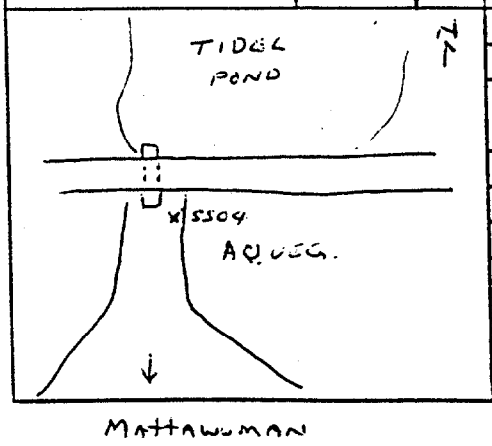
Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish Grey	Organic Rich Silty Fine Sand

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: ~~TR~~ SHOVEL



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 04 - 0612 Source Location STA. 4 - S OF CULVERT & NOBLE RD

Sample Method: SEE NOTES	
Depth Sampled: 6.12"	
Sample Date & Time: 8/26/92 1440 HRS.	
Sampled By: TR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

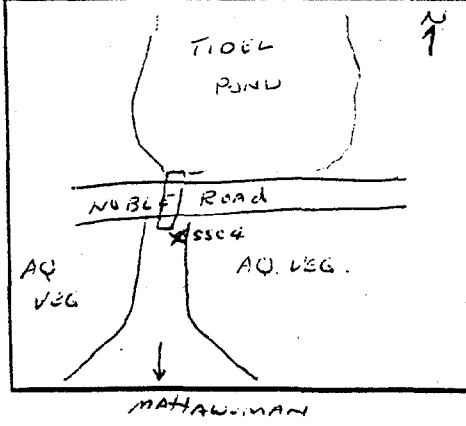
Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK BRN	SILTY CLAY

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPOON



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS03 - 0006 - M Source Location STA. 3 · S. OF Culvert & NOBLE R

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/26/92 1510 HRS.			
Sampled By: T.K.		N/A	
Signature(s): [signature]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAT
GRAY	MUCK w/ SOME ORGANICS & SOME SAND - MUDDY

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

* DO LAB QA/QC

NEAR log ~15' OFF SHORE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS03-0612 Source Location STA 3; S. culvert & Noble Road

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 8/26/92 1510 HRS.			
Sampled By: T.K.		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	MUDDY SAND w/ little CLAY

Analysis:

TOTAL Hg		
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

NEAR LOG APPROX. 15' OFF SHORE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS02-0006 Source Location STA 2 : S. of culvert & Noble Rd.

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/26/92 1520 HRS.			
Sampled By: FWR / TR		N/A	
Signature(s): [signature] Fred Rimer			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Brownish	Black - MUCK ORGANIC RICH w/SOME SAND

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

SAMPLED FROM BOAT

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS02 - 0612 Source Location STA 2; S. of Culvert & Noble Rd.

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 8/26/92 1520 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature] [signature]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Gray	Clay w/ green vegetation mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS01 - 0006 Source Location Sta. 1; Sweetwater & Noble R.

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 8/26/92 1540 HRS.	
Sampled By: FWR/TR	
Signature(s): Terry Rogers, Fred Ramos	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish / Gray	mucky w/ organics in top 3"-4"

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

Sampled From Boat

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS01-0612 Source Location Sta 1. S. of culvert E Noble Rd

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/26/92 1540 HRS.

Sampled By: FWR / TR

Signature(s): [illegible]

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BROWNISH	Green Clay (No Grit) Cohesive, TRC organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☒ Other Rinsate

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 16 - E Source Location Rinsate

Sample Method: SEE NOTES

Depth Sampled: —

Sample Date & Time: 8/26/92 1730 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	—

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

TR SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

St. Dist. H_2O through LOT # 10791

TO BE HELD

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☒ Other Rinsate

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 17-E Source Location Rinsate

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: —			
Sample Date & Time: 9/27/92 0840 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

St. Dist. H_2O Through

Lot # 10791

TO ANALIZE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS31 - ~~0012~~ 0006 (TR) Source Location SS31 Tributary

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: ~~6-12"~~ 0-6"			
Sample Date & Time: 8/27/92 0835 HRS.			
Sampled By: TK.		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) → SAT.
BLACK	MUCK w/ ORGANICS (leaves etc)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

~10' UP FROM PIPE/CULVERT IN ≈6" OF H2O

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS31-0612 Source Location SS31 Tributary

Sample Method: SEE NOTES	
Depth Sampled: 6-12"	
Sample Date & Time: 8/27/92 0835 HRS.	
Sampled By: T.K.	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GRAY	MUCK / CLAY w/some GRIT (SAND); ORGANIC MAT.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 82 - 0106 Source Location SS82 - Tributary

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/27/92 0850 HRS.

Sampled By: T.K.

Signature(s): [signature]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet etc.) SAT.
Black	MUCKY SAND w/some CLAY - Rich Organic Mat.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS33-0006 Source Location SS33 - TRIBUTARY

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/27/92 0910 HRS.

Sampled By: TK.

Signature(s): [signature]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAT.
BLACK/GRAY	RICH IN ORGANICS MUCKY TRC. SAND

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS17 - 0006 Source Location SIA 17 ; TRANSECT 5

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/27/92 1005 HRS.

Sampled By: FWR/TR

Signature(s): [illegible] / Fred W. Ramser

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish	MUCK Organics w/Some Clay Roots & decayed Plant mat

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR/TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 17 - 0612 Source Location STA. 17 ; TRANSECT 5

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 8/27/92 1005 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible] [illegible]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN/BLACK	Organic Rich (roots etc.)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS17-1219 Source Location STA 17; TRANSECT 5

Sample Method: SEE NOTES

Depth Sampled: 12-18"

Sample Date & Time: 8/27/92 1005 HRS.

Sampled By: TR/FWR

Signature(s): [illegible]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN/TAN	(Cohesive) CLAY w/some blk Organic mat.

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 18 - 0010 Source Location STA 10 · TRANSECT 5

Sample Method: SEE NOTES

Depth Sampled: 0 - 10"

Sample Date & Time: 8/27/92 1010 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN / BLACK	Organic mat; somewhat cohesive; TYP SITE SAMP

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 18-0010-D Source Location STA. 10 TRANSECT 5

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-10			
Sample Date & Time: 8/27/92 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN/BLACK	ORGANIC mat. some clay, somewhat cohesive TRC. silty SAND

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS/8-1018 Source Location Sta. 18; Transect 5

Sample Method: SEE NOTES	
Depth Sampled: 10-18"	
Sample Date & Time: 8/27/92 1010 HRS.	
Sampled By: FWR/TR	
Signature(s): [signature] Fred W. Rumsey	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Brownish / Tan/Green	Soft Clay w/ 1 layer of Black organic mat.

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (X)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS19-0024 Source Location STA. 19 TRANSECT 5

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-4"			
Sample Date & Time: 8/27/92 1020 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature] Fred W. Ramos			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) → SAT.
BLACK	MUCK; SOME BRN CLAY; ORGANICS throughout

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS19-0412-M Source Location STA 19; TRANSECT 5

Sample Method: SEE NOTES

Depth Sampled: 4-12"

Sample Date & Time: 8/27/92 1020 HRS.

Sampled By: FWR/TR

Signature(s): [signature]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	Clay; w/ undecayed organic mat. somewhat stiff

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

* Do LAB QA/QC

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS22 - 0006 Source Location STA. 22 ; TRANSECT 6

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/27/92 1110 HRS.

Sampled By: FWR / TR

Signature(s): [illegible]

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLACK	ORGANICS RICH MUCK ; SOME BRN. CLAY @ bottom of sample

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS22-0612 Source Location STA. 22 ; TRANSECT 6

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/27/92 1110 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Brn	Soft Clay w/ Fibers (i.e. roots) V. little black organic

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS22 - 1218 Source Location STA 22 ; TRANSECT 6

Sample Method: SEE NOTES

Depth Sampled: 12-18"

Sample Date & Time: 8/27/92 1110 HRS.

Sampled By: FWR / TR

Signature(s): [illegible]

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	MED ~~Soft~~ STIFF CLAY; W/FIBERS NO BLACK ORGANIC

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic TUBE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS21 - 0006 Source Location STA 21 - Transect 6

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/27/92 1118 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAT.
BLACK	MUCK, Highly ORGANIC

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS21-0814 Source Location STA 21; TRANSECT 6

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-14"			
Sample Date & Time: 6/27/92 1110 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	Clay mat. w/ Fibers (Roots)

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS21-1420 Source Location STA 21 TRANSECT 6

Sample Method: SEE NOTES

Depth Sampled: 14-20"

Sample Date & Time: 8/27/92 1118 HRS.

Sampled By: FINN/TR

Signature(s): [signature] Fred Manser

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Brn.	Clay (Stiff); Trace Fibers

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS20-0006 Source Location STA 2.0; TRANSECT 6

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 8/27/92 1124 HRS.	
Sampled By: FWR/TR	
Signature(s): [signature] Fred W. Ramos	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) → SAT
BLACK	Organic RICH Mat. w/ Clay (Soft but slightly Cohesive)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS20-0612 Source Location Sta 23 / Transect G

Sample Method: SEE NOTES	
Depth Sampled: 6 12"	
Sample Date & Time: 8/27/92 1125 HRS.	
Sampled By: TC/FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Blackish Gray	Clay w/ some organics somewhat cohesive

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS100 - 0006 Source Location SS100 ; TRIBUTARY

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 0850 HRS 08/28/92 ~~850~~ HRS.			
Sampled By: FWR / TR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) MOIST
LGT BRN	SILTY FINE SAND W/SOME CLAY TR ORGANIC MATERIAL

Analysis:	PRESERVED	✓
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUP. TAKEN @ this location

.000 HS PER JEROME (mg/m3)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 100 - 0006 - D Source Location _____

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 8/28/92 0850 HRS.	
Sampled By: FWR/TR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Lgt. Brn	SAME AS SS100-0006

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS100 - ~~2012~~ FWR 0612 Source Location SS100, TRIBUTARY

Sample Method: SEE NOTES	
Depth Sampled: 0" - 12"	
Sample Date & Time: 08/28/92 850 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature] Fred Ulamson	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRNISH GRAY	SILTY CLAY TR/ORGANIC MATERIAL MOIST

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL (✓)
- DISPOSABLE TROWEL ( )
- SPLIT SPOON ( )
- SEDIMENT SAMPLER ( )
- OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS23-0006 Source Location SS23 : TRANSECT 7

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 8 /28/92 0920 HRS.			
Sampled By: TR / [illegible]		N/A	
Signature(s): [illegible] Fred H Ramsey			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	ORGANIC MATERIAL CLAYEY, SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OIL SHEEN SEEN IN WATER

SAMPLED 100 FT FROM WEST SIDE OF STREAM @ T7

.002 per JERRME (mg/m³)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS23-0012 Source Location SS23 ; TRANSECT 7

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/28/92 0920 HRS.			
Sampled By: TR FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK TO DK BRN	CLAY AND SILT W/SOME ORGANICS SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

OIL SHEEN SEEN IN STANDING WATER THROUGH OUT THE TIDAL POND/SWAMP.

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS24-0006 Source Location STA. 24 TRANSECT 7

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/28/92 930 HRS.			
Sampled By: TR FWR		N/A	
Signature(s): Typical Fred Reamer			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	CLAYEY ORGANIC MATERIAL SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

FROM STREAM ~~OVERBANK DEP~~ DEPOSITS

SAMPLED AT 78 FEET FROM WEST SIDE OF STREAM @ T7

.001 HS. PER JEROME. (mg/m³)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 24-0612 Source Location Sta 2.4; Transect 7

Sample Method: SEE NOTES

Depth Sampled: 6-12"

Sample Date & Time: 8/28/92 0930 HRS.

Sampled By: FWR / TR

Signature(s): [illegible] Fred Wramer

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	CLAYEY ORGANIC MATERIAL SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (→)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

OILY ~~SHEN~~ SEEN SHEEN ON WATER

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS24-1218 Source Location STA. 24 ; TRANSECT 7

Sample Method: SEE NOTES

Depth Sampled: 12-14'

Sample Date & Time: 8/28/92 0930 HRS.

Sampled By: FWR/TR

Signature(s): [illegible] Fred W. Ramos

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK + DK BRN	CLAY W/ TR ORGANIC MATERIAL

Analysis:	PRESERVED	✓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

OILY SHEEN SEEN IN SOS/SEDIMENTS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS25-0006 Source Location SS25; TRANSECT 7

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/28/92 0940 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	ORGANIC MATERIAL CLAY SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OILY SHEEN ON WATER

SAMPLED 35 FT FROM THE WEST SIDE OF STREAM BANK (T7)

.001 HS. PER SERONE (mg/M³)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS25-0612 Source Location SS25 - TRANSECT 7

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/28/92 0940 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred W Ramos			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	CLAYEY ORGANIC MATERIAL SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPOON

OILY SHEEN ON WATER + SEDIMENTS

SAMPLED 35FT FROM THE WEST SIDE OF STREAM BANK (T7)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS26-0006 Source Location 9526, TRANSECT 8

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/28/92 1010 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	ORGANIC MATERIAL (CLAYEY) SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED 75FT FROM WEST SIDE OF BANK (T8) (ug/m³)
.002 H.S. PER JEROME

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS26-0612 Source Location SS26, TRANSECT 8

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/28/92 1010 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	ORGANIC MATERIAL, CLAYEY, SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON (✓) RUL
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

SAMPLED 75' T8W

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS27-0000 Source Location SS27 / TRANSECT 8

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 1"			
Sample Date & Time: 08/28/92 1020 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred W. Ramer			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	ORGANIC MATERIAL (CLAYEY) TR/FINE SAND SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED @ 50FT TBW

.003 PER JEROME (mg/m³)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS28-0006 Source Location S328 ; TRANSECT 8

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/28/92 1025 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	ORGANIC CLAYEY SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED 25 FT T8.
NON DEFINED STREAM BED at ALL T8 LOCATIONS
.002 PER TERCIA (H.S.) (mg/m3)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 28 - 0612 Source Location SS28, TRANSECT 8

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/28/92 1025 HRS.			
Sampled By: TR FWR		N/A	
Signature(s):			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
D BRN, DKK	ORGANIC CLAYEY

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED 25 FT (T8)

.002 HS PER JEROME (mg/m³)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS29-0006 Source Location SS29, TRANSECT 9

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 08/28/92 1045 HRS.	
Sampled By: TR / FWR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DRY, ~~MOIST~~ BLK	ORGANIC MATERIAL, CLAYEY W/TR FINESAND/SILT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE SAMPLE TAKEN AT THIS LOCATION/DEPTH

66 FT T9W.

AT T9W, POORLY DEFINED STREAM, HEAVILY VEGETATED

.001 H.S. PER JEROME (mg/m³)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS29 - 0006 - D Source Location SS29 ; Transect 9

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 8/28/92 1045 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature] Fred W. Ramier	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	SAME AS SS29-0006

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS29-0612 Source Location SS29 - TRANSECT 9

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/28/92 1045 HRS.			
Sampled By: TK - FWR		N/A	
Signature(s): [illegible]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK-BRN-BLK	FAT CLAYEY ORGANICS W/SOME FINE TO MED GRAIN SAND

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

66 FT TGW

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 30-0006 Source Location SS30 · TRANSECT 9

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/28/92 1050 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DKBRN TO BLK	CLAY ORGANICS, CLAYEY W/TR MED-FINE SAND + SILT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

33A T9W

.002 H.S. PER JEROME (mg/m³)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS30-0612 Source Location SS30 ; TRANSECT 9

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" TO 12"			
Sample Date & Time: 08/28/92 1050 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred W. Ramsey			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRUSH GREY	MED TO FINE SAND W/SOME SILT TR CLAY/ORGANICS SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPOON

33 FT T9W

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS34-0006 Source Location SS34

Sample Method: SEE NOTES	
Depth Sampled: 6"	
Sample Date & Time: 08/28/92 1500 HRS.	
Sampled By: TR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	MED TO FINE SAND W/TR SILT & CLAY WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED IN STREAM BED

.001 HS (mg/m³) per JEROME

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 34-0612 Source Location SS34

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/28/92 1500 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BK	ORGANIC MATERIAL W/SOME SAND (FINE)

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SAMPLE

SAMPLED IN STREAM BED

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS35-CODL Source Location SS35

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 08/28/92 1510 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK-DK GREY	ORGANIC MATERIAL (CLAYEY) w/ CHE SILT SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED IN OVERPHUR DIR. (RESIDUAL)

.001 HS (mg/m³) per Jerome

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS35-0612 Source Location SS35

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/28/92 1510 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible] Fred Ramer			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY TO BLK	SILTY FINE SAND W/SOME ORGANICS + CLAY (SAT)

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPRUCE

SAMPLED IN OVER BANK DEP. (RESIDUAL)

.001 HS/(mg/m³) per Jerome

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS30-0006-M Source Location SS36

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-2"			
Sample Date & Time: 08/28/92 1520 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	ORGANIC MATERIAL SILT CLAYEY W/FR FINE SAND

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DO LAB QA/QC

SAMPLED IN STANDING WATER
INSTREAM ~~SPLAY~~ SPLAY

.001 H_2S (mg/m³) per detector

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS36-0612 Source Location SS36

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 08/18/92 1520 HRS.	
Sampled By: TR/FWR	
Signature(s): [signature] [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
LT GREY-DK GREY	FINE TO MED SAND WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

.001 H.S (mg/m3) per Jerome

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other RINSATE

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS36-E Source Location RINSATE

Sample Method: SEE NOTES

Depth Sampled: —

Sample Date & Time: 8 / 28 / 92 HRS.

Sampled By: TR

Signature(s): [signature]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color | Description: (Sand, Clay, Dry, Moist, Wet, etc.) —

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

St. Dist. H2O [illegible]
LOT # 10791

* TO BE HELD *

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS101-0006 Source Location SS101 ; Tributary

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 08/29/92 800 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DKBRN-BLK	SILTY FINE SAND W/SOME ORGANICS (LOAMY) TRCLHI

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

Approx. 100' WEST OF STREAM

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS101-0012 Source Location SS101 - Tributary

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 6" - 12"			
Sample Date & Time: 08/24/92 0800 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred Wainwright			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY	SANDY SILT w/ TR CLAY MOIST

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SAMPLE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS38-0006 Source Location SS38

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/29/92 0810 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY + BRN	MED + FINE SAND W/SOME ORGANICS WET/MOIST

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED RESIDUAL (FLOOD PLAIN)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 39-0006 Source Location SS39

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/29/92 0812 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY TO DARK GRAY	FINE SAND W/SOME ORGANICS WET

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED IN STANDING WATER (SECONDARY STREAM)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS37-0006 * Source Location SS37

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/24/92 0815 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
LT BRN + GREY	MED SAND + FINE SAND TR ORGANICS SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

*DUPLICATE TAKEN AT THIS LOCATION

IN STREAM DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS37-0006-D Source Location _____

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/24/92 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SEE SS37-0006

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE OF SS37-0006

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS37-0612 Source Location SS37

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/29/92 0815 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)	
LT-GRY	MED SAND W/TR FINE + COARSE SAND + ORGANICS	SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

IN STREAM DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS40-0006 Source Location SS40

Sample Method: SEE NOTES

Depth Sampled: 6"

Sample Date & Time: 08/29/92 0827 HRS.

Sampled By: TR / FWR

Signature(s): [illegible]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK BRN	SILT W/TR CLAY + ORGANICS MOIST

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DRIED OUT STREAM BED/FLOOD PLAIN/RESIDUE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS102-0006 Source Location SS102; Tributary

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6"			
Sample Date & Time: 08/29/92 0830 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	FINE SAND + SILT SOME ORGANICS TR CLAY

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED IN DRIED TRIBUTARY

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS102-0012 Source Location SS102 ; TIRUTARY

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 3" - 12			
Sample Date & Time: 08/24/92 0830 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	FINESAND - SILT SOME ORGANICS TR CLAY

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPATULA

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS103-0006 Source Location SS103 ; Tributary

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 08/29/92 0840 HRS.	
Sampled By: TR/FWR	
Signature(s): [illegible] Fred W. Ramirez	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	FINE SAND + SILT + CLAY W/SOME ORGANICS MOIST

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLE DRIED TOP SOIL IN A RUN OFF PATH FROM BLDG 609

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☒ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS103-0612 Source Location SS103 / Tributary

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 08/24/92 0840 HRS.	
Sampled By: TR / FWR.	
Signature(s): [signature] [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) MOIST
YELLOWISH BRN	FINE SANDY SILT W/SOME CLAY WITH ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C / HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SAMPLE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS41-0006 Source Location SS41

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/29/92 0855 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): Tom Rogal, Fred W. Ramirez			

Type of Sample (CHECK IF TAKEN)

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
LIGHT	YELLOWISH BRN MED SAND + FINE SAND TROPCAMBS SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

IN STREAM BED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS41-0612 * Source Location SS41

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" TO 12"			
Sample Date & Time: 08/29/92 0855 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred W Ramler			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
LTGREY/BRN	MED TO FINE SAND TR SILT + ORGANICS

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

+ DUPLICATE TAKEN AT THIS LOCATION

IN STREAM BED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS41 - 0612 - D Source Location _____

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 8/31/92 0855 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	SAME AS SS41-0612

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS42-0006 Source Location

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 08/29/92 900 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	CLAYEY SILT ~~SUBSOIL~~ ORGANICS TR FINE SAND WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OVER BANK DEPOSITS/RESIDUE

18' EAST OF SS41

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 104 - 0006 Source Location SS104 ; TRIBUTARY

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 08/29/92 0415 HRS.	
Sampled By: TR/FWR	
Signature(s): [illegible] Fred W Ramirez	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	MED TO FINE SAND W/SOME ORGANICS WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED IN DRIED TRIBUTARY 150 FT FROM MAIN STREAM

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS104-0612 Source Location SS104

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 08/29/92 0915 HRS.	
Sampled By: TR/FWR	
Signature(s): [illegible] Fred H. Ramsier	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DKGRY/BLK	FINE TO MED SAND W/SOME SILT TR ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SLUDGE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS43-0006 Source Location SS43

Sample Method: SEE NOTES	
Depth Sampled: 0 - 6"	
Sample Date & Time: 08 / 29 / 92 0920 HRS.	
Sampled By: TR / CWR	
Signature(s): [signature] [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	MED TO FINE SAND W/SOME SILT TR ORGANICS SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C / HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL (✓)
- DISPOSABLE TROWEL ( )
- SPLIT SPOON ( )
- SEDIMENT SAMPLER ( )
- OTHER: _____

SAMPLED IN STREAM BED

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS43-0012 Source Location SS43

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 08/29/92 0930HRS.	
Sampled By: TR/FWR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	MED TO FINE SAND W/SOME ORGANICS TR CLAY & SILT SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS44-0006 Source Location SS44

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/29/92 0925 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK YELLOW BRN	CLAYEY SILT W/SOME SAND ORGANICS W/SOME CLAY + FINE SANDS MOIST TO WET

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SAMPLED OVERBANK DEP. (RESIDUAL) 6' EAST OF SS43

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS45-0006 ≠M Source Location SS45

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 08/29/92 0430 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): Terry Rozak, Fred Ramsey			

Type of Sample (CHECK IF TAKEN)

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	FINE TO MED SAND ~~TR ORG~~ TR SILT

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C / HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

≠ DUPLICATE TAKEN AT THIS LOCATION

DO LAB QA/QC

IN STREAM BED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 45 - 0006-D Source Location 5545

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/29/92 0730 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): [signature]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	See 5545-0006

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

*DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS45-0612 Source Location SS45

Sample Method: SEE NOTES	
Depth Sampled: 6"-12"	
Sample Date & Time: 08/29/92 0932 HRS.	
Sampled By: TR / FWR	
Signature(s): [illegible] Fred W. Ramos	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
LT GREY/BROWN	FINE TO MED SAND TR ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. ~~SS105-0006~~ FWR SS46-0006 Source Location ~~SS105~~ SS46

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 08/29/92 0935 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	FINE TO MED SAND W/SOME ORGANICS WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OVER BANK DEPOSITES (RESIDUAL) ~~3' FROM SS45~~, FWR 3' WEST OF SS45

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS105-0006 Source Location SS105 / TRIBUTARY

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/24/92 0945 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible] / Fred M. Ramirez			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	FINE TO MED SAND W/SOME ORGANICS TR FINE GRAVELS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OILY SHEEN ON WATER, DETECTED ODORS

SAMPLED IN STREAM TRIBUTARY

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS105-0612 Source Location SS105 - TRIBUTARY

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/29/92 0445 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred W. Ramos			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
~~BRN~~ YELLOW BRN	FINE TO MED SAND W/SOME FINE GRAVELS TR/ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

25' DOWN GRADIENT OF CULVERT

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS47-~~0006~~ SUL-0006 Source Location SS47

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 08/29/92 3955 HRS.

Sampled By: TR / FWR

Signature(s): [signature] Fred W. Ramer

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	MED TO FINE SAND TR ORGANIC

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS47-0612 Source Location SS47

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 08/29/92 0955 HRS.	
Sampled By: TR / FWR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY TO BLK	FINE TO MED SAND TR SILT + ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS48-0006 Source Location SS48

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/29/92 1200 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
MOTTLED GRAY, BROWN	FINE SAND + SILT W/SOME CLAY TR ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OVERBANK DEPOSITES (RESIDUAL)
3' EAST OF SS47

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS49-0006 Source Location SS49

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/29/92 1005 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	FINE TO MED SAND SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

IN STREAMBED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS44-0612 Source Location 5544

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/29/92 1005 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	FINE TO MED SAND TR ORGANICS SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPADE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS50 · 0006* Source Location SS50

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 08/29/92 1010 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred W. Ramier			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	SILTY FINE TO MED SAND TR CLAY + ORGANICS (ROOTS)

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

*DUPLICATE TAKEN AT THIS LOCATION

CHEMICAL ODOR

OVER BANK DEPOSITS (RESIDUAL)
15' EAST OF SS49

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 50 - 0006 - D Source Location SS 50

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6			
Sample Date & Time: 8/29/92 1010 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAME AS SS 50 - 0006

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS51-0006 Source Location SS51

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 08/29/92 1020 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred McCarron			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	FINE TO MED SAND

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

IN STREAMBED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 51-0612 Source Location SS51

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 08/29/92 1020 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DKGRY	MED TO FINE SAND TR ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

IN STREAM BED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS52-0006 Source Location SS-52

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 08/29/92 1025 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred W. Ramsey			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH ORANGISH BROWN	FINE TO MED SAND TR SILT + CLAY SOME ORGANICS

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OVERBANK DEPOSITS (RESIDUAL)
TAKEN ON WEST BANK FROM SS5(

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS53-0006 Source Location SS53

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 08/29/92 1030 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): [signature]			

Type of Sample (CHECK IF TAKEN)

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	FINE TO MED SAND TR COARSE SAND TO FINE GRAVELS

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

IN STREAM BED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS53-0612 Source Location SS53

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/29/92 1030 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible] Fred M. Rumsey			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK YELLOW BROWN	FINE TO MED SAND TR ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: CHUTE

IN STREAM BED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS54-0006 Source Location SS54

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/29/92 1035 HRS.			
Sampled By: FWR / TR		N/A	
Signature(s): [signature] Fred H. Ramsey			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK BRN	CLAYEY SILT SOME ORGANICS TR FINE SAND

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OVERBANK DEPOSITS
RESIDUAL.
12' EAST OF SS53

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS55-0006 Source Location SS55

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 08/29/92 1055 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	FINE TO MED SAND SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

IN STREAM BED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS55-0612-M Source Location SS55

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 08/29/92 1055 HRS.	
Sampled By: TR FWR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRWN/GREY	FINE TO MED SAND TR ORGANICS

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DO LAB QA/QC

IN STREAM BED DEPOSITS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS56-0006 Source Location SS56

Sample Method: SEE NOTES	
Depth Sampled: 0 - 6"	
Sample Date & Time: 08/29/92 1100 HRS.	
Sampled By: TR / FWR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DKBRN	SILTY FINE SAND SOME ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OVER BANK DEPOSITES

6' WEST FROM SS55

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS57-0006 + Source Location SS57

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 08/24/92 1105 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
MOTTLED YELLOWISH BRN	FINE TO MED SAND TR/FINE GRAVELS + ORGANICS

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

- DUPLICATE TAKEN AT THIS LOCATION

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS57-0006-D Source Location _____

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6			
Sample Date & Time: 8/27/92 1105 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible] Fred M. Ramsey			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SEE SS57-0006

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (X)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☒ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS57-0612 Source Location SS57

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 08/29/92 1105 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred W. Ramsey			

Type of Sample

- ☒ Low Concentration
- ☐ High Concentration
- ☒ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK GREY TO BLK	FINE TO MED SAND W/ TR ORGANICS

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS58-0006 Source Location SS58

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/29/92 1110 HRS.			
Sampled By: FWR / TR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOW, RED THUMOTTLED	FINE TO MED SAND TR SILT + ORGANICS WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

OVERBANK DEPOSITE

6" WEST OF SS57

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☒ Other RINSATE

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 58-E Source Location RINSATE

Sample Method: SEE NOTES

Depth Sampled: —

Sample Date & Time: 8/29/92 HRS.

Sampled By: TR / FWR

Signature(s): Terry Rozak, Fred W. Rumsey

Type of Sample (CHECK IF TAKEN)

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (X)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

St. Dist H2O over → LOT # 10791
To Analize

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [x] Other FIELD BLANK

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS59 - B Source Location FIELD BLANK

Sample Method: SEE NOTES

Depth Sampled: —

Sample Date & Time: 8 / 30 / 92 0915 HRS.

Sampled By: FR

Signature(s): [signature]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

Direct pour ST. Dist. H_2O into Bottle
Lot # 10791

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [x] Other Rinsate

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 59 - E Source Location Rinsate

Sample Method: SEE NOTES	
Depth Sampled: —	
Sample Date & Time: 7/30/92 0917 HRS.	
Sampled By: TR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (X)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

Rinse St. Dist. H_2O over
LOT # 10791 TO "HOLD"

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS106-0006 Source Location SS106 / TRIBUTARY

Sample Method: SEE NOTES

Depth Sampled: 0" - 6"

Sample Date & Time: 8/30/92 945 HRS.

Sampled By: TR / FWR

Signature(s): [illegible]

Type of Sample (CHECK IF TAKEN)

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
MOTTLED YELLOW BRN	MED TO FINE SANDY SILT W/TR CLAY + ORGANICS MOIST

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

APPROX 20' FROM CULVERT

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS106-0612 Source Location SS106 ; TRIBUTARY

Sample Method: SEE NOTES	
Depth Sampled: 6"-12"	
Sample Date & Time: 8/30/92 0945 HRS.	
Sampled By: TR / FWR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	FINE TO MED SIRND TR SILT + CLAY SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

~20' FROM CULVERT

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 106-0612-D Source Location SS 106; Tributary

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 8/30/92 0945 HRS.			
Sampled By: TA/FWR		N/A	
Signature(s): [signature] Fred W. Ramos			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAME AS SS106-0612

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	—
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SAMPLE

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other ____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS59-0006 Source Location SS59

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 08/30/92 0455HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

CHECK IF TAKEN

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BROWN	FINE TO MED SAND W/SOME ORGANICS

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: ____

IN STREAM SED.

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS54-0612 Source Location SS59

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6"-12"			
Sample Date & Time: 8/30/92 0955 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK YELLOW BRN	FINE TO MED SAND

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

INORGANIC SED

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☒ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS60-0006 Source Location SS60

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0" - 6"			
Sample Date & Time: 8/30/92 1000 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH GRN	FINE TO MED SAND TR SILT + ORGANICS SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS60-0612 Source Location SS60

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 8/30/92 1000 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature] Fred M Ramon			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK YELLOWISH BRN	FINE TO MED SAND SOME SILT SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS61-0006 Source Location SS61

Sample Method: SEE NOTES	
Depth Sampled: 0 - 6"	
Sample Date & Time: 8/30/92 1005 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK YELLOWISH BRN	FINE TO MED SAND W/SOME FINE GRAVELS TR SILT + ORGANICS SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS61-0612 Source Location SS61

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6"-12"			
Sample Date & Time: 8/30/92 1005 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DISCRETE/COLOR	FINE TO MED SAND TR SILT SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS107-~~0612~~ 0006 Source Location SS107 ; TRIBUTARY

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6"-12"			
Sample Date & Time: 8/30/92 1020 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

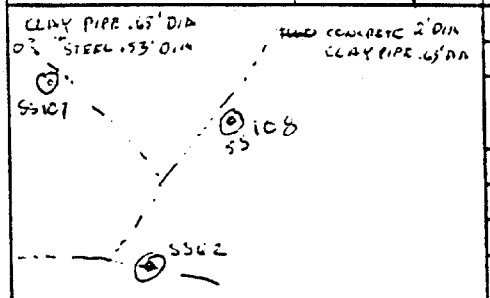
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK YELLOW BN	FINE TO MED SAND SOME SILT, ORGANIC RICH (BLK) SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

REDDISH/ORANGE STAINED SURFACE SEDIMENTS ~.5cm.



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. ~~SS 108-0006~~ SS 107-0612 Source Location ~~SS108~~ SS107 ; TRIBUTARY

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 8/30/92 1020 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK GREY-GREY	FINE TO MED SAND SOME FINE GRA, SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS108-0006 Source Location SS108, TRIBUTARY

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 8/30/92 1025 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample (CHECK IF TAKEN)

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK GREY	FINE SAND + SILT W SOME GRAVELS TR CLAY SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

REDDISH/ORANGE STAINED SURFACES SED.

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS108-0612 Source Location SS108, Tributary

Sample Method: SEE NOTES	
Depth Sampled: 6"-12"	
Sample Date & Time: 8/30/92 1025 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK GREY-LT GRAY	FINE TO MED SAND + SILT TR CLAY SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SAUCER

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62-0006* Source Location SS62

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 8/30/92 1040 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

CHECK IF TAKEN

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK YELLOWISH	FINE TO MED SAND TR GRAVELS (FINE) SOME ORGANICS SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DUPLICATE TAKEN AT THIS LOCATION

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62-0006-D Source Location _____

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/30/92 1040 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature] Fred [illegible]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	SAME AS SS62-0006

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62-0612 Source Location SS62

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 8/30/92 1040 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK GREY-BLK	FINE TO MED SAND W/SOME FINE GRAVELS TR ORGANICS SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPOON

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS63-0006-M Source Location SS63

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 8/30/92 1045 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GRY DKGRY	FINE TO MED SAND + FINE GRAVELS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DO LAB QA/QC

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS63-0612 Source Location SS63

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6"-12"			
Sample Date & Time: 8/30/92 1045 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK. GRY LGHT	FINE TO MED SANDS SOME GRAVEL TR SILT + ORGANIC

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SAUCE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS64-0006 Source Location SS64

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0" - 6"			
Sample Date & Time: 8/30/92 1050 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
~~YELLOWISH~~ BRN-GREY	FINE TO MED SANDS TR SILT + ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

ODOR DETECTED IN SED.

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS64-0612 Source Location SS64

Sample Method: SEE NOTES	
Depth Sampled: 6"-12"	
Sample Date & Time: 8/30/92 1050 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
PALE GREY	FINE TO MED SAND + SILT SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SAWZEC

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS65-0006 Source Location SS65

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 8/30/92 1100 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN + GREY	FINE TO MED SAND W/SOME FINE GRAVELS TR ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS65-0617 Source Location SS65

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 8/30/92 1100 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH GRAY + BLK	FINE TO MED SAND W/ FINE GRAVELS TR ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SIBUSC.

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS66-0006 Source Location SS65

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0" – 6"			
Sample Date & Time: 8/30/92 1105 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK. GREY/BLK	FINE TO MED SAND W/SOME GRAVEL (FINE) TR/SILT TR/ORGANIC

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

NOTE: TOP 6" IS DK-GREY BLK SANDS OVER LYING YELLOWISH BRN SANDS

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS66-0612 Source Location SS 66

Sample Method: SEE NOTES

Depth Sampled: 6" - 12"

Sample Date & Time: 8/30/92 1105 HRS.

Sampled By: TR / ECUR

Signature(s): [signature]

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Yellowish Brown	FINE TO MED SAND AND FINE GRAVELS TR SILT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67-0006* Source Location SS67

Sample Method: SEE NOTES	
Depth Sampled: 0" - 6"	
Sample Date & Time: 8/30/92 1115 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature] [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
MOTTLED YELLOW-BROWN-GREY	CLAY W/TR SILT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DUPLICATE TAKEN AT THIS LOCATION

~5" OF SILT + SANDY GRAV. OVERLYING A MOTTLED YELLOW CLAY

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67-0006-D Source Location SS67

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/30/92 1115 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SEE SS67-0006

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67-0612 Source Location SS67

Sample Method: SEE NOTES	
Depth Sampled: 6" – 12"	
Sample Date & Time: 8/30/92 1115 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
MOTTLED YELLOW/BROWN	CLAY W/TR SILT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPOON

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS68-0006 Source Location SS68

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 8/30/92 1125 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
MOTTLED YELLOW-GREY	CLAY TR SILT WET (MED PLASTICITY)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

NO PIPE SEDIMENT AT BOTH LOC. IE ENDPT AND 10' IN TO PIPE.

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS68-0612-M Source Location SS68

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 8/20/92 1125 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
MOTTLED BROWN + GREY	CLAY TR SILT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

DO LAB QA / QC

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS70-0006 Source Location SS70

Sample Method: SEE NOTES

Depth Sampled: 0 - 6"

Sample Date & Time: 8/30/92 1140 HRS.

Sampled By: TR / FWR

Signature(s): [signature]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample (CHECK IF TAKEN)

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN (YELLOWISH BRN)	FINE SAND + SILT TR MED SAND + ORGANICS

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

1' FROM PIPE RUNNING EAST FROM MANHOLE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS109-0006 Source Location SS109 ; NEXT to Steam Pipe

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0" - 6"			
Sample Date & Time: 8/30/92 1145 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK BRN	SILTY FINE SAND w/SOME CLAY + ORGANICS SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67A-0004 Source Location Hunting Fox Loose Silt/Sand

Sample Method: SEE NOTES	
Depth Sampled: 0"-4"	
Sample Date & Time: 8/31/92 1145 HRS.	
Sampled By: TR / FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color: YELLOWISH BROWN + DK GREY

Description: (Sand, Clay, Dry, Moist, Wet, etc.) ORGANICS FINE TO MED SAND W/SOME FINE GRAVELS +

Analysis:	PRESERVEB	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

THE STREAM BED IS PRIMARILY GRAVELS, 5" TO 3" ϕ OVERLYING A GREY + YELLOWISH CLAY. RARE POCKETS OF SEDIMENT WERE SAMPLED AT THIS LOC. AND SS68A

ERODED BANK!

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS68A0004 Source Location [illegible] SAND/SILT

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-4"			
Sample Date & Time: 8/31/92 1156 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BROWN FOAM	FINE TO MED SAND W/SOME FINE GRAVELS

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE SAMPLE TAKEN AT THIS LOCATION

MEASURED .004 @ Diggings WITH THE JEROME. (mg/m³)

IN BANK

ERODED BANK

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS68A-0004-D Source Location Hunting for Loose Sand/Silt

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-4"			
Sample Date & Time: 8/31/92 1150 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): Tony Rozak, Fred Williamson			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	SAME AS SS68A-0004

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE

IN BANK

ERODED BANK

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 114 - 0006 Source Location Between West Side T5 & T6

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 8/31/92 1520 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	ORGANICS CLAYEY SAT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	HOLD
CYANIDE	↓	↓
TCLP METALS	↓	↓
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SPOON / Acrylic Tube
For Hold

Between T5 & T6 WEST END

~30' OFF West BANK

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 114-0006-D Source Location Between T5 & T6

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/31/92 1520 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Type of Sample (CHECK IF TAKEN)

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	See SS114-0006

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT ~~SAMPLER~~ ( )
OTHER: (TR) ~~Plastic~~ Acrylic Tube
(TR) ✓ ~~Tot~~

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 114-0612 Source Location Between TS & TG WEST BANK

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 8 / 31 / 92 1524 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAT
DK-Yellowish Brn	Clay w/Some silt Trc. organics

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: ~~[illegible]~~ Acrylic Tube

~30' OFF WEST BANK

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 113-0006 Source Location Between T4 & T5

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/31/92 1615 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	HOLD
CYANIDE	↓	↓
TCLP METALS	↓	↓
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	Organic Rich

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube SIPHOEL FOR HOLD

~45' From West Bank

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 113-0612 Source Location Between T4 & T5

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-12"			
Sample Date & Time: 8/31/92 1615 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature] Fred W. Ramsey			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	B/K Organics w/ Yellow Brn Silt, Tan Clay

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

~45' ~~OFFSET~~ (TR) FROM WEST BANK

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 112-0006 Source Location Between T3 & T4

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 8/31/92 1630 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	HxD
CYANIDE	↓	↓
TCLP METALS	↓	↓
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Black →	DK BRN Organic Rich Mat → SAT

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube
HOLD W/SHOVEL

50' FROM WEST BANK

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 112 - 0612 Source Location _____

Sample Method: SEE NOTES	
Depth Sampled: 6-12"	
Sample Date & Time: 9/31/92 1630 HRS.	
Sampled By: FWR/TR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Dark Brn → BLK	Clayey silt w/ TR organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL (✓)
- DISPOSABLE TROWEL ( )
- SPLIT SPOON ( )
- SEDIMENT SAMPLER ( )
- OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 112-1218 Source Location _____

Sample Method: SEE NOTES	
Depth Sampled: 12-18"	
Sample Date & Time: 8/31/92 1630 HRS.	
Sampled By: FWR/TR	
Signature(s): [signature] Fred [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DARK BRN → Black	~~(TR)~~ Clayey Silt w/TR Organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 11A - 0612 Source Location SS 11, TRANSECT 3

Sample Method: SEE NOTES

Depth Sampled: 06 - 12"

Sample Date & Time: 8 / 31 / 92 1705 HRS.

Sampled By: FWR/TR

Signature(s): [illegible]

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK Yellowish Brn	Silt + Clay w/ some organics

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS11A-1218 Source Location SS11; TRANSECT 3

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 12-18"			
Sample Date & Time: 8/31/92 1705 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data	
Color	Description: (Sand, Clay, Dry, ~~Moist~~, Wet, etc.)
Yellowish	Brn Silt & Clay Tr Organics

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tubes

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☒ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS11A-1824 Source Location SS11, TRANSECT 3

Sample Method: SEE NOTES	
Depth Sampled: 18-24"	
Sample Date & Time: 8/31/92 1705 HRS.	
Sampled By: FWR/TR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ☒ Low Concentration
- ☐ High Concentration
- ☒ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Yellowish Brn	S. Lt E Clay, TRC. ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☒ Other Rinsate

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 11-E Source Location Rinsate

Sample Method: SEE NOTES	
Depth Sampled: —	
Sample Date & Time: 8 / 31 / 92 1730 HRS.	
Sampled By: TR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

St. Dist. H_2O poured over
Lot # 10791

TO ANALIZE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 111-0006 Source Location Between T2 & T3

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/01/92 0910 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK BRN → BLK	CLAYEY ORGANIC MAT TRACE SILT

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

≈50' From West Bank

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 111 - 0612 Source Location Between Transects T2 & T3

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 9/01/92 0910 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Dr Brn to Brn	CLAY W/TRC SILT + ORGANICS

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS10A - 0612 Source Location STA 10 : TRANSECT 2

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12"			
Sample Date & Time: 9/01/92 0940 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DARK BRN → BLK	CLAY W/SOME SILT

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic TUBE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 10A - 1218 Source Location Sta 10 - Transect 2

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 12 - 18"			
Sample Date & Time: 9/01/92 0900 HRS.			
Sampled By: FWR / TR		N/A	
Signature(s): [signature] Fred W. Ramirez			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DARK BRN	CLAY w/TRC SILT + ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic TUBE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 110 - 0006 Source Location Between Transects T1 & T2

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6" ~~0-12"~~ (FC)			
Sample Date & Time: 9/01/92 1000 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature] Fred W. Ramsey			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Dark BRN → BLK	Clay + Organics TRC Silt

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

~75' FROM WEST BANK

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 110 - 0612 Source Location Between Transects 7 & 12

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6-12" ~~12-14~~ TR			
Sample Date & Time: 9/01/92 1000 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [illegible] Fred W. Rennes			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DARK BRN → BRN	CLAY W/SOME SILT, TRC. ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube

275' FROM W. BANK

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS204 - 0006 Source Location BACKGROUND - ABOVE SEWAGE PLANT ON MATTAWOMAN

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 9 / 01 / 92 1520 HRS.			
Sampled By: SH / FWR		N/A	
Signature(s): Steve Hightower, Fred Ramsey			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL (✓)
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other Rinsate

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 62 LC-E Source Location Rinsate

Sample Method: SEE NOTES

Depth Sampled: —

Sample Date & Time: 9 / 01 / 92 1730 HRS.

Sampled By: TL

Signature(s): [signature]

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON (✓)
SEDIMENT SAMPLER ( )
OTHER: _____

Rinsate Dist H_2O through
Lot # 10791

To Hold

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62LC1-0612-M Source Location Sta 62

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6"-12"			
Sample Date & Time: 9 / 1 / 92 1810 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [illegible]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY	SAND (FINE TO MED) TR SILT + CLAY SATURATED

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON (✓)
SEDIMENT SAMPLER ( )
OTHER: _____

DO LAB QA/QC

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62LC1-1824 Source Location STA 63

Sample Method: SEE NOTES	
Depth Sampled: 18" - 24"	
Sample Date & Time: 9/01/92 1810 HRS.	
Sampled By: TR - FWR	
Signature(s): [illegible] Fred W Rommel	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BROWN - GREY MOTTLED	SANDY CLAY SATURATED

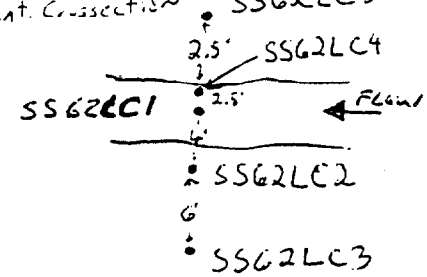
Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON (✓)
SEDIMENT SAMPLER ( )
OTHER: _____

PENETRATED TWO FEET WITH 50% RECOVERY

MAP OF Lat. Cross section



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62LC2-0006 Source Location Lat. Crosssection @ STA 62

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0" - 6"			
Sample Date & Time: 9/1/92 1820 HRS.			
Sampled By: TR - CWL		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	MED TO FINE SAND W/SOME SILT MR CLAY + ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

FOR SAMPLE LOCATION SEE SS62LC1-1824 SAMPLE LOG SHEET

SEE MAP ON S.L.S. 198

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62LC3-0006 Source Location Lat. Crossection @ STA 6 3

Sample Method: SEE NOTES	
Depth Sampled: 0 - 6"	
Sample Date & Time: 9 / 1 / 92 1825 HRS.	
Sampled By: TR - FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) MOIST
BRN/DKBRN	FINE TO MED SAND W/SOME SILT TR CLAY + ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SEE MAP ON S.C.S 148

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62LC4-0006 Source Location CAT. CROSSCUTTING @ STA 62

Sample Method: SEE NOTES	
Depth Sampled: 0 - 6"	
Sample Date & Time: 9/1/92 1830 HRS.	
Sampled By: TR - FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY BLK, BRN + YELLOWISH BRN	FINE TO MED SAND + SILT W/SOME ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SEE MAP ON SCS 198

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62LC4-0612 Source Location LAT CROSSECTION @ STA 62

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 9/1/92 1830 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [illegible]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY-OLIVE GREY	FINE TO MED SAND W/SOME ORGANICS TR SILT WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SEE MAP IN SLS 198

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62LC5-0006 Source Location LAT. Cross section @ STA 62

Sample Method: SEE NOTES	
Depth Sampled: 6"	
Sample Date & Time: 9 / 1 / 92 1835 HRS.	
Sampled By: TR - FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
MOTTLED GREY, YELLOWISH BRN	FINE TO MED SAND W/SOME SILT + ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

SEE MAP ON SLS 198

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

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Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS62A-00006 Source Location STA 62

Sample Method: SEE NOTES	
Depth Sampled: 0"-6"	
Sample Date & Time: 9 / 1 / 92 1240 HRS.	
Sampled By: TR - FWR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SATURATED FINE TO MED SAND W/SOME SILT + ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	✓
CYANIDE	↓	✓
TCLP METALS	↓	✓
TOTAL Hg	4°C/HNO3	

HOLD

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS115-0006-M Source Location S. of Noble Rd & Culvert

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/12/92 1330 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

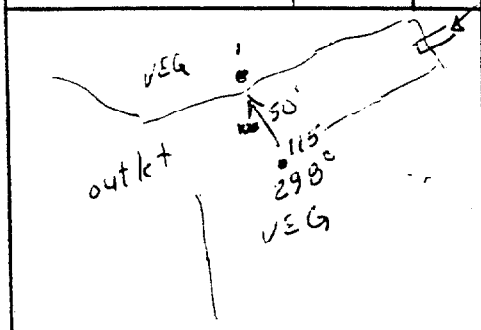
Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK-BRN-BLK	ORGANICS CLAYEY SILT SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: PLASTIC TUBE SAMPLER

DO LAB QA/QC



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS115-0612 Source Location S. OF Nobis Rd & Culvert

Sample Method: SEE NOTES

Depth Sampled: 6" - 12"

Sample Date & Time: 9 /02/ 92 1330 HRS.

Sampled By: TR - FWR

Signature(s): [signature]

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	CLAYEY - SILT w/SOME ORGANICS WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓
DISPOSABLE TROWEL (
SPLIT SPOON (
SEDIMENT SAMPLER (
OTHER: PLASTIC TUBE SAMPLER

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS116-0006 Source Location _____

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 9/02/92 1345 HRS.			
Sampled By: TR-FWR		N/A	
Signature(s): Terry Rigsby, Fred Ramsey			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

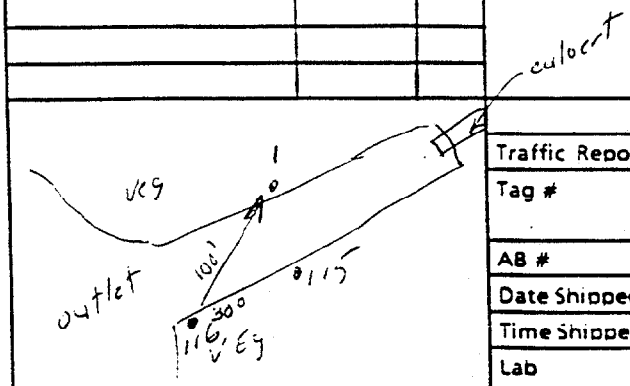
Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK. BRN TO BLK	ORGANICS CLAYEY SILT SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: Acrylic Tube



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS116-0612 Source Location _____

Sample Method: SEE NOTES	
Depth Sampled: 6" - 12"	
Sample Date & Time: 4/2/92 1345 HRS.	
Sampled By: TR - FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	CLAYEY SILT w/SOME ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: PLASTIC TUBE SAMPLER

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

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Case # NA

By FWR / TR

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [x] Other Rinsate

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 64 A - E Source Location

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: —			
Sample Date & Time: 9/02/92 1445 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
—	—

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER:

Rinsed st. Dist. H2O over

LOT# 10791 *TO ANALIZE*

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [x] Other FIELD BLANK

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS64A - B Source Location

Sample Method: SEE NOTES	
Depth Sampled: —	
Sample Date & Time: 9/02/92 1448 HRS.	
Sampled By: FWR/TR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
—	—

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	✓

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

Direct Pour into Bottle

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS-~~[illegible]~~ 64A-0006 Source Location Sta 64A

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0 - 6"			
Sample Date & Time: 9 / 2 / 92 1500 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [illegible]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color: MOTTLED GREY + YEL BRN

Description: (Sand, Clay, Dry, Moist, Wet, etc.): MED FINE SAND ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS *	↓	✓
CYANIDE *	↓	✓
TCLP METALS *	↓	✓
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* HOLD EXCEPT TOTAL Hg.

8 oz, collected
TWO 4 oz CONTAINERS
↳ 2ND Bottle Dup.
ALSO Hold For possible
TAL METALS, TCLP
& CN⁻ Analysis
SEE S.L.S. #212

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 64A - 0006 - D Source Location Sta 64A

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 9/02/92 HRS.	
Sampled By: FWR/TR	
Signature(s):	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Mottled Grey & YEL BRN	MED to FINE SAND ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	✓
CYANIDE	↓	✓
TCLP METALS	↓	✓
TOTAL Hg	4°C/HNO3	

FIELD

DUPLICATE

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS66CL1-N.12 Source Location LATERAL CROSSCUTTING @ STA. 66

Sample Method: SEE NOTES	
Depth Sampled: 6"-12"	
Sample Date & Time: 9/2/92 1530 HRS.	
Sampled By: TR - FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

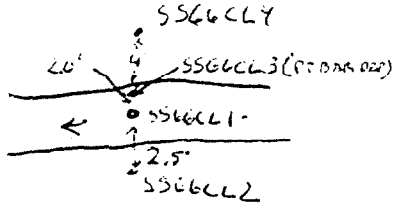
Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY	MED TO FINE SAND SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL ( )
SPLIT SPOON (✓)
SEDIMENT SAMPLER ( )
OTHER: _____



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS66UL1-1824 Source Location LATERAL CROSSECTION @ STA 66

Sample Method: SEE NOTES	
Depth Sampled: 18" - 24"	
Sample Date & Time: 9 / 2 / 92 1520 HRS.	
Sampled By: TR - FWR	
Signature(s): [signature] [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
GREY	MED TO FINE SAND SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL ( )
- DISPOSABLE TROWEL ( )
- SPLIT SPOON (✓)
- SEDIMENT SAMPLER ( )
- OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS66JL2-0006 Source Location Lateral Crossection @ STA 66

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/2/92 1525 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s):			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Yellowish BRN	SAND (FINE TO FINE) w/SOME ORGANICS

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS61 (TR) L3-0006 Source Location LATERAL CROSSECTION @ STA 66

Sample Method: SEE NOTES	
Depth Sampled: 0-6"	
Sample Date & Time: 9/2/92 1530HRS.	
Sampled By: TR - FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DKGREY - BLK BROWN	ORGANICS, FINE TO MED SAND W/SOME FINE GRAV, SAT.

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL (✓)
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE TAKEN AT THIS LOCATION

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS66LC3-0006-D Source Location Lateral Cross-section @ Sta. 66

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/2/92 1530 HRS.			
Sampled By: TR-FWR		N/A	
Signature(s): Terry Azal, Fred J. Rommer			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAT.
Dr Grey - BLK	BRN on Top, Organics, Fine - Med Sand w/Some Fine

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL ( )
DISPOSABLE TROWEL (✓)
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS66(L3-0612) Source Location

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 9/2/92 1530 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature] [signature]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
LIGHT GREY	MED TO FINE SAND WET

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS61L4-0006 Source Location LATERAL CONSTRUCTION @ STA 66

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/2/92 1535 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color: BRN	Description: (Sand, Clay, Dry, Moist, Wet, etc.) BRN TO YELLOWISH BRN OF YELLOWISH BRN SAND (FINE TO MED)

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67CL1-0612 (TR) Source Location Lateral Connection @ Sta 67

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6"-12"			
Sample Date & Time: 9/2/92 1615 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): Tony Rizzo, Fred W. Ramsey			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Sample Data

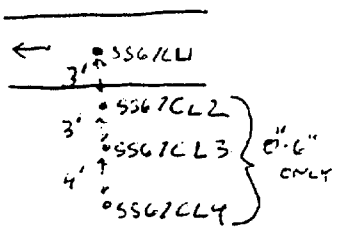
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN + GREY	CLAY W/TR SAND

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON (✓)
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

TWO ATTEMPTS WERE MADE TO EXTRACT SAMPLE USING SPLIT SPOON BOTH TIMES 0% RECOVERY, WILL USE SHOVEL TO OBTAIN SAMPLES

THERE ARE NO PT BAR DEPOSITES AT SS67 LOC. WILL TAKE THREE 6" SAMPLES



	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67CL1-1824 (FA) Source Location Lat. Crossection @ Sta 67

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 18" - 24"			
Sample Date & Time: 9/2/92 1615 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
	SAME AS SS67CL1-0612 FWR

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON (✓)
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67A-0006 Source Location STA 67

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0' - 6"			
Sample Date & Time: 9 / 2 / 92 1620 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [illegible]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BROWN GREY	CLAY W/SOME FINE ROOTS AND WET

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS*		✓
CYANIDE*		✓
TCLP METALS*		✓
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* HOLD

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67A-0006-D Source Location SIA 67

Sample Method: SEE NOTES

Depth Sampled: 0-6"

Sample Date & Time: 9/2/92 1620 HRS.

Sampled By: FR/FWR

Signature(s): [signature]

Composite Sample Data		
Sample	Time	Color / Description
	N/A	

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAME AS SLS # 222

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

* DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67LC2-0006 Source Location Lat. Crossection @ Sta 67

Sample Method: SEE NOTES

Depth Sampled: 0" - 6"

Sample Date & Time: 9 / 2 / 92 1630 HRS.

Sampled By: TR - FWR

Signature(s): [illegible]

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN - BRN	FINE TO MED SAND & SILT W/SOME ORGANICS DAMP

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67CL3-00016 Source Location LAT. CROSSCUT @ STA 67

Sample Method: SEE NOTES	
Depth Sampled: 0"-6"	
Sample Date & Time: 9/2/92 1630 HRS.	
Sampled By: TR - FWR	
Signature(s): [illegible]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
REDDISH BRN TO BRN	FINE TO MED SAND W/SOME ORGANICS

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67QL4-0006 Source Location Lat. Crossection @ STA 67

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 9/12/92 1633 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	FINE TO MED SAND SILT + ORGANICS DRY

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS		
CYANIDE		
TCLP METALS		
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67B-0006-M Source Location 10' UPSTREAM OF STA 67

Sample Method: SEE NOTES	
Depth Sampled: 0'-6'	
Sample Date & Time: 9/2/92 1640 HRS.	
Sampled By: TR FWR	
Signature(s): [signature]	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH GREY	CLAY TR SAND

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DO LAB QA/QC

10' UPSTREAM FROM SS67

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS67C-0006 Source Location 20' upstream of Sta 67

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0'-6"			
Sample Date & Time: 9/2/92 1645 HRS.			
Sampled By: TR / FWR		N/A	
Signature(s): [signature]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH GREY	CLAY TR SAND

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

20' UPSTREAM FROM SS67

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS70-0612 Source Location S/A 70

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 9/2/92 1730HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [illegible]			

Type of Sample
- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

CHECK IF TAKEN

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	FINE TO MED SAND + SILT TR CLAY + ORGANICS SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL (✓)
- DISPOSABLE TROWEL ( )
- SPLIT SPOON ( )
- SEDIMENT SAMPLER ( )
- OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS70-12 Source Location Sta 70

Sample Method: SEE NOTES	
Depth Sampled: 12" - 18"	
Sample Date & Time: 9 / 2 / 92 1730HRS.	
Sampled By: FWR - TR	
Signature(s): Terry R Smith / Fred W Ramsey	

Composite Sample Data

Sample	Time	Color / Description
	N/A	

Type of Sample

- [x] Low Concentration
- [ ] High Concentration
- [x] Grab
- [ ] Composite
- [ ] Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
YELLOWISH BRN	FINE TO MED SAND & SILT TR CLAY + FINE GRAVELS SATURATED

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE		
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ☒ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS70B-0006 Source Location APP. 60' UPSLOPE OF STA 70

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0"-6"			
Sample Date & Time: 9/2/92 1735 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
LGH BRN	SANY LOAM DRY

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 70A-0006 Source Location 5' upstream of STA. 70

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/2/92 1740 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): Terry Rogers, Fred W. Ramos			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BRN	FINE TO MED SAND w/some SILT

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE TAKEN AT THIS LOCATION

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 70A-0006-D Source Location 5' upstream of Sta. 70

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/2/92 1740 HRS.			
Sampled By: FWR/TR		N/A	
Signature(s): [signature]			

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAME as SLS 232

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS Environmental Corporation

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Lagoon / Pond
- [ ] Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS109-1218 Source Location Sta 109

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 12" - 18"			
Sample Date & Time: 9/2/92 1950 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature] [signature]			

Type of Sample	CHECK IF TAKEN
[x] Low Concentration	
[ ] High Concentration	
[x] Grab	
[ ] Composite	
[ ] Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
DK-BRN	FINE TO MED SAND + SILT W/SOME CLAY SATURATED

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS104A-0006 Source Location ~20' upstream w.= sta. 109

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/2/92 1755 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature] Fred Williams			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK	CLAYEY ORGANICS TR SAND

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE TAKEN AT THIS LOCATION

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS 107A-0006-D Source Location ~20' upstream of sta 109

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-6"			
Sample Date & Time: 9/2/92 1755 HRS.			
Sampled By: TR/FWR		N/A	
Signature(s): [illegible]			

Type of Sample	CHECK IF TAKEN
■ Low Concentration	
☐ High Concentration	
■ Grab	
☐ Composite	
☐ Grab - Composite	

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.) SAME AS SLS# 235

Analysis:	PRESERVED	↓
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD: STAINLESS STEEL TROWEL (✓)
DISPOSABLE TROWEL ( )
SPLIT SPOON ( )
SEDIMENT SAMPLER ( )
OTHER: _____

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

HALLIBURTON NUS
Environmental Corporation

- ☐ Surface Soil
- ☐ Subsurface Soil
- ■ Sediment
- ☐ Lagoon / Pond
- ☐ Other _____

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SS109A-0612 Source Location ~20' upstream of STA 109

Sample Method: SEE NOTES	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 6" - 12"			
Sample Date & Time: 9/2/92 1755 HRS.			
Sampled By: TR - FWR		N/A	
Signature(s): [signature]			

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
BLK - DK GREY	CLAYEY ORGANICS W/SOME SILT TR FINE SAND SATURATE

Analysis:	PRESERVED	CHECK IF TAKEN
TOTAL Hg	4°C	✓
TAL METALS	↓	
CYANIDE	↓	
TCLP METALS	↓	
TOTAL Hg	4°C/HNO3	

Observations / Notes

SAMPLE METHOD:
- STAINLESS STEEL TROWEL (✓)
- DISPOSABLE TROWEL ( )
- SPLIT SPOON ( )
- SEDIMENT SAMPLER ( )
- OTHER: SHOVEL

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

APPENDIX B

SAMPLE LOG SHEETS FOR SURFACE WATER SAMPLES

INDIAN HEAD SITE 8 - SURFACE WATER SAMPLES

NUS CORPORATION

SAMPLE LOG SHEET
TABLE OF CONTENT

SAMPLE NUMBER	DATE SAMPLED	SAMPLE NAME	PAGE NO.
		PHASE - I	
SW01-01	8/24/92	SW01 ROUTINE	S1
SW02-01	8/24/92	SW02 ROUTINE	S2
SW01-02	8/26/92	SW01 ROUTINE	S3
SW01-03 / 03-M	8/28/92	SW01 ROUTINE - Dis. Hg LAB QA/QC - Total Hg	S4
SW02-02	8/28/92	SW02 ROUTINE	S5
SW01-E	8/30/92	SW01 RINSATE	S6
SW01-B	8/30/92	SW01 FIELD BLANK	S7
SW01-04	8/30/92	SW01 ROUTINE	S8
SW01-04-D	8/30/92	SW01 DUPLICATE	S9
		PHASE II (SCRUB PIPE)	
SW02-03	9/01/92	SW02 ROUTINE	S10
SW01-05	9/02/92	SW01 ROUTINE	S11
		(SCRUB PIPE)	
SW02-04	9/02/92	SW02 ROUTINE	S12

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

Page 51 of 512

Case # NA

By FWR / TR

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☒ Other POND

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW01-01 Source Location

Sample Method: Direct @ Culvert	Sample Data			
	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: —	7.3	400 umho	28.2 °C	CLEAR / LOW
Sample Date & Time: 8/24/92 1610 HRS.	Collected as H_2O ENTERED CULVERT			
Sampled By: TR/FWR				
Signatures: Fred W. Kamser, Terry Tyler				

Type of Sample

- ☒ Low Concentration
- ☐ High Concentration
- ☒ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO_3
DIS. Hg	" / "

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

- ☐ Spring
- ☐ Lake
- ☒ Stream
- ☐ Other _____

Page 2 of 12

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW02-01 Source Location _____

Sample Method:	Sample Data			
DIRECT FILL	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: N/A	7.58	580	21.7°	CLEAR / LOW
Sample Date & Time: 08/24/92 1645 HRS.	TAKEN FROM CONCRETE PIPE			
Sampled By: FWRamser				
Signatures: Fred W Ramser				

Type of Sample

- ☒ Low Concentration
- ☐ High Concentration
- ☒ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

Page 03 of 012

Case # NA

By FWR / TR

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☒ Other Pond

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW01-02 Source Location

Sample Method: Direct

Depth Sampled: Culvert

Sample Date & Time: 8/26/92 0840 HRS.

Sampled By: FWR

Signatures: Fred W Ramsey

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

Sample Data

pH	S.C.	Temp. (°C)	Color & Turbidity
6.87	400	26°C	clear

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☒ Other POND

Page 54 of 512

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW01-3-M & SW01-3 Source Location SW01

Sample Method: Direct	Sample Data			
	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: —	6.8	490	28.7	Clear - Cloudy

Sample Date & Time: 8 /28/92 1315 HRS.

Sampled By: FWR

Signatures: Fred W Ramsor

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

→ DO LAB QA/QC (ONLY)

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

- ☐ Spring
- ☐ Lake
- ☒ Stream
- ☐ Other _____

Page 85 of 512

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW02-2 Source Location SW02

Sample Method: Direct From Culvert

Depth Sampled: —

Sample Date & Time: 8 /28/92 /340 HRS.

Sampled By: FWR

Signatures: Fred M Ramser

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

Sample Data			
pH	S.C.	Temp. (°C)	Color & Turbidity
7.8	640	22.2	Clear

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

Page 6 of 12

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☐ Other RINSATE

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW01-E Source Location RINSATE

Sample Method: SEE NOTE	Sample Data			
	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: —	—	—	—	—

Sample Date & Time: 8/30/92 1245 HRS.

Sampled By: TR

Signatures: [signature]

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
~~TOTAL Hg~~	~~4°C / HNO3~~
DIS. Hg	" / "

TC

NOTES

St Dist. H_2O Lot# 10791

Run through Filtering Apparatus

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

Page 87 of 812

Case # NA

By FWR / TR

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☒ Other FIELD BLANK

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW01 - B Source Location FIELD BLANK

Sample Method: SEE NOTES	Sample Data			
	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: —	—	—	—	—
Sample Date & Time: 8/30/92 1248 HRS.				
Sampled By: TR				
Signatures: [signature]				

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
~~DIS. Hg~~	~~" / "~~ TR

Direct Pour of St. Dist. H_2O (Lot # 10791) into Bottle

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

Page 8 of 12

Case # NA

By FWR / TR

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☒ Other Pond

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW01-04 Source Location

Sample Method: Direct From Culvert	Sample Data			
	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: —	6.68	630	24.7	Clear/Cloudy

Sample Date & Time: 8/30/92 1255 HRS.

Sampled By: FWR

Signatures: Fred W Ramser

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

Page 9 of 12

Case # NA

By FWR / TR

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☒ Other POND

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW01-04-D Source Location

Sample Method:	Sample Data			
Direct From Culvert	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled:	6.68	630	24.7	Clear / Cloudy

Sample Date & Time: 8/30/92 1255 HRS.

Sampled By: FWR

Signatures: Fred W Ramer

Type of Sample
- ☒ Low Concentration
- ☐ High Concentration
- ☒ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

DUPLICATE

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

- ☐ Spring
- ☐ Lake
- ☒ Stream
- ☒ Other (TR)

Page $10 of $12

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW02-03 Source Location SW02

Sample Method: Direct From Pipe	Sample Data			
	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: —	7.4	580	21.5	Brn / Mod - High

Sample Date & Time: 9/01/92 1700 HRS.

Sampled By: FWR

Signatures: Fred W Ramsey

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Scrub Pipe w/ Long handled Brush to catch Pipe sediment.

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

Page #11 of #12

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☒ Other POND

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW01 - 05 Source Location

Sample Method:	Sample Data			
Direct From Culvert	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: —	7.6	480	26.9	Clear / Low

Sample Date & Time: 9 /02/92 1910 HRS.

Sampled By: FWR

Signatures: Fred H Ramsey

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

- ☐ Spring
- ☐ Lake
- ☒ Stream
- ☐ Other _____

Page 12 of 12

Case # NA

By FWR / TR

Project Site Name INDIAN HEAD - SITE 8 Project Site Number 5508

NUS Source No. SW02 - 04 Source Location _____

Sample Method:	Sample Data			
Direct From Pipe	pH	S.C.	Temp. (°C)	Color & Turbidity
Depth Sampled: —	7.69	540	21.2	TAN w/part. / MED

Sample Date & Time: 9/02/92 1930 HRS.

Sampled By: FWR

Signatures: Fred W Ramsor

Scrub pipe w/ long handled brush

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis:	Preservative
TOTAL Hg	4°C / HNO3
DIS. Hg	" / "

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

APPENDIX C

ANALYTICAL VALIDATION DOCUMENTATION

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-09-02-119

TO: TONY KLIMEK **DATE:** SEPTEMBER 14, 1992

FROM: RICKY C. DEPAUL RCD **COPIES:** D. A. SCHEIB

SUBJECT: INORGANIC DATA VALIDATION - MERCURY (COLD VAPOR)
INDIAN HEAD
SDG 01-02T

SAMPLES:

Waters:

SW01-02 (TOTAL) SW01-02 (DISSOLVED)

Soils:

SS01-0006	SS01-0612	SS02-0006	SS02-0612
SS03-0006-M	SS03-0612	SS04-0006	SS04-0612
SS14-0006	SS14-0612	SS15-0612	SS15-0612D
SS15-0006	SS15-0006D	SS16-0006	SS202-0004
SS203-0004			

Overview

The sample set for the Indian Head site, SDG 01-02T, consists of one (1) total and one (1) filtered aqueous surface water, and seventeen (17) sediment samples. These samples were analyzed for TAL mercury. Although two field duplicate pairs were included in this analytical data set, no field quality control blanks were included.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/26/92 and analyzed by GP Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program Statement of Work (SOW) 7/88 analytical and reporting protocols.

Summary

Mercury was successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory blank results,

laboratory control sample results, laboratory duplicate and matrix spike results and analyte quantitation.

Areas of concern with respect to data quality are listed below.

After data evaluation, no qualifications were made to the sample data.

Notes

In accordance with USEPA Region III data validation protocol, no qualifications are made to the data based on the evaluation of field duplicates. Tables summarizing the field duplicate results can be found in the attached HNUS/CLEAN Data Validation Worksheets (Appendix C).

The Contract Required Detection Limit (CRDL) Standard analysis recovery for mercury (70.0%) failed to meet the 80% lower quality control limit for soils. However, only low concentration samples were analyzed in this data set and no actions were necessary since qualifications apply to only high concentration samples.

The laboratory failed to analyze an aqueous Laboratory Control Sample (LCS) to accurately represent the aqueous environmental sample matrix.

No other problems were noted.

Executive Summary

Laboratory Performance: An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program".

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Ricky C DePaul

HALLIBURTON NUS Environmental Corporation

Ricky C. DePaul
Data Reviewer

Debra A. Scheib

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. A. Scheib

Appendix A - Qualified Analytical Results

SITE: INDIAN HEAD
SDG. 01-02T
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			01-02T	01-02D
LAB ID:			SW01-02	SW01-02
			Total	Dissolved
ANALYTE	CRDL	IDL		
Mercury	0.2	0.2	0.20 U	0.20 U

SITE: INDIAN HEAD
SDG. 01-02T
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS01-0006	SS01-0612	SS02-0006	SS02-0612	SS03-0006-M	SS03-0612
LAB ID:			01-0006	01-612	02-0006	02-612	03-06M	03-612
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	1.6	0.19 U	0.48	0.20 U	0.94	0.23 U
% Solids:			45.4	52.0	40.0	48.9	40.8	43.1

SITE: INDIAN HEAD
SDG. 01-02T
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS04-0006	SS04-0612	SS14-0006	SS14-0612	SS15-0612	SS15-0612D
LAB ID:			04-006	04-612	14-006	14-612	15-612 Field Duplicate	15612D Pair
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.40	0.20 U	5.4	0.50	0.19 U	6.1
% Solids:			65.0	50.9	44.5	45.6	54.0	39.9

SITE: INDIAN HEAD
SDG. 01-02T
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS15-0006	SS15-0006D	SS16-0006	SS202-0004	SS203-0004
LAB ID:			15-006	15-06D	16-006	202-04	203-04
			Field Duplicate	Pair			
ANALYTE	CRDL	IDL					
Mercury	0.1	0.1	8.3	8.2	9.2	0.18 U	0.34
% Solids:			31.7	32.2	31.1	55.5	46.2

QUALIFIER KEY:

U - Value is a nondetect as reported by the laboratory.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-09-02-118

TO: TONY KLIMEK **DATE:** SEPTEMBER 14, 1992

FROM: RICKY C. DEPAUL RCD **COPIES:** D. A. SCHEIB

SUBJECT: INORGANIC DATA VALIDATION - MERCURY (COLD VAPOR)
INDIAN HEAD
SDG SW01-0

SAMPLES:

Waters:

SW01-01 (TOTAL) SW01-01 (DISSOLVED)
SW02-01 (TOTAL) SW02-01 (DISSOLVED)
SS10-E (RINSATE BLANK)

Soils:

SS200-0006	SS201-0006	SS05-0006	SS05-0612
SS06-0006	SS06-0612	SS07-0006	SS07-0612
SS08-0006	SS08-1218	SS08-0612	SS09-0006
SS09-0006-D	SS09-0612	SS10-0006	SS10-1218
SS10-0612	SS11-0006	SS11-0612	SS12-0006
SS12-1218	SS12-0612-M	SS13-0006	SS13-0616
SS13-0616-D			

Overview

The sample set for the Indian Head site, SDG SW01-0, consists of four (4) total and filtered aqueous samples, one (1) aqueous rinsate blank, and twenty-five (25) sediment samples. These samples were analyzed for mercury. Two field duplicate pairs were included in this analytical data set.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/24/92 and 08/25/92 and analyzed by GP Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program Statement of Work (SOW) 7/88 analytical and reporting protocols.

Summary

Mercury was successfully analyzed in all samples. The findings offered

in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory and field quality control blank results, laboratory control sample results, laboratory duplicate and matrix spike results, and compound quantitation. Areas of concern with respect to data quality are listed below.

Minor Problems

The laboratory duplicate Relative Percent Difference (%RPD) for mercury failed to meet the 35% quality control limit for soils. Positive and nondetected sample results for this analyte in the soil samples are considered to be estimated and qualified, [coded J(d)] and [coded UJ(d)], respectively. Bias cannot be determined.

Notes

In accordance with USEPA Region III data validation protocol, no qualifications are made to the data based on the evaluation of field duplicates. Tables summarizing the field duplicate results can be found in the attached HNUS/CLEAN Data Validation Worksheets (Appendix C).

The soil Matrix Spike (MS) Percent Recovery (%R) for mercury (134.4%), failed to meet the 125% upper quality control limit. However, the initial sample result for this analyte was greater than 4X the amount spiked, thus no actions were necessary.

The laboratory failed to analyze an aqueous Laboratory Control Sample (LCS) to accurately represent the aqueous matrix.

No other problems were noted.

Executive Summary

Laboratory Performance: An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix. Laboratory duplicate imprecision was noted for the soil sample matrix.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program".

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Ricky C. DePaul

HALLIBURTON NUS Environmental Corporation

Ricky C. DePaul
Data Reviewer

Debra A. Scheib

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. A. Scheib

Appendix A - Qualified Analytical Results

SITE: INDIAN HEAD
SDG. SW01-0
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			SW01-01	SW01-01	SW02-01	SW02-01	SS10-E
LAB ID:			SW01-01	SW01-01	SW02-01	SW02-01	SS10-E
			Total	Dissolved	Total	Dissolved	Rinsate Blank
ANALYTE	CRDL	IDL					
Mercury	0.2	0.2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U

SITE: INDIAN HEAD
SDG. SW01-0
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS200-0006	SS201-0006	SS05-0006	SS05-0612	SS06-0006	SS06-0612
LAB ID:			SS200-0006	SS201-0006	SS05-0006	SS05-0612	SS06-0006	SS06-0612
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.12 UJ(d)	0.14 UJ(d)	2.5 J(d)	0.80 J(d)	2.3 J(d)	0.48 J(d)
% Solids:			80.7	73.0	44.2	52.5	41.6	47.4

SITE: INDIAN HEAD
SDG. SW01-0
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS07-0006	SS07-0612	SS08-0006	SS08-1218	SS09-0006	SS09-0006-D
LAB ID:			SS07-0006	SS07-0612	SS08-0006	SS08-1218	SS09-0006	SS09-0006-D
							Field Duplicate	Pair
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.95 J(d)	0.27 J(d)	0.29 J(d)	0.23 UJ(d)	2.5 J(d)	2.8 J(d)
% Solids:			40.9	46.4	49.4	42.6	38.7	37.8

SITE: INDIAN HEAD
SDG. SW01-0
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS08-0612	SS09-0612	SS10-0006	SS10-1218	SS10-0612	SS11-0006
LAB ID:			SS08-0612	SS09-0612	SS10-0006	SS10-1218	SS10-0612	SS11-0006
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.18 UJ(d)	0.49 J(d)	5.1 J(d)	6.0 J(d)	3.9 J(d)	7.9 J(d)
% Solids:			54.4	45.0	39.4	38.6	43.0	35.8

SITE: INDIAN HEAD
SDG. SW01-0
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS11-0612	SS12-0006	SS12-1218	SS12-0612-M	SS13-0616	SS13-0616-D	SS13-0006
LAB ID:			SS11-0612	SS12-0006	SS12-1218	SS12-0612-M	SS13-0616	SS13-0616-D	SS13-0006
							Field Duplicate	Pair	
ANALYTE	CRDL	IDL							
Mercury	0.1	0.1	6.0 J(d)	4.2 J(d)	0.17 UJ(d)	0.43 J(d)	1.0 J(d)	0.26 J(d)	7.0 J(d)
% Solids:			37.4	35.6	57.2	51.2	53.6	48.5	33.2

QUALIFIER KEY:

U - Value is a nondetect as reported by the laboratory.

J(d) - Value is estimated due to laboratory duplicate imprecision. Bias cannot be determined.

UJ(d)- Nondetect is estimated due to laboratory duplicate imprecision. Bias cannot be determined.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-09-02-137

TO: TONY KLIMEK

DATE: SEPTEMBER 15, 1992

FROM: RICKY C. DEPAUL

COPIES: D. A. SCHEIB

SUBJECT: INORGANIC DATA VALIDATION - MERCURY (COLD VAPOR)
INDIAN HEAD
SDG SS17-E

SAMPLES:

Waters:

SS17-E (RINSATE BLANK)

Soils:

SS17-0006	SS17-0612	SS17-1218	SS18-0010
SS18-0010-D	SS18-1018	SS19-0004	SS20-0006
SS19-0412-M	SS20-0612	SS21-0006	SS21-0814
SS21-1420	SS22-0006	SS22-0612	SS22-1218
SS31-0006	SS31-0612	SS32-0006	SS33-0006

Overview

The sample set for the Indian Head site, SDG SS17-E, consists of one (1) rinsate blank sample and twenty (20) sediment samples. These samples were analyzed for mercury. One field duplicate pair (the duplicate member of which is designated -D), was included in this analytical data set.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/27/92 and analyzed by GP Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program Statement of Work (SOW) 7/88 analytical and reporting protocols.

Summary

Mercury was successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory and field quality control blank results, laboratory control sample results, laboratory duplicate and matrix spike results and compound quantitation.

There were no areas of concern with respect to data quality. Items of note are listed below.

Notes

The Contract Required Detection Limit (CRDL) Standard analysis recovery for mercury failed to meet the 80% lower quality control limit. However, only low concentration samples were analyzed in this data set, thus no actions are necessary since qualifications are limited to high concentration samples, as per USEPA Region III data validation protocol.

The laboratory failed to analyze an aqueous Laboratory Control Sample (LCS) to accurately represent the aqueous matrix.

Precision inconsistencies, although not present in this SDG, have been encountered in both matrices of samples analyzed at this site. Discussions with GP Environmental laboratory supervisory personnel indicate peculiar anomalies with the sample matrix. This is thought to be attributable to the inherent lack of homogeneity of the mercury present in the sample matrices. The heterogeneous nature of these samples seems to be causing extreme analytical difficulty in terms of reproducibility of results.

The laboratory's Case Comments for this SDG further document this anomaly. The Case Comments state that such matrix interferences were present, and may be falsely represented as positive mercury results. In the opinion of the laboratory's analyst, these interferences may be attributable to some other compound and/or analyte absorbing in the same wavelength window as the compound of interest.

No explicit provisions for qualification are made based on these occurrences in the applicable USEPA Region III data validation protocol, and the data reviewer could not find sufficient qualitative or quantitative evidence of data impact to warrant qualification. This discussion of the potential presence of matrix affects is included in this memorandum for informational purposes only.

Additional discussions reveal another potential source of interferences as the presence of volatile organic compounds in the sample matrix. Such a possibility is further substantiated by reports with field sampling personnel which noted potential hydrocarbon presence in some samples. Additionally, chemical reduction reactions caused by such compounds as methane (marsh gas), may be partially responsible for the lack of analytical reproducibility. These aforementioned precision problems are

present in a majority ofthe sample analyses pertaining to this particular site to such a degree that sample reanalyses, involving special measures to remove interferences, have been requested in certain instances.

No other problems were noted.

Executive Summary

Laboratory Performance: An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix.

Other Factors Affecting Data Quality: Some sample results may be affected by matrix interferences.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program".

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Ricky C. DePaul

HALLIBURTON NUS Environmental Corporation

Ricky C. DePaul
Data Reviewer

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. A. Scheib

Appendix A - Qualified Analytical Results

SITE: INDIAN HEAD
SDG. SS17-E
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			SS17-E
LAB ID:			SS17-E
			Rinsate Blank
ANALYTE	CRDL	IDL	
Mercury	0.2	0.2	0.20 U

SITE: INDIAN HEAD
SDG. SS17-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS21-1420	SS22-0006	SS22-0612	SS22-1218	SS31-0006	SS31-0612
LAB ID:			211420	220006	220612	222118	310006	310612
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.27 U	2.8 U	1.4	0.28	0.59	0.51
% Solids:			36.5	35.8	28.7	46.5	41.8	44.5

SITE: INDIAN HEAD
SDG. SS17-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS32-0006	SS33-0006
LAB ID:			320006	330006
ANALYTE	CRDL	IDL		
Mercury	0.1	0.1	0.16	0.92
% Solids:			66.9	44.6

QUALIFIER KEY:

U - Value is a nondetect as reported by the laboratory.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-09-2-117

TO: TONY KLIMEK

DATE: SEPTEMBER 14, 1992

FROM: RICKY C. DEPAUL

COPIES: D. A. SCHEIB

SUBJECT: INORGANIC DATA VALIDATION - MERCURY (COLD VAPOR)
INDIAN HEAD
SDG NUS-MD

SAMPLES:

Waters:

SW01-3-M (TOTAL) SW01-3 (DISSOLVED) SW02-2 (TOTAL)
SS36-E (RINSATE BLANK)

Soils:

SS100-0006	SS100-0006D	SS100-0612	SS23-0006
SS23-0612	SS24-0006	SS24-0612	SS24-1218
SS25-0006	SS25-0612	SS26-0006	SS26-0612
SS27-0006	SS28-0006	SS28-0612	SS29-0006
SS29-0006D	SS29-0612	SS30-0006	SS30-0612
SS34-0006	SS34-0612	SS35-0006	SS35-0612
SS36-0006-M	SS36-0612		

Overview

The sample set for the Indian Head site, SDG NUS-MD, consists of two (2) unfiltered and one (1) filtered aqueous samples, one (1) rinsate blank and twenty-six (26) sediment samples. These samples were analyzed for mercury. Two field duplicate pairs were included in this analytical data set.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/28/92 and analyzed by GP Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program Statement of Work (SOW) 7/88 analytical and reporting protocols.

Summary

Due to extreme matrix interferences, mercury was not successfully

analyzed as described below in text. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory and field quality control blank results, laboratory control sample results, laboratory duplicate and matrix spike results, and compound quantitation. Areas of concern with respect to data quality are listed below.

Major Problems

It is suspected that the sample results analyzed in this analytical data set are affected by matrix interferences. The laboratory notes, that possibly, false positive absorbance readings are due to matrix interferences. Positive sample results for mercury may not be completely due to the actual presence of mercury for these samples. This is further revealed in the noncompliant matrix spike recoveries for both samples designated for this QA/QC analysis. Two matrix spike analyses were required for this SDG as per the 1 per 20 analysis frequency. One initial matrix spike analysis yielded an extremely low recovery, (< 30%). The other initial matrix spike analysis was analytically incorrect as performed by the laboratory, rendering it invalid in terms of quality control useability.

Reanalyses of laboratory duplicate and matrix spikes were conducted as requested by Halliburton NUS personnel. These tests were performed subsequent to additional wet chemical assays performed to determine the presence of possible interferants.

Minor Problems

Matrix spike reanalyses concluded that recoveries, and hence analytical precision were poor. It is for this reason that nondetects for mercury are considered estimated, [coded UJ(m)] and positive sample results for this analyte are estimated, [coded J(m)].

Analytical interferences may be contributing to the poor precision encountered with the samples in this SDG. The presence of chlorides and sulfides in the sample matrix are two such potential interferents. GP Environmental attempted to determine whether chloride concentrations in the sample matrix were present at sufficient levels to be creating analytical problems. The results of their findings reveal low levels of chloride in the sample matrix such that interference from this compound seems remote. However, analyses for the detection of sulfides revealed substantially high (percentage levels) of this compound. It is

believed that interferences due to the presence of sulfide, may be a contributing factor to poor precision.

Notes

The CRDL Standard analysis recovery for mercury failed to meet the 80% lower quality control criteria. No actions were taken because qualifications are limited to high concentration samples only; all samples in this analytical data set are of low concentration.

The laboratory failed to analyze an aqueous Laboratory Control Sample (LCS) to accurately represent the aqueous matrix.

The dissolved analyses for sample SW02-2 was not performed by the laboratory. The chain of custodies for this analytical data package indicate that sample SW02-2 was also supposed to be filtered and analyzed for mercury.

No other problems were noted.

Executive Summary

Laboratory Performance: The CRDL standard analysis recovery fell below the lower quality control limit for mercury. Negative concentrations (at the IDL) were reported for mercury in the laboratory method blanks. The laboratory inadvertantly failed to analyze dissolved mercury for sample SW02-2. An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix.

Other Factors Affecting Data Quality: All data pertaining to this analytical data set are considered estimated due to analytical complications possibly stemming from the heterogeneous nature of the sediment matrix. Additional tests were performed to determine the cause of matrix interferences as related to the heterogenous nature of the samples. These tests concluded that sulfides present in the sample matrix may have contributed to analytical imprecision.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program".

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

HALLIBURTON NUS Environmental Corporation

Ricky C. DePaul
Data Reviewer

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. A. Scheib

Appendix A - Qualified Analytical Results

SITE: INDIAN HEAD
SDG. NUSMD
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			SW01-3-M	SW01-3	SW02-02	SS36-E
LAB ID:			013M-T	013--D	022--T	SS36-E
			Total	Dissolved	Total	Rinsate Blank
ANALYTE	CRDL	IDL				
Mercury	0.2	0.2	0.20 UJ(m)	0.20 UJ(m)	0.20 UJ(m)	0.10 UJ(m)

SITE: INDIAN HEAD
SDG. NUSMD
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS100-0006	SS100-0006-D	SS100-0612	SS23-0006	SS23-0612	SS24-0006
LAB ID:			10006	10006D	100612	230006	230612	240006
			Field Duplicate	Pair				
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.14 UJ(m)	0.13 UJ(m)	0.13 UJ(m)	0.42 UJ(m)	0.26 UJ(m)	1.4 J(m)
% Solids:			71.0	77.1	79.4	24.0	39.1	29.1

SITE: INDIAN HEAD
SDG. NUSMD
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS24-0612	SS24-1218	SS25-0006	SS25-0612	SS26-0006	SS26-0612
LAB ID:			240612	241218	250006	250612	260006	260612
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	1.9 J(m)	0.80 J(m)	3.9 UJ(m)	2.1 UJ(m)	4.8 UJ(m)	4.3 UJ(m)
% Solids:			36.3	39.6	25.8	47.4	20.9	23.2

SITE: INDIAN HEAD
SDG. NUSMD
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS27-0006	SS28-0006	SS28-0612	SS29-0006	SS29-0006-D	SS29-0612
LAB ID:			270006	280006	280612	290006 Field Duplicate	29006D Pair	290612
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	45.7 UJ(m)	53.2 UJ(m)	61.3 UJ(m)	0.42 UJ(m)	0.32 UJ(m)	18.4 UJ(m)
% Solids:			21.9	18.8	16.3	23.9	31.7	54.3

SITE: INDIAN HEAD
SDG. NUSMD
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS30-0006	SS30-0612	SS34-0006	SS34-0612	SS35-0006	SS35-0612
LAB ID:			300006	300612	340006	340612	350006	350612
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	18.9 UJ(m)	14.4 UJ(m)	1.1 J(m)	5.5 J(m)	29.6 UJ(m)	15.5 UJ(m)
% Solids:			53.0	69.5	75.2	75.5	33.8	64.6

SITE: INDIAN HEAD
SDG. NUSMD
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS36-0006-M	SS36-0612
LAB ID:			36006M	360612
ANALYTE	CRDL	IDL		
Mercury	0.1	0.1	1.3 UJ(m)	3.3 UJ(m)
% Solids:			75.9	29.9

QUALIFIER KEY:

U - Value is a nondetect as reported by the laboratory.

J(m) - Value is estimated due to matrix spike noncompliances. Bias cannot be determined.

UJ(m) - Nondetect is estimated due to matrix spike noncompliances. Bias cannot be determined.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-09-02-144

TO: TONY KLIMEK

DATE: SEPTEMBER 15, 1992

FROM: RICKY C. DEPAUL RCD

COPIES: D. A. SCHEIB

SUBJECT: INORGANIC DATA VALIDATION - MERCURY (COLD VAPOR)
INDIAN HEAD
SDG SS58-E

SAMPLES:

Waters:

SS58-E (RINSATE BLANK)

Soils:

SS101-0006	SS101-0612	SS102-0006	SS102-0612
SS103-0006	SS103-0612	SS104-0006	SS104-0612
SS105-0006	SS105-0612	SS37-0006-D	SS37-0006
SS37-0612	SS38-0006	SS39-0006	SS40-0006
SS41-0006	SS41-0612	SS41-0612-D	SS42-0006
SS43-0006	SS43-0612	SS44-0006	SS46-0006
SS45-0006-D	SS45-0006-M	SS45-0612	SS47-0006
SS47-0612	SS48-0006	SS49-0006	SS49-0612
SS50-0006	SS50-0006-D	SS51-0006	SS51-0612
SS52-0006	SS53-0006	SS53-0612	SS54-0006
SS55-0006	SS55-0612-M	SS56-0006	SS57-0006
SS57-0006-D	SS57-0612	SS58-0006	

Overview

The sample set for the Indian Head site, SDG SS58-E, consists of one (1) aqueous rinsate blank and forty-seven (47) sediment samples. These samples were analyzed for mercury. Five field duplicate pairs were included in this analytical data set.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/29/92 and analyzed by GP Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program Statement of Work (SOW) 7/88 analytical and reporting protocols.

Summary

Mercury was successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory and field quality control blank results, laboratory control sample results, matrix spike and laboratory duplicate results and compound quantitation.

Areas of concern with respect to data quality are listed below.

Minor Problems

The Matrix Spike (MS) Percent Recovery (%R) for mercury in the soil matrix failed to meet the 125% upper quality control limit. Positive sample results for this analyte in soils are potentially biased high and qualified, [coded K(m)]. Nondetects are unaffected.

Notes

In accordance with USEPA Region III data validation protocol, no qualifications are made to the data based on the evaluation of field duplicates. Tables summarizing the field duplicate results can be found in the attached HNUS/CLEAN Data Validation Worksheets (Appendix C).

The laboratory failed to analyze an aqueous Laboratory Control Sample (LCS) to accurately represent the aqueous matrix.

Discussions with GP Environmental laboratory supervisory personnel indicate peculiar anomalies with laboratory duplicate results, and matrix spike recoveries in general for this particular site. This is thought to be attributable to the inherent lack of homogeneity of the mercury present in the sample matrices. The heterogeneous nature of these samples seems to be causing extreme analytical difficulty in terms of reproducibility of results.

Further discussions reveal possible interferences due to volatile organic compounds present in the sample matrix. Such a possibility is further substantiated by reports with field sampling personnel which noted potential hydrocarbon presence in some samples. Additionally, chemical reduction reactions caused by such compounds as methane (marsh gas), may be partially responsible for the lack of analytical reproducibility. These aforementioned precision problems are present in a majority of the sample analyses pertaining to this particular

site to such a degree that sample reanalyses, involving special measures to remove interferences, have been requested in certain instances.

No other problems were noted.

Executive Summary

Laboratory Performance: An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix.

Other Factors Affecting Data Quality: Positive soil sample results were estimated due to low MS recovery.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program".

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Ricky C. DePaul

HALLIBURTON NUS Environmental Corporation

Ricky C. DePaul
Data Reviewer

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. A. Scheib

Appendix A - Qualified Analytical Results

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			SS58-E
LAB ID:			SS58-E
ANALYTE	CRDL	IDL	Rinsate Blank
Mercury	0.2	0.2	0.20 U

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS101-0006	SS101-0612	SS102-0006	SS102-0612	SS103-0006	SS103-0612
LAB ID:			101006	101612	102006	102612	103006	103612
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.13 U	0.12 U	0.14 U	0.12 U	0.11 U	0.11 U
% Solids:			79.5	86.2	72.2	80.2	89.6	92.4

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS104-0006	SS104-0612	SS105-0006	SS105-0612	SS37-0006-D	SS37-0006
LAB ID:			104006	104612	105006	105612	37006D	370006
							Field Duplicate	Pair
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.13 U	0.13 U	0.13 U	0.13 K(m)	2.9 K(m)	1.5 K(m)
% Solids:			77.7	79.3	79.8	80.9	80.5	77.1

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS37-0612	SS38-0006	SS39-0006	SS40-0006	SS41-0612	SS41-0612-D
LAB ID:			370612	380006	390006	400006	410612	41612D
							Field Duplicate	Pair
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	4.6 K(m)	1.3 U	7.4 K(m)	2.3 U	6.1 K(m)	6.7 K(m)
% Solids:			70.5	76.8	56.0	42.9	74.0	63.4

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS41-0006	SS42-0006	SS43-0006	SS43-0612	SS45-0006-D	SS45-0006-M
LAB ID:			4100006	420006	430006	430612	45006D	45006M
							Field Duplicate	Pair
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	1.2 K(m)	2.0 U	1.3 U	1.7 U	1.8 K(m)	1.4 K(m)
% Solids:			77.5	51.0	76.5	59.5	79.5	76.7

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS44-0006	SS45-0612	SS46-0006	SS47-0006	SS47-0612	SS48-0006
LAB ID:			4400006	450612	460006	470007	470612	480006
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	1.7 U	2.6 K(m)	2.8 K(m)	1.3 U	1.3 U	1.4 U
% Solids:			58.9	73.9	78.0	79.3	77.9	73.0

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS49-0006	SS49-0612	SS50-0006	SS50-0006-D	SS51-0006	SS51-0612
LAB ID:			490006	490612	500006	50006D	510006	510612
					Field Duplicate	Pair		
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	1.3 U	1.4 U	15.5 U	14.8 U	0.13 U	0.43 K(m)
% Solids:			78.3	71.3	64.5	67.7	76.2	76.6

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS52-0006	SS53-0006	SS53-0612	SS54-0006	SS55-0006	SS55-0612-M
LAB ID:			520006	530006	530612	540006	550006	55612M
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	1.3 U	1.3 U	1.4 U	3.7 U	1.4 U	0.48 K(m)
% Solids:			78.1	77.7	72.0	53.7	73.1	74.8

SITE: INDIAN HEAD
SDG. SS58-E
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS56-0006	SS57-0006	SS57-0006-D	SS57-0612	SS58-0006
LAB ID:			560006	570006	57006D	570612	580006
				Field Duplicate	Pair		
ANALYTE	CRDL	IDL					
Mercury	0.1	0.1	1.5 U	1.3 U	1.2 U	0.26 K(m)	1.3 U
% Solids:			66.3	77.0	82.1	80.9	74.3

QUALIFIER KEY:

U - Value is a nondetect as reported by the laboratory.

K(m) - Positive result is estimated and biased high due to high matrix spike recovery.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-09-02-149

TO: TONY KLIMEK

DATE: SEPTEMBER 16, 1992

FROM: RICKY C. DEPAUL RCD

COPIES: D. A. SCHEIB

SUBJECT: INORGANIC DATA VALIDATION - MERCURY (COLD VAPOR)
INDIAN HEAD
SDG NUS213

SAMPLES:

Waters:

SW01-04 (TOTAL)	SW01-04 (DISSOLVED)
SW01-04-D (TOTAL)	SW01-04-DT (DISSOLVED)
SW01-B (FIELD BLANK)	SW01-E (RINSATE BLANK)
SS59-B (FIELD BLANK)	SS59-E (RINSATE BLANK)

Soils:

SS106-0006	SS106-0612	SS106-0612-D	SS107-0006
SS107-0612	SS108-0006	SS108-0612	SS109-0006
SS59-0006	SS59-0612	SS60-0006	SS60-0612
SS61-0006	SS61-0612	SS62-0006	SS62-0612
SS62-0006-D	SS63-0006-M	SS63-0612	SS64-0006
SS64-0612	SS65-0006	SS65-0612	SS66-0006
SS66-0612	SS67-0006	SS67-0006-D	SS67-0612
SS68-0006	SS68-0612-M	SS70-0006	

Overview

The sample set for the Indian Head site, SDG NUS213, consists of two (2) filtered and two (2) unfiltered surface water samples, two (2) field blanks, two (2) rinsate blanks, and thirty-one (31) sediment samples. Five field duplicate pairs were included in this analytical data set. These samples were analyzed for mercury.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/30/92 and analyzed by GP Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program Statement of Work (SOW) 7/88 analytical and reporting protocols.

Summary

Mercury was successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory and field quality control blank results, laboratory control sample results and compound quantitation. Areas of concern with respect to data quality are listed below.

After data evaluation, no qualifications were made to the sample data.

Notes

In accordance with USEPA Region III data validation protocol, no qualifications are made to the data based on the evaluation of field duplicate precision. Tables summarizing the field duplicate results can be found in the attached HNUS Navy CLEAN Data Validation Worksheets (APPENDIX C).

Precision inconsistencies are prevalent throughout many of the samples analyzed at this site. Discussions with GP Environmental laboratory supervisory personnel indicate peculiar anomalies with laboratory duplicate results, field duplicate results, and matrix spike recoveries. This is thought to be attributable to the inherent lack of homogeneity of the mercury present in the sample matrices. The heterogeneous nature of these samples seems to be causing extreme analytical difficulty in terms of accuracy and reproducibility of results.

Further discussions reveal possible interferences due to volatile organic compounds present in the sample matrix. Such a possibility is further substantiated by reports with field sampling personnel which noted potential hydrocarbon presence in some samples. Additionally, chemical reduction reactions caused by such compounds as methane (marsh gas), may be partially responsible for the lack of analytical reproducibility. These aforementioned accuracy and precision problems are present in a majority of the sample analyses pertaining to this particular site to such a degree that sample reanalyses, involving special measures to remove interferences, have been requested in certain instances.

The laboratory failed to analyze an aqueous Laboratory Control Sample (LCS) to accurately represent the aqueous matrix.

No other problems were noted.

Executive Summary

Laboratory Performance: An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program".

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Ricky C. DePaul

HALLIBURTON NUS Environmental Corporation

Ricky C. DePaul
Data Reviewer

Debra A. Scheib

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. A. Scheib

Appendix A - Qualified Analytical Results

SITE: INDIAN HEAD
SDG. NUS213
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			SW014T	SW014DT	SW014D	SW014DD	SW01-B	SW01-E
LAB ID:			SW01-04	SW01-04-D	SW01-04	SW01-04-D	SW01-B	SW01-E
ANALYTE	CRDL	IDL	Total Field Duplicate	Total Pair	Dissolved Field Duplicate	Dissolved Pair	Field Blank	Rinsate Blank
Mercury	0.2	0.2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U

SITE: INDIAN HEAD
SDG. NUS213
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			SS59-B	SS59-E
LAB ID:			SS59-B	SS59-E
			Field Blank	Rinsate Blank
ANALYTE	CRDL	IDL		
Mercury	0.2	0.2	0.20 U	0.20 U

SITE: INDIAN HEAD
SDG. NUS213
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS106-0006	SS106-0612	SS106-0612-D	SS107-0006	SS107-0612	SS108-0006
LAB ID:			106006	106612	106612D	107006	107612	108006
				Field Duplicate	Pair			
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.27	0.13 U	0.13 U	0.19 U	0.13 U	0.15 U
% Solids:			79.1	75.4	76.3	52.6	75.1	68.1

SITE: INDIAN HEAD
SDG. NUS213
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS63-0612	SS64-0006	SS64-0612	SS65-0006	SS65-0612	SS66-0006
LAB ID:			630612	640006	640612	650006	650612	660006
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	12.4	218	4.5	66.0	47.7	73.7
% Solids:			78.6	55.9	85.7	81.1	82.1	76.3

SITE: INDIAN HEAD
SDG. NUS213
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS66-0612	SS67-0006	SS67-0006-D	SS67-0612	SS68-0006	SS68-0612-M	SS70-0006
LAB ID:			660612	670006	67006D	670612	680006	680612	700006
				Field Duplicate	Pair				
ANALYTE	CRDL	IDL							
Mercury	0.1	0.1	30.9	671	0.84	0.37	0.13 U	0.13 U	6.3
% Solids:			78.8	70.3	70.7	72.9	77.6	77.1	70.2

QUALIFIER KEY:

U - Value is a nondetect as reported by the laboratory.

NA - Not analyzed.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-09-02-156

TO: TONY KLIMEK

DATE: SEPTEMBER 16, 1992

FROM: RICKY C. DEPAUL RCD

COPIES: D. A. SCHEIB

SUBJECT: INORGANIC DATA VALIDATION - MERCURY (COLD VAPOR)
INDIAN HEAD
SDG NUS006

SAMPLES:

Waters:

SS11A-E (RINSATE BLANK)

Soils:

SS112-0006	SS112-1218	SS112-0612	SS113-0006
SS113-0612	SS114-0006	SS114-0006-D	SS114-0612
SS11A-1218	SS11A-1824	SS11A-0612	SS67A-0004
SS68A-0004	SS68-0004-D		

Overview

The sample set for the Indian Head site, SDG NUS006, consists of fourteen (14) environmental sediment samples (including two field duplicate pairs) and one (1) aqueous rinsate blank. These samples were analyzed for mercury.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/31/92 and analyzed by GP Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program Statement of Work (SOW) 7/88 analytical and reporting protocols.

Summary

Mercury was successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory and field quality control blank results, laboratory control sample results, laboratory duplicate and matrix spike results and compound quantitation.

Areas of concern with respect to data quality are listed below.

Notes

In accordance with USEPA Region III data validation protocol, no qualifications are made to the data based on the evaluation of field duplicate precision. Tables summarizing the field duplicate results can be found in the attached HNUS/CLEAN Data Validation Worksheets (APPENDIX C).

An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix.

Precision inconsistencies, although not present in this SDG, have been encountered in both matrices of samples analyzed at this site. Discussions with GP Environmental laboratory supervisory personnel indicate peculiar anomalies with the sample matrix. This is thought to be attributable to the inherent lack of homogeneity of the mercury present in the sample matrices. The heterogeneous nature of these samples seems to be causing extreme analytical difficulty in terms of reproducibility of results.

The laboratory's Case Comments for this SDG further document this anomaly. The Case Comments state that such matrix interferences were present, and may be falsely represented as positive mercury results. In the opinion of the laboratory's analyst, these interferences may be attributable to some other compound and/or analyte absorbing in the same wavelength window as the compound of interest.

No explicit provisions for qualification are made based on these occurrences in the applicable USEPA Region III data validation protocol, and the data reviewer could not find sufficient qualitative or quantitative evidence of data impact to warrant qualification. This discussion of the potential presence of matrix affects is included in this memorandum for informational purposes only.

Additional discussions reveal another potential source of interferences as the presence of volatile organic compounds in the sample matrix. Such a possibility is further substantiated by reports with field sampling personnel which noted potential hydrocarbon presence in some samples. Additionally, chemical reduction reactions caused by such compounds as methane (marsh gas), may be partially responsible for the lack of analytical reproducibility. These aforementioned precision problems are present in a majority ofthe sample analyses pertaining to this particular site to such a degree that sample reanalyses,

involving special measures to remove interferences, have been requested in certain instances.

No other problems were noted.

Executive Summary

Laboratory Performance: An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix.

Other Factors Affecting Data Quality: Some sample results may be affected by matrix interferences.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program".

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Ricky C. DePaul

HALLIBURTON NUS Environmental Corporation

Ricky C. DePaul
Data Reviewer

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. A. Scheib

Appendix A - Qualified Analytical Results

SITE: INDIAN HEAD
SDG. NUS006
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			SS11A-E
LAB ID:			SS11A-E Rinsate Blank
ANALYTE	CRDL	IDL	
Mercury	0.2	0.2	0.20 U

SITE: INDIAN HEAD
SDG. NUS006
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS112-0006	SS112-1218	SS112-0612	SS113-0006	SS114-0006	SS114-0006-D
LAB ID:			112006	1121218	112612	113006	114006	114006D
							Field Duplicate	Pair
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	7.4	0.24 U	0.19 U	13.2	11.4	13.8
% Solids:			33.2	42.2	52.5	29.1	33.5	35.8

SITE: INDIAN HEAD
SDG. NUS006
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS113-0612	SS114-0612	SS11A-1218	SS11A-1824	SS11A-0612	SS67A-0004
LAB ID:			113612	114612	11A1218	11A1824	11A612	67A004
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	13.4	0.18 U	0.21 U	0.16 U	0.38	30.7
% Solids:			27.6	56.8	47.4	61.8	41.9	70.2

SITE: INDIAN HEAD
SDG. NUS006
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS68A-0004	SS68-0004-D
LAB ID:			68A004	68A004D
			Field Duplicate	Pair
ANALYTE	CRDL	IDL		
Mercury	0.1	0.1	21.7	2.8
% Solids:			75.6	71.8

QUALIFIER KEY:

U - Value is a nondetect as reported by the laboratory.

NA - Not analyzed.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-09-02-134

TO: TONY KLIMEK

DATE: SEPTEMBER 14, 1992

FROM: RICKY C. DEPAUL

COPIES: D. A. SCHEIB

SUBJECT: INORGANIC DATA VALIDATION - MERCURY (COLD VAPOR)
INDIAN HEAD
SDG NUS014

SAMPLES:

Waters:

SW02-03 (TOTAL) SW02-03 (DISSOLVED)
SS62LC-E (RINSATE BLANK)

Soils:

SS10A-1218	SS10A-0612	SS110-0006	SS110-0612
SS111-0006	SS111-0612	SS204-0006	SS26A-0006
SS62LC1-1824	SS62LC2-0006	SS62LC3-0006	
SS62LC4-0006	SS62LC4-0612	SS62LC5-0006	
SS62LC1-0612-M			

Overview

The sample set for the Indian Head site, SDG NUS014, consists of one (1) total and one (1) filtered aqueous surface water sample, one (1) aqueous rinsate blank, and fifteen (15) sediment samples. These samples were analyzed for mercury. No field duplicates were included for analysis in this analytical data set.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 09/01/92 and analyzed by GP Environmental Laboratories under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program Statement of Work (SOW) 7/88 analytical and reporting protocols.

Summary

Mercury was successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory and field quality control blank results, laboratory control sample results, matrix spike and laboratory duplicate results, and compound quantitation.

Areas of concern with respect to data quality are listed below.

Minor Problems

The laboratory duplicate %RPD for mercury (179.6%) failed to meet the 20% quality control limit for waters. Positive and nondetected sample results for this analyte in the aqueous samples are considered to be estimated and qualified, [coded J(d)] and [coded UJ(d)], respectively. Bias cannot be determined.

Notes

The Contract Required Detection Limit (CRDL) Standard analysis recovery for mercury failed to meet the 80% lower quality control limit. However, only low concentration samples were analyzed in this data set and no actions are necessary since only high concentration samples require qualification.

The laboratory failed to analyze an aqueous Laboratory Control Sample (LCS) to accurately represent the aqueous sample matrix.

Both soil and aqueous matrix spike recoveries failed to meet the upper quality control limit. However, in both instances, the initial sample result exceeded 4X the amount spiked, thus, no actions were necessary.

In addition to the laboratory duplicate imprecision that is noted above in text, further precision inconsistencies are prevalent in both matrices as evidenced by substantially high and low matrix spike recoveries. Discussions with GP Environmental laboratory supervisory personnel indicate peculiar anomalies with the sample matrix. This is thought to be attributable to the inherent lack of homogeneity of the mercury present in the sample matrices. The heterogeneous nature of these samples seems to be causing extreme analytical difficulty in terms of reproducibility of results.

The laboratory's Case Comments for this SDG further document this anomaly. The Case Comments state that such matrix interferences were present, and may be falsely represented as positive mercury results. In the opinion of the laboratory's analyst, these interferences may be attributable to some other compound and/or analyte absorbing in the same wavelength window as the compound of interest.

No explicit provisions for qualification are made based on these

occurrences in the applicable USEPA Region III data validation protocol, and the data reviewer could not find sufficient qualitative or quantitative evidence of data impact to warrant qualification. This discussion of the potential presence of matrix affects is included in this memorandum for informational purposes only.

Additional discussions reveal another potential source of interferences as the presence of volatile organic compounds in the sample matrix. Such a possibility is further substantiated by reports with field sampling personnel which noted potential hydrocarbon presence in some samples. Additionally, chemical reduction reactions caused by such compounds as methane (marsh gas), may be partially responsible for the lack of analytical reproducibility. These aforementioned precision problems are present in a majority of the sample analyses pertaining to this particular site to such a degree that sample reanalyses, involving special measures to remove interferences, have been requested in certain instances.

No other problems were noted.

Executive Summary

Laboratory Performance: An aqueous Laboratory Control Sample (LCS) was not analyzed to accurately represent the aqueous matrix. Laboratory duplicate imprecision was noted for mercury in the aqueous matrix.

Other Factors Affecting Data Quality: Some sample results may be affected by matrix interferences.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program".

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

Ricky C DePaul

HALLIBURTON NUS Environmental Corporation

Ricky C. DePaul
Data Reviewer

Debra A Scheib

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. A. Scheib

Appendix A - Qualified Analytical Results

SITE: INDIAN HEAD
SDG. NUS014
LABORATORY: GP ENVIRONMENTAL CORP.

AQUEOUS MERCURY ANALYSES (ug/l)

CLIENT ID:			62LC-E	SW023D	SW023T
LAB ID:			SS62LC-E	SW02-03	SW02-03
			Rinsate Blank	Dissolved	Total
ANALYTE	CRDL	IDL			
Mercury	0.2	0.2	0.20 UJ(d)	3.2 J(d)	10.6 J(d)

SITE: INDIAN HEAD
SDG. NUS014
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS10A-1218	SS10A-0612	SS110-0006	SS110-0612	SS111-0006	SS111-0612
LAB ID:			10A1218	10A612	110006	110612	111006	1111612
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.26 U	0.92	0.81	0.29 U	6.1	0.27 U
% Solids:			38.8	46.9	36.0	34.6	41.0	36.9

SITE: INDIAN HEAD
SDG. NUS014
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS204-0006	SS62A-0006	SS62LC1-0612-M	SS62LC1-1824	SS62LC2-0006	SS62LC3-0006
LAB ID:			204006	62A006	62LC1A	62LC1B	62LC2A	62LC3A
ANALYTE	CRDL	IDL						
Mercury	0.1	0.1	0.17 U	59.2	1.0	0.32	43.4	4.7
% Solids:			59.9	66.9	85.5	86.2	71.8	68.4

SITE: INDIAN HEAD
SDG. NUS014
LABORATORY: GP ENVIRONMENTAL CORP.

SOIL MERCURY ANALYSES (mg/kg)

CLIENT ID:			SS62LC4-0006	SS62LC4-0612	SS62LC5-0006
LAB ID:			62LC4A	62LC4B	62LC5A
ANALYTE	CRDL	IDL			
Mercury	0.1	0.1	23.1	22.2	60.2
% Solids:			72.5	68.9	64.9

QUALIFIER KEY:

U - Value is a nondetect as reported by the laboratory.

J(d) - Value is estimated due to laboratory duplicate imprecision. Bias cannot be determined.

UJ(d)- Nondetect is estimated due to laboratory duplicate imprecision. Bias cannot be determined.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-11-2-162

TO: TONY KLIMEK **DATE:** NOVEMBER 13, 1992

FROM: KAREN M. SMECKER

SUBJECT: INORGANIC DATA VALIDATION - MERCURY
CTO #64, INDIAN HEAD
SDG s11506

SAMPLES: 31/Solid/

SS115-0006-M	SS115-0612	SS116-0006
SS116-0612	SS64A-0006	SS67LC1-0612
SS66LC1-1824	SS66LC2-0006	SS66LC3-0006
SS66LC3-0006-D	SS66LC3-0612	SS66LC4-0006
SS66LC1-0612	SS67LC1-1824	SS67A-0006
SS67A-0006-D	SS67LC2-0006	SS67LC3-0006
SS67LC4-0006	SS67B-0006-M	SS67C-0006
SS70-0612	SS70-1218	SS70B-0006
SS70A-0006	SS70A-0006-D	SS109-1218
SS109A-0006	SS109A-0006-D	SS109A-0612

SS64A-B

4/Aqueous/

SS64A-E	SW01-05	SW02-04

Overview

The sample set for the CTO #64 Indian Head site, SDG s11506, consists of thirty (30) solid samples (including four field duplicate pairs) and one (1) field blank (designated -B) which the laboratory analyzed and reported as a solid. Also included in this analytical data set are one (1) rinsate blank (designated -E), and two aqueous samples. These samples were analyzed for total mercury. The two aqueous samples were also filtered and analyzed for dissolved mercury.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 09/02/92 and analyzed by GP ENVIRONMENTAL under Naval Energy and Environmental Support Activity (NEESA) Level D Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program (CLP) Statement of Work (SOW) 3/90 analytical and reporting protocols.

Summary

Mercury was successfully analyzed for all samples. The findings offered in this report are based upon a general review of all

available data including data completeness, holding times, calibration data, laboratory method and field blank results, matrix spike recoveries, laboratory control sample results, laboratory duplicate results, and analyte quantitation.

No areas of concern with respect to data quality were noted.

Notes

In accordance with USEPA Region III data validation protocol, no qualifications are made to the sample data based on the evaluation of field duplicate precision. A comparison of the field duplicate results is provided in Appendix C (HNUS/CLEAN Data Validation Worksheets).

The laboratory incorrectly transcribed the Percent (%) Solids value on the Form I for sample SS67LC4-0006. The validator amended the appropriate form. The reported sample result for mercury was not impacted.

The laboratory did not analyze an aqueous preparation blank, an aqueous Laboratory Control Sample (LCS), and an aqueous laboratory duplicate. Consequently, the aqueous sample data were not evaluated for these parameters.

Samples designated for Matrix Spike (MS) analyses were labeled -M at the time of sample collection. An aqueous Matrix Spike (MS) analysis was not performed since none of the aqueous samples were designated at sample collection for MS analysis. Therefore, the aqueous sample data were not evaluated based on this parameter.

A Contract Required Detection Limit (CRDL) Standard analysis recovery for mercury failed to meet the 80-120% quality control limits. However, no actions were taken as data qualifications are limited to high concentration samples, and all samples in this analytical data set are low concentration.

No other problems were noted.

Executive Summary

Laboratory Performance: The laboratory made a % Solids transcription error on the Form I for one sample. The laboratory did not analyze an aqueous preparation blank, laboratory duplicate and LCS. One CRDL Standard %R was slightly below the lower quality control limit.

Other Factors Affecting Data Results: None.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (6/88).

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

HALLIBURTON NUS Environmental Corporation

Karen M. Smecker
Data Reviewer

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. Scheib (HNUS, Pittsburgh)

APPENDIX A

Qualified Analytical Results

SITE: CTO #64, INDIAN HEAD
SDG s11506
LABORATORY: GP ENVIRONMENTAL

INORGANIC AQUEOUS DISSOLVED ANALYSES (ug/L)

CLIENT ID:			SW01-05	SW02-04
LAB ID:			920903333A	920903335A
ANALYTE	CRDL	IDL		
MERCURY	0.2	0.20	0.20 U	1.7

SITE: CTO #64, INDIAN HEAD
SDG s11506
LABORATORY: GP ENVIRONMENTAL

INORGANIC AQUEOUS TOTAL ANALYSES (ug/L)

CLIENT ID:			SS64A-E	SW01-05	SW02-04
LAB ID:			920903305A	920903332A	920903334A
ANALYTE	CRDL	IDL			
MERCURY	0.2	0.20	0.20 U	0.20 U	111 ~~U~~

APK RMS 12/31/92

SITE: CTO #64, INDIAN HEAD
SDG s11506
LABORATORY: GP ENVIRONMENTAL

INORGANIC SOIL ANALYSES (mg/kg)

CLIENT ID:			SS115-0006-M	SS115-0612	SS116-0006	SS116-0612	SS64A-B	SS64A-0006 D APK
LAB ID:			920903301A	920903302A	920903303A	920903304A	92093306A	92093307B
ANALYTE	CRDL	IDL						
MERCURY	0.1	0.10	0.44	0.25 U	0.27 U	0.24 U	13.2 U	8.4
PERCENT SOLIDS:			33.5	39.3	36.5	42.0	0.8	64.7

SITE: CTO #64, INDIAN HEAD
SDG s11506
LABORATORY: GP ENVIRONMENTAL

INORGANIC SOIL ANALYSES (mg/kg)

CLIENT ID:			SS66LC1-0612	SS66LC1-1824	SS66LC2-0006	SS66LC3-0006	SS66LC3-0006-D	SS66LC3-0612	SS66LC4-0006
LAB ID:			92093308A	92093309A	92093310A	92093311A	92093312A	92093313A	92093314A
ANALYTE	CRDL	IDL							
MERCURY	0.1	0.10	0.12 U	0.12 U	42.6	196	113	163	69.8
PERCENT SOLIDS:			80.5	81.9	76.1	63.2	71.5	76.4	72.1

SITE: CTO #64, INDIAN HEAD
SDG s11506
LABORATORY: GP ENVIRONMENTAL

INORGANIC SOIL ANALYSES (mg/kg)

CLIENT ID:			SS67LC1-0612	SS67LC1-1824	SS67A-0006	SS67A-0006-D	SS67LC2-0006	SS67LC3-0006	SS67LC4-0006
LAB ID:			92093315A	92093316A	92093317A	92093317B	92093318A	92093319A	92093320A
ANALYTE	CRDL	IDL							
MERCURY	0.1	0.10	0.48	62.0	0.14 U	0.50	136	73.3	4.6
PERCENT SOLIDS:			73.0	74.9	71.2	76.9	94.7	92.5	91.2

SITE: CTO #64, INDIAN HEAD
SDG s11506
LABORATORY: GP ENVIRONMENTAL

INORGANIC SOIL ANALYSES (mg/kg)

CLIENT ID:			SS67B-0006-M	SS67C-0006	SS70-0612	SS70-1218	SS70B-0006	SS70A-0006	SS70A-0006-D
LAB ID:			92093321A	92093322A	92093323A	92093324A	92093325A	92093326A	92093327A
ANALYTE	CRDL	IDL							
MERCURY	0.1	0.10	307	43.4	0.73	0.37	3.5	1.0	0.92
PERCENT SOLIDS:			80.9	75.6	77.2	75.8	91.2	63.8	54.4

SITE: CTO #64, INDIAN HEAD
SDG s11506
LABORATORY: GP ENVIRONMENTAL

INORGANIC SOIL ANALYSES (mg/kg)

CLIENT ID:			SS109-1218	SS109A-0006	SS109A-0006-D	SS109A-0612
LAB ID:			92093328A	92093329A	92093330A	92093331A
ANALYTE	CRDL	IDL				
MERCURY	0.1	0.10	0.50	1.1	0.28	0.23 U
PERCENT SOLIDS:			80.2	49.3	61.1	42.8

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-10-2-267

TO: TONY KLIMEK

DATE: OCTOBER 16, 1992

FROM: KAREN M. SMECKER

SUBJECT: INORGANIC DATA VALIDATION - TAL METALS
CTO #64, INDIAN HEAD
SDG s62006

SAMPLES: 3/Solid/

SS62-006 SS64-006 SS113-006

Overview

The sample set for the CTO #64 Indian Head site, SDG s62006, consists of three (3) solid samples. These samples were analyzed for Target Analyte List (TAL) metals excluding mercury and cyanide. No field quality control blanks or field dupliate pairs were included in this analytical data set.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/30/92 and 08/31/92 and analyzed by GP ENVIRONMENTAL under Naval Energy and Environmental Support Activity (NEESA) Level D Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program (CLP) Statement of Work (SOW) 3/90 analytical and reporting protocols.

Summary

All analytes were successfully analyzed except for those qualified as rejected, [coded R]. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory method blank results, matrix spike and post digestion spike recoveries, laboratory control sample results, ICP interference check sample results, laboratory duplicate results, graphite furnace atomic absorption results, ICP serial dilution results, and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- Three problems were noted with the analysis of antimony. The solid Matrix Spike (MS) recovery (22.3%) was extremely low (< 30%), poor instrument performance

due to base-line fluctuations was noted, and the graphite furnace Post Digestion Spike (PDS) recovery for sample SS64-006 (80.7%) was below the 85% quality control limit. The positive antimony result for sample SS113-006 is qualified as biased very low, [coded L(m,n)]. The nondetect for this analyte for sample SS64-006 is qualified as rejected, [coded R(m,n,p)]. The nondetect for this analyte for sample SS62-006 is qualified as rejected, [coded R(m,n,)]. Rejected sample results are considered to be unreliable due to severe matrix interferences.

- Solid MS recoveries for arsenic (0.5%) and selenium (0.0%) were extremely low (< 30%). In addition, the graphite furnace PDS recovery for selenium (49.0%) for sample SS113-006 fell below the 85% quality control criterion. The positive arsenic result is qualified as biased very low, [coded L(m)]. The nondetect for selenium in sample SS113-006 is qualified as rejected, [coded R(m,p)]. The nondetects for both analytes in the remaining samples are qualified as rejected, [coded R(m)]. Rejected sample results are considered to be unreliable due to severe matrix interferences.

Minor Problems

- Negative concentrations, whose absolute values were > IDL, were reported for copper, potassium and sodium in the laboratory method blanks. These occurrences suggest poor instrument performance (base-line drifting). Positive results < 10X CRDL and nondetects for these analytes are qualified as biased low, [coded L(n)] and [coded UL(n)], respectively.

- MS recoveries for manganese (42.5%) and silver (51.7%) were below the 75% quality control criterion (yet > 30%) for the solid matrix. Additonally, poor instrument performance due to base-line fluctuations was observed for silver. Positive results and nondetects for silver are qualified as biased low, [coded L(m,n)] and [coded UL(m,n)], respectively. Only positive results were reported for manganese, and these results are qualified as biased low, [coded L(m)].

Notes

Contract Required Detection Limit (CRDL) Standard analysis recoveries for various analytes failed to meet the 80-120%

quality control limits. However, no actions were necessary because data qualifications are limited to high concentration samples; all samples in this analytical data set are low concentration.

Aluminum, copper and zinc were detected as contaminants in the laboratory method blanks. No qualifications were needed because positive sample results for these analytes were greater than 5X the maximum amount detected in the associated blanks.

The laboratory incorrectly reported several results for the interfering analytes on the ICP Interference Check Sample (ICS) Form 4. The validator amended the appropriate forms.

ICP interferences were evident for barium and cadmium during the ICP ICS analyses. Sample concentrations for interfering analytes were not comparable to the respective ICS level, therefore, no actions were required.

Graphite furnace PDS recoveries for arsenic in two samples and thallium in three samples exceeded the 115% upper quality control limit. Qualifications were not made as the associated nondetects were not compromised.

No other problems were noted.

Executive Summary

Laboratory Performance: Negative concentrations were reported for various analytes in laboratory method blanks. The laboratory made several reporting errors on the ICS Form 4s.

Other Factors Affecting Data Quality: MS recoveries for antimony, selenium and arsenic were extremely low, while the MS recoveries for manganese and silver were relatively low. Graphite furnace PDS recoveries for antimony in one sample and selenium in another sample were low.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program" (6/88).

The text of this report has been formulated to address only those problem areas affecting data quality. Documentation of compliance for non-problem areas is presented in the attached Appendix C (HNUS/CLEAN Data Validation Worksheets.)

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

HALLIBURTON NUS Environmental Corporation

Karen M. Smecker
Data Reviewer

HALLIBURTON NUS Environmental Corporation

Debra A. Scheib
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - HNUS/CLEAN Data Validation Worksheets
4. Appendix D - Support Documentation

cc: D. Scheib (HNUS, Pittsburgh)

APPENDIX A

Qualified Analytical Results

SITE: CTO #64, INDIAN HEAD
SDG s62006
LABORATORY: GP ENVIRONMENTAL

INORGANIC SOIL ANALYSES (mg/kg)

CLIENT ID:			SS62-006		SS64-006		SS113-006	
LAB ID:			920907601A		920907602A		920900607A	
ANALYTE	CRDL	IDL						
ALUMINUM	40	30.6	3180		3950		15400	
ANTIMONY	12	3.2	4.1	R(m,n)	5.7	R(m,n,p)	14.6	L(m,n)
ARSENIC	2	0.74	0.95	R(m)	1.3	R(m)	36.7	L(m)
BARIUM	40	3.8	28.8		39.4		143	
BERYLLIUM	1	0.16	0.69		0.99		0.92	
CADMIUM	1	0.48	0.62	U	0.86	U	1.6	U
CALCIUM	1000	26.4	452		252		2480	
CHROMIUM	2	1.8	11.5		11.4		41.6	
COBALT	10	4.6	5.9		8.2	U	22.6	
COPPER	5	3.5	4.4	UL(n)	6.2	UL(n)	70.2	L(n)
IRON	20	7.0	16800		9390		32800	
LEAD	0.6	0.20	10.5		9.6		442	
MAGNESIUM	1000	11.6	416		285		1690	
MANGANESE	3	1.0	173	L(m)	69.6	L(m)	300	L(m)
NICKEL	8	5.8	7.4	U	10.3	U	30.5	
POTASSIUM	1000	60.0	227	L(n)	107	UL(n)	206	UL(n)
SELENIUM	1	0.86	1.1	R(m)	1.5	R(m)	3.0	R(m,p)
SILVER	2	0.14	0.18	UL(m,n)	0.25	UL(m,n)	2.3	L(m,n)
SODIUM	1000	37.8	48.6	UL(n)	67.6	UL(n)	130	UL(n)
THALLIUM	2	0.72	0.93	U	1.3	U	2.5	U
VANADIUM	10	4.3	13.8		14.2		54.5	
ZINC	4	1.3	109		44.4		287	
PERCENT SOLIDS:			77.8		55.9		29.1	

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
B	-	Value is considered to be a false positive attributable to blank contamination.
UL(n)	-	Nondetect is considered to be biased low due to poor instrument performance (i.e. negative laboratory method blank concentrations).
UL(m,n)	-	Nondetect is considered to be biased low due to poor instrument performance (i.e. negative laboratory method blank concentrations) and low MS recovery.
L(n)	-	Positive value is considered to be biased low due to poor instrument performance (i.e. negative laboratory method blank concentrations).
L(m)	-	Positive value is considered to be biased low due to low matrix spike recovery.
L(m,n)	-	Positive value is considered to be biased low due to low matrix spike recovery and poor instrument performance (i.e. negative laboratory method blank concentrations).
R(m)	-	Nondetect is rejected due to extremely low MS recovery.
R(m,p)	-	Nondetect is rejected due to extremely low MS recovery and low graphite furnace PDS recovery.
R(m,n)	-	Nondetect is rejected due to extremely low MS recovery and poor instrument performance (i.e. negative laboratory method blank concentrations).
R(m,n,p)	-	Nondetect is rejected due to extremely low MS recovery, low graphite furnace PDS recovery, and poor instrument performance (i.e. negative laboratory method blank concentrations).

HALLIBURTON NUS
Environmental Corporation

INTERNAL CORRESPONDENCE

C-49-10-2-249

TO: TONY KLIMEK **DATE:** OCTOBER 19, 1992

FROM: KAREN M. SMECKER

SUBJECT: INORGANIC DATA VALIDATION - TCLP METALS
CTO #64, INDIAN HEAD
CASE NO. 920975, SDG s62006

SAMPLES: 3/Extracts/

SS62-006 SS64-006 SS113-006

Overview

The sample set for the CO #64 Indian Head site, Case No. 92-0975, SDG s62006, consists of three (3) Toxicity Characteristic Leaching Procedure (TCLP) extracts. These samples were analyzed for TCLP metals. No field quality control blanks or field duplicate pairs were included in this analytical data set.

The samples were collected by HALLIBURTON NUS Environmental Corporation on 08/30/92 and 08/31/92 and analyzed by GP ENVIRONMENTAL under Naval Energy and Environmental Support Activity (NEESA) Level C Quality Assurance/Quality Control (QA/QC) criteria. All analyses were conducted using Contract Laboratory Program (CLP) Statement of Work (SOW) 3/90 analytical and reporting protocols.

Summary

All compounds were successfully analyzed, with the exception of those results qualified as rejected, [R]. The findings offered in this report are based upon a general review of all available data including data completeness, holding times, calibration data, laboratory method blank results, matrix spike recoveries, laboratory control sample results, laboratory duplicate results and analyte quantitation.

Areas of concern with respect to data quality are listed below.

Major Problems

- In the validator's professional opinion, the quantitation of the positive mercury result (29.6 µg/L) reported for sample SS113-006 is questionable. Associated initial and continuing calibration blanks had absorbance values of either 0.007 and 0.008 units. These values corresponded to a nondetected

concentration (< 20 µg/L). The absorbance value shownfor sample SS113-006 in the raw data is 0.008 units. Consequently, the analysis does not indicate the presence of mercury in this sample, and this result has been rejected, [coded R(q)].

Minor Problems

- A negative concentration, whose absolute value was > IDL, was reported for selenium in a laboratory method blank. This occurrence is an indication of poor instrument performance (base-line drifting). Only sample SS113-006 was affected, the selenium nondetect for this sample is qualified as biased low, [coded UL(n)].

Notes

Arsenic was detected as a contaminant in a laboratory method blank. No qualifications were necessary because no positive sample results were reported for this analyte.

A positive result for mercury (25.0 µg/L) was reported in the TCLP method blank associated with sample SS113-006. No action was taken since the he positive mercury result in this sample is qualified as rejected as a result of questionable quantitation.

The Matrix Spike (MS) recovery for mercury (174%) was high (> 125%). No action was taken since the positive mercury result was qualified based on blank contamination.

No other problems were noted.

Executive Summary

Laboratory Performance: Mercury was detected as a contaminant in a TCLP method blank. A negative concentration was reported for selenium in a laboratory method blank. The quantitation of mercury for sample SS113-006 was questionable.

Other Factors Affecting Data Quality: The MS recovery for mercury was high.

Data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation" (7/88), as amended for use within USEPA Region III, and the NEESA document entitled "Sampling and Chemical Analysis Quality

Assurance Requirements for the Navy Installation Restoration Program" (6/88).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed-upon validation criteria as specified in the NEESA Guidelines and the Quality Assurance Project Plan (QAPP)."

HALLIBURTON NUS Environmental Corporation

Karen M. Smecker
Data Reviewer

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Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

cc: D. Scheib (HNUS, Pittsburgh)

APPENDIX A

Qualified Analytical Results

SITE: CTO #64, INDIAN HEAD
CASE NO. 920975, SDG s62006
LABORATORY: GP ENVIRONMENTAL

INORGANIC TCLP EXTRACT ANALYSES (ug/L)

CLIENT ID:			SS62-006	SS64-006	SS113-006
LAB ID:			9209158-01	9209158-02	9209075-01
ANALYTE	CRDL	IDL			
ARSENIC	2	276	276 U	276 U	276 U
BARIUM	40	26.0	837	26.0 U	588
CADMIUM	1	18.0	18.0 U	18.0 U	18.0 U
CHROMIUM	2	25.0	25.0 U	25.0 U	25.0 U
LEAD	0.6	282	282 U	282 U	282 U
MERCURY	0.2	20.0	20.0 U	20.0 U	29.6 R(q)
SELENIUM	1	167	167 U	167 U	167 UL(n)
SILVER	2	45.0	45.0 U	45.0 U	45.0 U

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
UL(n)	-	Nondetect is considered to be biased low due to poor instrument performance (i.e. negative laboratory method blank concentrations).
R(q)	-	Result is considered to be a false positive based on questionable quantitation.