

**POST-FIELD WORK MAGNETOMETER SURVEY
AND DEBRIS REMOVAL ACTION
SWAMPY ROAD DEBRIS SITE, SITE 16
24 JANUARY 2001**

A. Background

This report supplements Post-Field Work Magnetometer Survey Report, 29 February 2000. A follow-up magnetometer survey and debris removal was performed of the subject site on 10, 11, and 15 May 2000 by Mr. Paul Kempf and Mr. Anthony Williams of NASB Public Works' Environmental Division. The weather for each day was cloudy, rainy, and sunny respectively. Fieldwork occurred from 0800 to 1530 each day. The instrument used for this survey was a Schonstedt MAC-51Bx receiver. Additional information about this instrument was provided in the first report and can be found at <http://www.schonstedt.com/>. Mr. Tom Fusco, NASB Restoration Advisory Board Co-Chair, performed a walk-over inspection of the site on 11 May 2000, assessed the environmental significance of the debris items found, and provided feedback regarding adequacy of removal actions.

B. Summary of Findings

a. Northern Section. Several more household debris items were found in soils immediately beneath the large subsurface object described as Item D6 in our previous report. Soil sample location #4 (SS-4) was resampled and analysis results confirmed a lead concentration of 84.0 mg/kg (Attachment 1).

b. Southern Section. A full visual survey was performed along the entire length of ravine area from the golf cart path to the irrigation pond. A number of metal debris items was found at an outcropping in the southern section of Site 16 (farther south of the golf cart path), located between the road and the stream at the area where other items were found and removed by Foster-Wheeler in August 1999. Almost all surficial metal debris items were removed and disposed from this area on 11 and 15 May 2000. Debris items appeared to have originated from a building demolition. Following discussion with Mr. Fusco, a few larger pieces of corrugated drainage culvert and the partial remains of a large riveted metal box-type item (empty) were left in place. Subsurface debris items found in this area by magnetometer were exposed by hand shovel to better assess their environmental threat, and the larger construction debris items were also left in place with the concurrence of Mr. Fusco.

C. Methodology of Survey and Debris Removal

1. Instrument Calibration and Use. The magnetometer instrument was calibrated prior to each day's field work as described in Section C1 of the previous report. Survey areas in the northern section of Site 16 were limited to those spots that were previous identified as having debris items. Following removal of the metal debris items, the magnetometer was used to resurvey those spots in order to confirm no subsurface metallic items remained. Based on discussions in our team's February 2000 teleconference call, the survey area in the southern section of Site 16 emphasized more visual inspection in lieu of magnetometer survey, with

particular survey attention on a large outcropping that had a high visual concentration of metallic debris items. After the surficial metallic debris items were removed, the magnetometer was used to resurvey this outcropping area in order to assess the presence and confirm the nature of remaining subsurface metallic items.

2. Survey Coverage

a. Northern Section of Site 16. Most items identified in the northern section of Site 16 (area north of the golf path, see Figure 1) were removed and disposed in the scrap metal containers of Supply Department's recycling area on 10 May 00. The large subsurface item that was previously identified as a "large metal object...like a tractor towed grass mower deck attachment" (Item D6 of previous report) was fully excavated and found to be an older type of kerosene heater unit filled with soil and contained no evidence of fuel residuals. No petroleum odors or visibly stained soils were detected around or beneath the heater unit when it was excavated and removed. The soils at the bottom of this excavation were surveyed with the magnetometer. Additional smaller metal debris items of a domestic nature were found, uncovered, and subsequently disposed. These items included several manufactured metal pieces suspected to be related to suspension components of a horse-drawn wagon, a Model A type of automobile horn, and some rusted food cans. With concurrence from Mr. Fusco, the following household and construction debris items were left in place in the northern section of Site 16:

- Perforated steel planking (Items D4 & D5 of previous report)
- Partially buried block of concrete with reinforcing steel (Item D10 of previous report)
- Large metal tub with an evergreen tree growing through middle of it (part of Item D17 of previous report)
- Several standing steel fence posts
- Partially buried steel sheep fencing attached to the fence posts

b. Southern Section of Site 16. Most metal debris items found in the southern section of Site 16 (area south of the golf path, see Figure 2) were removed and disposed in the scrap metal containers of Supply Department's recycling area on 11 and 15 May 2000. The length of stream floodplain and west stream bank (between stream and road) was visually inspected twice from the golf cart path to the irrigation pond, then a more focused inspection was performed at the outcropping area due to the number of debris items found. Surficial metal debris items were removed first. Most debris items recovered from the southern section were crumpled pieces of sheet metal roofing and piping or fence posts. After almost all visible items were removed, the outcropping area was then surveyed with the magnetometer. The subsurface metal anomalies detected with the magnetometer were then revealed with a hand shovel to identify them. If debris items were small enough, they were excavated and disposed. If anomalies would require heavy equipment to remove (such as concrete chunks with steel reinforcing, large fence posts, culverts, or piping), the items were identified, assessed for environmental potential, re-covered with soil, and left in place. Based on this method of detection and identification, there is a possibility for additional items to exist beneath the subsurface metallic items left in place. With concurrence from Mr. Fusco, the following debris items were left in place in the southern section of Site 16:

- Buried and partially buried chunks of concrete with reinforcing steel
- Steel fence posts, piping, and wire conduit

- Corrugated steel drainage conduit
- Large piece of metal box constructed of thick sheet metal with row of rivets at corner

D. Inventory of Items Discovered or Removed

a. Northern Section

- 5 gallon gas can (empty), 2½ gallon milk pail (empty), 1# coffee can, red fence post, gym locker door, soup can, fence wire, 3 metal wire fence posts with wire attached
- Telephone pole guy wire anchor
- 1 gallon paint cans (empty)
- Kerosene heater unit
- Suspension components of a horse-drawn wagon
- A "Model A" type of automobile horn
- Steel fence post, about 6' long
- Wood fence post with 3" diameter cast iron piping extended through it
- Metal fence post or steel pipe approximately 1½' deep
- Heavily rusted pieces of a flattened metal drum (empty)
- Rotary blade grass cutter and wheel assembly
- 4 quart metal motor oil can (empty) labeled "Oilzum motor oils and lubricants," glass bottles, rusted cans, and other domestic trash debris items approximately 2 meters upgradient from an older orange pin flag marked "SS2"
- 2½' metal pipe, threaded end, approximately 1½" diameter
- Steel pail-mounted mop ringer without the pail
- Many larger metal debris items (all heavily rusted); pieces of three 5-gallon motor oil cans; a child's metal toy wagon body; an old round 5 gallon gas can; many old glass bottles, rusted soup-sized cans, and domestic trash items.
- Old soup-sized cans, old glass bottles, and domestic trash items
- Old brass bed headboard
- Pieces of barbed wire and wire sheep fencing

b. Southern Section

- Numerous sheet metal roofing pieces, some with roofing nails sticking out of attached tabs. One piece was stenciled with the words "Maine full roofing" visible.
- Metal fence posts or steel pipes, approximately 1½" diameter (a few not removed)
- Metal pipes with threaded end(s), approximately 2½" diameter (a few not removed)
- Metal wire conduit with threaded end(s), approximately ¾" and 1" diameters
- Heavily rusted ends of 55 gallon drums, no identifying markings visible
- Buried and partially buried chunks of concrete with reinforcing steel (not removed)
- Corrugated steel drainage conduit (a few not removed)
- Large piece of metal box (empty), constructed of thick sheet metal, with row of rivets along the corner (not removed)

E. Conclusions and Recommendations

a. As indicated by the inventory of debris items found, metallic anomalies detected at Site 16 appear to be inert solid wastes, originating from domestic refuse and building demolition, that pose no substantive adverse risks to human health, public welfare, or the environment. Debris items that remain on site were visually identified to be additional building demolition debris that are unregulated solid wastes.

b. Previous soil and surface water sampling results in the southern section did not have exceedances of federal or state standards.

c. The location in the northern section that previously had an exceedance of lead in soil during the April 2000 sampling event (SS-4) was resampled by EA Engineering and the analytical results indicated a lead concentration of 84.0 mg/kg. This concentration is less than the State of Maine's residential Maximum Exposure Guideline of 375 mg/kg, and the US EPA's soil screening levels of 2,000 mg/kg (non-residential) or 400 mg/kg (children's play areas).

d. Based on the findings of our previous magnetometer surveys and metallic debris removal actions, we recommend approval a No Further Action Consensus Statement for Site 16.

- The potential for buried drums at this site has been more extensively assessed by multiple magnetometer surveys. The uncertainty about "buried drums potentially full of chemical substances" has been reduced.
- These latest activities sufficiently fulfill the recommendation for Sites 15 & 16 stated in the October 1993 Site Inspection Report: "Based on these site inspection efforts, the site is recommended for cleanup of debris; no additional characterization for hazardous substances is warranted."

e. Recommend adding a clause in the Consensus Statement that allows reassessment of these sites by regulatory agencies if a change in conditions or new information should reveal a potential for adverse threats. If property transfer should occur in the future, CERCLA 120(h)(3) requires the Navy to disclose all environmental investigation results to the future property owners. A clause could be added to the Consensus Statement to reiterate this requirement.



Anthony F. Williams
Installation Restoration Program Coordinator
Naval Air Station, Brunswick, Maine

3 Attachments:

1. Lead Sample Analysis Results, 25 May 2000
2. Site 16 Location Map, Northern Section
3. Site 16 Location Map, Southern Section

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: BN-16-SS4

Matrix: SOIL

SDG Name: BN16SS4

Percent Solids: 77.6

Lab Sample ID: WQ1410-001

Concentration Units (ug/L or mg/Kg dry weight): mg/Kg

CAS No.	Analyte	Concentration	C	Q	M	DF
7439-92-1	LEAD	84.0		N	P	1

Color Before: BROWN

Texture: FINE

Color After: YELLOW

Clarity After: CLEAR

Comments:

FORM 1 - IN

Handwritten signature or initials

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Katahdin Analytical Services

SDG Name: BN16SS4

SOW No. SW846

Client Field ID	Lab Sample ID
BN-16-SS4	WQ1410-001
BN-16-SS4	WQ1410-001P
BN-16-SS4	WQ1410-001S

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

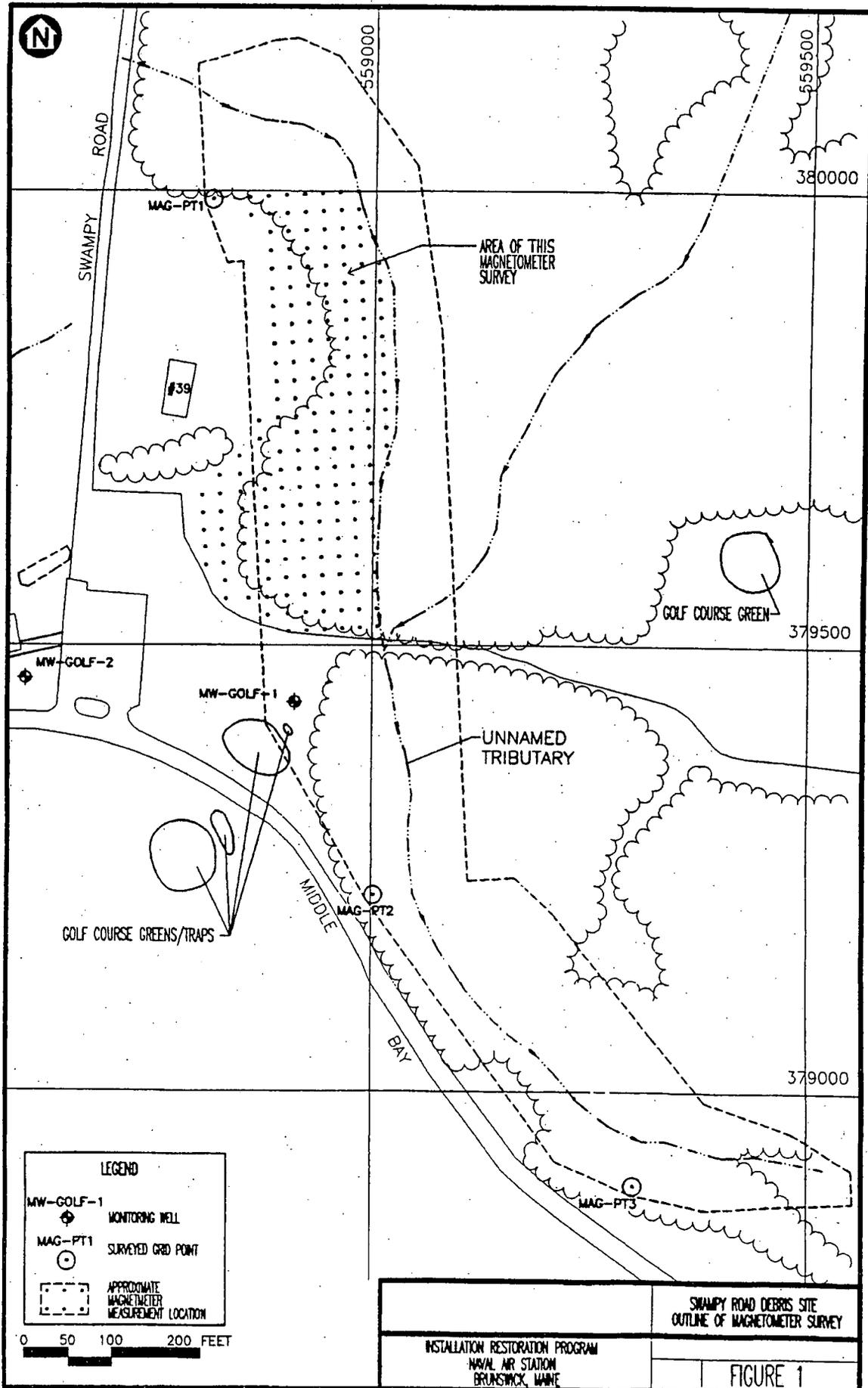
I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: George Brewer

Name: George Brewer

Date: 05/25/00

Title: Metals Section Supv



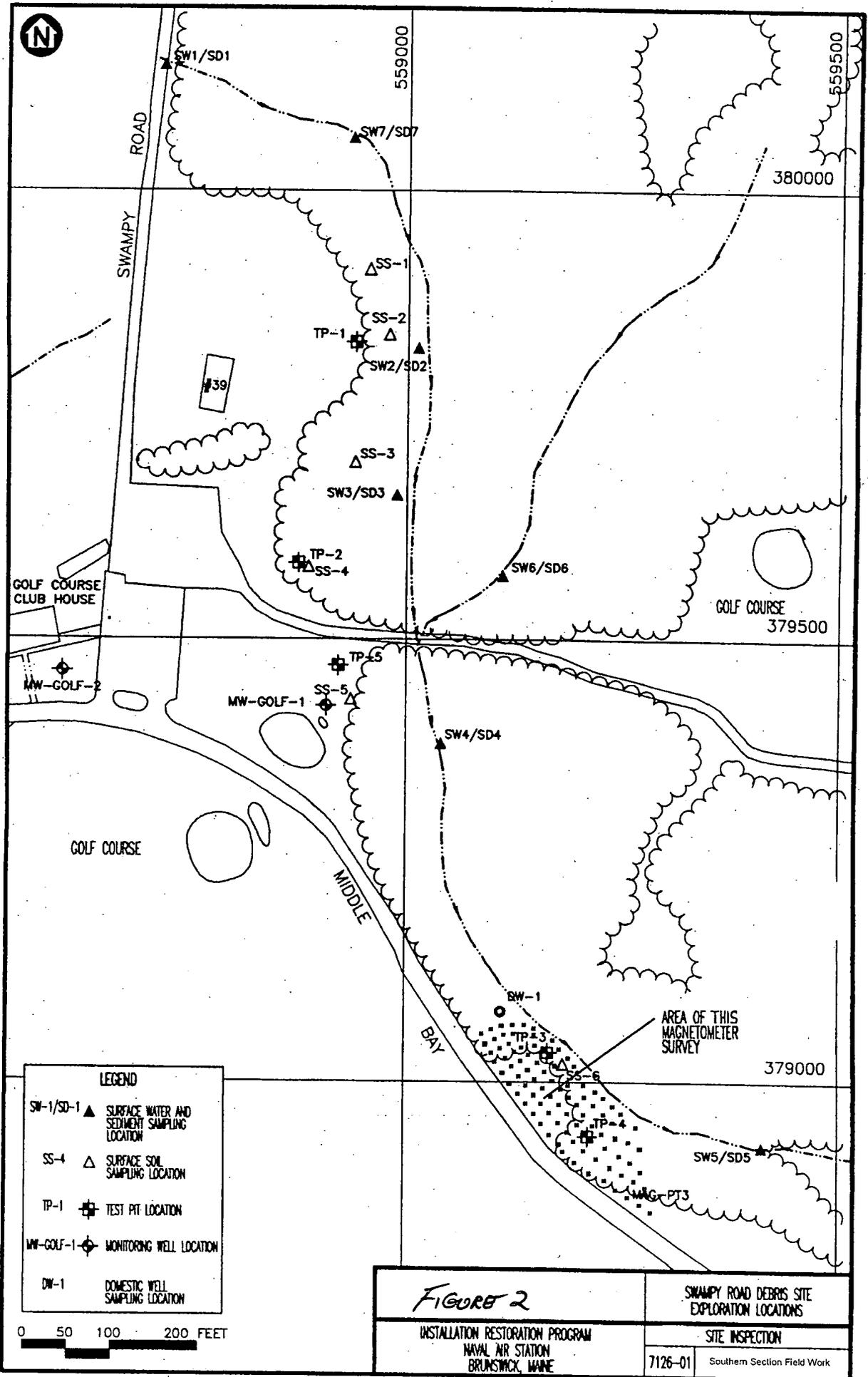


FIGURE 2 INSTALLATION RESTORATION PROGRAM NAVAL AIR STATION BRUNSWICK, MAINE	SWAMPY ROAD DEBRIS SITE EXPLORATION LOCATIONS
	SITE INSPECTION 7126-01 Southern Section Field Work

ATCH 3