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FINAL RESOURCE CONSERVATION AND RECOVERY ACT PARTIAL CLOSURE REPORT
FOR BUILDINGS 22 AND 39 WITH TRANSMITTAL LETTER NAS BRUNSWICK ME
3/31/2011
NAS BRUNSWICK

**ENVIRONMENTAL DEPARTMENT
NAVAL AIR STATION
437 HUEY DRIVE
BRUNSWICK, ME 04011**

March 31, 2011

Mr. Edward Vigneault
Maine Department of Environmental Protection
Division of Oil and Hazardous Waste Facilities Registration
17 State House Station
Augusta, ME 04333-0017

Subj: Final RCRA Partial Closure Report for Buildings 22 and 39

Dear Mr. Vigneault:

A copy of the Final RCRA Partial Closure Report for Buildings 22 and 39 at Naval Air Station Brunswick is provided as Enclosure (1).

If you have any questions, please contact Mr. Mike Fagan at 921-1717 or via e-mail at michael.fagan1@navy.mil.

Sincerely,


LISA M. JOY
Environmental Director

Enclosure: (1) Final RCRA Partial Closure Report for Buildings 22 and 39

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NAVFAC Mid-Atlantic (B. Abraham)
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RCRA PARTIAL CLOSURE REPORT
for
BUILDING 22 – GOLF MAINTENANCE BUILDING AWNING
BUILDING 39 – GOLF MAINTENANCE BUILDING
NAVAL AIR STATION BRUNSWICK, MAINE
USEPA IDENTIFICATION NUMBER ME8170022018
MARCH 2011

1. INTRODUCTION

The purpose of this report is to present the findings and conclusions of the investigation conducted to determine if the Maine Department of Environmental Protection (MEDEP) RCRA or hazardous waste closure requirements have been completed for Buildings 22 and 39 at Naval Air Station Brunswick (NAS Brunswick).

2. PROPERTY DESCRIPTION

Buildings 22 and 39 are part of the Mere Creek Golf Course maintenance facilities, located in the southwestern portion of NAS Brunswick, near the western boundary of the base (Figure 1). The buildings are northeast of the intersection of Middle Bay Road (to the south) and Swampy Road (to the west). The buildings are within the RCRA Partial Closure Golf Course Parcel.

Building 22

Building 22, known as the Golf Maintenance Building Awning, is bordered immediately to the northwest by a driveway, Building 18 (Golf Cart Shed), and a grassy area beyond; to the north and northeast by an asphalt parking area with a wooded area beyond; to the east by Building 39 (Golf Maintenance Building), with a parking area and wooded area beyond; to the south by grass-covered area and a driveway and parking area beyond; and to the west by a bulk material storage area, a driveway, and Swampy Road beyond (Figure 2).

Building 22 was constructed in the mid-1990s and measures 1,003 square feet in area. It is an open, single-story, wooden awning structure. The awning covers a concrete slab maintenance area sloped to a metal-grate-covered, blind sump located at its center. Building 22 is unheated.

Three temporary structures, steel storage containers, are also located along the western portion of Building 22, as shown on Figure 2. Structures U4 and V4 each measure 5 feet by 6 feet by 6 feet high. Structure W4 measures 8 feet by 10 feet by 8 feet high.

Photographs of the exterior and interior of Building 22 and Structures U4, V4, and W4 are provided in an attachment.

Building 39

Building 39, known as the Golf Maintenance Building, is bordered immediately to the northwest by a driveway/parking area, Building 18 (Golf Cart Shed), and a grassy area and Swampy Road beyond; to the north, northeast, and east by an asphalt parking area with a wooded area beyond; immediately to the south by a small area of grass and trees, a driveway, and a grassy and wooded area beyond; to the west by Building 22 (Golf Maintenance Building Awning), and Swampy Road beyond (Figure 2).

Building 39 was constructed in 1985 and measures 2,800 square feet in area. It is a single-story, concrete block structure on a concrete slab foundation. The building interior consists of a work shop, maintenance area for golf carts and lawn mowers, office area, pesticide-mixing room, and garage area for mower storage. Building 39 is heated by a fuel-oil-fired furnace.

Photographs of the Building 39 exterior and interior are provided in an attachment.

The investigation conducted under this report applies only to the building footprints of Buildings 22 and 39 (footprints as shown on Figure 2). The RCRA Partial Closure Report for the Golf Course Parcel addresses the land surrounding and groundwater underlying Buildings 22 and 39.

3. PROPERTY HISTORY AND RECORDS RESEARCH

The Tetra Tech NUS, Inc. (Tetra Tech) project team interviewed NAS Brunswick Environmental Department personnel and performed records research at both NAS Brunswick and the MEDEP office in Augusta, Maine to collect available information concerning Buildings 22 and 39, including past use and operations at these locations.

Records reviewed include historical aerial photographs, the NAS Brunswick Other Environmental Liabilities (OEL) Database, area-specific reports, facility plans and drawings, and hazardous waste records. Aerial photographs dated 1953, 1958, 1978, 1981, 1984, 1989, 1993 and 1997 (Sewall, 1953, 1958, 1978, 1981, 1984, 1989, 1993 and 1997) were reviewed. Additional aerial photographs for the parcel dated 1940, 1959, 1965, 1966, 1972, 1978, and 1980 were also reviewed (U.S. EPA, 1987). Public Works Department (PWD) site base maps dated 1943, 1946, 1952, 1956, 1957, 1975, 1978, 1979, 1989, and 2006 (PWD, 1943, 1946, 1952, 1956, 1957, 1975, 1978, 1979, 1989, and 2006a) and site building lists for 1950, 1965, 1976, 2003, 2006 and 2008 (PWD, 1950, 1965, 1976, 2003, 2006b, and 2008a) were also reviewed.

The 1956 historical plan is the earliest to show the golf course area. This plan shows Middle Bay Road, but no other area features are present. Beginning with the 1957 historical plan, Buildings 305 (Clubhouse [Golf Course]) and 306 (Shed [Golf Course]) are shown northeast of the current location of Building 34 (Huntmaster Shed), and the area to the south is labeled as a golf course. No further changes are noted until the 1981 aerial photograph, which shows Building 78 (Golf Clubhouse) in its current location, and Buildings 305 and 306 are no longer shown. In the 1984 aerial photograph, Building 39 is shown to the north of the current Building 34 location. In the 1989 aerial photograph, the outdoor skating rink and warming hut are present to the northwest of Building 78. Building 22 (Golf Maintenance Building Awning) is present in its current location, to the west of Building 39. The 1997 aerial photograph is the earliest to show Building 18 (Golf Cart Storage). No further changes are noted after 1997.

Building 22

According to a review of the historical building lists, and based on discussions with NAS Brunswick Public Works Department personnel, Building 22 was used mainly as a pesticide and fertilizer loading and storage area. Bagged, granular fertilizers and pesticides materials applied on the golf course fairways and greens were stored in Structures U4, V4, and W4, positioned on the west side of the awning covered area. The space also provided shelter for minor maintenance activities for golf carts and mowers. Prior to the construction of the current Building 22, this building identification number had been previously assigned to a building that was used as the brig, which was located in the central portion of NAS Brunswick.

Building 22 has no sanitary service (Navy, 2006). No oil/water separators (O/W separator) have been associated with Building 22 (Navy, 2008b). A blind sump is located under the Building 22 awning and was cleaned out by NAS Brunswick.

According to MEDEP and NAS Brunswick spill records, no spills were reported in the vicinity of Building 22 (Environmental Department, 1988; Environmental Department 1999; and MEDEP, 2010). There is no record of hazardous waste generation at Building 22 (Environmental Department, 2010).

The NAS Brunswick Removed Transformer Database lists no electrical transformers associated with the current Building 22 (PWD, 2010).

The NAS Brunswick Aboveground Storage Tank (AST) and Underground Storage Tank (UST) inventory lists no ASTs or USTs associated with Building 22.

Building 39

Based on a review of the historical building lists and on discussions with NAS Brunswick Public Works Department personnel, Building 39 was used as the golf course maintenance building since its construction in 1985. In addition, the pesticide mixing room in the southwest corner was used for storage and mixing of liquid pesticides for application on the golf course grounds.

Building 39 has no sanitary service (Navy, 2006). No floor drains were observed in Building 39.

A 5,000-gallon, steel tank O/W separator that is associated with Building 39 collects runoff from the parking area north of the building and drains to the storm sewer (PWD, 2008b). This O/W separator will be addressed in the Golf Course Parcel RCRA Partial Closure Report.

According to MEDEP and NAS Brunswick spill records, no spills were reported in the vicinity of Building 39 (Environmental Department, 1988; Environmental Department 1999; and MEDEP, 2010). According to NAS Brunswick Environmental Department personnel, the quantity of hazardous waste generated at Building 39 was small and was episodic in nature, with no operations producing hazardous waste on a regular basis. According to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith, Building 39 mainly produced "used oil" waste. This included oils, hydraulic fluids, and waste fuel generated during the maintenance of golf carts and mowers. Hazardous waste generated at Building 39 collected by the NAS Brunswick Hazardous Waste Department, to be managed through the base-wide hazardous waste program.

The NAS Brunswick Removed Transformer Database lists no electrical transformers associated with the current Building 39 (PWD, 2010).

The NAS Brunswick AST and UST inventory lists no USTs associated with Building 39. The following ASTs were located at Building 39:

NAS Brunswick Tank Number	Tank Capacity and Material	Stored Product	Installation Date	Removal Date
A39.0	275 gallon SWS	gasoline	unknown	1995
A39.1	275 gallon SWS	heating oil (inside building)	unknown	inactive
A39.2	250 gallon DWS	gasoline	1995	inactive
A39.3	250 gallon DWS	diesel	1995	inactive
A39.4	250 gallon DWD	waste oil	1995	inactive

SWS single-walled steel
 DWS double-walled steel

4. SITE VISIT AND INVESTIGATION

A site visit for Buildings 22 and 39 was conducted on December 2, 2010 by Mr. James Forrelli, P.E., and Mr. Brandon Smith, P.E., of Tetra Tech. The purpose of the visit was to verify information gathered during the records search and to collect additional information as necessary to prepare this closure report. Tetra Tech personnel were accompanied by Mr. D. Bruce Smith, the NAS Brunswick Hazardous Waste Manager. The building was visually inspected for signs of hazardous waste generation or storage. Site visit observations, recorded on the attached Building Inspection Form ⁽¹⁾, are summarized below:

Building 22

- At the time of inspection, Building 22 was unoccupied and in fair condition.
- No evidence of current or past hazardous waste generation activities was observed.
- No signs of a past release (staining, unusual odors, stressed vegetation, etc.) were observed.
- No modifications to the structure, which may conceal signs of a past release, were observed.
- No peeling or flaking paint was observed on the exterior or interior of the building.
- Structure U4 was empty and in poor condition; no evidence of hazardous waste residues was observed.
- Structure V4 was empty and in poor condition; no evidence of hazardous waste residues was observed.
- Structure W4 was empty and in poor condition; no evidence of hazardous waste residues was observed.

Building 39

- At the time of inspection, Building 39 was unoccupied and in poor condition.
- All liquid pesticide materials had been removed from the pesticide mixing room...
- Evidence of past, possible, hazardous waste generation activities was observed, including welding/soldering and grinding activities.
- Staining was observed on the floor and work benches in the maintenance room.
- No modifications to the structure, which may conceal signs of a past release, were observed.
- No peeling or flaking paint was observed on the exterior or interior of the building.

No investigation samples were collected at Building 22 or 39, because it was concluded that based on the site visit observations and records research findings, closure actions would be required at Building 39 and Structures U4, V4, and W4 to satisfy the MEDEP hazardous waste closure requirements. Cleaning of Building 39 was required to remove potentially metal-contaminated residue exceeding the associated MEDEP clearance values for dust on floors, walls and other flat surfaces (discussed in Section 6). Also, cleaning of the pesticide mixing room in Building 39 was required to remove potential pesticide residue. In addition, due to the storage of pesticide materials in Structures U4, V4, and W4, cleaning of the structures was warranted.

5. HAZARDOUS WASTE GENERATION AND STORAGE

Based on the records research and NAS Brunswick Environmental Department personnel interviews, former operations at Buildings 22 and 39 generated small quantities of various wastes on an episodic basis; these wastes were handled and disposed of under the NAS Brunswick hazardous waste department, as discussed in Section 3. In addition, based on site visit observations, hazardous waste residue was likely present at Building 39 and Structures U4, V4, and W4. The areas impacted were addressed by the closure actions described in Section 6.

6. CLOSURE ACTIONS

Based on site visit observations and records research findings discussed in Section 4, closure actions were required at Buildings 22 and 39 to satisfy the MEDEP hazardous waste closure requirements. The closure actions were designed to meet the lead-contaminated settled dust criteria and all other metals-contaminated settled dust clearance values, and to remove pesticide residue in potentially impacted areas. Closure actions were conducted at Buildings 22 and 39 in January and February 2011, as discussed below.

Tetra Tech's cleaning subcontractor, Global Remediation Services (Global), performed floor- and wall-cleaning activities at Building 39 on January 26, 2010 and January 27, 2010 (Event 1).

Global initiated cleaning activities in the vehicle repair bay, pesticide mixing room and vehicle storage area in Building 39 and the interiors of Structures U4, V4, and W4. Prior to cleaning, floor openings were covered and sealed with polyethylene sheeting, trench-drain covers were removed, and drains were plugged. The floor was then manually swept and then vacuumed with a high efficiency particulate air (HEPA) vacuum. After sweeping and vacuuming, floors were sprayed with a 2-percent, lead-specific detergent solution with a degreaser, scrubbed, and washed, using a 5,000-pounds-per-square-inch (psi) hot water pressure-washer. All cleaning wastewater was containerized using a wet-vacuum, placed in 55-gallon drums (three drums were generated) and transferred to the NAS Brunswick hazardous waste department for disposal. Upon completion, the Tetra Tech field representative performed a visual inspection of the cleaned area.

Five post-cleaning, confirmatory floor-wipe samples, five wall samples, and two bench samples were collected from the maintenance area on January 27, 2011 (Figure 3). Five post-cleaning, confirmatory floor-wipe samples and five wall samples were collected from the vehicle storage area on January 27, 2011. Wipe samples were collected with cotton gauze saturated with dilute nitric acid (1:4 nitric acid to distilled water) for metals analysis. A 10-centimeter (cm) by 10-cm sampling area was wiped with the cotton gauze while applying moderate pressure. Wipe samples were submitted for RCRA metals analysis by Tetra Tech's subcontracted analytical laboratory, Katahdin Analytical Services (Katahdin). The resulting analytical data underwent limited data validation consisting of field duplicate evaluation, blank contamination evaluation, and completeness evaluation.

Wipe sample results for the Building 22 and 39 confirmatory samples are presented in Table 1. For lead, analytical results were compared to the following MEDEP criteria for lead-contaminated settled dust, applicable for RCRA closures:

Floors: 40 micrograms per square foot ($\mu\text{g}/\text{ft}^2$)
Walls and other flat surfaces up to a height of 8 feet: 250 $\mu\text{g}/\text{ft}^2$
Surfaces above 8 feet: visibly clean (dust-free)

There are no Maine criteria for the other seven RCRA metals. However, for these RCRA Partial Closure activities, the MEDEP has approved the use of World Trade Center (WTC) Settled Dust Screening Values (WTC, 2003) as clearance values for wipe sample results for six of the other seven metals (there are no WTC screening values for selenium).

As shown in Table 1, the lead level detected in one floor-wipe sample ($41 \mu\text{g}/\text{ft}^2$) from the maintenance area and one floor-wipe sample ($41 \mu\text{g}/\text{ft}^2$) from the vehicle storage area exceeded the MEDEP criterion for floors ($40 \mu\text{g}/\text{ft}^2$). One wall-wipe sample collected from the vehicle storage area also exceeded the respective MEDEP criterion for walls ($250 \mu\text{g}/\text{ft}^2$), with a lead level of $250 \mu\text{g}/\text{ft}^2$. Arsenic in one floor-wipe sample ($540 \mu\text{g}/\text{ft}^2$) from the maintenance area exceeded the WTC criterion for arsenic ($36 \mu\text{g}/\text{ft}^2$). All levels of other detected metals in these samples were below criteria.

Since floor-wipe and wall-wipe samples collected on January 27, 2011 were found to be above the associated MEDEP criterion, a second decontamination event (Event 2) was conducted at Building 39 on February 23, 2011. Floors and walls were scrubbed, and the floor, walls and the overhead surface were sprayed with a 2-percent, lead-specific detergent solution, and floors, and pressure-washed, using a 5,000-psi steam cleaner. All cleaning wastewater was containerized using a wet-vacuum, placed in one 55-gallon drum, and transferred to the NAS Brunswick hazardous waste department for disposal. Upon completion, the Tetra Tech field representative performed a visual inspection of the cleaned areas.

After the work areas were allowed to dry, post-cleaning Event 2 confirmatory wipe samples were collected on February 25, 2011. Three floor-wipe and two wall-wipe samples were collected (Figure 3) and submitted for metals analysis by Katahdin. The resulting analytical data

underwent limited data validation. The February 25, 2011 wipe sample results (Table 2) show that lead not detected at levels exceeding the associated MEDEP criterion for walls (250 $\mu\text{g}/\text{ft}^2$) or floors (40 $\mu\text{g}/\text{ft}^2$) in Event 2 wipe confirmation samples.

Post-cleaning Event 2 confirmatory wipe samples were collected in the pesticide mixing room and Structures U4 and V4 on March 10, 2011 and in Structure W4 on March 15, 2011. One floor-wipe and one wall-wipe sample was collected from each structure (Figure 3) and submitted by Katahdin for pesticides analysis. The resulting analytical data underwent limited data validation. As shown in Table 3 pesticides were not detected in Event 2 wipe confirmation samples.

7. OTHER ENVIRONMENTAL CONSIDERATIONS

Any electrical transformers, OW separator, USTs or ASTs known to be associated with Buildings 22 and 39 are discussed in Sections 3 and 4. No other transformers, OW separator, USTs or ASTs were observed in the immediate vicinity of the building.

8. LIMITATIONS

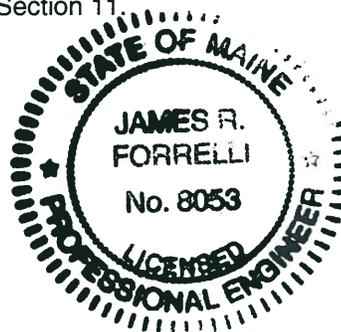
This investigation of the hazardous waste closure requirement applies to the footprints of Buildings 22 and 39 (as shown on Figure 2), only. It does not apply to the land surrounding or the groundwater underlying Buildings 22 and 39.

9. CERTIFICATION

Based on the findings of the investigation as presented in this Partial Closure Report, historical operations resulted in the generation of hazardous waste including residue in the form of arsenic and lead-contaminated residue at Buildings 22 and 39, NAS Brunswick, Maine. Closure actions were conducted to remove lead-contaminated residue to levels meeting MEDEP criteria for contaminated settled dust surfaces, applicable for RCRA closures, and to remove other metals-contaminated residue to levels meeting clearance values, as well as pesticide residues in potentially impacted storage and mixing areas. Therefore, the hazardous waste closure of Buildings 22 and 39 was completed in accordance with the provisions of MEDEP Regulations Chapter 851, Standards for Generators of Hazardous Waste, Section 11.

James R. Forrelli

James Forrelli, P.E.
Senior Project Engineer
Tetra Tech NUS, Inc.



⁽¹⁾ The Building Inspection Form provides preliminary information collected during the building inspection, including information from visual observations, Navy personnel interviews, and from documents reviewed during file reviews. It does not reflect any additional information provided at a later date that further clarifies or corrects preliminary information collected during the building inspection and file reviews.

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**TABLE 1
POST-CLEANING EVENT 1 WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDINGS 22 AND 39 – GOLF MAINTENANCE BUILDING AND AWNING
NAVAL AIR STATION BRUNSWICK, MAINE
PAGE 1 OF 4**

SAMPLE IDENTIFICATION ⁽¹⁾				B39-WP01	B39-WP02	B39-WP03	B39-WP04	B39-WP05	B39-WP06	B39-WP07	B39-WP08
LOCATION				south maintenance area south floor	south maintenance area center floor	south maintenance area south floor	south maintenance area west wall	south maintenance area west wall	north maintenance area south floor	north maintenance area south floor	north maintenance area west wall
MATRIX				wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe
EVENT				post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning
SAMPLE DATE				01/27/11	01/27/11	01/27/11	01/27/11	01/27/11	01/27/11	01/27/11	01/27/11
CRITERIA											
				WTC	MEDEP floor	MEDEP wall					
METALS (µg/ft ²)											
arsenic	36	--	--	2.32	3.16	537.89	1.21	2.14	4.55	6.32	1.30
barium	10000	--	--	48.31	36.23	36.23	9.29	12.08	35.30	58.53	9.20
cadmium	140	--	--	4.27	3.34	3.81	0.46	0.65	3.16	6.87	0.46
chromium	440	--	--	7.15	8.45	9.20	13.94	6.87	12.08	19.51	5.30
lead	NA	40	250	13.01	13.01	40.88	7.34	11.15	26.01	38.09	5.39
mercury	15	--	--	0.065	0.093 U	0.028	0.046	0.046	0.019	0.019	0.093 U
selenium	--	--	--	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U
silver	730	--	--	3.72 U	3.72 U	1.11	3.72 U	3.72 U	0.56	3.72 U	3.72 U

**TABLE 1
 POST-CLEANING EVENT 1 WIPE SAMPLE RESULTS
 RCRA PARTIAL CLOSURE REPORT
 BUILDINGS 22 AND 39 – GOLF MAINTENANCE BUILDING AND AWNING
 NAVAL AIR STATION BRUNSWICK, MAINE
 PAGE 2 OF 4**

SAMPLE IDENTIFICATION ⁽¹⁾				B39-WP09	B39-WP10	B39-WP10 (duplicate)	B39-WP11	B39-WP12	B39-WP13	B39-WP14	B39-WP15
LOCATION				north maintenance area east wall	north maintenance area east work bench	north maintenance area east work bench	north maintenance area west work bench	south vehicle storage area south floor	south vehicle storage area center floor	south vehicle storage area north floor	south vehicle storage area south wall
MATRIX				wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe
EVENT				post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning
SAMPLE DATE				01/27/11	01/27/11	01/27/11	01/27/11	01/27/11	01/27/11	01/27/11	01/27/11
CRITERIA											
				WTC	MEDEP floor	MEDEP wall					
METALS (µg/ft ²)											
arsenic	36	--	--	2.23	4.65 U	4.65 U	1.39	4.65 U	2.69	2.14	4.65 U
barium	10000	--	--	19.51	17.65	26.01	23.23	61.31	33.44	54.81	604.78
cadmium	140	--	--	0.93	7.90	17.65	2.51	2.69	1.49	5.67	0.28
chromium	440	--	--	10.22	17.65	27.87	27.87	10.22	10.22	9.10	3.62
lead	NA	40	250	13.01	37.16	122.63	85.47	18.58	13.01	33.44	250.83
mercury	15	--	--	0.093 U	0.186	0.186	0.009	0.019	0.019	0.009	7.618
selenium	--	--	--	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U
silver	730	--	--	3.72 U	0.65	1.49	1.11	3.72 U	3.72 U	3.72 U	3.72 U

**TABLE 1
POST-CLEANING EVENT 1 WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDINGS 22 AND 39 – GOLF MAINTENANCE BUILDING AND AWNING
NAVAL AIR STATION BRUNSWICK, MAINE
PAGE 3 OF 4**

SAMPLE IDENTIFICATION ⁽¹⁾				B39-WP16	B39-WP17	B39-WP18	B39-WP19	B39-WP20	B39-WP20 (duplicate)	B39-WP21	B39-WP22
LOCATION				south vehicle storage area west wall	north vehicle storage area south floor	north vehicle storage area north floor	north vehicle storage area west wall	north vehicle storage area north wall	north vehicle storage area north wall	pesticide mixing room floor	pesticide mixing room east wall
MATRIX				wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe
EVENT				post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning
SAMPLE DATE				01/27/11	01/27/11	01/27/11	01/27/11	01/27/11	01/27/11	01/28/11	01/28/11
CRITERIA											
				WTC	MEDEP floor	MEDEP wall					
METALS (µg/ft²)											
arsenic	36	--	--	2.23	4.27	2.97	1.30	4.65 U	1.11	4.65 U	4.65 U
barium	10000	--	--	166.29	37.16	45.52	146.78	90.11	522.10	18.58	7.99
cadmium	140	--	--	0.19	4.74	23.23	0.28	0.28	0.28	0.93	0.28
chromium	440	--	--	2.04	8.83	13.01	1.77	2.69	1.95	9.29	3.81
lead	NA	40	250	87.33	23.23	40.88	123.56	227.61	421.77	17.65	5.67
mercury	15	--	--	3.066	0.037	0.046	6.131	5.017	2.415	0.019	0.009
selenium	--	--	--	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U
silver	730	--	--	3.72 U	3.72 U	3.72 U	3.72 U	3.72 U	3.72 U	3.72 U	3.72 U

**TABLE 1
POST-CLEANING EVENT 1 WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDINGS 22 AND 39 – GOLF MAINTENANCE BUILDING AND AWNING
NAVAL AIR STATION BRUNSWICK, MAINE
PAGE 4 OF 4**

SAMPLE IDENTIFICATION ⁽¹⁾				B39-WP23	B39-WP24	B39-WP25	B39-WP26	B39-WP27	B39-WP28	B39-WP29	B39-WP29 (duplicate)
LOCATION				pesticide mixing room north wall	Structure W4 floor	Structure W4 wall	Structure V4 floor	Structure V4 wall	Structure U4 floor	Structure U4 wall	Structure U4 wall
MATRIX				wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe
EVENT				post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning
SAMPLE DATE				01/28/11	01/28/11	01/28/11	01/28/11	01/28/11	01/28/11	01/28/11	01/28/11
CRITERIA											
				WTC	MEDEP floor	MEDEP wall					
METALS (µg/ft ²)											
arsenic	36	--	--	4.65 U	4.65 U	4.65 U	4.65 U	4.65 U	4.65 U	4.65 U	1.39
barium	10000	--	--	9.01	8.08	6.22	13.01	7.15	6.60	5.85	6.13
cadmium	140	--	--	0.28	0.19	0.19	0.09	0.28	0.19	0.19	0.28
chromium	440	--	--	4.09	5.11	4.65	78.04	9.29	3.25	4.65	4.09
lead	NA	40	250	3.72	1.39	1.86	1.95	1.49	3.72 U	5.95	1.21
mercury	15	--	--	0.009	0.093 U	0.093 U	0.02	0.186	0.009	0.019	0.046
selenium	--	--	--	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U	6.50 U
silver	730	--	--	3.72 U	0.74	3.72 U	0.56	3.72 U	3.72 U	3.72 U	3.72 U

Notes:

(1) Sample prefix (NASB) not shown

Wipe sample surface area: 10 centimeters (cm) by 10 cm

Shading indicates criterion exceeded

WTC Source: Table A-3 Settled Dust Screening Values and Supporting Toxicity Criteria from World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks, May 2003

J estimated result

µg/ft² micrograms per square foot

-- no criteria available

NA not applicable

U not detected (with associated detection limit)

**TABLE 2
POST-CLEANING EVENT 2 WIPE SAMPLE METALS RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDINGS 22 AND 39 – GOLF MAINTENANCE BUILDING AND AWNING
NAVAL AIR STATION BRUNSWICK, MAINE**

SAMPLE IDENTIFICATION ⁽¹⁾				B39-WP30	B39-WP31	B39-WP32	B39-WP33	B39-WP33 (duplicate)	B39-WP34
LOCATION				south maintenance area south floor	south maintenance area center floor	south maintenance area south floor	south vehicle storage area south wall	south vehicle storage area south wall	north vehicle storage area north wall
MATRIX				wipe	wipe	wipe	wipe	wipe	wipe
EVENT				post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning
SAMPLE DATE				02/25/11	02/25/11	02/25/11	02/25/11	02/25/11	02/25/11
		CRITERIA							
		WTC	MEDEP floor	MEDEP wall					
METALS (µg/ft ²)									
arsenic	36	--	--	0.74	4.6 U	0.93	na	na	na
barium	10000	--	--	4.46	4.27	7.25	na	na	na
cadmium	140	--	--	0.19	0.56	0.65	na	na	na
chromium	440	--	--	4.18	2.32	5.20	na	na	na
lead	NA	40	250	2.23	1.58	7.43	19.51	49.24	13.01
mercury	15	--	--	0.09 U	0.09 U	0.03	na	na	na
selenium	--	--	--	6.5 U	6.5 U	6.5 U	na	na	na
silver	730	--	--	3.7 U	3.7 U	3.7 U	na	na	na

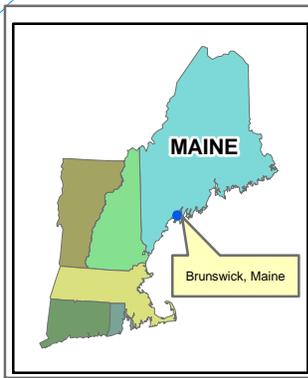
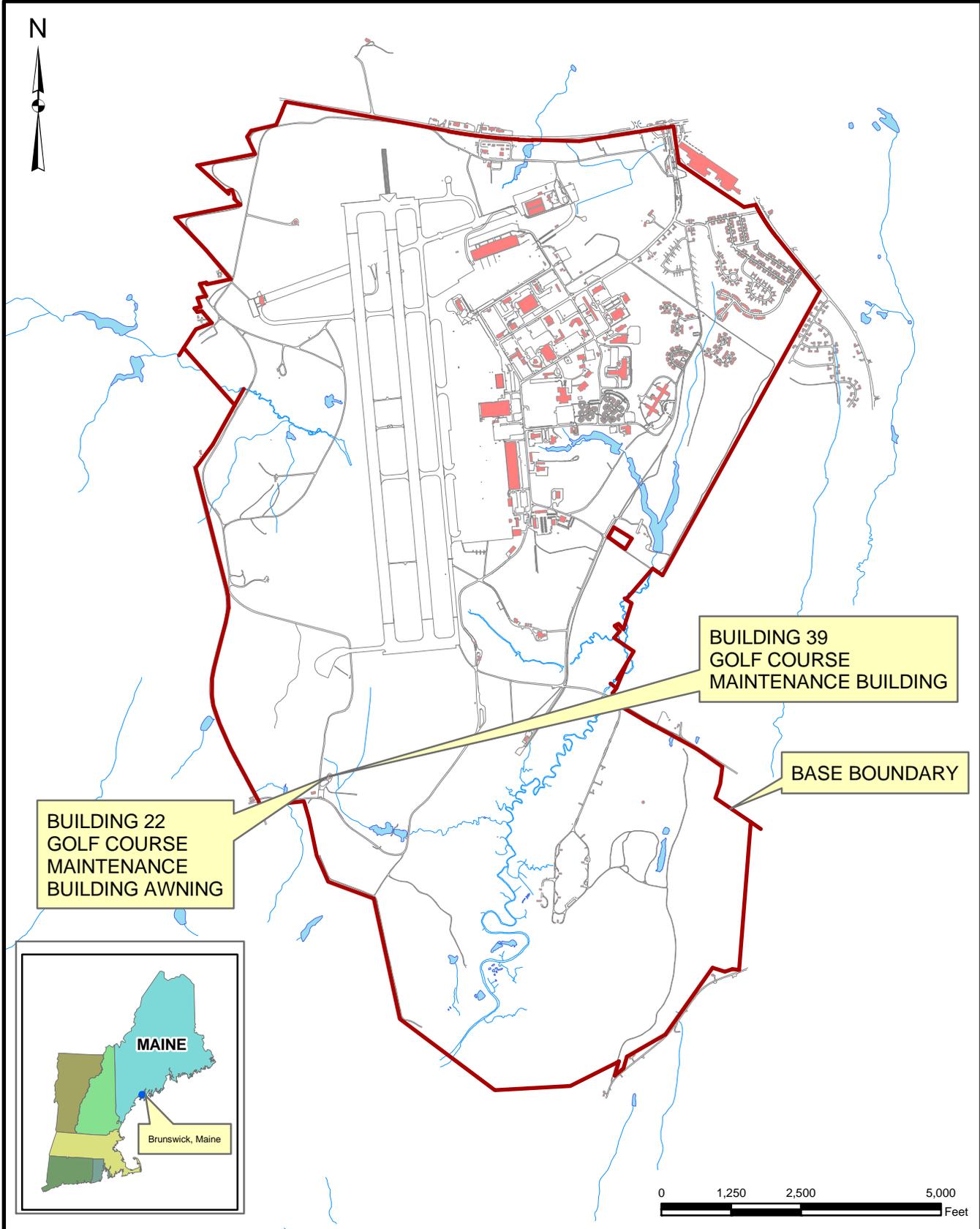
Notes:

- (1) Sample prefix (NASB) not shown
- Wipe sample surface area: 10 centimeters (cm) by 10 cm
- Shading indicates criterion exceeded
- WTC Source: Table A-3 Settled Dust Screening Values and Supporting Toxicity Criteria from World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks, May 2003
- µg/ft² micrograms per square foot
- no criteria available
- na not analyzed
- NA not applicable
- ND not detected
- U not detected (with associated detection limit)

**TABLE 3
 POST-CLEANING EVENT 2 WIPE SAMPLE PESTICIDES RESULTS
 RCRA PARTIAL CLOSURE REPORT
 BUILDINGS 22 AND 39 – GOLF MAINTENANCE BUILDING AND AWNING
 NAVAL AIR STATION BRUNSWICK, MAINE**

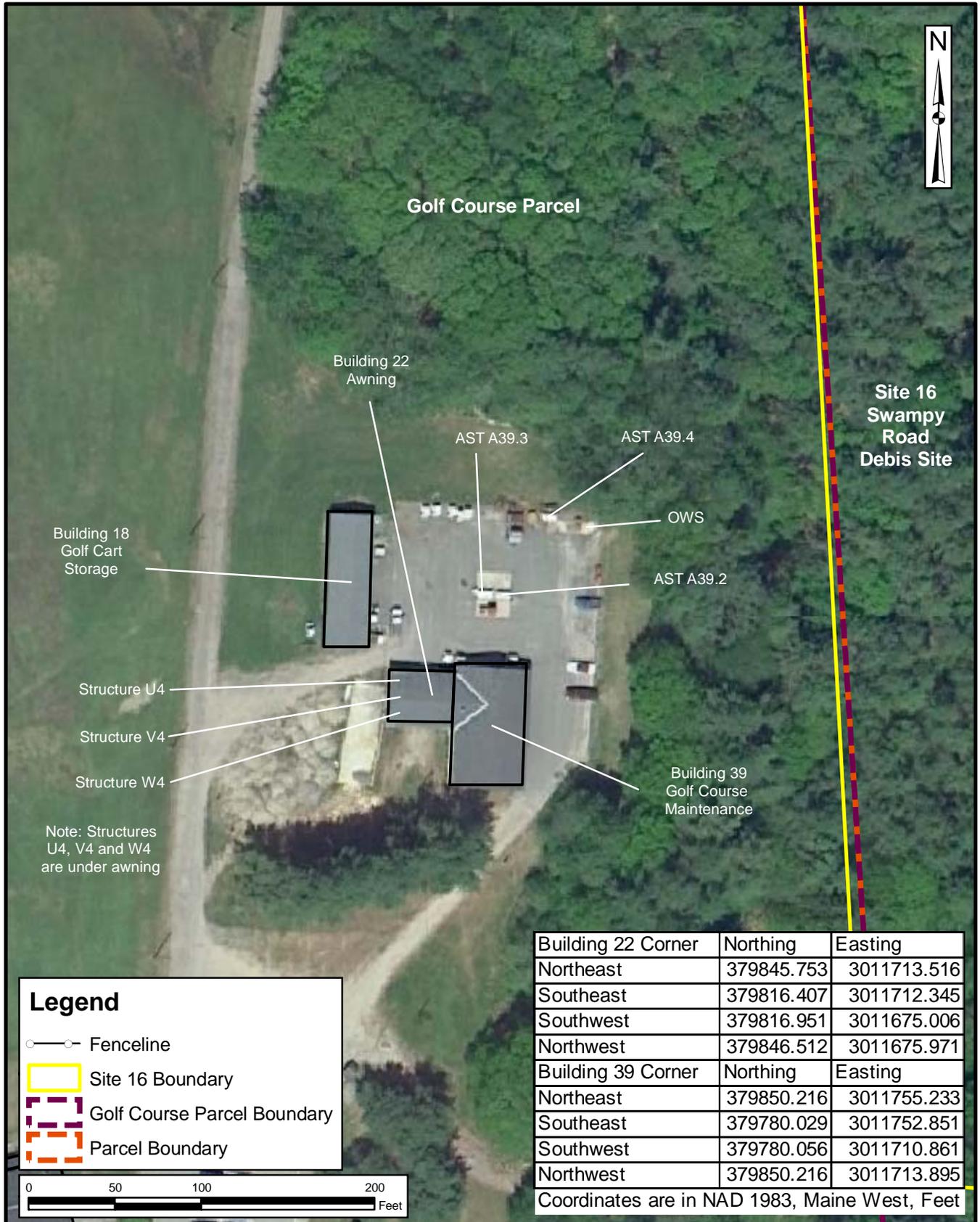
SAMPLE IDENTIFICATION ⁽¹⁾	B39-WP35	B39-WP35 (duplicate)	B39-WP36	B39-WP37	B39-WP38	B39-WP39	B39-WP40	B39-WP41	B39-WP42	B39-WP43
LOCATION	pesticide mixing room floor	pesticide mixing room floor	pesticide mixing room east wall	pesticide mixing room north wall	Structure V4 floor	Structure V4 west wall	Structure U4 floor	Structure U4 west wall	Structure W4 floor	Structure W4 west wall
MATRIX	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe
EVENT	post- cleaning	post- cleaning	post- cleaning	post- cleaning	post- cleaning	post- cleaning	post- cleaning	post- cleaning	post- cleaning	post- cleaning
SAMPLE DATE	3/10/11	3/10/11	3/10/11	3/10/11	3/10/11	3/10/11	3/10/11	3/10/11	3/15/11	3/15/11
	CRITERIA									
	MEDEP									
PESTICIDES (µg/ft²)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
 (1) Sample prefix (NASB) not shown
 Wipe sample surface area: 10 centimeters (cm) by 10 cm
 µg/ft² micrograms per square foot
 -- no criteria available
 ND not detected



SITE LOCATION MAP
BUILDING 22 - GOLF COURSE MAINTENANCE BUILDING AWNING
BUILDING 39 - GOLF COURSE MAINTENANCE BUILDING
RCRA PARTIAL CLOSURE REPORT
NAVAL AIR STATION BRUNSWICK, MAINE

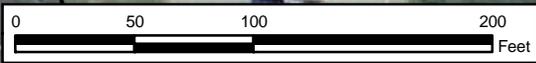
SCALE AS NOTED	
FILE	
I:_NASB_BLDG_22and39_LOCUS.MXD	
REV	DATE
0	03/03/11
FIGURE NUMBER	
1	



Note: Structures U4, V4 and W4 are under awning

Legend

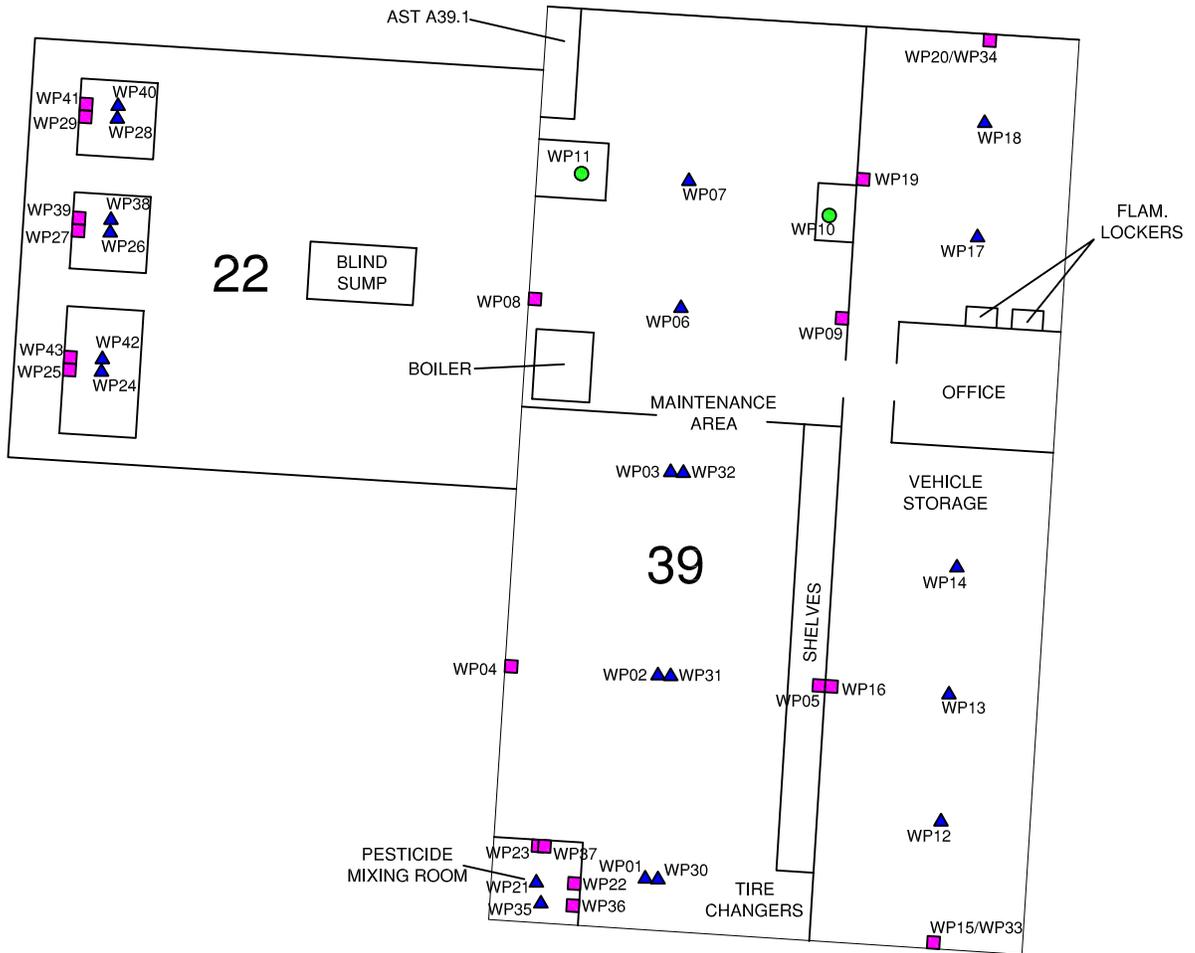
- Fenceline
- Site 16 Boundary
- Golf Course Parcel Boundary
- Parcel Boundary



Building 22 Corner	Northing	Easting
Northeast	379845.753	3011713.516
Southeast	379816.407	3011712.345
Southwest	379816.951	3011675.006
Northwest	379846.512	3011675.971
Building 39 Corner	Northing	Easting
Northeast	379850.216	3011755.233
Southeast	379780.029	3011752.851
Southwest	379780.056	3011710.861
Northwest	379850.216	3011713.895

Coordinates are in NAD 1983, Maine West, Feet

 Tetra Tech NUS, Inc.	SITE PLAN BUILDING 22 - GOLF COURSE MAINTENANCE BUILDING AWNING BUILDING 39 - GOLF COURSE MAINTENANCE BUILDING RCRA PARTIAL CLOSURE REPORT NAVAL AIR STATION BRUNSWICK, MAINE	SCALE AS NOTED
		FILE \\NASB_BLDG_22and39_SITE_MAP.MXD
		REV DATE 0 03/18/11
		FIGURE NUMBER 2



LEGEND

- WP01 ▲ FLOOR WIPE SAMPLE LOCATION
- WP04 ■ WALL WIPE SAMPLE LOCATION
- WP01 ● BENCH WIPE SAMPLE LOCATION



**POST-CLEANING SAMPLE LOCATIONS
 BUILDINGS 22 AND 39 - GOLF MAINTENANCE
 BUILDINGS
 RCRA PARTIAL CLOSURE REPORT
 NAVAL AIR STATION BRUNSWICK, MAINE**

SCALE AS NOTED	
FILE \\.\NASB_BLDG_39_POST.DWG	
REV 0	DATE 3/18/11
FIGURE NUMBER 3	

**HWSA INSPECTION FORM
HAZARDOUS WASTE STORAGE AREAS CLOSURE
NAS BRUNSWICK
BRUNSWICK, MAINE
CTO WE22**

Inspection Date: 12/02/10
Personnel: Brandon Smith, P.E. / James Forrelli, P.E.
Weather: Clear, 30s

GENERAL BUILDING INFORMATION / USES

Building Name: Golf Maintenance Building Awning
Function: Golf course maintenance building awning
Size: 1,003 SF
Year of Construction: Mid-1990s
Building 22 is located in the southwestern portion of NAS Brunswick at the Mere Creek Golf Course on Middle Bay Road, southeast of Building 18 (Golf Cart Storage), east of a driving range, outdoor skating rink and warming hut, and Swampy Road, south of a parking area and wooded area beyond, north of Middle Bay Road and the golf course parking lot, and west of a wooded area. It was constructed in 1985 and served as the golf course maintenance building for its entire history. Building 22 consists of a 1,003-square-foot, single story, open awning structure attached to the west side of Building 39 on a concrete slab foundation. The building interior consists of a maintenance area with a blind sump and three steel storage structures (Structure U4, V4, and W4) which stored herbicides and pesticides.

Building 22 is not heated.

HWSA INSPECTION / CONDITION

No hazardous waste was stored at Building 22.
At the time of inspection, Building 22 was in fair condition.
No evidence of current or past hazardous waste generation activities was observed.
No evidence of hazardous waste residues was observed.
No signs of a past release (staining, unusual odors, stressed vegetation, etc.) were observed.
No modifications to the structure, which may conceal signs of a past release, were observed.
No hazardous waste storage areas or hazardous waste accumulation areas were observed.

POTENTIAL PCB-CONTAINING TRANSFORMERS

No transformers are listed in the NASB transformer database for the Building 22.

APPLICABLE REPORTS / DOCUMENTS

Available historical aerial photos and base maps were reviewed for past uses:

1943 map – Area not shown.

1946 map – Area not shown.

1952 map – Area not shown.

1956 map – Middle Bay Road shown; no buildings shown.

1957 map – Buildings 305 (Clubhouse [Golf Course]) and 306 (Shed [Golf Course]) present northeast of current B34 location. Area labeled as golf course.

1958 aerial – Buildings 305 (Clubhouse [Golf Course]) and 306 (Shed [Golf Course]) present northeast of current B34 location. Area to the south is the golf course.

1975 map – Area not shown.

1978 aerial – Same as 1958 aerial.

1978 map – Same as 1957 map.

1979 map – Area not shown.

1981 aerial – Building 78 present with parking area to the east. B39 and B22 are not present.

1983 map – Area not shown.

1984 aerial – Same as 1981 aerial; Building 39 is now present to the north of the parking lot.

1989 map – Middle Bay Road shown and area labeled as Golf Course; no buildings are shown.

1989 aerial – Same as 1984 aerial; Building 22 is now present to the west of building 39. Outdoor ice rink and warming hut are present to the northwest of Building 78.

1993 aerial – Same as 1989 aerial.

1997 aerial – Same as 1993 aerial; Building 18 is present north of Building 39.

2006 map – Building 78 shown in its current location; Building 34 not shown.

No OWS are associated with Building 22 according to NASB records.

No ASTs or USTs were present at Building 22 according to NASB records.

No records of spills at Building 22.

HAZARDOUS WASTE STORAGE RECORDS

No hazardous waste was historically stored at Building 22 according to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith.

MISCELLANEOUS NOTES

The Tetra Tech personnel were accompanied on the inspection by D. Bruce Smith Hazardous Waste Manager. Building Number 22 was previously assigned to the brig located in the central portion of the

(SEE ATTACHED PHOTOGRAPHS)

INSPECTOR SIGNATURE: _____  _____

**HWSA INSPECTION FORM
HAZARDOUS WASTE STORAGE AREAS CLOSURE
NAS BRUNSWICK
BRUNSWICK, MAINE
CTO WE22**

Inspection Date: 12/02/10

Personnel: Brandon Smith, P.E. / James Forrelli, P.E.

Weather: Clear, 30s

GENERAL BUILDING INFORMATION / USES

Building Name: Golf Maintenance Building

Function: Golf course maintenance building

Size: 2,800 SF

Year of Construction: 1985

Building 39 is located in the southwestern portion of NAS Brunswick at the Mere Creek Golf Course on Middle Bay Road, southeast of Building 18 (Golf Cart Storage), east of a driving range, outdoor skating rink and warming hut, and Swampy Road, south of a parking area and wooded area beyond, north of Middle Bay Road and the golf course parking lot, and west of a wooded area. It was constructed in 1985 and served as the golf course maintenance building for its entire history. Building 39 consists of a 2,800-square-foot, single story, concrete block structure on a concrete slab foundation. The building interior consists of a maintenance area, office area, pesticide mixing room and garage area for mower storage.

Building 39 is heated via a fuel-oil-fired furnace.

HWSA INSPECTION / CONDITION

Hazardous waste including waste oil, lubricants, antifreeze, pesticides, and oils were stored at Building 39.

At the time of inspection, Building 39 was in poor condition.

Evidence of current or past hazardous waste generation activities was observed including welding/soldering and grinding activities.

Evidence of hazardous waste residues was observed on the floor and work benches in the maintenance room.

No signs of a past release (staining, unusual odors, stressed vegetation, etc.) were observed. No modifications to the structure, which may conceal signs of a past release, were observed.

No hazardous waste storage areas or hazardous waste accumulation areas were observed.

POTENTIAL PCB-CONTAINING TRANSFORMERS

No transformers are listed in the NASB transformer database for the Building 39.

APPLICABLE REPORTS / DOCUMENTS

Available historical aerial photos and base maps were reviewed for past uses:

1943 map – Area not shown.

1946 map – Area not shown.

1952 map – Area not shown.

1956 map – Middle Bay Road shown; no buildings shown.

1957 map – Buildings 305 (Clubhouse [Golf Course]) and 306 (Shed [Golf Course]) present northeast of current B34 location. Area labeled as golf course.

1958 aerial – Buildings 305 (Clubhouse [Golf Course]) and 306 (Shed [Golf Course]) present northeast of current B34 location. Area to the south is the golf course.

1975 map – Area not shown.

1978 aerial – Same as 1958 aerial.

1978 map – Same as 1957 map.

1979 map – Area not shown.

1981 aerial – Building 78 present with parking area to the east. B39 is not present.

1983 map – Area not shown.

1984 aerial – Same as 1981 aerial; Building 39 is now present to the north of the parking lot.

1989 map – Middle Bay Road shown and area labeled as Golf Course; no buildings are shown.

1989 aerial – Same as 1984 aerial; Outdoor ice rink and warming hut are present to the northwest of Building 78.

1993 aerial – Same as 1989 aerial.

1997 aerial – Same as 1993 aerial; Building 18 is present north of Building 39.

2006 map – Building 78 shown in its current location; Building 34 not shown.

A 5,000 gallon steel tank OWS is present in the parking area north of B39 and drains to the storm sewer and discharges to the Mere Brook tributary to the east of B39.

No USTs were present at Building 39 according to NASB records.

The following ASTs were present at Building 39 according to NASB records:

A39.0 – 275-gallon SWS AST containing gasoline (Installed unknown, removed 1995)

A39.1 – 275-gallon SWS AST containing heating oil inside building (Installed unknown, inactive)

A39.2 – 250-gallon DWS AST containing gasoline (Installed 1995, inactive)

A39.3 – 250-gallon DWS AST containing diesel (Installed 1995, inactive)

A39.4 – 250-gallon DWS AST containing waste oil (Installed 2001, inactive)

HAZARDOUS WASTE STORAGE RECORDS

Hazardous waste was historically stored and generated at Building 39 according to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith.

MISCELLANEOUS NOTES

The Tetra Tech personnel were accompanied on the inspection by D. Bruce Smith Hazardous Waste Manager.

(SEE ATTACHED PHOTOGRAPHS)

INSPECTOR SIGNATURE: _____



PHOTOGRAPHS



No 1 Buildings 22 and 39, NAS Brunswick December 2, 2010
Golf Maintenance Building (Building 39) northeast elevation; Golf Maintenance Building Awning (Building 22) visible at right of frame



No 2 Buildings 22 and 39, NAS Brunswick December 2, 2010
Golf Maintenance Building Awning area; blind sump and insulated water tank for eye wash station at right center and Golf Maintenance Building in background



No 3 Buildings 22 and 39, NAS Brunswick December 2, 2010
Golf Maintenance Building Awning area Structures W4, V4 and U4 (left to right)



No 4 Buildings 22 and 39, NAS Brunswick December 2, 2010
Golf Maintenance Building interior before cleaning; northwest maintenance area, aboveground tank A39.1 in corner



No 5 Buildings 22 and 39, NAS Brunswick December 2, 2010
Golf Maintenance Building interior before cleaning; northeast maintenance area



No 6 Buildings 22 and 39, NAS Brunswick December 2, 2010
Golf Maintenance Building interior before cleaning; south maintenance area



No 7 Buildings 22 and 39, NAS Brunswick December 2, 2010
Golf Maintenance Building interior before cleaning; south vehicle storage



No 8 Buildings 22 and 39, NAS Brunswick November 3, 2010
Golf Maintenance Building Awning area Structure U4 interior before cleaning