Technical Memorandum

Naval Air Station - Pensacola, Florida

To: NAS Pensacola Partnering Team

From: EnSafe Inc.

Date: January 2004

Subject: Recommendation for Surface Water Resampling at Select Site 41 Wetlands

Sampling Rationale

During the Site 41 Wetland investigations, several surface water samples had water quality criteria exceedances possibly attributable to high turbidity. Therefore, resampling of those locations with the low-flow/low-volume technique is recommended to confirm the exceedances. Table 1 summarizes the sample locations, criteria exceedances, and the recommended analysis. Figures 1 through 7 show the wetlands and proposed sampling locations.

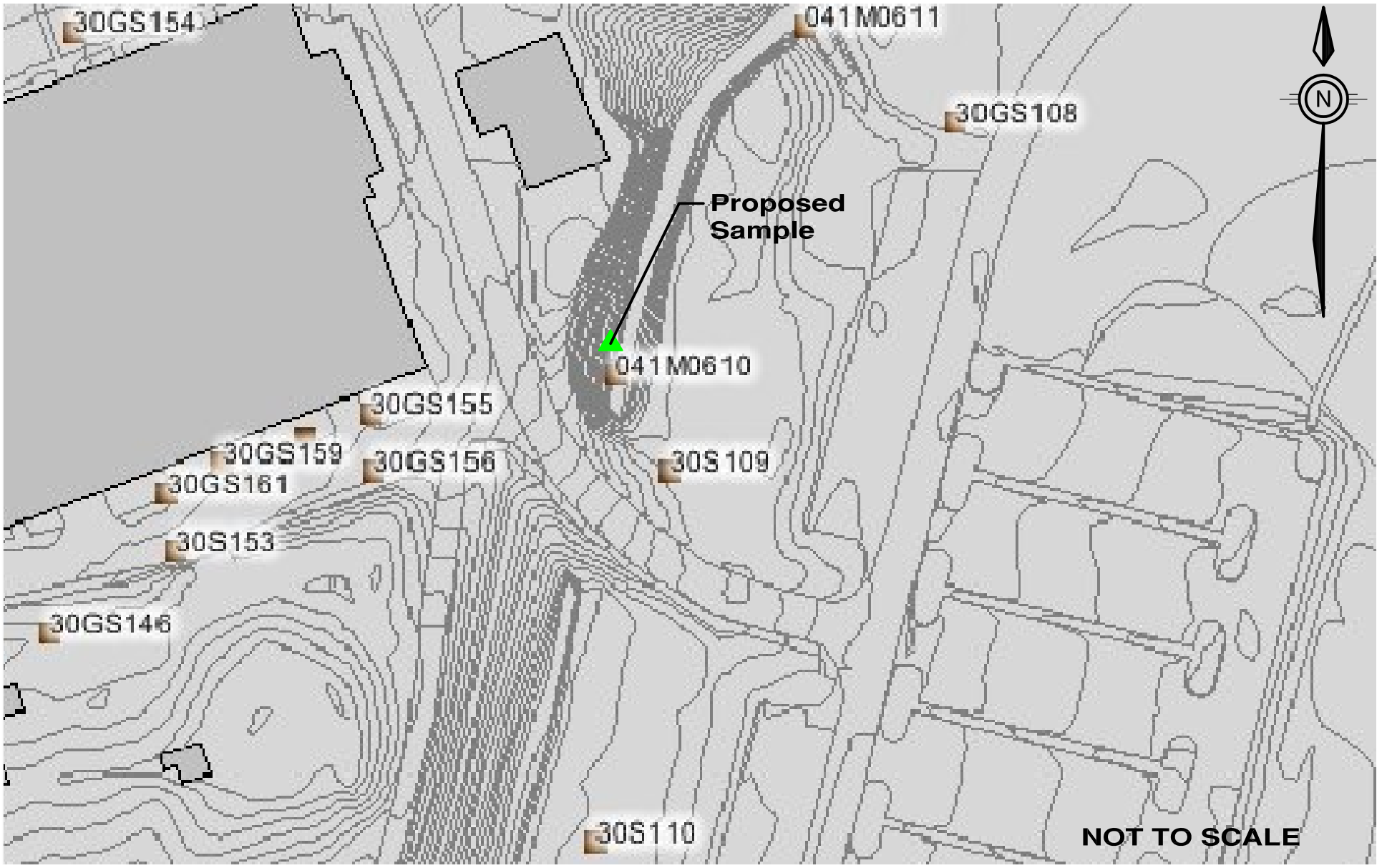
Table 1
Sample Locations, Exceedances and Recommendations for Surface Water
NAS Pensacola Site 41

Wetland	Sample Location	Original Turbidity Reading (NTU)	Parameters Exceeded	HQs	Recommendation
6	041W0610 041W0610	No data	Mercury 1,1-DCE	HQ 73.33 HQ 2.5	Resample surface water at 041W0610 for VOCs and metals.
10	033W0001	No data	Cadmium	HQ 6.71	Resample surface water for metals at 033W0001.
13	041W1301	>1000	Metals	Several ≥ 1	Resample surface water at 041W1301 for metals.
15	041W1501 041W1501	>1000	Mercury Metals	HQ 78.33 Several ≥ 1	Resample surface water for metals at 041W1501.
17	041W1701	0	Thallium	HQ 2.59	Resample surface water at 041W1701 for Thallium only.
19	041W19A1	41	Metals	Several ≥ 1	Resample surface water at 041W19A1 for metals.
58	041W5801 041W5801	0	Aluminum Lead	HQ 83.85 HQ 4.33	Resample 041W5801 for metals.
63A	041W63A2	10	Lead	HQ 53.39	Resample 041W63A2 for metals.
72	041W7201	9	Silver	HQ 62.86	Resample 041W7201 for metals.

Note:
NTU = Nephelometric turbidity unit.

Sampling Methods

All samples will be collected, handled, and documented in accordance with *Final Comprehensive*



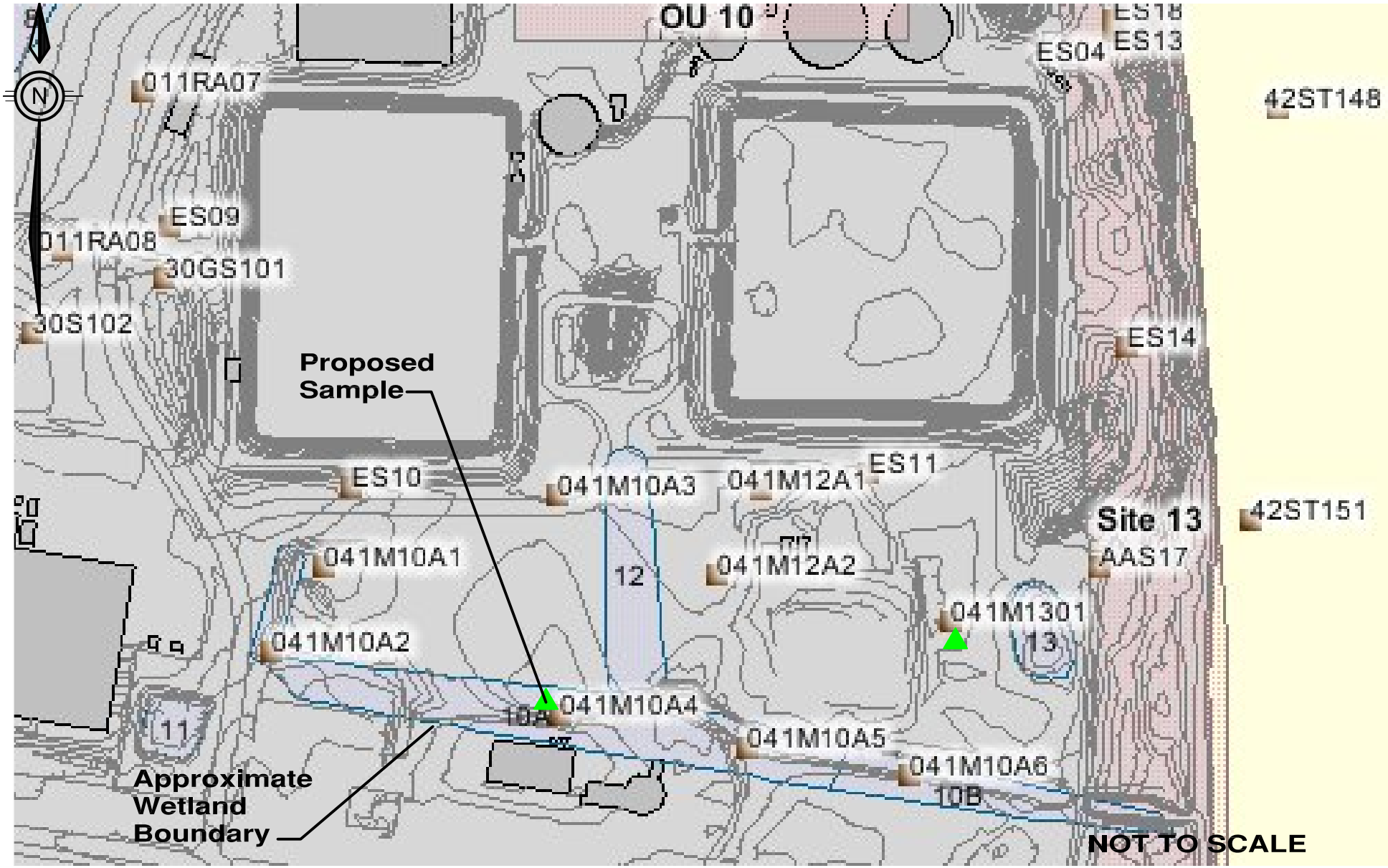
NAVFAC
Naval Facilities Engineering Command
SOUTHERN DIVISION

SITE 41 – WETLANDS
REMEDIAL INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 1
WETLAND 6 – PROPOSED
SURFACE WATER SAMPLING

Date: 01/26/04

DWG Name: 0036001C003



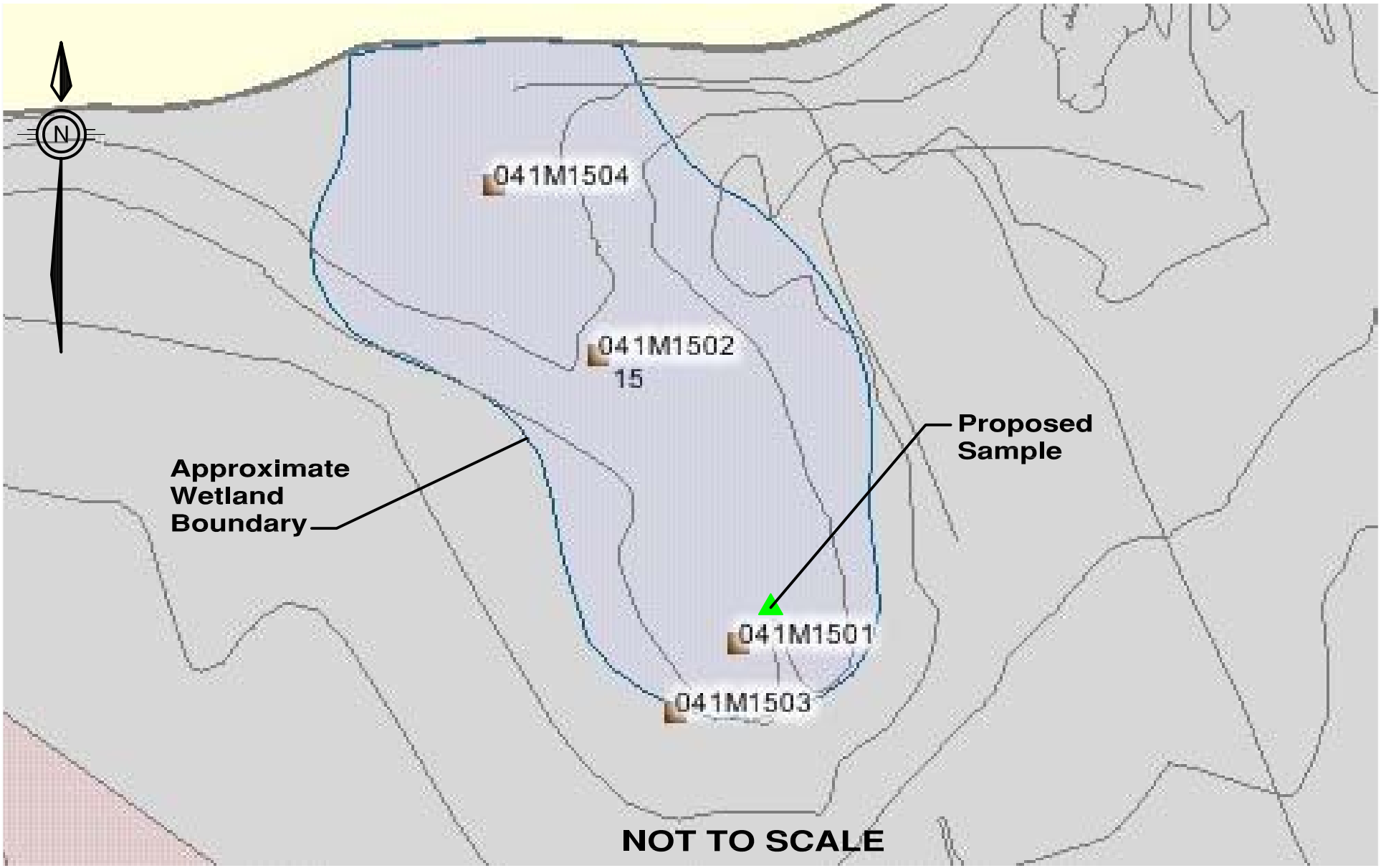
NAVFAC
Naval Facilities Engineering Command
SOUTHERN DIVISION

SITE 41 – WETLANDS
REMEDIAL INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 2
WETLANDS 10 & 13 – PROPOSED
SURFACE WATER RE-SAMPLING

Date: 01/26/04

DWG Name: 0036001C004



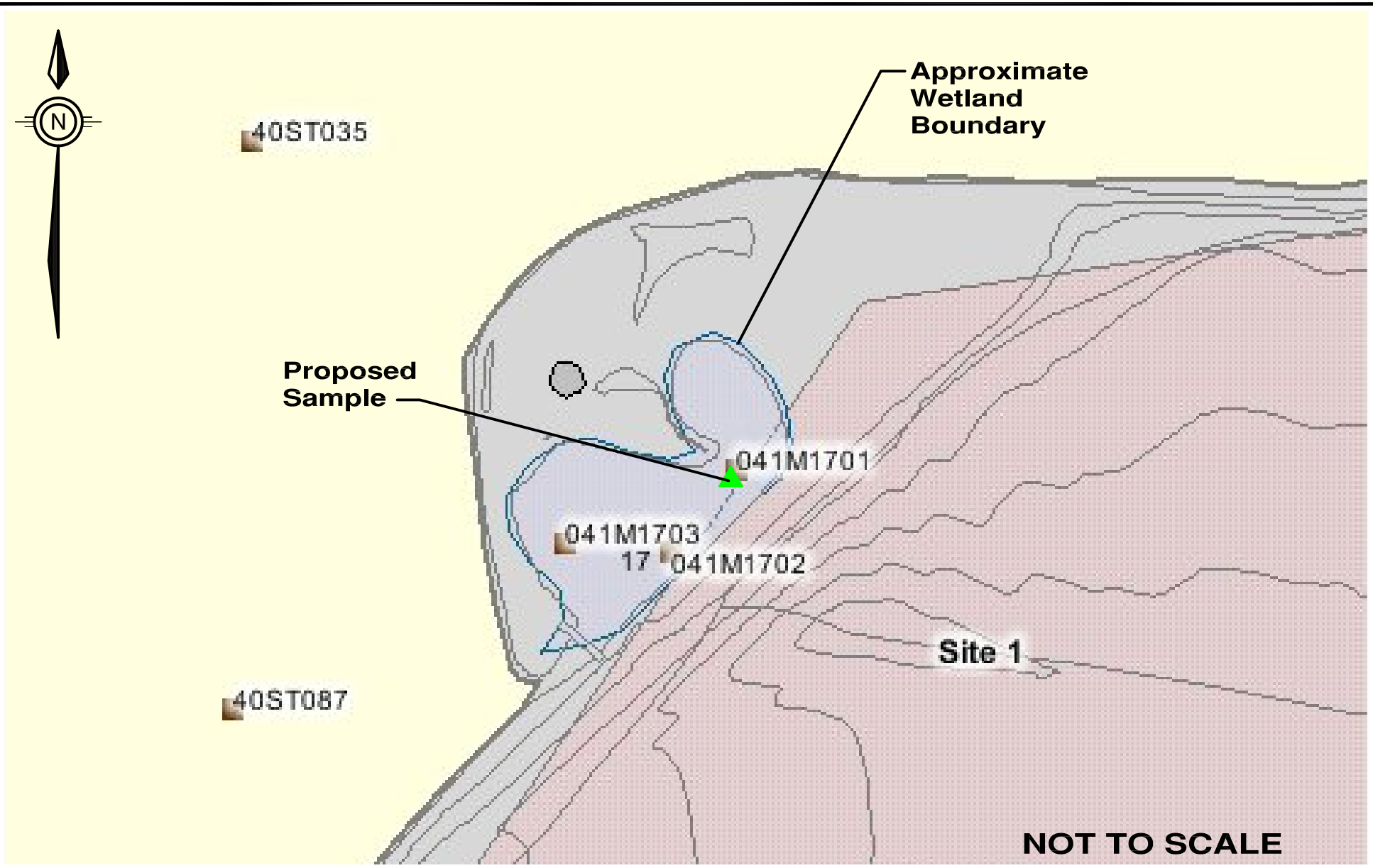
NAVFAC
Naval Facilities Engineering Command
SOUTHERN DIVISION

SITE 41 – WETLANDS
REMEDIAL INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 3
WETLAND 15 – PROPOSED
SURFACE WATER SAMPLING

Date: 01/26/04

DWG Name: 0036001C005



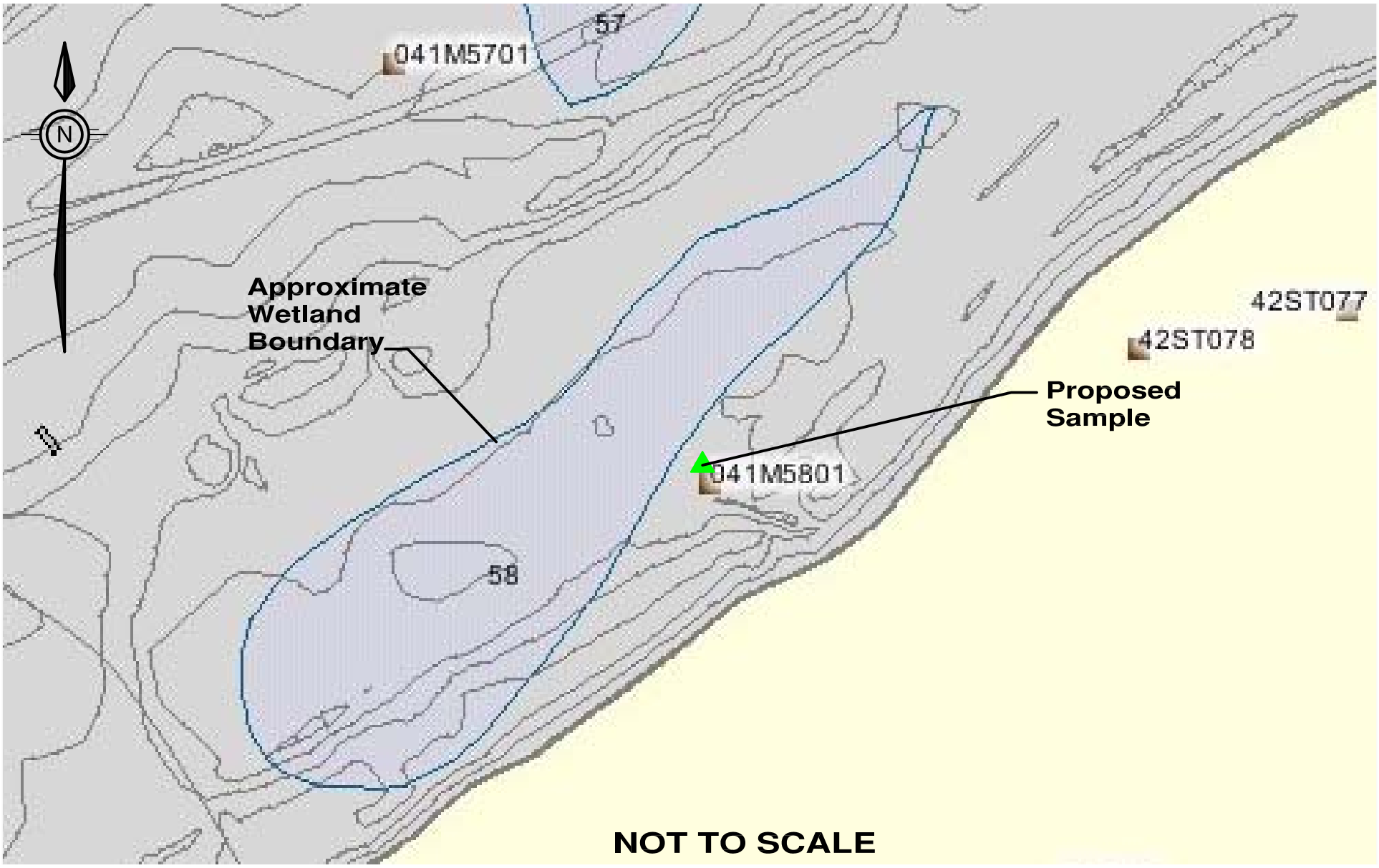
NAVFAC
Naval Facilities Engineering Command
SOUTHERN DIVISION

SITE 41 – WETLANDS
REMEDIAL INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 4
WETLAND 17 – PROPOSED
SURFACE WATER SAMPLING

Date: 01/26/04

DWG Name: 0036001C006

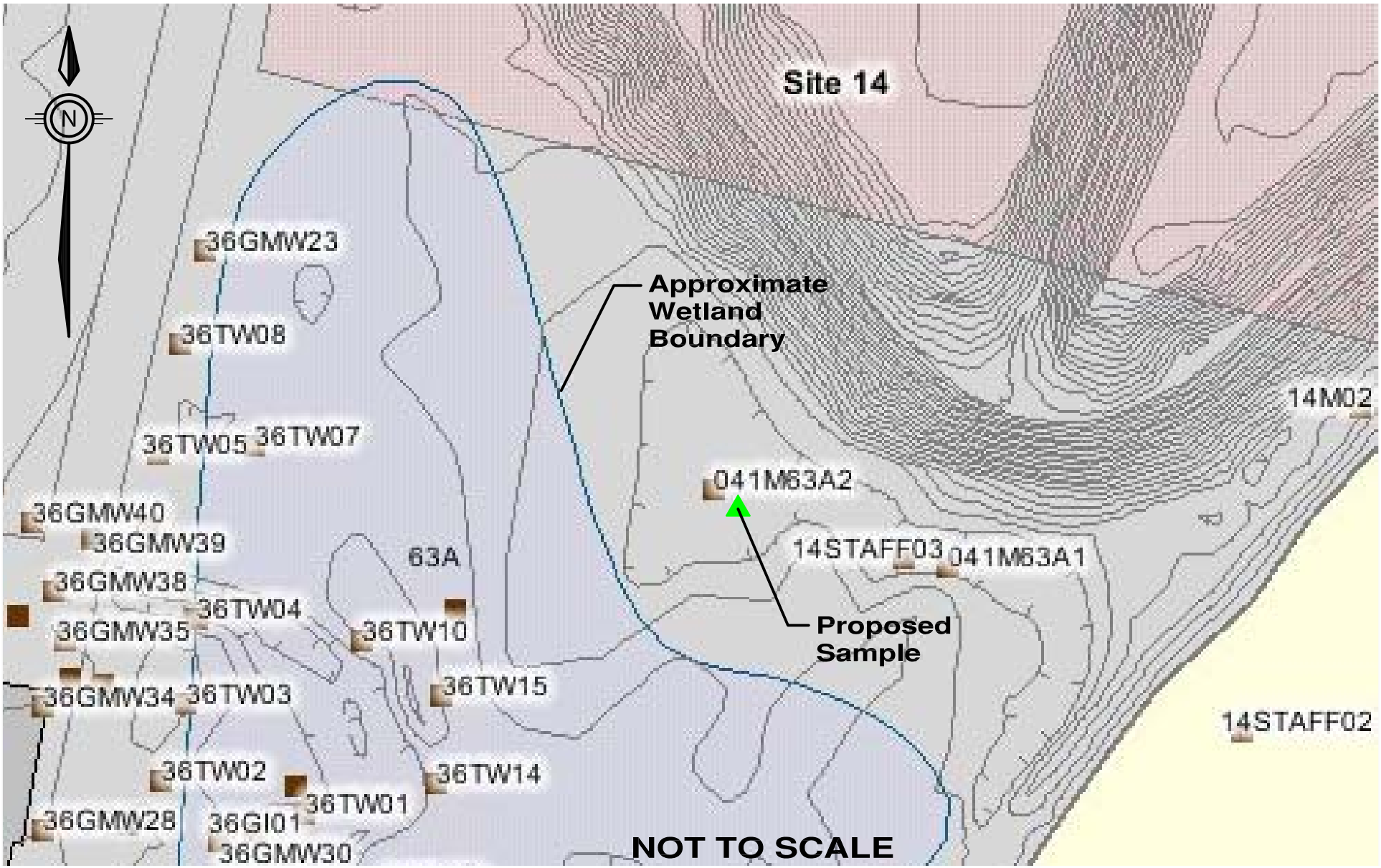


NAVFAC
Naval Facilities Engineering Command
SOUTHERN DIVISION

SITE 41 – WETLANDS
REMEDIAL INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 5
WETLAND 58 – PROPOSED
SURFACE WATER SAMPLING

Date: 01/26/04 | DWG Name: 0036001C007



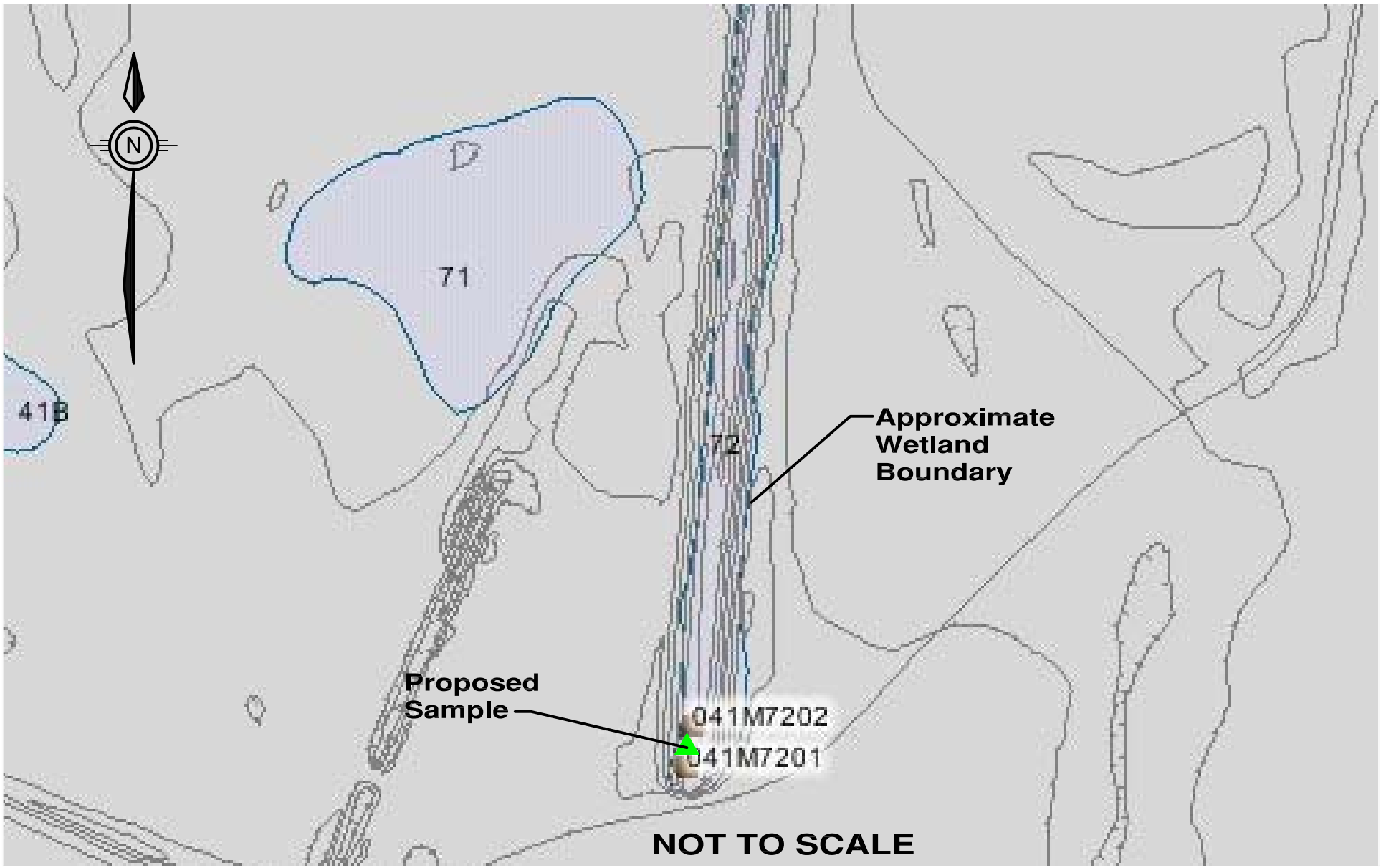
NAVFAC
Naval Facilities Engineering Command
SOUTHERN DIVISION

SITE 41 – WETLANDS
REMEDIAL INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 6
WETLAND 63A – PROPOSED
SURFACE WATER SAMPLING

Date: 01/26/04

DWG Name: 0036001C008



NAVFAC
Naval Facilities Engineering Command
SOUTHERN DIVISION

SITE 41 – WETLANDS
REMEDIAL INVESTIGATION
NAS PENSACOLA
PENSACOLA, FLORIDA

FIGURE 7
WETLAND 72 – PROPOSED
SURFACE WATER SAMPLING

Date: 01/26/04

DWG Name: 0036001C009

Sampling and Analysis Plan (CSAP) (E/A&H, July 8, 1994). To minimize the turbidity of the samples the quiescent, low-flow/low-volume groundwater sampling method will be modified for collecting surface water samples. The Teflon tubing will be carefully inserted below the surface of the water at the locations to be resampled, allowing a grab sample to be collected at a low pumping rate (i.e., approximately 0.05 gpm). A Horiba U-10 or similar instrument will be used to collect ancillary data (temperature, turbidity, pH, specific conductivity, dissolved oxygen, and salinity) at the sampling locations, and to ensure that low turbidity and stable measurements are maintained during sample collection. Sample collection and handling will be done in accordance with the CSAP.

Table 2 describes the surface water sample aliquots proposed for sampling from each wetland. These requirements may change, depending on the needs of the contracted laboratory.

Table 2
Proposed Sample Aliquots Per Wetland

Wetland	Analysis	Sample Container/Aliquot	Preservative
6, 10, 13, 15, 17, 19, 58, 63A, 72	Metals	1 ea. 500 ml plastic	HNO_3/4°C
6	VOCs	3 ea. 40 ml glass vials	HCL/4°C

At each location, both unfiltered and filtered samples will be collected. The filtered samples will be used to determine if the detected concentrations are attributable to the surface water or to the sediment.

Laboratory Analyses

All samples will be analyzed for low-concentration metals. The sample from Wetland 6 will also be analyzed for VOCs. All analyses will be level 2 data quality.

Reporting

Upon receipt of the sample results from the analytical laboratory, they will be compared to the state and federal surface water criteria. The data will be included in the Site 41 RI Report.