S0024 - F00565

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Type of Survey: **Field Examination**

Registry Number: **F00565**

LOCALITY

State: **Connecticut**

General Locality: **Eastern Long Island Sound**

Sub-locality: **New London Harbor**

2009

CHIEF OF PARTY
LT(jg) Matthew Jaskoski, NOAA

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DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

F00565

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State:	**Connecticut**		
General Locality:	**Eastern Long Island Sound**		
Sub-Locality:	**New London Harbor**		
Scale:	**1:10,000**	Date of Survey:	**04/27/09 to 04/27/09**
Instructions Dated:	**N/A**	Project Number:	**OPR-B470-NRT5-09**
Change No.1 Dated:	**N/A**		
Change No.2 Dated:	**N/A**		
Vessel:	**NOAA NRT-5, S3002**		
Chief of Party:	**LT(jg) Matthew Jaskoski, NOAA**		
Surveyed by:	**NOAA Navigation Response Team 5 Personnel**		
Soundings by:	**Odom Echotrac CV/200** **Kongsberg Simrad EM3002**		
Graphic record checked by:	**N/A**		
Protracted by:	**N/A**	Automated Plot:	**N/A**
Verification by:	**Atlantic Hydrographic Branch Personnel**		
Soundings in:	**Meters at MLLW**		

Remarks:
1) All Times are UTC.
2) This is a Basic Navigable Area Hydrographic Survey.
3) Projection is UTM Zone 18.
Bold, italic, red notes in Descriptive Report were made during office processing.

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DESCRIPTIVE REPORT

to accompany
HYDROGRAPHIC SURVEY F00565

Scale of Survey: 1:10,000
Year of Survey: 2009
NOAA Navigation Response Team 5
LT(jg) Matthew Jaskoski, OIC

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Hydrographic Survey Instructions for project OPR-B470-NRT5-09, F00565, New London Harbor, CT. The original instructions are dated March 23, 2009.

This Descriptive Report pertains to areas within of New London Harbor. The assigned registry number for this field examination is F00565, as prescribed in the Project Instructions.

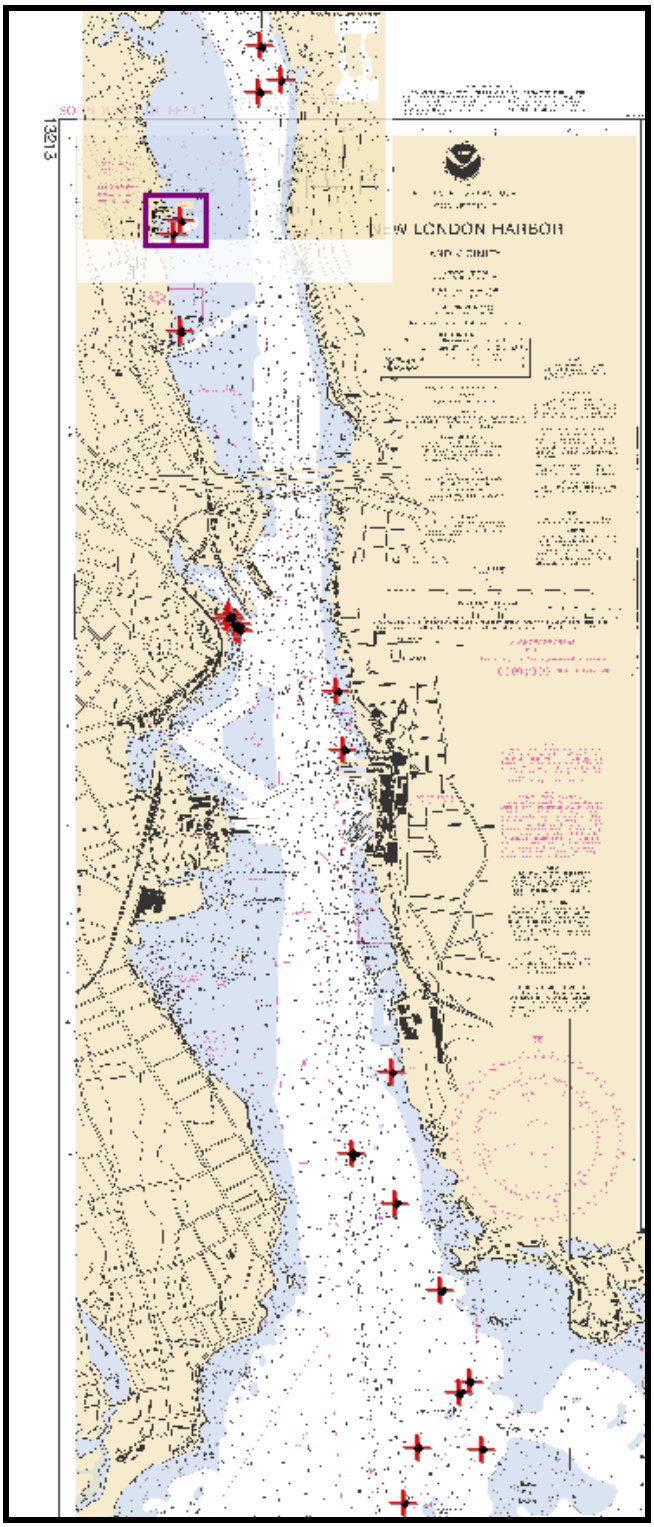
The purpose of the CY 2009 operations to provide bathymetry data for contacts identified by NOAA Ship *Thomas Jefferson* during operation in the area in 2008 but could not be developed at the original time of hydrography.

For complete survey limits, see figure A-1 on the following page.

Linear nautical miles of single beam only sounding lines - mainscheme only	0.0
Linear nautical miles of multibeam only sounding lines - mainscheme only	0.0
Linear nautical miles of side scan sonar only lines - mainscheme only	0.0
Linear nautical miles of any combination of the above techniques	0.0
Linear nautical miles of crosslines from single beam and multibeam combined	0.0
Linear nautical miles of developments other than mainscheme lines	1.20
Linear nautical miles of shoreline/nearshore investigation	0.0
Number of bottom samples collected	0
Number of items investigated that required additional time/effort in the field beyond the above survey operations	0.0
Total square nautical miles	1.2

Dates of acquisition: April 27, 2009

Figure A-1: Outline of survey area



B. DATA ACQUISITION AND PROCESSING

See also the Evaluation Report.

B.1 EQUIPMENT

Data were acquired by NOAA NRT-5, S3002. NOAA Survey Vessel S3002 is a 9.12-meter aluminum SeaArk outboard driven vessel with an average multibeam transducer draft of 1.3 meters.

NOAA S3002 acquired bathymetry data with a Kongsberg Simrad EM 3002 multibeam echosounder (MBES). Positioning and attitude were determined with a TSS POS/MV 320, version 4 GPS aided inertial navigation system (POS).

The HVF "NRT5_S3002_EM3002_MBES" was used to process EM3002 data; no unusual vessel configurations or problems were encountered. Refer to the 2009 Data Acquisition and Processing Report (DAPR) ***for detailed equipment and vessel configuration information.

B.2 QUALITY CONTROL

B.2.1 Side Scan Sonar Quality Control

N/A

B.2.2 Multibeam Echosounder Quality Control

There were no faults with the MBES system which affected data integrity. For detailed discussion of MBES system calibrations, data acquisition, and data processing refer to this project's DAPR.***

****Data filed with original field records.***

B.2.3 Total Propagated Error

Total Propagated Error (TPE) parameters as applied for sound speed and tide data for F00565 are shown in table B-1. The estimated tidal error contribution to the total survey error budget in the vicinity of New London Harbor is 0.14 meters at the 95% confidence level (0.07 at 1-σ), and includes the estimated gauge measurement error, tidal datum computation error, and tidal zoning error. Sound speed TPE values were used in accordance with HSTP guidelines regarding frequency of surface and water column sound speed measurements. ***Concur.***

Table B-1. Total Propagated Error parameters.

Total Propagated Error Values			
Tide Values		Sound Speed Values	
Measured	Zoning	Measured	Surface
0.00	0.07	4.0	0.2

B.2.4 Fieldsheets and Navigation Surfaces

Caris HIPS uncertainty weighted BASE surfaces were created for this project. For MBES data surfaces were created and submitted at 0.75m resolution. The MBES BASE surface finalized weighted grid is included in the digital PSS. Table B-2 lists all surfaces submitted with this survey. ***See Evaluation report.***

Table B-2: F00553 bathymetry surfaces.

F00553 Bathymetry surfaces and SSS mosaic			
Fieldsheet	Surface/Mosaic Name	Grid Type	Resolution
F00565	F00553_MBES_BASE_ALL_75cm	Uncertainty Weighted	0.75m
F00565	F00553_MBES_BASE_ALL75cm_Final	Uncertainty Weighted	0.75m

B.2.5 Single Beam Quality Control

N/A

B.2.6 Crosslines

Each development was ensonified by lines run at orthogonal angles.

B.2.7 Junctions

N/A

B.3 CORRECTIONS TO ECHO SOUNDING

Sound velocity profiles were applied to all EM3002 data in real time during acquisition by SIS, not during CARIS post-processing. All other methods or instruments used were as described in the project DAPR.* Raw and Processed sound speed data are included in the data submission package. ***Concur***

C. VERTICAL AND HORIZONTAL CONTROL ***See also the Evaluation Report.***

C.1 VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at New London, CT (846-1490) served as datum control for the survey area. No leveling or installation was done by NRT5 personnel.

A Request for Approved Tides was sent to N/OPS1 on May 5, 2009 (Appendix III). Verified tides from the N/OPS1 CO-OPS website were downloaded and applied to all sounding data. ***Approved tides were applied during office processing.***

C.2 HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 18.

Sounding positional control was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon stations. The DGPS beacon used for this survey was Acushnet, MA. No horizontal control stations were established for this survey.

Horizontal dilution of precision (HDOP) was monitored during acquisition, and did not exceeded 4.00. Adequate satellite coverage was maintained throughout the survey period. ***Concur***

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report.*

D.1 CHART COMPARISON

According to the Project instructions, the charts affected by this survey are:

Chart Number	*Edition*	*Edition Date*	*Scale*
13213	41	03/13/2004	1:10,000

ENC Cell Name	*Edition*	*Issue Date*	*Scale*
US4CN20M	3	01/18/2009	1:40,000
US4CN21M	9	10/31/2008	1:80,000

D.1.1 General Agreement with Charted soundings

Multibeam data was in general agreement with charted soundings where developments were conducted. ***Concur***

D.1.2 AWOIS Items and Significant Contacts

See Feature Reports in Appendix II for significant contact descriptions. No AWOIS items assigned. ***Concur***

D.1.3 Dangers to Navigation

No DTONS were identified. ***Concur with clarification - See appendix 1 for DTONS. Data attached to this report.***

D.1.4 Charted Features

Charted shoreline features in the vicinity of a floating drydock and shipyard located north of the USCG Academy were investigated by NRT5 personnel. NOAA Ship THOMAS JEFFERSON'S contact 0001 on line 413_1654 is associated with the adjacent charted pier that is part of the U.S. Navy Submarine Force Museum: Home of USS Nautilus (SSN 571). Full description and hydrographer recommendations for changes to charted features are addressed in Appendix II sec. 1 of this report, as well as in the digital PSS. ***Concur***

D.1.5 Charting Recommendations

Survey F00565 is complete and adequate to supersede charted soundings in their common areas. ***Concur***

D.2 ADDITIONAL RESULTS

D.2.1 Aids to Navigation

No AToN's were noted to be incorrectly positioned or charted. See Appendix V, section V.3 of this report. ***Concur***

D.2.2 Bridges and Overhead Cables

There are two bridges within the survey limits of F00565. Positioning data was not adversely effected by overhead objects, and the hydrographer has no charting recommendations regarding the overhead objects. ***Concur***

D.2.3 Submarine Cables and Pipelines

There are four charted submarine cable areas within the survey limits of F00565, no bathymetric data were gathered over any submerged cables. One contact is adjacent to one of the aforementioned pipelines. It is charted as a sewer pipeline. ***Concur***

E. APPROVAL SHEET

OPR-B470
Eastern Long Island Sound
Connecticut

New London Harbor
Survey Registry No. F00565

Field operations for this survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, bathymetry models, this Descriptive Report, and all accompanying records and data are approved.

Submitted in association with this descriptive report has been a series of reports and data:

2009 Data Acquisition and Processing Report (submitted with this report)
2009 HSRR Memo (submitted with this report)

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

Respectfully,

_____

LT(jg) Matthew Jaskoski, NOAA
OIC NRT-5

APPENDIX I

DANGERS TO NAVIGATION REPORT

See Appendix 2 - Features Report for DTONS.

APPENDIX II

SURVEY FEATURES REPORT

F00565 Features Report

Registry Number: F00565
State: Connecticut
Locality: Eastern Long Island
Sub-locality: New London Harbor
Project Number: OPR-B470-NRT5-09
Survey Date: 27 April 2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13213	41st	03/01/2004	1:5,000 (13213_2)	NGA NTM: 08/21/2004 (04/26/2008)
13213	41st	03/01/2004	1:10,000 (13213_1)	USCG LNM: 01/29/2008 (04/15/2008) NGA NTM: 11/06/2004 (04/26/2008)
12372	34th	11/01/2006	1:20,000 (12372_4)	[L]NTM: ?
13212	38th	11/01/2008	1:20,000 (13212_1)	NGA NTM: None (12/20/2008) USCG LNM: None (12/02/2008) CHS NTM: None (10/31/2008)
12372	34th	11/01/2006	1:40,000 (12372_1)	USCG LNM: 09/02/2008 (12/02/2008) CHS NTM: None (10/31/2008) NGA NTM: None (12/20/2008)
13205	38th	02/01/2007	1:80,000 (13205_1)	USCG LNM: 11/25/2008 (12/02/2008) NGA NTM: 04/11/1998 (12/20/2008)
12354	42nd	12/01/2006	1:80,000 (12354_1)	USCG LNM: 11/25/2008 (12/02/2008) NGA NTM: 12/04/1999 (12/20/2008)
12300	47th	05/01/2008	1:400,000 (12300_1)	USCG LNM: 11/18/2008 (12/02/2008) CHS NTM: None (10/31/2008) NGA NTM: 05/21/2005 (12/20/2008)
13006	34th	05/01/2007	1:675,000 (13006_1)	USCG LNM: 12/02/2008 (12/02/2008) NGA NTM: 11/01/2008 (12/20/2008)
5161	13th	10/01/2003	1:1,058,400 (5161_1)	USCG LNM: 09/16/2008 (12/02/2008) CHS NTM: None (10/31/2008) NGA NTM: 05/24/2008 (12/20/2008)
13003	49th	04/01/2007	1:1,200,000 (13003_1)	USCG LNM: 12/02/2008 (12/02/2008) NGA NTM: 11/01/2008 (12/20/2008)

* Correction(s) - *source: last correction applied (last correction reviewed--"cleared date")*

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Charted Obstn	GP	[None]	41° 21' 47.2" N	072° 05' 16.2" W	---
1.2	Charted Obstn	GP	[None]	41° 21' 48.0" N	072° 05' 15.0" W	---
1.3	Charted PA Wk	GP	[None]	41° 21' 43.1" N	072° 05' 12.9" W	---
1.4	343/80 Charted OBSTN	Rock	13.77 m	41° 23' 09.3" N	072° 05' 24.1" W	---
1.5	220/22 Uncharted Rock	Rock	5.79 m	41° 19' 04.9" N	072° 04' 35.1" W	---
2.1	Ft Griswold Dolphin 0002	Dolphin	[None]	41° 21' 07.1" N	072° 05' 02.9" W	---
2.2	CG Finger Pier Piling 0001	Pile	[None]	41° 22' 20.5" N	072° 05' 45.2" W	---
2.3	Dolphin 0001	Dolphin	[None]	41° 21' 19.4" N	072° 05' 29.2" W	---
2.4	Dolphin 0002	Dolphin	[None]	41° 21' 19.7" N	072° 05' 30.2" W	---
2.5	Dolphin 0003	Dolphin	[None]	41° 21' 20.6" N	072° 05' 29.7" W	---

2.6	Dolphin 0004	Dolphin	[None]	41° 21' 20.8" N	072° 05' 30.8" W	---
2.7	Dolphin 0005	Dolphin	[None]	41° 21' 21.9" N	072° 05' 31.8" W	---
2.8	Dolphin 0006	Dolphin	[None]	41° 21' 21.8" N	072° 05' 32.6" W	---
2.9	Dolphin 0007	Dolphin	[None]	41° 21' 22.6" N	072° 05' 32.0" W	---
2.10	Navy Restr Zone Buoy 0001	Open buoy	[None]	41° 23' 11.5" N	072° 05' 18.2" W	---
2.11	Navy Restr Zone Buoy 0005	Open buoy	[None]	41° 23' 18.5" N	072° 05' 23.5" W	---
2.12	Dolphin North 0001	Dolphin	[None]	41° 22' 40.1" N	072° 05' 47.3" W	---
2.13	Possible new pier extension 0003	Stationary structure, floating or fixed	[None]	41° 22' 43.2" N	072° 05' 45.9" W	---
2.14	217/23 Charted OBSTN	Obstruction	11.57 m	41° 19' 32.9" N	072° 04' 59.5" W	---
2.15	500/138 RK	Rock	6.80 m	41° 18' 46.2" N	072° 04' 27.2" W	---
2.16	134/87 RK	Rock	8.38 m	41° 18' 44.0" N	072° 04' 29.9" W	---
2.17	162/85 Rky area	Rock	6.88 m	41° 18' 32.5" N	072° 04' 23.8" W	---
3.1	DtoN 638/8 Obstn	Obstruction	11.18 m	41° 18' 22.2" N	072° 04' 45.2" W	---
3.2	DtoN 530/145 Obstn	Obstruction	11.15 m	41° 18' 21.0" N	072° 04' 45.9" W	---

1 - Charted Features

1.1) Charted Obstn

Survey Summary

Survey Position: 41° 21' 47.2" N, 072° 05' 16.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2009-013.14:54:52 (01/13/2009)

GP Dataset: ChartGPs - Digitized

GP No.: 55

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	55	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

Delete obstn.

1.2) Charted Obstn

Survey Summary

Survey Position: 41° 21' 48.0" N, 072° 05' 15.0" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ;**TVU (TPEv)** [None]

Timestamp: 2009-013.14:55:07 (01/13/2009)

GP Dataset: ChartGPs - Digitized

GP No.: 56

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	56	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

Delete obstn.

1.3) Charted PA Wk

Survey Summary

Survey Position: 41° 21' 43.1" N, 072° 05' 12.9" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ;**TVU (TPEv)** [None]

Timestamp: 2009-013.14:55:30 (01/13/2009)

GP Dataset: ChartGPs - Digitized

GP No.: 57

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	57	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

Delete dangerous sunken wreck.

1.4) 343/80 Charted OBSTN

Survey Summary

Survey Position: 41° 23' 09.3" N, 072° 05' 24.1" W

Least Depth: 13.77 m (= 45.17 ft = 7.528 fm = 7 fm 3.17 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.966 m ; **TVU (TPEv)** ±0.229 m

Timestamp: 2009-117.15:51:11.374 (04/27/2009)

Survey Line: f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 005_1550

Profile/Beam: 343/80

Charts Affected: 13213_2, 12372_4, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is a rock located on a slope, LD deeper than controlling depht of the channel.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/005_1550	343/80	0.00	000.0	Primary
s00024/tj_3101_klein5000_sss100/2008-293/110_1312	0001	2.04	231.7	Secondary
s00024/tj_3101_klein5000_sss100/2008-292/110_1834	0001	3.36	308.3	Secondary (grouped)
s00024/tj_3101_klein5000_sss200/2008-292/222_1936	0003	4.55	353.4	Secondary (grouped)

Hydrographer Recommendations

Remove charted Obstn, danger circle, and 44 ft depth.

Cartographically-Rounded Depth (Affected Charts):

45ft (13213_2, 12372_4)

7 ½fm (12300_1, 13006_1, 13003_1)

13.8m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: QUASOU - 1:depth known

SORDAT - 20090427

TECSOU - 3:found by multi-beam

VALSOU - 13.767 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Delete 44 Obstn and danger curve.

Feature Images

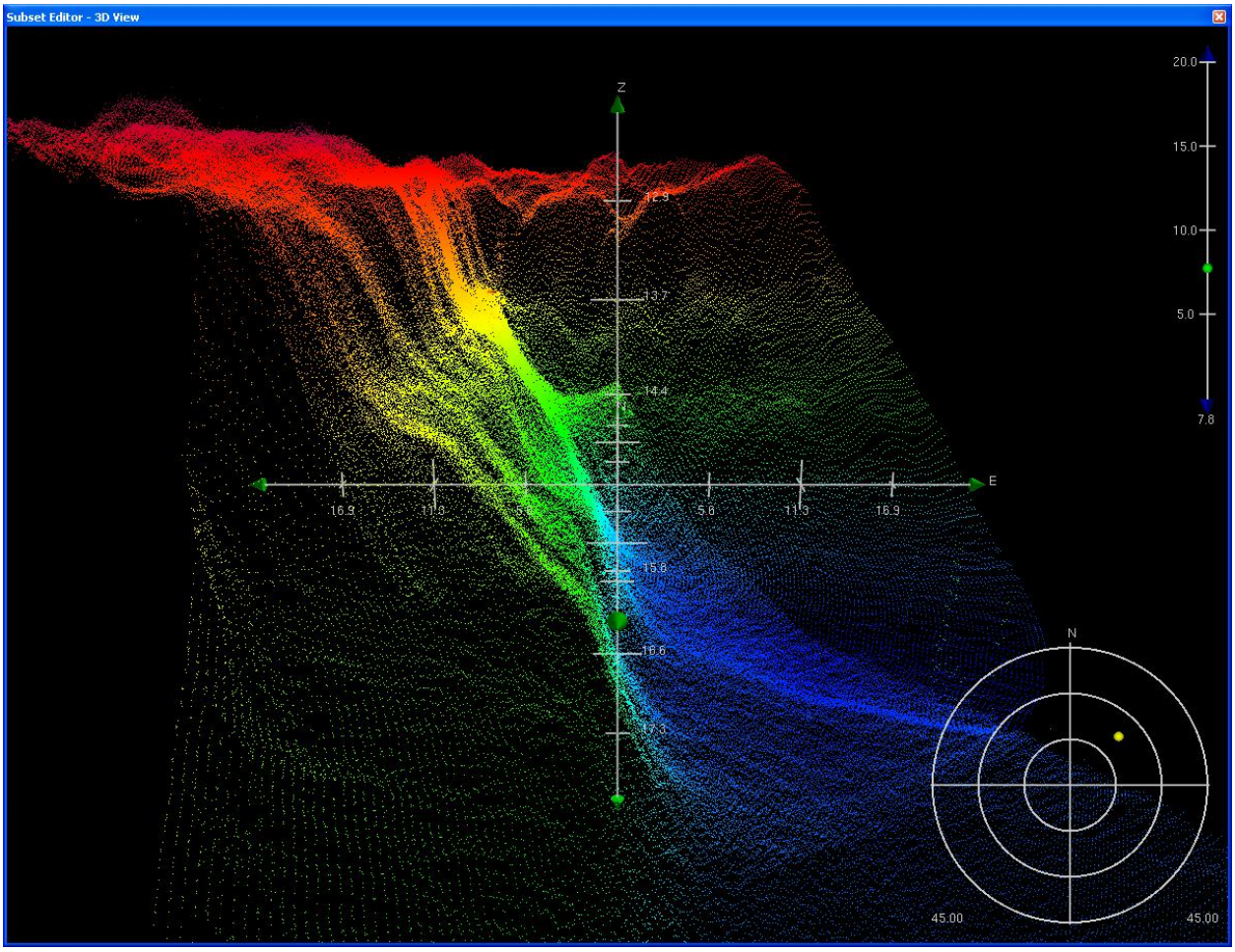


Figure 1.27.1

1.5) 220/22 Uncharted Rock

Survey Summary

Survey Position:	41° 19' 04.9" N, 072° 04' 35.1" W
Least Depth:	5.79 m (= 19.00 ft = 3.166 fm = 3 fm 1.00 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.966 m ; **TVU (TPEv)** ±0.210 m
Timestamp:	2009-117.15:00:16.000 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 030_1459
Profile/Beam:	220/22
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The contact was developed with 100% Simrad EMN3002 MBES, verified tides applied. The contact is a large rock outcrop, LD shallower than charted sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/030_1459	220/22	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-289/109_1356	0003	3.29	245.5	Secondary
s00024/tj_3101_klein5000_sss200/2008-290/235_1445	0001	5.14	189.0	Secondary
s00024/tj_3102_klein5000_sss100/2008-291/133_2042	0001	6.50	252.1	Secondary (grouped)

Hydrographer Recommendations

Chart Rk with LD of 19 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

19ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

3fm (12300_1, 13006_1, 13003_1)

5.8m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	SORDAT - 20090427

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 5.790 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concor - Chart 19 Rk and danger curve.

Feature Images

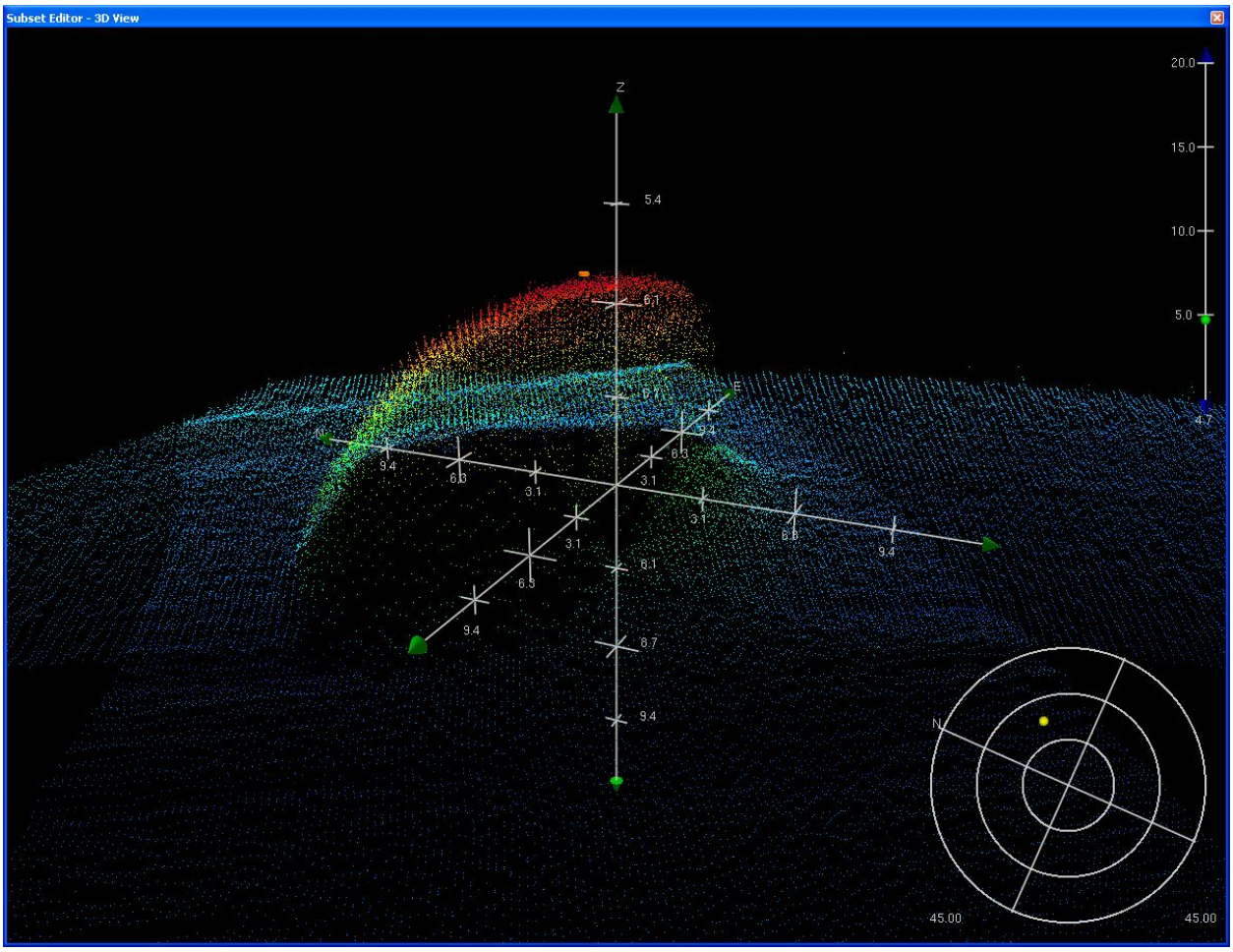


Figure 1.28.1

2 - New Features

2.1) Ft Griswold Dolphin 0002

Survey Summary

Survey Position: 41° 21' 07.1" N, 072° 05' 02.9" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-309.04:29:57 (11/04/2008)

Survey Line: s00024 / tj_3101_klein5000_sss100 / 2008-290 / 157_2124

Contact/Point: 0002/1

Charts Affected: 13213_1, 12372_4, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Pile cluster not on chart. Dolphin confirmed by NRT5 visually. Data was not acquired due to Electric Boat patrols requesting we depart their restricted area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3101_klein5000_sss100/2008-290/157_2124	0002	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dol with Dolphin symbol.

NRT5: Hydrographers concur.

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart Dolphin.

2.2) CG Finger Pier Piling 0001

Survey Summary

Survey Position:	41° 22' 20.5" N, 072° 05' 45.2" W
Least Depth:	[None]
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2008-310.03:44:40 (11/05/2008)
Survey Line:	s00024 / tj_3101_klein5000_sss200 / 2008-291 / 270_1453
Contact/Point:	0001/1
Charts Affected:	13213_1, 12372_4, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted pile.

No further development conducted by NRT5 due to restrictions, visual inspection confirmed existence of a floating pier. No evidence of ruins was noted

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3101_klein5000_sss200/2008-291/270_1453	0001	0.00	000.0	Primary

Hydrographer Recommendations

Extend the charted finger pier (ends approx. 20m west of this position) or chart ruins from current pier's charted position to this position.

NRT5: Agree with recommendation to extend the charted pier.

S-57 Data

Geo object 1:	Shoreline Construction (SLCONS)
Attributes:	CATSLC - 4:pier (jetty)
	STATUS - 1:permanent
	WATLEV - 5:awash

Office Notes

Concur with clarification - Defer to MCD NDB for final charting recommendation.

Feature Images

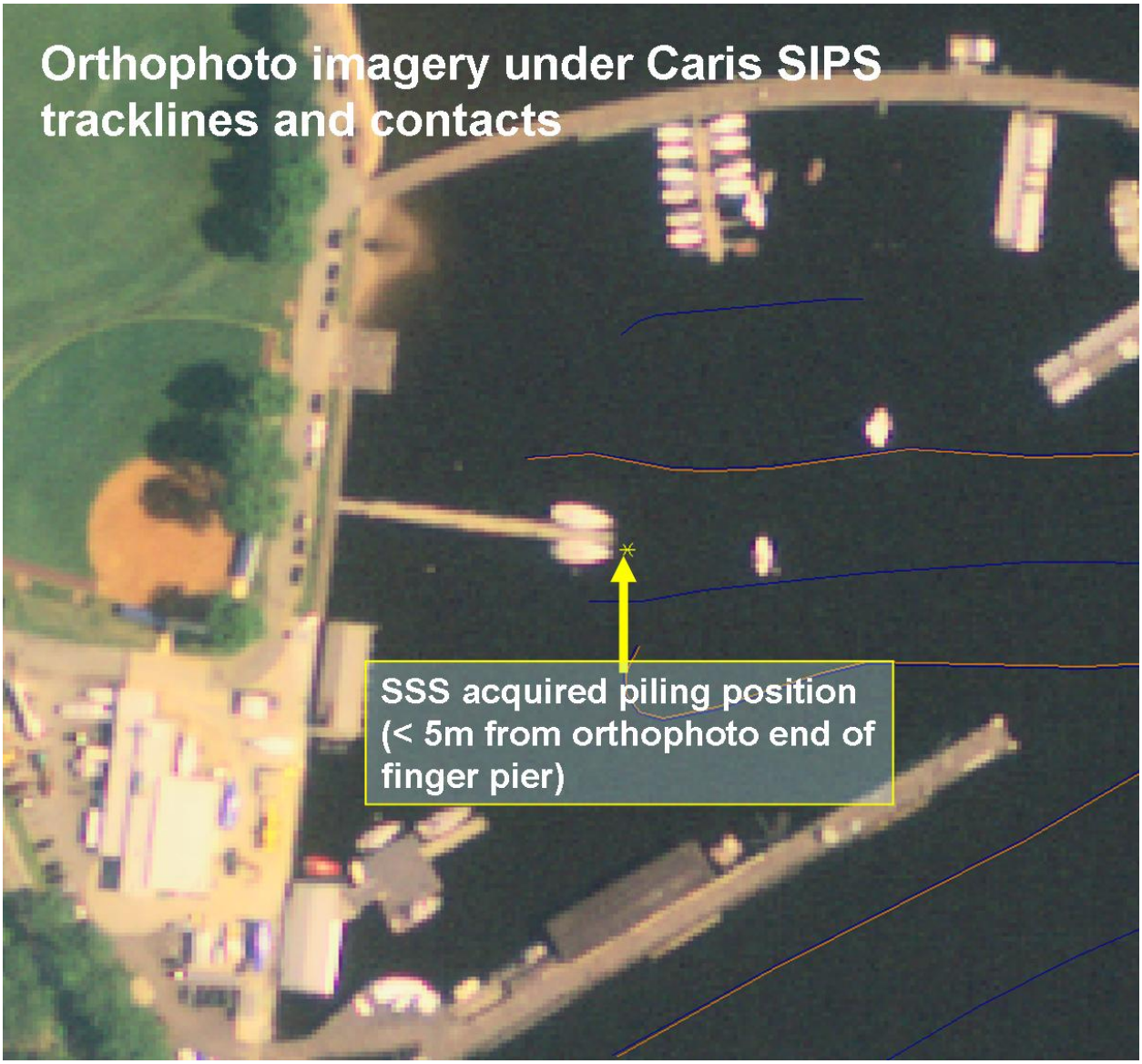


Figure 2.2.1

2.3) Dolphin 0001

Survey Summary

Survey Position: 41° 21' 19.4" N, 072° 05' 29.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:22:27 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0001/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0001	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart Dolphin.

2.4) Dolphin 0002

Survey Summary

Survey Position: 41° 21' 19.7" N, 072° 05' 30.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:23:17 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0002/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0002	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart Dolphin.

2.5) Dolphin 0003

Survey Summary

Survey Position: 41° 21' 20.6" N, 072° 05' 29.7" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:24:20 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0003/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin, NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0003	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - - Chart Dolphin.

2.6) Dolphin 0004

Survey Summary

Survey Position: 41° 21' 20.8" N, 072° 05' 30.8" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:24:52 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0004/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0004	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart dolphin.

2.7) Dolphin 0005

Survey Summary

Survey Position: 41° 21' 21.9" N, 072° 05' 31.8" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:25:28 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0005/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0005	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart dolphin.

2.8) Dolphin 0006

Survey Summary

Survey Position: 41° 21' 21.8" N, 072° 05' 32.6" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:25:58 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0006/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0006	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart dolphin.

2.9) Dolphin 0007

Survey Summary

Survey Position: 41° 21' 22.6" N, 072° 05' 32.0" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:26:34 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0007/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0007	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart dolphin.

2.10) Navy Restr Zone Buoy 0001

Survey Summary

Survey Position: 41° 23' 11.5" N, 072° 05' 18.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.04:47:48 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-293 / 413_1654

Contact/Point: 0001/1

Charts Affected: 13213_2, 12372_4, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted item.

NRT5 was unable to gather bathy data over this feature, visual inspections confirmed the item as a buoy demarking the restricted zone IVO a permanently moored inactive submarine (Nautilus SSn571) located at the USN Submarine Force Museum Pier. The buoy is a small black yokahoma with no markings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-293/413_1654	0001	0.00	000.0	Primary

Hydrographer Recommendations

NRT5: Recommends the permanantly moored sub be charted as a land feature and the area inshore of the buoy be charted as restricted.

S-57 Data

Geo object 1: Buoy, safe water (BOYSAW)

Attributes: COLOUR - 2:black

Office Notes

Concur - Defer to MCD NDB for final charting recommendation.

2.11 Navy Restr Zone Buoy 0005

Survey Summary

Survey Position: 41° 23' 18.5" N, 072° 05' 23.5" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.06:56:29 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-293 / 413_1654

Contact/Point: 0005/1

Charts Affected: 13213_2, 12372_4, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted item.

NRT5 was unable to gather bathy data on this feature. Visual investigation showed the contact to be a buoy demarking the restricted area IVO the USN Submarine base. The buoy is a small black yokahoma with no markings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-293/413_1654	0005	0.00	000.0	Primary

Hydrographer Recommendations

NRT5: Recommends the area be charted as restricted.

Chart restricted area around Navy base and buoy in current survey position.

S-57 Data

Geo object 1: Buoy, installation (BOYINB)

Attributes: COLOUR - 2:black

Office Notes

Concur - Defer to MCD NDB for final charting recommendation.

2.12) Dolphin North 0001

Survey Summary

Survey Position: 41° 22' 40.1" N, 072° 05' 47.3" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)**[None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.04:30:39 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-293 / 501_1550

Contact/Point: 0001/1

Charts Affected: 13213_2, 13213_1, 12372_4, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted piles dolphine. Visible.

NRT5 was able to visually confirm the existence of this dol, but unable to gather bathy due to its close proximity to moored barges.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-293/501_1550	0001	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss200/2008-293/503_1549	0005	2.82	268.4	Secondary

Hydrographer Recommendations

Chart Dolphin symbol

NRT5: Concur, the item should be charted as a Dol.

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

STATUS - 1:permanent

Office Notes

Concur - Chart dolphin.

2.13) Possible new pier extension 0003

Survey Summary

Survey Position: 41° 22' 43.2" N, 072° 05' 45.9" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.04:19:55 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-293 / 503_1549

Contact/Point: 0003/1

Charts Affected: 13213_2, 13213_1, 12372_4, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The investigation area was obstructed by a moored construction barge, NRT5 could gathered no bathy data at this location.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-293/503_1549	0003	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss200/2008-293/503_1549	0001	4.09	162.1	Secondary (grouped)

Hydrographer Recommendations

Recommend compiler conduct shoreline investigation of pier faces with orthoimagery and revise shoreline as applicable.

NRT5: Concur

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)

Attributes: CATSLC - 4:pier (jetty)

Office Notes

Concur with clarification - Defer to MCD NDB for final charting recommendation.

2.14) 217/23 Charted OBSTN

Survey Summary

Survey Position: 41° 19' 32.9" N, 072° 04' 59.5" W

Least Depth: 11.57 m (= 37.96 ft = 6.327 fm = 6 fm 1.96 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.972 m ; **TVU (TPEv)** ±0.243 m

Timestamp: 2009-117.15:07:43.584 (04/27/2009)

Survey Line: f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 026_1507

Profile/Beam: 217/23

Charts Affected: 13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The contact was developed with 100% Simrad EM3002 MBES, verified tides applied. The object is an OBSTN.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/026_1507	217/23	0.00	000.0	Primary
s00024/tj_3101_klein5000_sss100/2008-292/101_1247	0003	15.80	284.1	Secondary (grouped)
s00024/tj_3101_klein5000_sss100/2008-292/016_1329	0001	15.84	291.9	Secondary
s00024/noaa_auv600/2008-289/remus094	0001	16.01	287.8	Secondary (grouped)
s00024/tj_3102_klein5000_sss100/2008-292/300_1823	0001	16.18	292.2	Secondary
s00024/noaa_auv600/2008-290/remus393	0001	16.30	271.8	Secondary
s00024/noaa_auv600/2008-290/remus392	0001	16.31	273.0	Secondary (grouped)
s00024/noaa_auv600/2008-290/remus327	0001	16.86	307.1	Secondary
s00024/tj_3101_klein5000_sss200/2008-290/210_1722	0001	17.77	301.8	Secondary

Hydrographer Recommendations

Modify position of charted Obstn to current surveyed position. Change LD to 38 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

38ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

6 ¼fm (12300_1, 13006_1, 13003_1)

11.6m (5161_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes:
QUASOU - 6:least depth known
SORDAT - 20090427
TECSOU - 3:found by multi-beam
VALSOU - 11.571 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification - Delete charted 37 Obstn. Add 38 Obstn and danger curve.

Feature Images

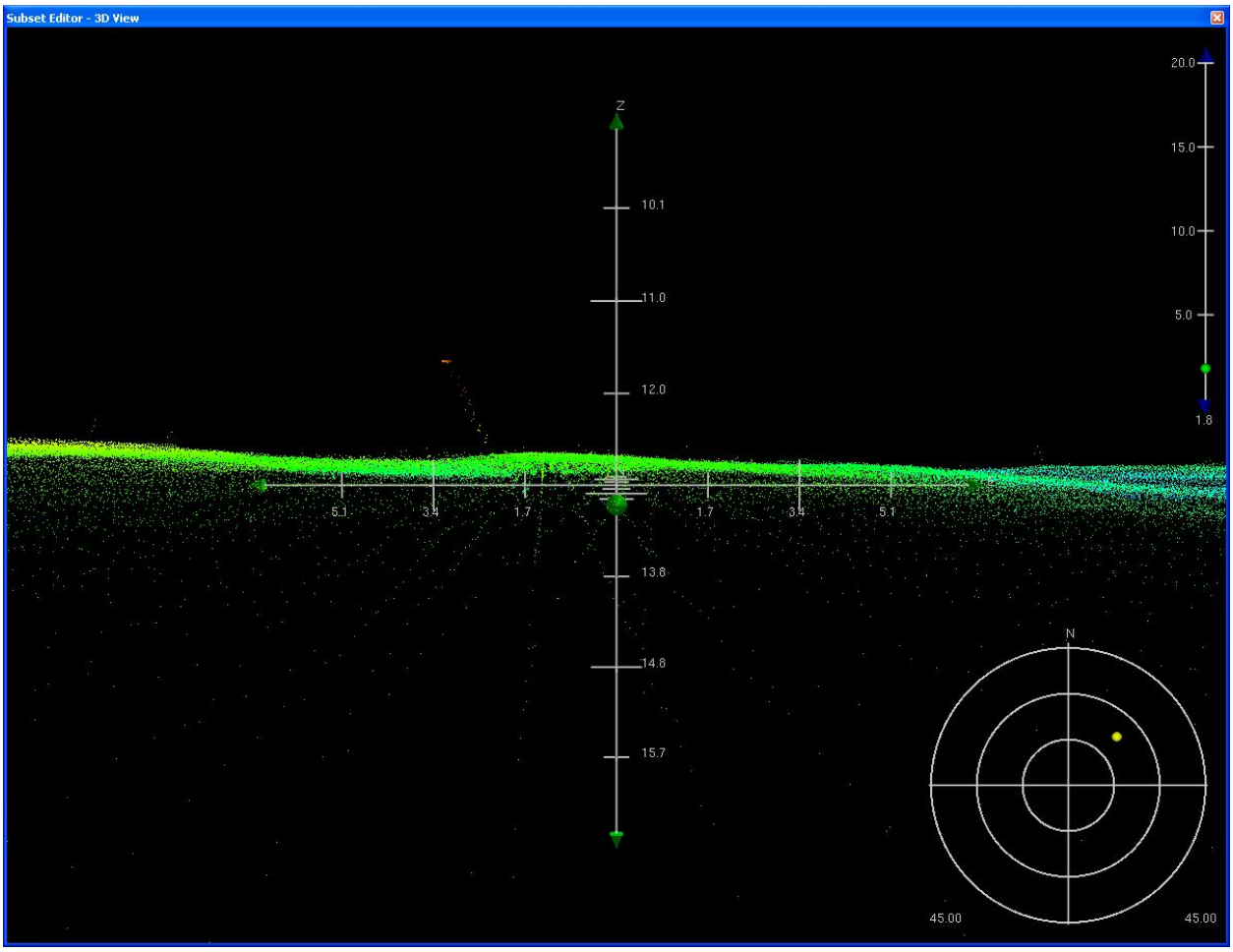


Figure 2.16.1

2.15) 500/138 RK

Survey Summary

Survey Position:	41° 18' 46.2" N, 072° 04' 27.2" W
Least Depth:	6.80 m (= 22.30 ft = 3.716 fm = 3 fm 4.30 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.966 m ; **TVU (TPEv)** ±0.213 m
Timestamp:	2009-117.14:56:57.821 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 033_1456
Profile/Beam:	500/138
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was developed with 100% Simrad EM3002 MBES, verfied tides applied. The contact is a rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/033_1456	500/138	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-289/111_1338	0004	1.11	333.3	Secondary
s00024/tj_3102_klein5000_sss200/2008-292/331_1600	0006	1.51	178.6	Secondary
s00024/tj_3102_klein5000_sss100/2008-289/110_1345	0004	3.79	161.2	Secondary (grouped)

Hydrographer Recommendations

Chart Rk with LD of 22 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

22ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

3 ¾fm (12300_1, 13006_1, 13003_1)

6.8m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	SORDAT - 20090430
	TECSOU - 3:found by multi-beam

VALSOU - 6.796 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart 22 Rk and danger curve.

Feature Images

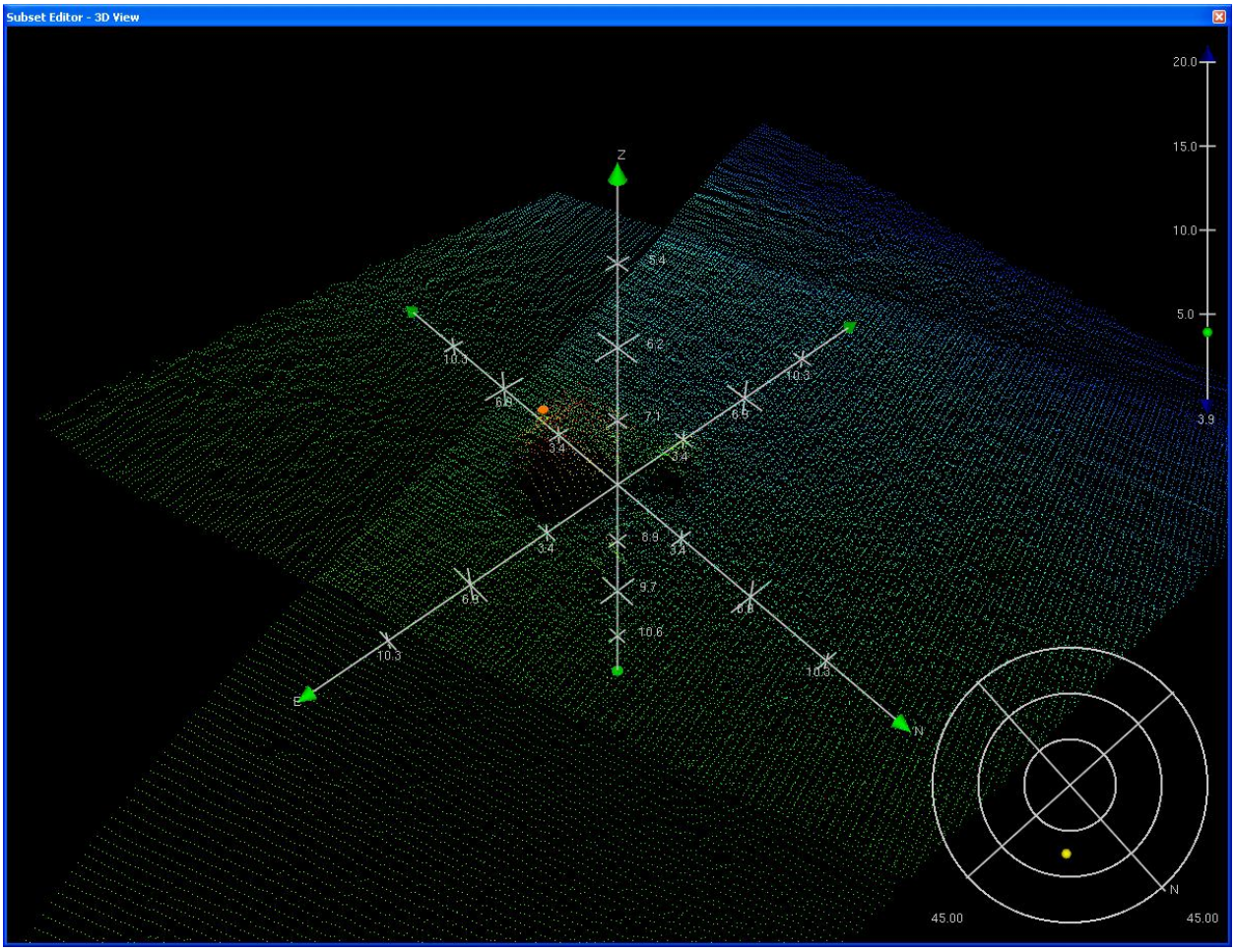


Figure 2.17.1

2.16) 134/87 RK

Survey Summary

Survey Position:	41° 18' 44.0" N, 072° 04' 29.9" W
Least Depth:	8.38 m (= 27.48 ft = 4.580 fm = 4 fm 3.48 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.965 m ; **TVU (TPEv)** ±0.221 m
Timestamp:	2009-117.14:54:39.569 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 034_1454
Profile/Beam:	134/87
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is a rock, LD shallower than charted soundings in the area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/034_1454	134/87	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-289/110_1345	0008	0.92	176.2	Secondary
s00024/tj_3102_klein5000_sss200/2008-289/216_1532	0002	2.05	167.6	Secondary

Hydrographer Recommendations

Chart Rk with LD of 27 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

27ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

4 ½fm (12300_1, 13006_1, 13003_1)

8.4m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	SORDAT - 20090430
	TECSOU - 3:found by multi-beam

VALSOU - 8.376 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart 27 Rk and danger curve.

Feature Images

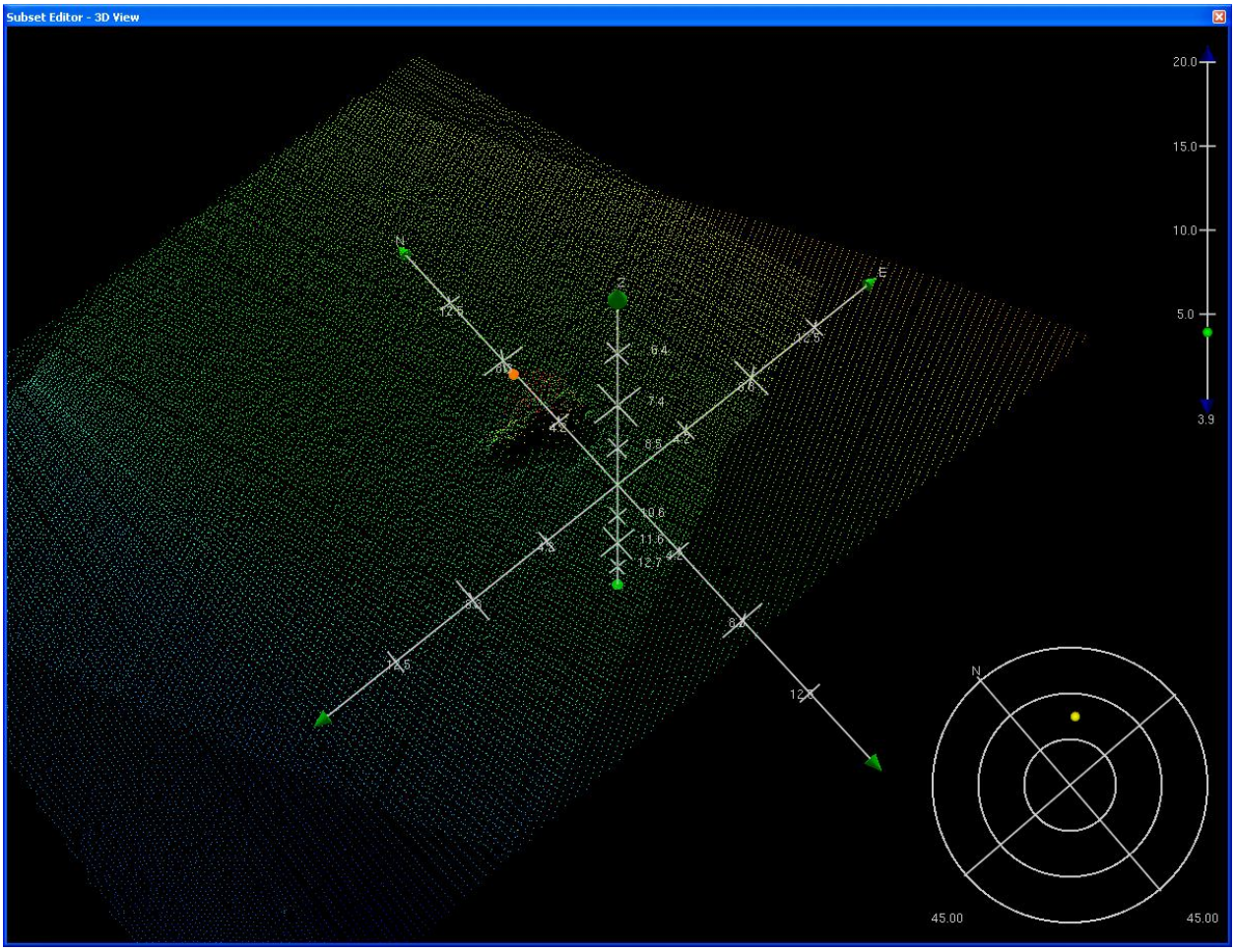


Figure 2.18.1

2.17) 162/85 Rky area

Survey Summary

Survey Position:	41° 18' 32.5" N, 072° 04' 23.8" W
Least Depth:	6.88 m (= 22.58 ft = 3.764 fm = 3 fm 4.58 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.964 m ; **TVU (TPEv)** ±0.220 m
Timestamp:	2009-117.14:51:57.734 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 041_1451
Profile/Beam:	162/85
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is several rocks, LD shallower than charted soundings in the area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/041_1451	162/85	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-292/314_1544	0004	4.90	208.0	Secondary
s00024/tj_3102_klein5000_sss200/2008-289/217_1522	0003	4.93	157.3	Secondary
s00024/tj_3102_klein5000_sss200/2008-292/333_1550	0002	5.55	178.5	Secondary

Hydrographer Recommendations

Chart Rky and update area charted soundings.

Cartographically-Rounded Depth (Affected Charts):

22ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

3 ¾fm (12300_1, 13006_1, 13003_1)

6.9m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	SORDAT - 20090430

TECSOU - 3:found by multi-beam

VALSOU - 6.883 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart notaion Rky.

Feature Images

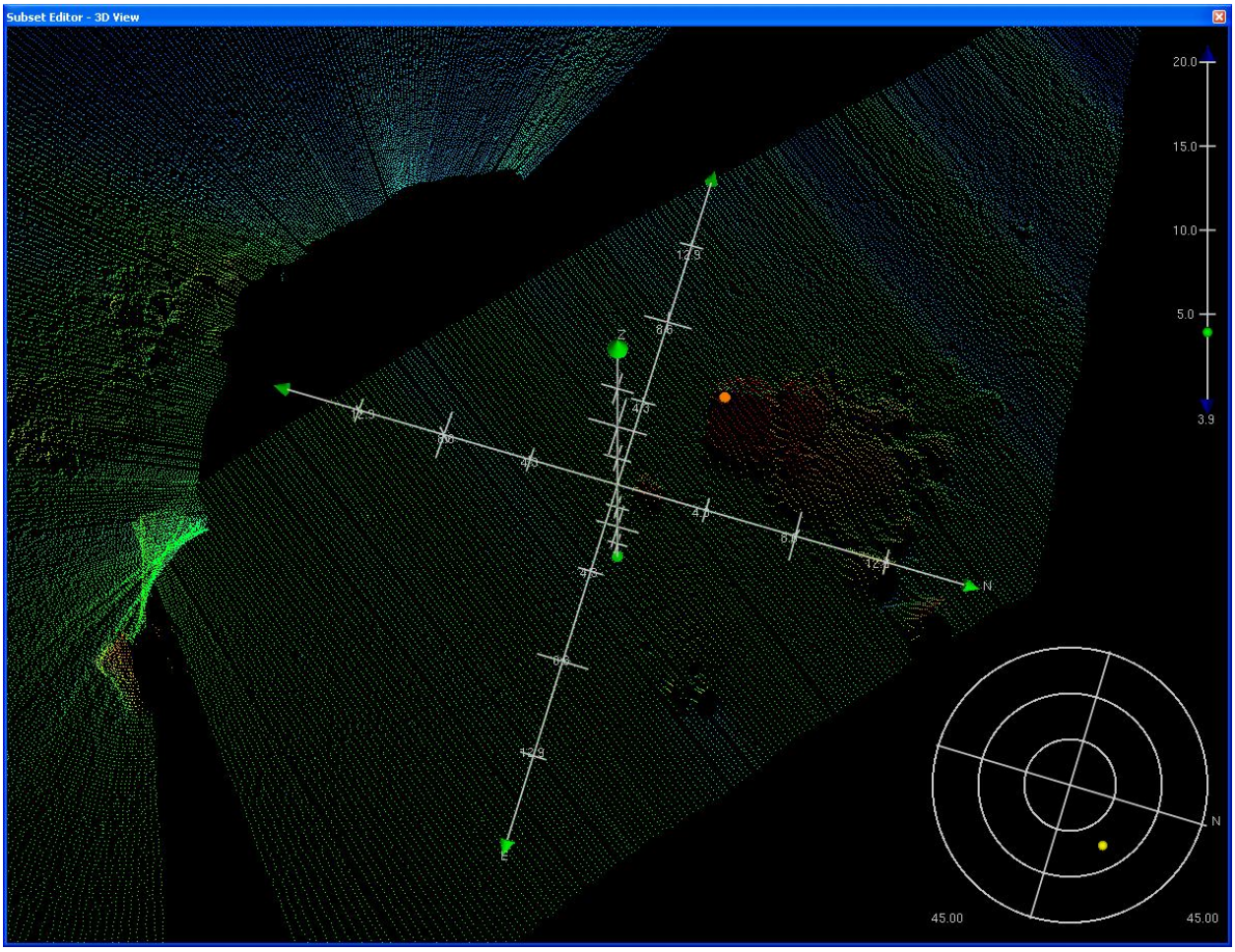


Figure 2.19.1

3 - Dangers to Navigation

3.1) DtoN 638/8 Obstn

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 18' 22.2" N, 072° 04' 45.2" W
Least Depth:	11.18 m (= 36.69 ft = 6.115 fm = 6 fm 0.69 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.974 m ; **TVU (TPEv)** ±0.263 m
Timestamp:	2009-117.14:44:50.561 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 037_1443
Profile/Beam:	638/8
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

This feature was found with 200% SSS and developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is a rock, LD shallower than charted sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/037_1443	638/8	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-289/124_1420	0001	8.15	343.8	Secondary

Hydrographer Recommendations

Modify the charted sounding to 36 ft MLLW and add Obstn danger symbol.

Cartographically-Rounded Depth (Affected Charts):

36ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

6fm (12300_1, 13006_1, 13003_1)

11.2m (5161_1)

S-57 Data

Geo object 1:	Obstruction (OBSTRN)
Attributes:	QUASOU - 6:least depth known
	TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 11.183 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart a 36 Obstn and danger curve.

Feature Images

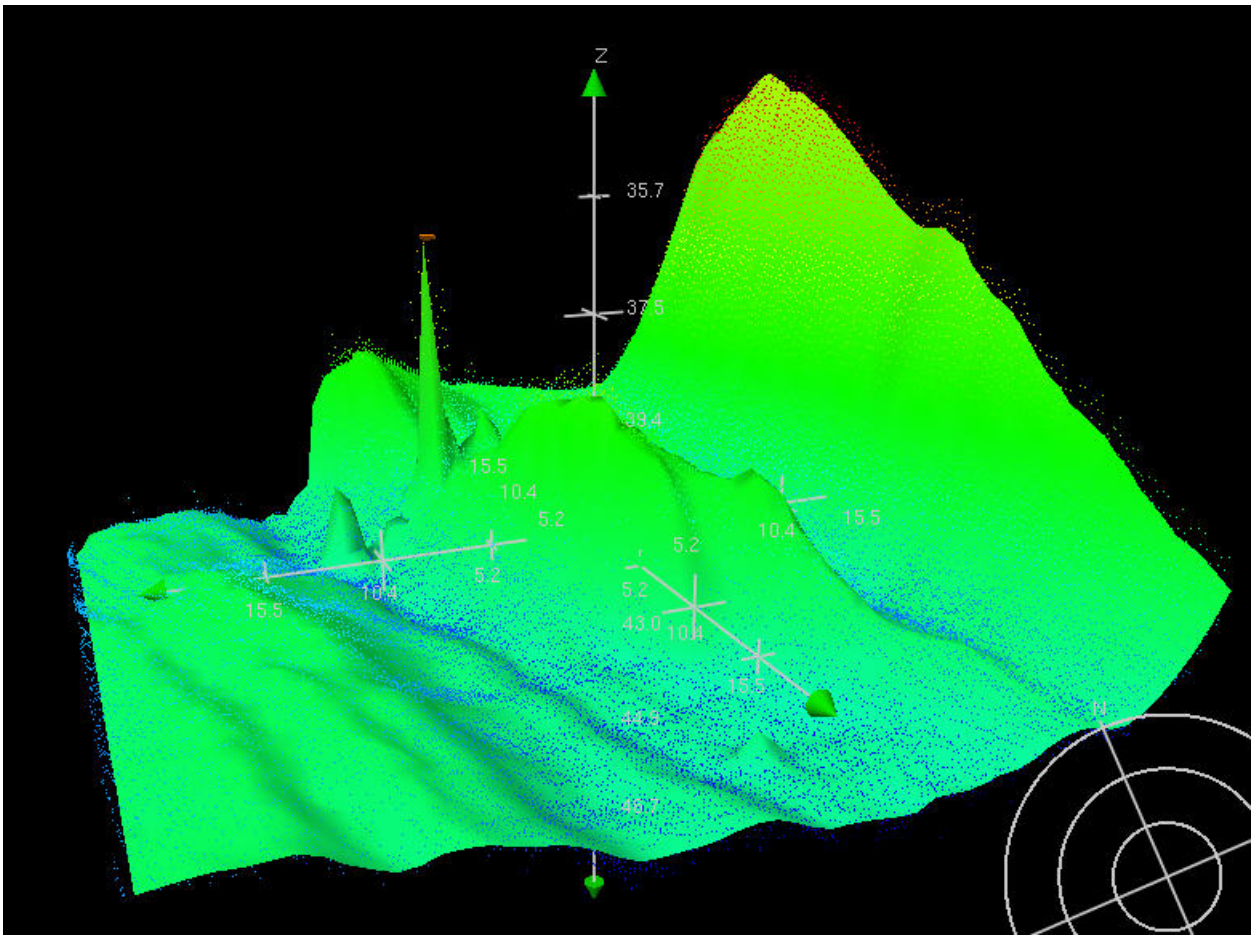


Figure 3.1.1

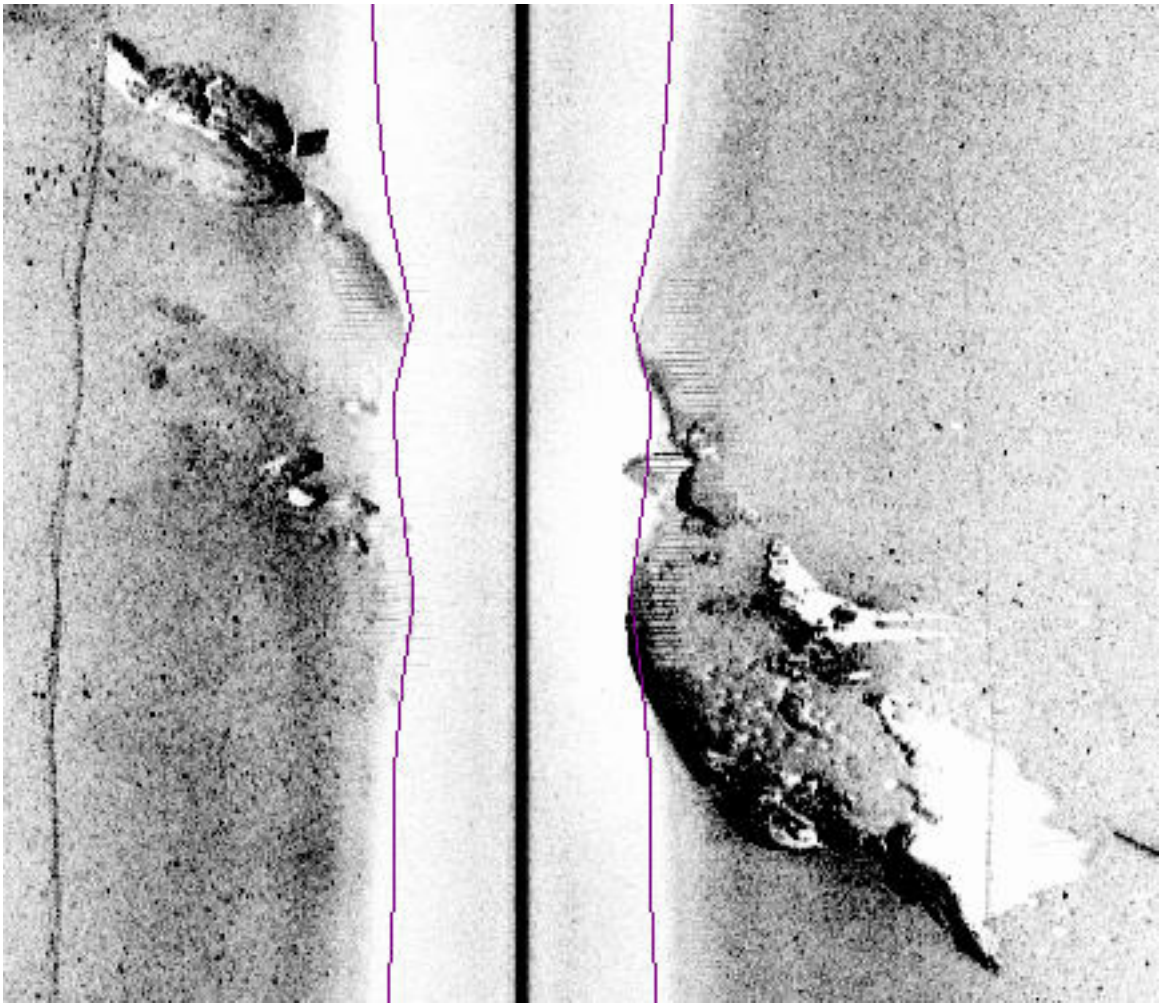


Figure 3.1.2

Figure 3.1.3

3.2) DtoN 530/145 Obstn

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 18' 21.0" N, 072° 04' 45.9" W

Least Depth: 11.15 m (= 36.58 ft = 6.097 fm = 6 fm 0.58 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.971 m ; **TVU (TPEv)** ±0.241 m

Timestamp: 2009-117.14:44:41.556 (04/27/2009)

Survey Line: f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 037_1443

Profile/Beam: 530/145

Charts Affected: 13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was found with 200% SSS and developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is a Rock, LD shallower than charted soundings in the area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/037_1443	530/145	0.00	000.0	Primary
s00024/noaa_auv600/2008-291/remus604	0001	2.02	277.7	Secondary
s00024/noaa_auv600/2008-289/remus178	0001	35.02	232.9	Secondary (grouped)

Hydrographer Recommendations

Chart a dangerous Obstn with LD of 36 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

36ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

6fm (12300_1, 13006_1, 13003_1)

11.2m (5161_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: CATOBS - 1:snag / stump

QUASOU - 6:least depth known

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 11.150 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart a 36 Obstn and danger curve.

Feature Images

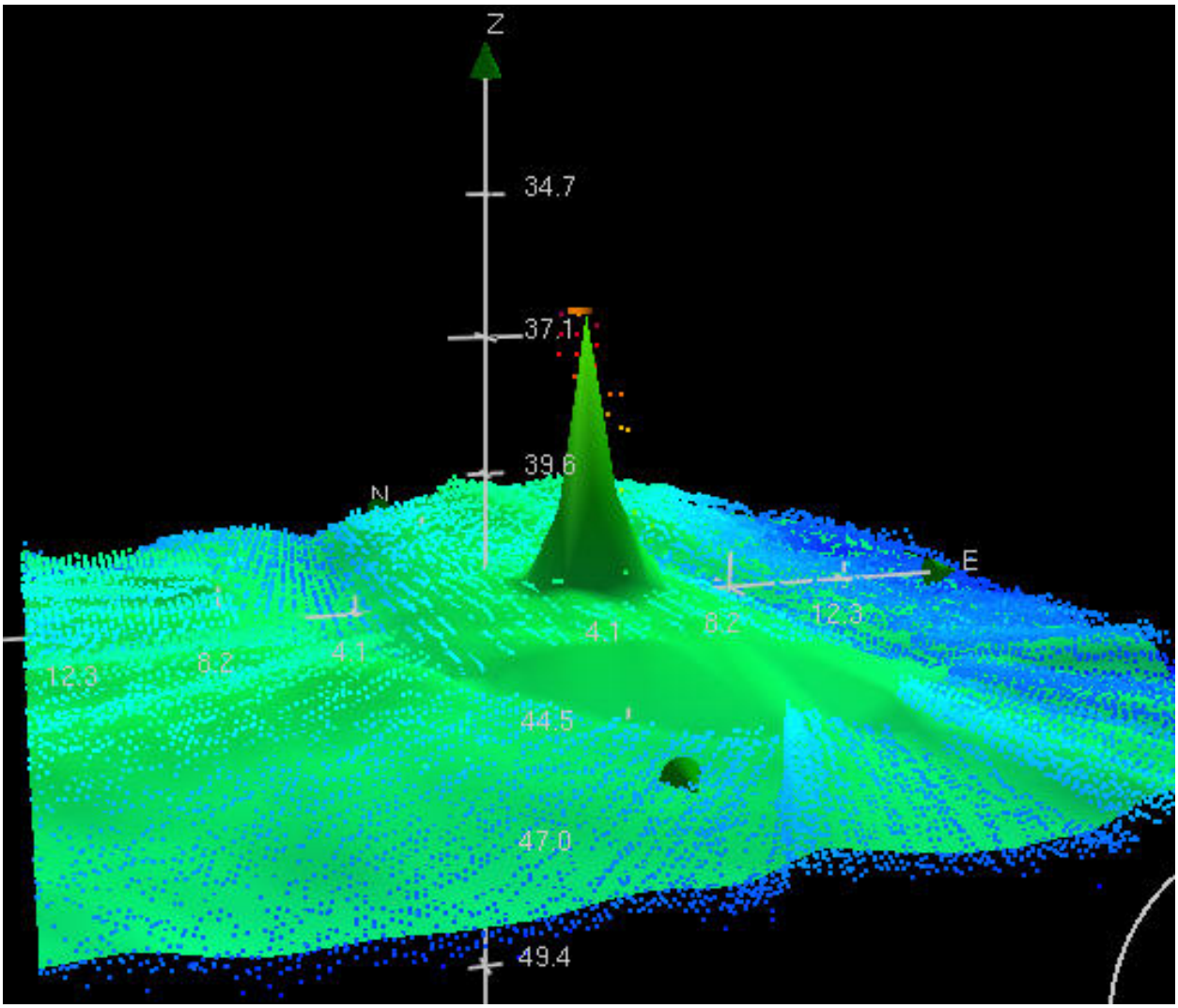


Figure 3.2.1

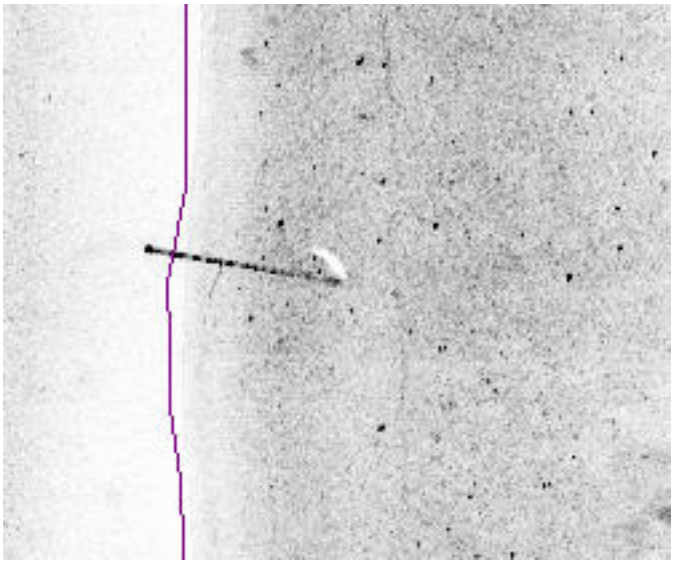
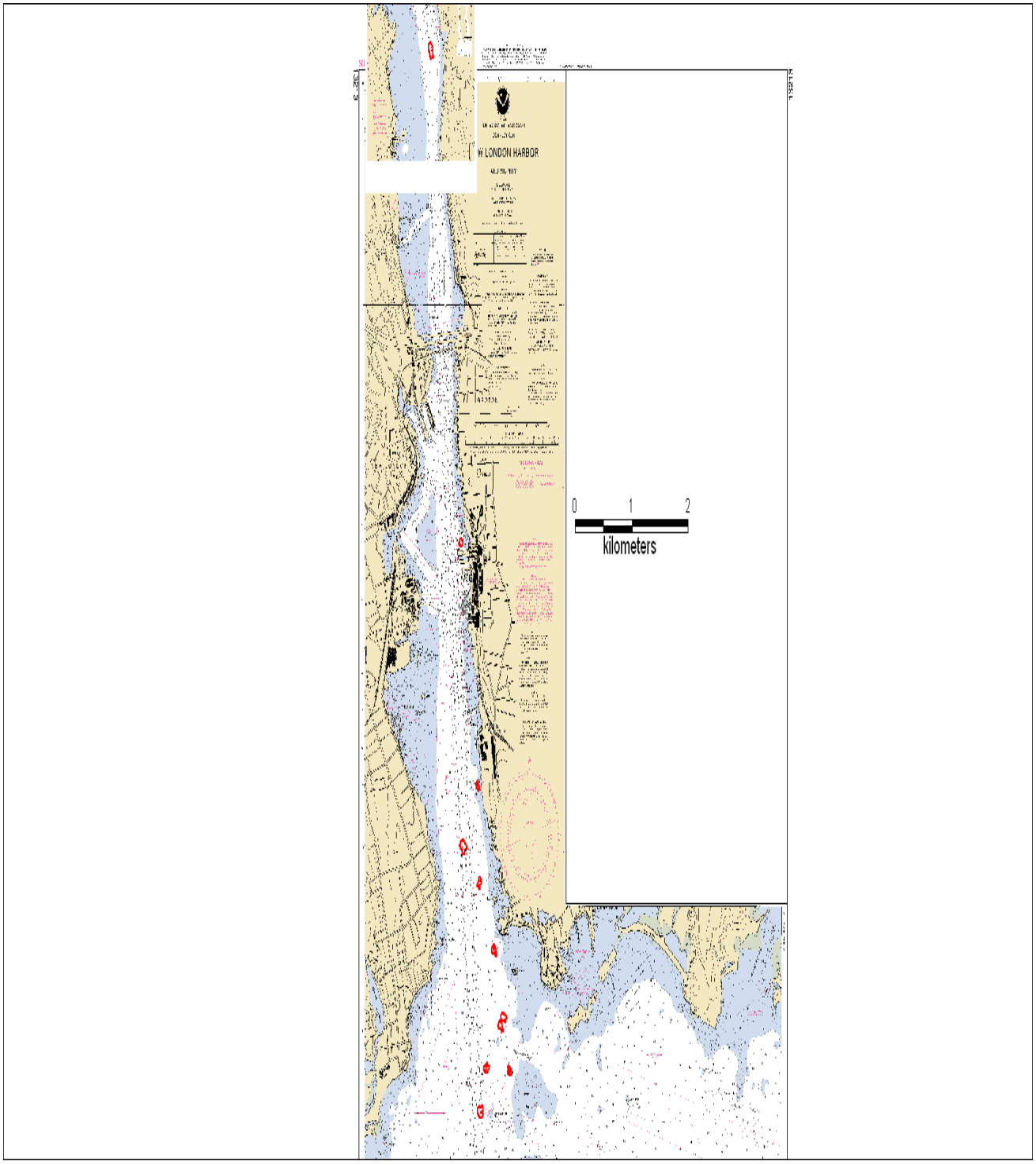


Figure 3.2.2

APPENDIX III

PROGRESS SKETCH



APPENDIX IV

TIDES AND WATER LEVELS

UNITED STATES DEPARMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : May 14, 2009

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B470-NRT5-2009
HYDROGRAPHIC SHEET: F00565

LOCALITY: New London Harbor, Eastern Long Island, CT
TIME PERIOD: April 27, 2009

TIDE STATION USED: 846-1490 New London, CT
Lat. 41° 21.7'N Long. 72° 05.4' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.839 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project OPR-B470-NRT5-2009, F00565 on April 27, 2009.

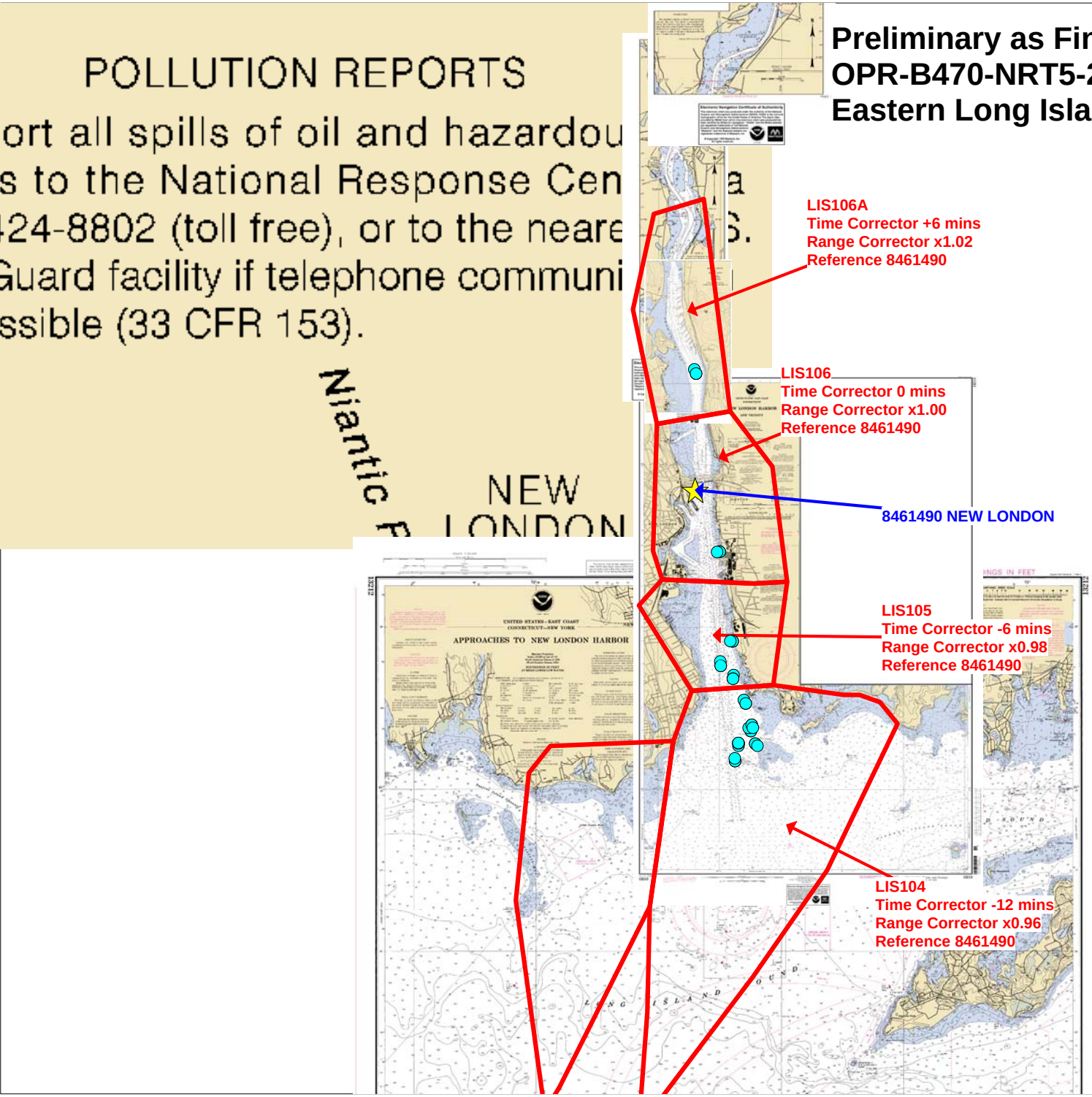
Please use the zoning file "B470NRT5CORP" submitted with the project instructions for Eastern Long Island, CT. Zones LIS104, LIS105, LIS106 and LIS106A are the applicable zones for F00565.

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

_____
CHIEF, OCEANOGRAPHIC DIVISION

Preliminary as Final Tidal Zoning for OPR-B470-NRT5-2009, F00565 Eastern Long Island Sound, CT



APPENDIX V
SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCES

V.1. COAST PILOT REPORT, NOAA FORM 77-6

No corrections or additions required.

V.2. BOTTOM SAMPLE, NOAA FORM 75-44

No bottom samples were taken.

V.3. AIDS TO NAVIGATION, NOAA FORM 76-40

No AToN's reports were submitted for this survey.

This Document is for Office Process use only and is intended to supplement, not supersede or replace, information/recommendations in the Descriptive or Evaluation Reports

S00024-F00565 COMPILATION LOG

General Survey Information	
REGISTRY No.	***S00024-F00565***
PROJECT No.	***S-B926-TJ-08 - OPR-B470-NRT5-09***
FIELD UNIT	***NOAA SHIP THOMAS JEFFERSON - NRT5***
DATE OF SURVEY	***10-15-2008 TO 04-27-2009***
LARGEST SCALE CHART	***13213, edition #41, 20040301***
SOUNDING UNITS	***feet***

Source Grids	**File Name**
	F00565_MBES_AHB_50CM_FINAL.HNS
Surfaces	***File Name***
Product Surface	***S00024-F00565-PS_50cm.hns***
Final HOBs	***File Name***
Survey Scale Soundings	***S00024_F00565_SS_Soundings.hob***
Chart Scale Soundings	***S00024-F00565_CS_Soundings.hob***
Feature Layer	***S00024-F00565_Features.hob***
Blue Notes	***S00024-F00565_BlueNotes.hob***

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Surveys S00024 (2008)-F00565 (2009)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Reports. Sections in this report refer to the corresponding sections of the Descriptive Reports.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

The following software was used to process and review data at the Atlantic Hydrographic Branch (AHB):

CARIS HIPS/SIPS version 6.1
CARIS BASE Manager 2.1
CARIS HOM ENC 3.3
PYDRO, version 8.7
CARIS S-57 Composer 2.0

B.2 QUALITY CONTROL

H-Cells

Project Instructions, B926-TJ-08 for survey S00024 (2008) required a side-scan-only survey be performed in support of the Department of Defense Maritime Homeland Defense project. Items located during S00024 (2008) operations were verified or disproved during F00565 (2009) operations. Bathymetry was only obtained for items investigated by survey F00565 (2009).

The chart-scale soundings in the H-Cell are a subset of the survey-scale soundings. Depth contours are not included in the H-Cell, because of the very small areas affected by the survey. The H-Cell contains several isolated features that do not fall within an M_COVR object.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC_CS.000) with all values measured in feet following NOAA sounding rounding rules.

The S00024-F00565 CARIS H-Cell final deliverables include the following products:

S00024_F00565_CS.000	1:10,000 Scale	S00024_F00565 Selected Soundings (Chart Scale)
S00024_F00565_SS.000	1:10,000 Scale	S00024_F00565 Selected Soundings (Survey Scale)

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by the field unit with no additional corrections required by Atlantic Hydrographic Branch personnel. The field unit applied verified water levels in conjunction with the preliminary tidal zoning which was accepted and approved by N/OPSI CO-OPS as the final zoning for F00565. Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW).

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 18. Office ENC processing of this survey required translating the datum to meet S-57 ENC requirements. The horizontal geodetic datum was translated to Latitude and Longitude (LLDG) World Geodetic System-84 (WGS-84) during CARIS Base Manager processing.

D. RESULTS AND RECOMMENDATIONS

Chart Comparison — **13213 (41st. Edition, Mar. /04**
Corrected through NM, Mar. 13/04
Corrected through LNM, Feb. 24/04
Scale 1:10,000

Hydrography

The charted Hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in Section D. of the Descriptive Report. The following should be noted:

A charted ***dangerous submerged obstruction*** in the vicinity of Latitude 41°22′09″N, Longitude 72°05′24″W was disproved by side scan sonar data. It is recommended that the charted ***dangerous submerged obstruction*** be deleted.

Adequacy of Survey

The side scan sonar imagery collected during this survey meets the Department of Defense Maritime Homeland Defense requirements.

Miscellaneous

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Chart used for compiling the present survey.

APPROVAL SHEET
S00024-F00565

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive review as per the Atlantic Hydrographic Branch Processing Manual and are verified to be accurate and complete except where noted.

_____

Norris A. Wike
Cartographer
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: _____

Shep Smith
Commander, NOAA
Chief, Atlantic Hydrographic Branch

S00024 – F00565

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Type of Survey: Special: Homeland Security

Registry Number: S00024

LOCALITY

State: Connecticut

General Locality: Eastern Long Island Sound

Sub-locality: New London Harbor

2008

CHIEF OF PARTY
CDR P Tod Schattgen
NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

S00024

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State:	**Connecticut**		
General Locality:	**Eastern Long Island Sound**		
Sub-Locality:	**New London Harbor**		
Scale:	**N/A**	Date of Survey:	**10/15/08 to 10/20/08**
Instructions Dated:	**5 Sept 2008**	Project Number:	**S-B926-TJ-08**
Vessel:	**NOAA Ship *THOMAS JEFFERSON***		
Chief of Party:	**CDR P. Tod Schattgen, NOAA**		
Surveyed by:	**THOMAS JEFFERSON Personnel**		
Soundings by:	**N/A**		
Graphic record scaled by:	**N/A**		
Graphic record checked by:	**N/A**		
Protracted by:	**N/A**	Automated Plot:	**N/A**
Verification by:	**Atlantic Hydrographic Branch Personnel**		
Soundings in:	**N/A**		

Remarks:
1) All Times are in UTC.
2) This is a Homeland Security Survey.
3) Projection is NAD83, UTM Zone 18.
Bold, italic, red notes in Descriptive Report were made during office processing.

Table of Contents

Descriptive Report to Accompany Hydrographic Survey S00024

Project S-B926-TJ-08
New London Harbor
Groton, CT.
Oct 15th - Oct 20th 2008
NOAA Ship *Thomas Jefferson*

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions S-B926-TJ-08, dated 5 Sept 2008. The survey area includes the New London Harbor.

Northern Limit	Southern Limit	Western Limit	Eastern Limit
41°24'32.43" N 072°05'47.35" W	41°17'34.14" N 072°04'40.01" W	41°21'06.28" N 072°05'52.04" W	41°18'42.04" N 072°04'13.66" W

Data acquisition was conducted from Oct 15th - Oct 20th 2008, as per project instructions. This was a Side Scan (SS) survey project. NOAA's Hydrographic Systems Technical Program (HSTP) acquired side scan data with an Autonomous Underwater Vehicle (AUV) and the NOAA Ship *Thomas Jefferson* used their launches (Hydrographic Survey Launch (HSL) 3101 & 3102). HSTP was tasked with surveying the priority one area (the channel) with the AUV and HLS 3101 & 3102 surveyed the secondary priority area (outside the channel).

This project was conducted to acquire high quality oceanographic data and side scan sonar acoustic imagery in support of Department of Defense Maritime Homeland Defense (MHLD) requirements "for the prevention, detection of, and response to mines in waters subject to the jurisdiction of the United States" as directed in the Maritime Operational Threat Response plan signed by the President of the United States. The primary purpose of this project was to demonstrate NOAA capabilities and to identify and resolve interoperability issues between NOAA and Navy survey systems and data processing.

Table -1. Hydrographic Survey Statistics

***NOAA Ship Thomas Jefferson,* Sheet S00024**	
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	N/A
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	142.70. NM
Lineal nautical miles of any combination of the above techniques (specify methods)	N/A
LNM Crosslines singlebeam and multibeam combined	n/A
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	N/A
LNM shoreline/nearshore investigations	0
Number of Bottom Samples	20
Number of items investigated that required additional time/effort in the field beyond the above survey operations	N/A
Total number of square nautical miles	3.4

Survey limits of S00024 are shown on the following page, fig 1.

Table -2. Dates of Side Scan Survey Data Acquisition in Calendar and Julian Days

Calendar Date	Julian Day	Calendar Date	Julian Day
15 Oct 2008	289	18 Oct 2008	292
16 Oct 2008	290	19 Oct 2008	293
17 Oct 2008	291	20 Oct 2008	294

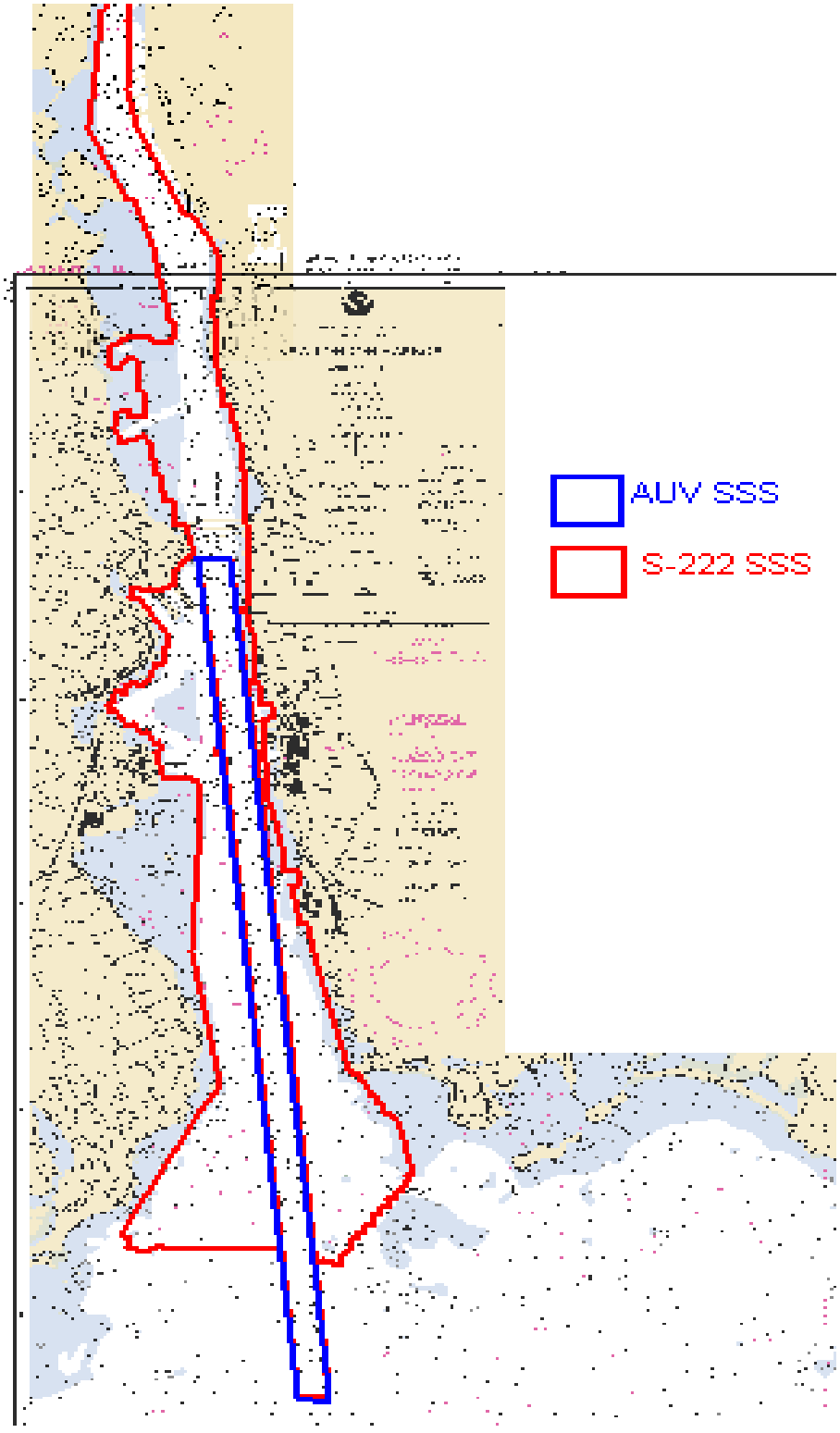


Fig 1. S-B926-TJ-08, S00024: SSS Surveyed Project limits

B. DATA ACQUISTION AND PROCESSING *See also the Evaluation Report.*

Refer to ***S-B926-TJ-08 Data Acquisition and Processing Report (DAPR-fall)**** for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement survey data and any deviations from the DAPR are included in this descriptive report. There is no information on the AUV' s data acquisition and processing included in the DAPR.

B 1. EQUIPMENT AND VESSELS

HSL 3101 acquired side-scan imagery, sound velocity profiles, and bottom samples. HSL 3102 acquired side-scan imagery, bottom samples, and sound velocity profiles. The HSL's configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR.*

A Remus 600 AUV owned and operated by NOAA's Office of Coast Survey, Hydro Systems Technology Program (HSTP), acquired side-scan imagery with a frequency of 900 kHz and 25m range scale. The AUV acquired SSS at approximate speeds of 4.0 kts with the sensor maintaining an altitude of approximately 3-4 meters from the bottom. HSTP did not provided any more specifics about the AUV, beyond what could be found on the manufactures website. ***Concur***

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

NOAA Ship *Thomas Jefferson* conducted a System Certification and Calibration test on 19 Oct 2008, for results see Appendix V. ** HSTP intended to collected data for the system calibration on Oct 17th. The AUV did not return from this calibration mission. Due to the AUV being lost there is no calibration test and results for the AUV for this survey. ***Concur***

B.2.2 Sounding Coverage

Not applicable to this survey. ***Concur***

B 2.3 Crosslines

Not applicable to the survey.

B 2.4 Junctions and Prior Surveys

No junction surveys were compared.

Data filed with original records.
****Data attached to this report.***

B 2.5 Systematic Errors

No systematic errors were observed. ***Concur***

B 3. CORRECTIONS TO ECHO SOUNDING

Not applicable to this survey.

B 4. DATA PROCESSING

B 4.1 Total Propagated Error

Not applicable to this survey.

B 4.2 BASE Surfaces and Mosaics

No BASE surfaces were created.

Table 3 describes all Mosaics submitted as part of Survey S00024. The AUV was assigned to surveying the channel and was in the processes of acquiring calibration data and filling holidays in the priority 1 area, on the Friday 17th, when it failed to return from its mission. There are holidays in the priority 1 area mosaics. TJ launches did not go fill in the holidays because the launch SSS systems are hull mounted and the depth of water in the priority 1 area cause the launch fish height to exceed the maximum allowable. Both the Launch and AUV mosaics are within the 100% and 200% field sheets. ***Concur***

Table -3. List of Mosaics

Name of Field Sheet	***Resolution***	***Type***	***Purpose***
S00024_SSS100_MOS	0.5m	SSS Mosaic	100% coverage
S00024_SSS200_MOS	0.5m	SSS Mosaic	200% coverage

C. VERTICAL AND HORIZONTAL CONTROL

As per HSTP guidance (see, Appendix V), a HVCR report was not filed as no horizontal control stations were established by the field party for this survey. A summary of horizontal and vertical control for this survey follows below. ***Concur***

C 1 Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83), zone 18. Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacons at Acushnet, MA (306 kHz), were used during this survey.

No horizontal control stations were established by the field party for this survey. ***Concur***

C 2 Vertical Control

Not applicable to this survey.

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report.*

D.1 Chart Comparison

Not applicable to this survey.

D.2 Additional Results

D.2.1 Automated Wreck and Obstruction Information Service (AWOIS) Items

Not applicable to this survey.

D.2.4 Shoreline

Not applicable to this survey.

D.2.5 Charted Features

Not applicable to this survey.

D.2.6 Charted Pipelines and Cables

Not applicable to this survey. ***Concur***

D.2.7 Bridges, Ferry Routes, and Overhead Cables

There are no updates or recommendations. ***Concur***

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

No "Dangers to Navigation" were reported based on this survey. This survey was a Side Scan Sonar only project. All significant SSS contacts, determined by estimating size from height of shadow, depth from charted location were logged in Pydro. All SSS contacts were collated using Pydro PSS. ***Concur with clarification – See appendix 1 for DTONS.***

D 3.2 Shoals

Not applicable to this survey.

D.4 Aids to Navigation

Not observed.

D.5 Coast Pilot Information

The Hydrographer has no recommendations for changes or addenda to the Coast Pilot. ***Concur***

D.6 Miscellaneous

Bottom Samples

Twenty bottom samples were obtained in accordance with NAVMETOCCOMINST 3142A, appendix C. A list of all bottom samples acquired during this survey is contained in Appendix V. The physical bottom samples were delivered along with the digital data for this survey to the Atlantic Hydrographic Branch (AHB). ***Concur***

Environmental Conditions and Notes

No extraordinary environmental conditions affected the data quality. As per NAVMETOCCOMINST 3142A specifications, Sound Velocity Profiles were collected, see Separates.***

D.8 Adequacy of Survey

The side scan sonar imagery collected during this survey meets the Department of Defense Maritime Homeland Defense requirements. ***Concur***

Summary and Recommendations for Additional Work

The requirements of this survey were interpreted by the Commanding Officer to require only side scan imagery for the Department of Defense. The least depth was estimated for any feature in the survey area. The Pydro PSS includes 349 individual contacts that have been sorted into three categories (insignificant-reject, significant-resolved, significant-investigate). The criteria was based on SSS shadow height and navigational significance (location and depth). These contacts should be compared to the latest hydrographic survey of the area OPR-B370-TJ-05, H11441, which has not been applied to the latest addition of the smallest scale chart. ***Concur with clarification – Items compared during office processing.***

****Data filed with original records.***

E. APPROVAL

As Lead Hydrographer, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Office of Coast Survey Hydrographic Surveys Division's *Field Procedures Manual*, and NOS *Hydrographic Surveys Specifications and Deliverables*. Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to N/CS33, Atlantic Hydrographic Branch.

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

Title	**Date Sent**	**Office**
Data Acquisition and Processing Report for S-B926-TJ-08-Fall	pending	*N/CS33*
Horizontal and Vertical Control Report for S-B926-TJ-08	*N/A*	*N/*CS33
Tides and Water Levels Package for S-B926-TJ-08	*N/A*	*N/OPS1*
Coast Pilot Report for S-B926-TJ-08	*N/A*	*N/CS26*

Approved and Forwarded:

_____ _____

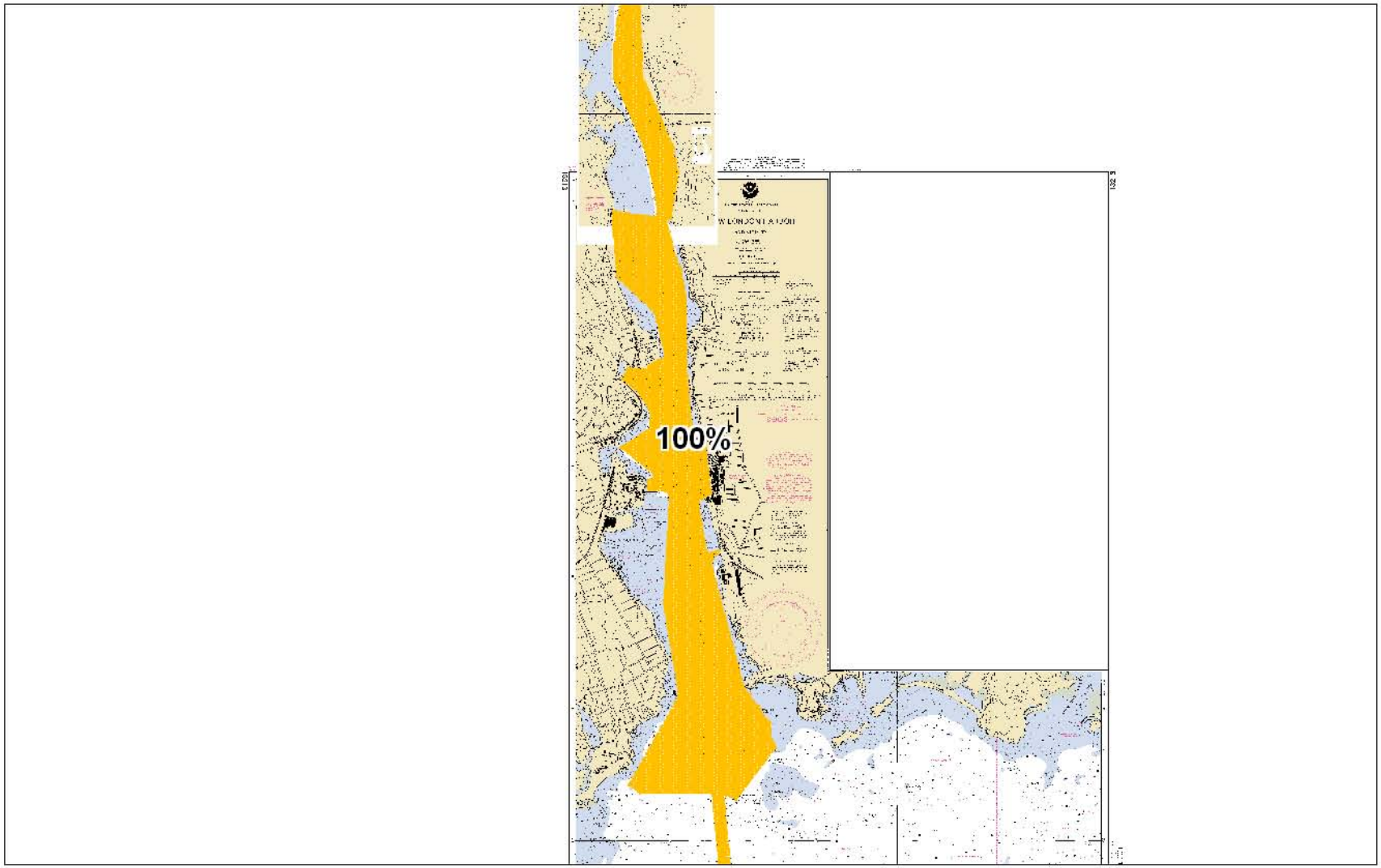
LT Jasper D. Schaer, NOAA
Operations Officer

CDR P. Tod Schattgen, NOAA
Commanding Officer

In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:

Survey Manager: _____

ENS Ryan A.Wartick, NOAA
Junior Officer, NOAA

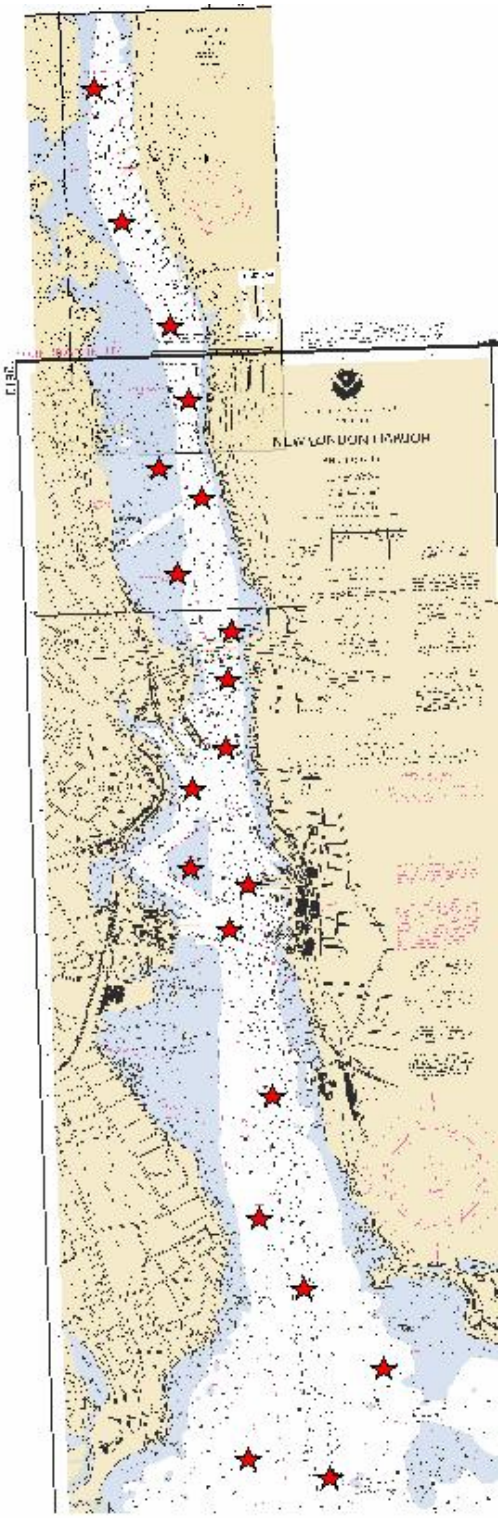


Project	Sheet_Letter	H_num	HQ_Est_SNM	CumlPercCompPrevM	CumlPercCompCurl	SNM_CompCurM	CumSNMcomp
S-B926-TJ-		S00024	2	0	100	2	2

Progress Sketch S-B926-TJ-08
October, 2008

S00024 Homeland Security Survey
Bottom Samples
Prepared by ENS Wartick

Location: New London Harbor



Acquisition

20 Bottom samples were obtained in accordance with NAVMETOCCOMINST 3142A, appendix C. After three attempts, bottom sample number 19 was determined to be a hard bottom. As such, no bottom sample was obtained. Bottom samples were obtained using the Khalisco Mud Snapper model 214WA100 which acquires a 4cm surface penetration in a clamshell grabber.

Bottom Sample Data Logs

NAVAL OCEANOGRAPHIC OFFICE BOTTOM SEDIMENT DATA LOG SHEET

CLASSIFICATION

3101/3102

RETURN TO: COMMANDING OFFICER NAVAL OCEANOGRAPHIC OFFICE 1002 BALCH BOULEVARD ATTN: DATA INGEST STENNIS SPACE CENTER, MS 39522-5001

SHIP: Thomas Jefferson S222

REGION: New London CT

DATA (GMT) (MM/DD/YY): 10/18/2008

BOTTOM SAMPLE NUMBER	JULIAN DAY (GMT)	TIME GMT (hh:mm)	SAMPLE POSTION		WATER DEPTH (FEET)	TYPE OF SAMPLER	WEIGHT OF SAMPLER	SEDIMENT TYPE (MUD, SAND, GRAVEL, ROCK, SHELL) AND REMARKS
			LATITUDE	LONGITUDE				
0	292	1524	41° 18.3673' N	72° 4.7793' W	44	Snapper	2lb	dk, gy, M
1	292	1605	41° 18.8191' N	72° 4.45308' W	27	Snapper	2lb	Med sh, dk, gy, M
2	292	1746	41° 18.4500' N	72° 5.2254' W	32	Snapper	2lb	Soft dk, gy, M
3	292	1840	41° 19.4588' N	72° 5.11248' W	43	Snapper	2lb	dk, gy, M
4	292	1817	41° 19.1615' N	72° 4.88028' W	32	Snapper	2lb	dk, gy, M
5	292	1944	41° 19.9679' N	72° 5.01864' W	38	Snapper	2lb	dk, gy, M
6	292	2045	41° 20.6675' N	72° 5.22534' W	39	Snapper	2lb	dk, gy, M
7	292	1455	41° 20.8448' N	72° 5.11602' W	40	Snapper	2lb	Black, sticky, M
8	292	1515	41° 20.9242' N	72° 5.43006' W	18	Snapper	2lb	Brown, Sand, M
9	292	1555	41° 21.258' N	72° 5.40762' W	25	Snapper	2lb	Black, sticky, M, Gravel
10	292	2045	41° 21.4244' N	72° 5.21148' W	40	Snapper	2lb	sticky, green M
11	292	2030	41° 21.7067' N	72° 5.18658' W	35	Snapper	2lb	smooth, green M
12	292	2025	41° 22.1561' N	72° 5.44344' W	18	Snapper	2lb	fine, green M
13	292	2010	41° 22.5955' N	72° 5.52624' W	20	Snapper	2lb	fine, green M, Sh
14	293	1931	41° 21.9033' N	72° 5.1636' W	28	Snapper	2lb	smooth green M, Sh
15	293	1925	41° 22.4667' N	72° 5.29398' W	44	Snapper	2lb	M with water (dry for sample)
16	293	1913	41° 22.874' N	72° 5.35542' W	44.8	Snapper	2lb	fine, brown, M, Sh
17	293	1910	41° 23.1906' N	72° 5.44374' W	42	Snapper	2lb	sticky, green
18	293	1854	41° 23.6254' N	72° 5.68998' W	40	Snapper	2lb	smooth green
19	293	1845	41° 24.1829' N	72° 5.81316' W	40	Snapper	2lb	Hard

S0024 - F00565

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Type of Survey: **Field Examination**

Registry Number: **F00565**

LOCALITY

State: **Connecticut**

General Locality: **Eastern Long Island Sound**

Sub-locality: **New London Harbor**

2009

CHIEF OF PARTY
LT(jg) Matthew Jaskoski, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

F00565

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State:	**Connecticut**		
General Locality:	**Eastern Long Island Sound**		
Sub-Locality:	**New London Harbor**		
Scale:	**1:10,000**	Date of Survey:	**04/27/09 to 04/27/09**
Instructions Dated:	**N/A**	Project Number:	**OPR-B470-NRT5-09**
Change No.1 Dated:	**N/A**		
Change No.2 Dated:	**N/A**		
Vessel:	**NOAA NRT-5, S3002**		
Chief of Party:	**LT(jg) Matthew Jaskoski, NOAA**		
Surveyed by:	**NOAA Navigation Response Team 5 Personnel**		
Soundings by:	**Odom Echotrac CV/200** **Kongsberg Simrad EM3002**		
Graphic record checked by:	**N/A**		
Protracted by:	**N/A**	Automated Plot:	**N/A**
Verification by:	**Atlantic Hydrographic Branch Personnel**		
Soundings in:	**Meters at MLLW**		

Remarks:
1) All Times are UTC.
2) This is a Basic Navigable Area Hydrographic Survey.
3) Projection is UTM Zone 18.
Bold, italic, red notes in Descriptive Report were made during office processing.

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LIST OF FIGURES

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DESCRIPTIVE REPORT

to accompany
HYDROGRAPHIC SURVEY F00565

Scale of Survey: 1:10,000
Year of Survey: 2009
NOAA Navigation Response Team 5
LT(jg) Matthew Jaskoski, OIC

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Hydrographic Survey Instructions for project OPR-B470-NRT5-09, F00565, New London Harbor, CT. The original instructions are dated March 23, 2009.

This Descriptive Report pertains to areas within of New London Harbor. The assigned registry number for this field examination is F00565, as prescribed in the Project Instructions.

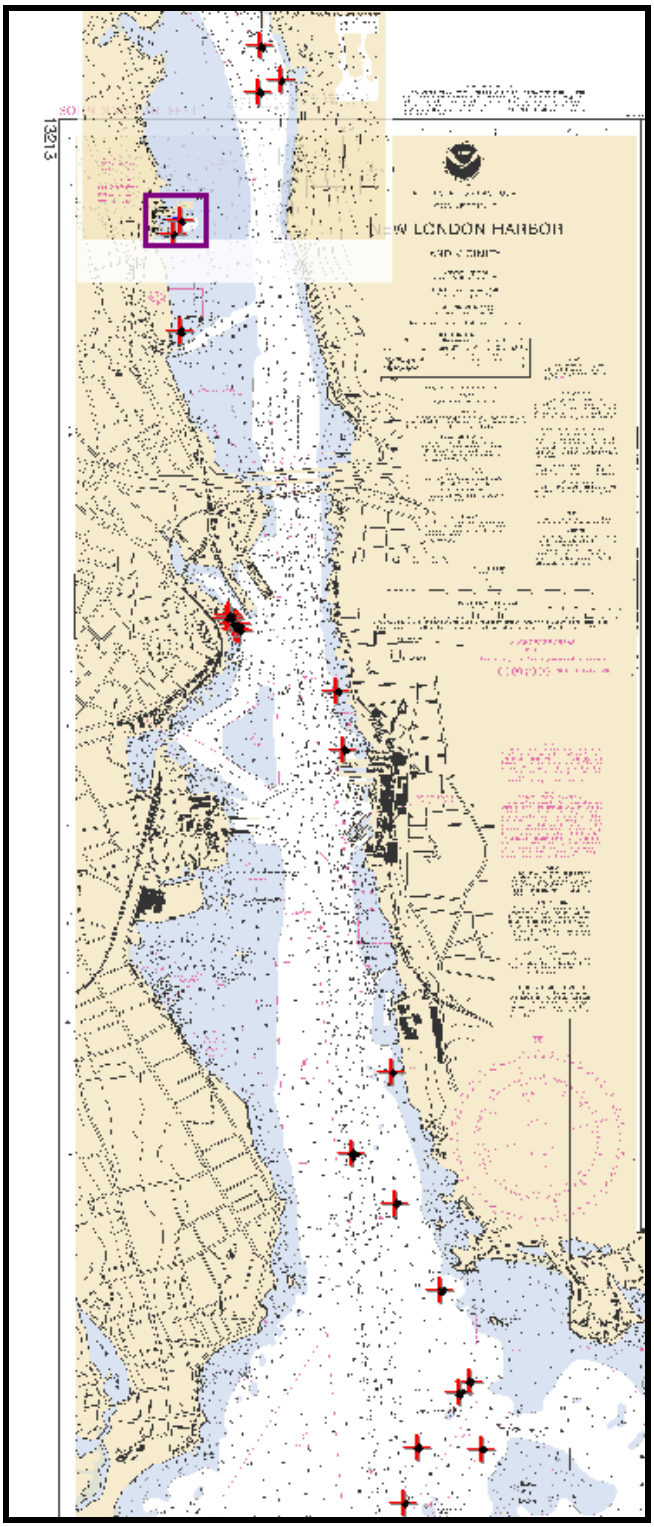
The purpose of the CY 2009 operations to provide bathymetry data for contacts identified by NOAA Ship *Thomas Jefferson* during operation in the area in 2008 but could not be developed at the original time of hydrography.

For complete survey limits, see figure A-1 on the following page.

Linear nautical miles of single beam only sounding lines - mainscheme only	0.0
Linear nautical miles of multibeam only sounding lines - mainscheme only	0.0
Linear nautical miles of side scan sonar only lines - mainscheme only	0.0
Linear nautical miles of any combination of the above techniques	0.0
Linear nautical miles of crosslines from single beam and multibeam combined	0.0
Linear nautical miles of developments other than mainscheme lines	1.20
Linear nautical miles of shoreline/nearshore investigation	0.0
Number of bottom samples collected	0
Number of items investigated that required additional time/effort in the field beyond the above survey operations	0.0
Total square nautical miles	1.2

Dates of acquisition: April 27, 2009

Figure A-1: Outline of survey area



B. DATA ACQUISITION AND PROCESSING

See also the Evaluation Report.

B.1 EQUIPMENT

Data were acquired by NOAA NRT-5, S3002. NOAA Survey Vessel S3002 is a 9.12-meter aluminum SeaArk outboard driven vessel with an average multibeam transducer draft of 1.3 meters.

NOAA S3002 acquired bathymetry data with a Kongsberg Simrad EM 3002 multibeam echosounder (MBES). Positioning and attitude were determined with a TSS POS/MV 320, version 4 GPS aided inertial navigation system (POS).

The HVF "NRT5_S3002_EM3002_MBES" was used to process EM3002 data; no unusual vessel configurations or problems were encountered. Refer to the 2009 Data Acquisition and Processing Report (DAPR) ***for detailed equipment and vessel configuration information.

B.2 QUALITY CONTROL

B.2.1 Side Scan Sonar Quality Control

N/A

B.2.2 Multibeam Echosounder Quality Control

There were no faults with the MBES system which affected data integrity. For detailed discussion of MBES system calibrations, data acquisition, and data processing refer to this project's DAPR.***

****Data filed with original field records.***

B.2.3 Total Propagated Error

Total Propagated Error (TPE) parameters as applied for sound speed and tide data for F00565 are shown in table B-1. The estimated tidal error contribution to the total survey error budget in the vicinity of New London Harbor is 0.14 meters at the 95% confidence level (0.07 at 1-σ), and includes the estimated gauge measurement error, tidal datum computation error, and tidal zoning error. Sound speed TPE values were used in accordance with HSTP guidelines regarding frequency of surface and water column sound speed measurements. ***Concur.***

Table B-1. Total Propagated Error parameters.

Total Propagated Error Values			
Tide Values		Sound Speed Values	
Measured	Zoning	Measured	Surface
0.00	0.07	4.0	0.2

B.2.4 Fieldsheets and Navigation Surfaces

Caris HIPS uncertainty weighted BASE surfaces were created for this project. For MBES data surfaces were created and submitted at 0.75m resolution. The MBES BASE surface finalized weighted grid is included in the digital PSS. Table B-2 lists all surfaces submitted with this survey. ***See Evaluation report.***

Table B-2: F00553 bathymetry surfaces.

F00553 Bathymetry surfaces and SSS mosaic			
Fieldsheet	Surface/Mosaic Name	Grid Type	Resolution
F00565	F00553_MBES_BASE_ALL_75cm	Uncertainty Weighted	0.75m
F00565	F00553_MBES_BASE_ALL75cm_Final	Uncertainty Weighted	0.75m

B.2.5 Single Beam Quality Control

N/A

B.2.6 Crosslines

Each development was ensonified by lines run at orthogonal angles.

B.2.7 Junctions

N/A

B.3 CORRECTIONS TO ECHO SOUNDING

Sound velocity profiles were applied to all EM3002 data in real time during acquisition by SIS, not during CARIS post-processing. All other methods or instruments used were as described in the project DAPR.* Raw and Processed sound speed data are included in the data submission package. ***Concur***

C. VERTICAL AND HORIZONTAL CONTROL ***See also the Evaluation Report.***

C.1 VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at New London, CT (846-1490) served as datum control for the survey area. No leveling or installation was done by NRT5 personnel.

A Request for Approved Tides was sent to N/OPS1 on May 5, 2009 (Appendix III). Verified tides from the N/OPS1 CO-OPS website were downloaded and applied to all sounding data. ***Approved tides were applied during office processing.***

C.2 HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 18.

Sounding positional control was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon stations. The DGPS beacon used for this survey was Acushnet, MA. No horizontal control stations were established for this survey.

Horizontal dilution of precision (HDOP) was monitored during acquisition, and did not exceeded 4.00. Adequate satellite coverage was maintained throughout the survey period. ***Concur***

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report.*

D.1 CHART COMPARISON

According to the Project instructions, the charts affected by this survey are:

Chart Number	*Edition*	*Edition Date*	*Scale*
13213	41	03/13/2004	1:10,000

ENC Cell Name	*Edition*	*Issue Date*	*Scale*
US4CN20M	3	01/18/2009	1:40,000
US4CN21M	9	10/31/2008	1:80,000

D.1.1 General Agreement with Charted soundings

Multibeam data was in general agreement with charted soundings where developments were conducted. ***Concur***

D.1.2 AWOIS Items and Significant Contacts

See Feature Reports in Appendix II for significant contact descriptions. No AWOIS items assigned. ***Concur***

D.1.3 Dangers to Navigation

No DTONS were identified. ***Concur with clarification - See appendix 1 for DTONS. Data attached to this report.***

D.1.4 Charted Features

Charted shoreline features in the vicinity of a floating drydock and shipyard located north of the USCG Academy were investigated by NRT5 personnel. NOAA Ship THOMAS JEFFERSON'S contact 0001 on line 413_1654 is associated with the adjacent charted pier that is part of the U.S. Navy Submarine Force Museum: Home of USS Nautilus (SSN 571). Full description and hydrographer recommendations for changes to charted features are addressed in Appendix II sec. 1 of this report, as well as in the digital PSS. ***Concur***

D.1.5 Charting Recommendations

Survey F00565 is complete and adequate to supersede charted soundings in their common areas. ***Concur***

D.2 ADDITIONAL RESULTS

D.2.1 Aids to Navigation

No AToN's were noted to be incorrectly positioned or charted. See Appendix V, section V.3 of this report. ***Concur***

D.2.2 Bridges and Overhead Cables

There are two bridges within the survey limits of F00565. Positioning data was not adversely effected by overhead objects, and the hydrographer has no charting recommendations regarding the overhead objects. ***Concur***

D.2.3 Submarine Cables and Pipelines

There are four charted submarine cable areas within the survey limits of F00565, no bathymetric data were gathered over any submerged cables. One contact is adjacent to one of the aforementioned pipelines. It is charted as a sewer pipeline. ***Concur***

E. APPROVAL SHEET

OPR-B470
Eastern Long Island Sound
Connecticut

New London Harbor
Survey Registry No. F00565

Field operations for this survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, bathymetry models, this Descriptive Report, and all accompanying records and data are approved.

Submitted in association with this descriptive report has been a series of reports and data:

2009 Data Acquisition and Processing Report (submitted with this report)
2009 HSRR Memo (submitted with this report)

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

Respectfully,

_____

LT(jg) Matthew Jaskoski, NOAA
OIC NRT-5

APPENDIX I

DANGERS TO NAVIGATION REPORT

See Appendix 2 - Features Report for DTONS.

APPENDIX II

SURVEY FEATURES REPORT

F00565 Features Report

Registry Number: F00565
State: Connecticut
Locality: Eastern Long Island
Sub-locality: New London Harbor
Project Number: OPR-B470-NRT5-09
Survey Date: 27 April 2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13213	41st	03/01/2004	1:5,000 (13213_2)	NGA NTM: 08/21/2004 (04/26/2008)
13213	41st	03/01/2004	1:10,000 (13213_1)	USCG LNM: 01/29/2008 (04/15/2008) NGA NTM: 11/06/2004 (04/26/2008)
12372	34th	11/01/2006	1:20,000 (12372_4)	[L]NTM: ?
13212	38th	11/01/2008	1:20,000 (13212_1)	NGA NTM: None (12/20/2008) USCG LNM: None (12/02/2008) CHS NTM: None (10/31/2008)
12372	34th	11/01/2006	1:40,000 (12372_1)	USCG LNM: 09/02/2008 (12/02/2008) CHS NTM: None (10/31/2008) NGA NTM: None (12/20/2008)
13205	38th	02/01/2007	1:80,000 (13205_1)	USCG LNM: 11/25/2008 (12/02/2008) NGA NTM: 04/11/1998 (12/20/2008)
12354	42nd	12/01/2006	1:80,000 (12354_1)	USCG LNM: 11/25/2008 (12/02/2008) NGA NTM: 12/04/1999 (12/20/2008)
12300	47th	05/01/2008	1:400,000 (12300_1)	USCG LNM: 11/18/2008 (12/02/2008) CHS NTM: None (10/31/2008) NGA NTM: 05/21/2005 (12/20/2008)
13006	34th	05/01/2007	1:675,000 (13006_1)	USCG LNM: 12/02/2008 (12/02/2008) NGA NTM: 11/01/2008 (12/20/2008)
5161	13th	10/01/2003	1:1,058,400 (5161_1)	USCG LNM: 09/16/2008 (12/02/2008) CHS NTM: None (10/31/2008) NGA NTM: 05/24/2008 (12/20/2008)
13003	49th	04/01/2007	1:1,200,000 (13003_1)	USCG LNM: 12/02/2008 (12/02/2008) NGA NTM: 11/01/2008 (12/20/2008)

* Correction(s) - *source: last correction applied (last correction reviewed--"cleared date")*

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Charted Obstn	GP	[None]	41° 21' 47.2" N	072° 05' 16.2" W	---
1.2	Charted Obstn	GP	[None]	41° 21' 48.0" N	072° 05' 15.0" W	---
1.3	Charted PA Wk	GP	[None]	41° 21' 43.1" N	072° 05' 12.9" W	---
1.4	343/80 Charted OBSTN	Rock	13.77 m	41° 23' 09.3" N	072° 05' 24.1" W	---
1.5	220/22 Uncharted Rock	Rock	5.79 m	41° 19' 04.9" N	072° 04' 35.1" W	---
2.1	Ft Griswold Dolphin 0002	Dolphin	[None]	41° 21' 07.1" N	072° 05' 02.9" W	---
2.2	CG Finger Pier Piling 0001	Pile	[None]	41° 22' 20.5" N	072° 05' 45.2" W	---
2.3	Dolphin 0001	Dolphin	[None]	41° 21' 19.4" N	072° 05' 29.2" W	---
2.4	Dolphin 0002	Dolphin	[None]	41° 21' 19.7" N	072° 05' 30.2" W	---
2.5	Dolphin 0003	Dolphin	[None]	41° 21' 20.6" N	072° 05' 29.7" W	---

2.6	Dolphin 0004	Dolphin	[None]	41° 21' 20.8" N	072° 05' 30.8" W	---
2.7	Dolphin 0005	Dolphin	[None]	41° 21' 21.9" N	072° 05' 31.8" W	---
2.8	Dolphin 0006	Dolphin	[None]	41° 21' 21.8" N	072° 05' 32.6" W	---
2.9	Dolphin 0007	Dolphin	[None]	41° 21' 22.6" N	072° 05' 32.0" W	---
2.10	Navy Restr Zone Buoy 0001	Open buoy	[None]	41° 23' 11.5" N	072° 05' 18.2" W	---
2.11	Navy Restr Zone Buoy 0005	Open buoy	[None]	41° 23' 18.5" N	072° 05' 23.5" W	---
2.12	Dolphin North 0001	Dolphin	[None]	41° 22' 40.1" N	072° 05' 47.3" W	---
2.13	Possible new pier extension 0003	Stationary structure, floating or fixed	[None]	41° 22' 43.2" N	072° 05' 45.9" W	---
2.14	217/23 Charted OBSTN	Obstruction	11.57 m	41° 19' 32.9" N	072° 04' 59.5" W	---
2.15	500/138 RK	Rock	6.80 m	41° 18' 46.2" N	072° 04' 27.2" W	---
2.16	134/87 RK	Rock	8.38 m	41° 18' 44.0" N	072° 04' 29.9" W	---
2.17	162/85 Rky area	Rock	6.88 m	41° 18' 32.5" N	072° 04' 23.8" W	---
3.1	DtoN 638/8 Obstn	Obstruction	11.18 m	41° 18' 22.2" N	072° 04' 45.2" W	---
3.2	DtoN 530/145 Obstn	Obstruction	11.15 m	41° 18' 21.0" N	072° 04' 45.9" W	---

1 - Charted Features

1.1) Charted Obstn

Survey Summary

Survey Position: 41° 21' 47.2" N, 072° 05' 16.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2009-013.14:54:52 (01/13/2009)

GP Dataset: ChartGPs - Digitized

GP No.: 55

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	55	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

Delete obstn.

1.2) Charted Obstn

Survey Summary

Survey Position: 41° 21' 48.0" N, 072° 05' 15.0" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ;**TVU (TPEv)** [None]

Timestamp: 2009-013.14:55:07 (01/13/2009)

GP Dataset: ChartGPs - Digitized

GP No.: 56

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	56	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

Delete obstn.

1.3) Charted PA Wk

Survey Summary

Survey Position: 41° 21' 43.1" N, 072° 05' 12.9" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ;**TVU (TPEv)** [None]

Timestamp: 2009-013.14:55:30 (01/13/2009)

GP Dataset: ChartGPs - Digitized

GP No.: 57

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	57	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

Delete dangerous sunken wreck.

1.4) 343/80 Charted OBSTN

Survey Summary

Survey Position: 41° 23' 09.3" N, 072° 05' 24.1" W

Least Depth: 13.77 m (= 45.17 ft = 7.528 fm = 7 fm 3.17 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.966 m ; **TVU (TPEv)** ±0.229 m

Timestamp: 2009-117.15:51:11.374 (04/27/2009)

Survey Line: f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 005_1550

Profile/Beam: 343/80

Charts Affected: 13213_2, 12372_4, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is a rock located on a slope, LD deeper than controlling depht of the channel.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/005_1550	343/80	0.00	000.0	Primary
s00024/tj_3101_klein5000_sss100/2008-293/110_1312	0001	2.04	231.7	Secondary
s00024/tj_3101_klein5000_sss100/2008-292/110_1834	0001	3.36	308.3	Secondary (grouped)
s00024/tj_3101_klein5000_sss200/2008-292/222_1936	0003	4.55	353.4	Secondary (grouped)

Hydrographer Recommendations

Remove charted Obstn, danger circle, and 44 ft depth.

Cartographically-Rounded Depth (Affected Charts):

45ft (13213_2, 12372_4)

7 ½fm (12300_1, 13006_1, 13003_1)

13.8m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: QUASOU - 1:depth known

SORDAT - 20090427

TECSOU - 3:found by multi-beam

VALSOU - 13.767 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Delete 44 Obstn and danger curve.

Feature Images

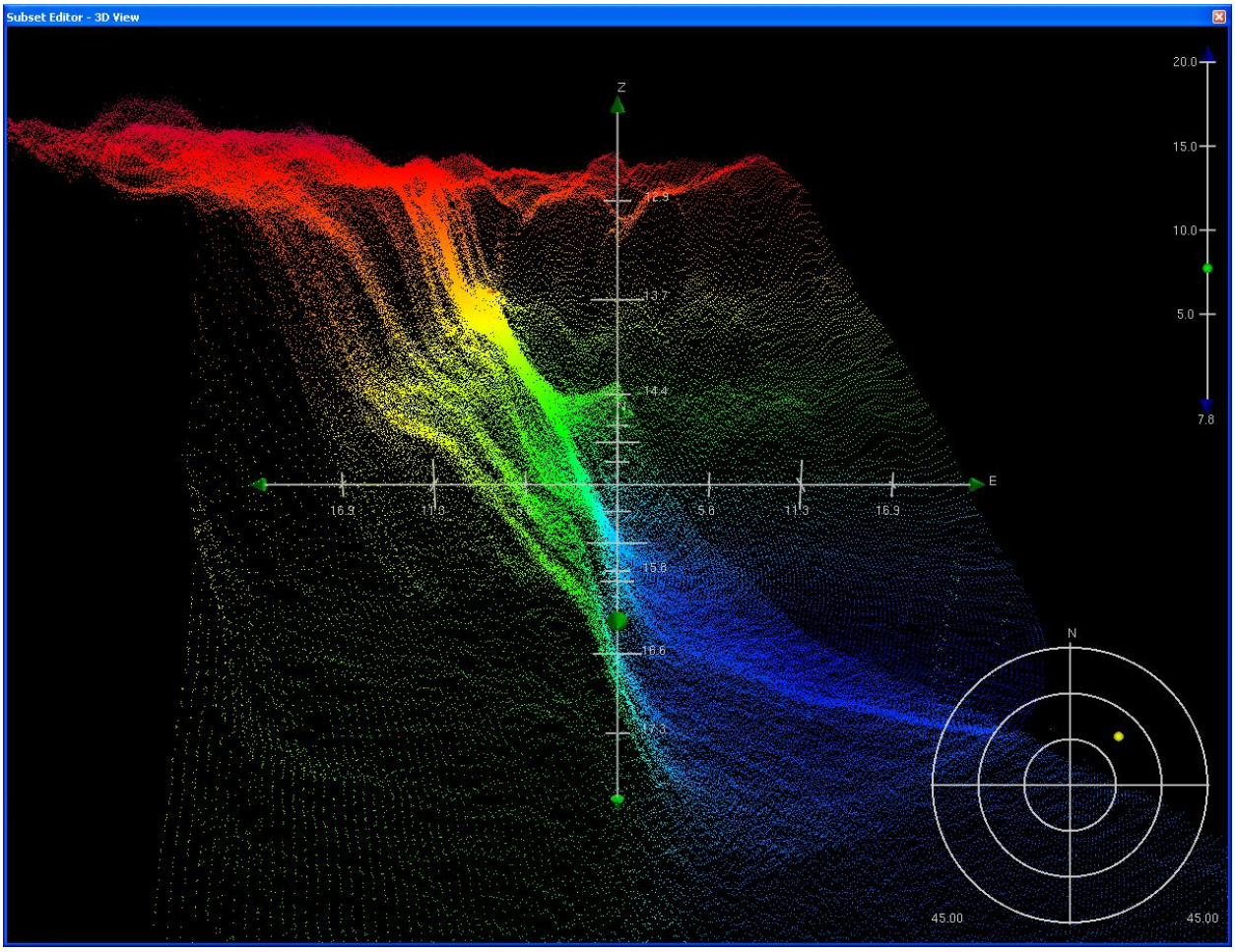


Figure 1.27.1

1.5) 220/22 Uncharted Rock

Survey Summary

Survey Position:	41° 19' 04.9" N, 072° 04' 35.1" W
Least Depth:	5.79 m (= 19.00 ft = 3.166 fm = 3 fm 1.00 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.966 m ; **TVU (TPEv)** ±0.210 m
Timestamp:	2009-117.15:00:16.000 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 030_1459
Profile/Beam:	220/22
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The contact was developed with 100% Simrad EMN3002 MBES, verified tides applied. The contact is a large rock outcrop, LD shallower than charted sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/030_1459	220/22	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-289/109_1356	0003	3.29	245.5	Secondary
s00024/tj_3101_klein5000_sss200/2008-290/235_1445	0001	5.14	189.0	Secondary
s00024/tj_3102_klein5000_sss100/2008-291/133_2042	0001	6.50	252.1	Secondary (grouped)

Hydrographer Recommendations

Chart Rk with LD of 19 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

19ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

3fm (12300_1, 13006_1, 13003_1)

5.8m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	SORDAT - 20090427

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 5.790 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concor - Chart 19 Rk and danger curve.

Feature Images

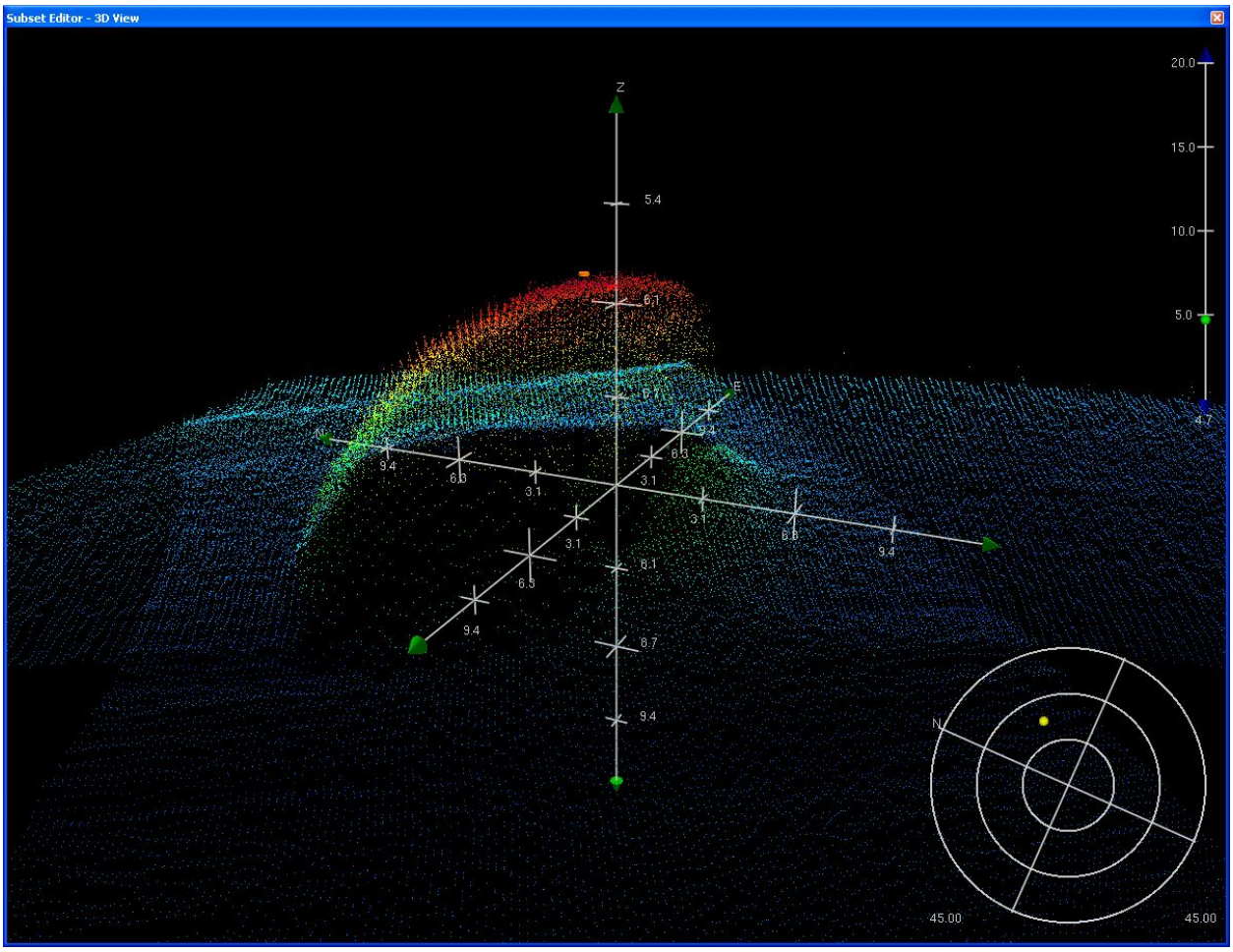


Figure 1.28.1

2 - New Features

2.1) Ft Griswold Dolphin 0002

Survey Summary

Survey Position: 41° 21' 07.1" N, 072° 05' 02.9" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-309.04:29:57 (11/04/2008)

Survey Line: s00024 / tj_3101_klein5000_sss100 / 2008-290 / 157_2124

Contact/Point: 0002/1

Charts Affected: 13213_1, 12372_4, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Pile cluster not on chart. Dolphin confirmed by NRT5 visually. Data was not acquired due to Electric Boat patrols requesting we depart their restricted area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3101_klein5000_sss100/2008-290/157_2124	0002	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dol with Dolphin symbol.

NRT5: Hydrographers concur.

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart Dolphin.

2.2) CG Finger Pier Piling 0001

Survey Summary

Survey Position:	41° 22' 20.5" N, 072° 05' 45.2" W
Least Depth:	[None]
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2008-310.03:44:40 (11/05/2008)
Survey Line:	s00024 / tj_3101_klein5000_sss200 / 2008-291 / 270_1453
Contact/Point:	0001/1
Charts Affected:	13213_1, 12372_4, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted pile.

No further development conducted by NRT5 due to restrictions, visual inspection confirmed existence of a floating pier. No evidence of ruins was noted

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3101_klein5000_sss200/2008-291/270_1453	0001	0.00	000.0	Primary

Hydrographer Recommendations

Extend the charted finger pier (ends approx. 20m west of this position) or chart ruins from current pier's charted position to this position.

NRT5: Agree with recommendation to extend the charted pier.

S-57 Data

Geo object 1:	Shoreline Construction (SLCONS)
Attributes:	CATSLC - 4:pier (jetty)
	STATUS - 1:permanent
	WATLEV - 5:awash

Office Notes

Concur with clarification - Defer to MCD NDB for final charting recommendation.

Feature Images

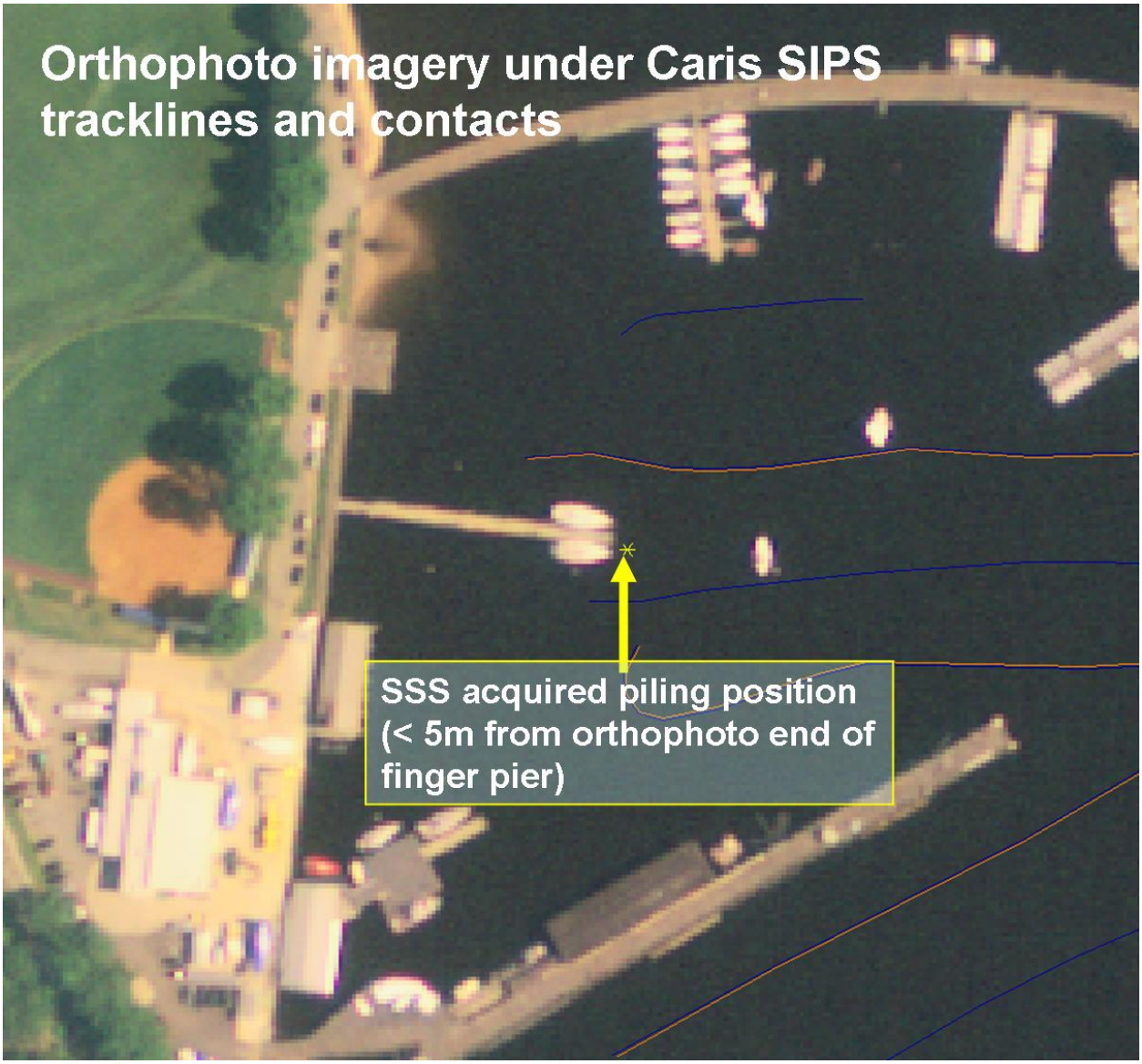


Figure 2.2.1

2.3) Dolphin 0001

Survey Summary

Survey Position: 41° 21' 19.4" N, 072° 05' 29.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:22:27 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0001/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0001	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart Dolphin.

2.4) Dolphin 0002

Survey Summary

Survey Position: 41° 21' 19.7" N, 072° 05' 30.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:23:17 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0002/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0002	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart Dolphin.

2.5) Dolphin 0003

Survey Summary

Survey Position: 41° 21' 20.6" N, 072° 05' 29.7" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:24:20 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0003/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin, NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0003	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - - Chart Dolphin.

2.6) Dolphin 0004

Survey Summary

Survey Position: 41° 21' 20.8" N, 072° 05' 30.8" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:24:52 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0004/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0004	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart dolphin.

2.7) Dolphin 0005

Survey Summary

Survey Position: 41° 21' 21.9" N, 072° 05' 31.8" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:25:28 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0005/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0005	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart dolphin.

2.8) Dolphin 0006

Survey Summary

Survey Position: 41° 21' 21.8" N, 072° 05' 32.6" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:25:58 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0006/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0006	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart dolphin.

2.9) Dolphin 0007

Survey Summary

Survey Position: 41° 21' 22.6" N, 072° 05' 32.0" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.02:26:34 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-290 / 254_1800

Contact/Point: 0007/1

Charts Affected: 13213_1, 12372_4, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dolphin. NRT5 was unable to collect bathy data due to the proximity of active ferries. Dols were confirmed visually.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-290/254_1800	0007	0.00	000.0	Primary

Hydrographer Recommendations

Chart Dolphin symbol.

NRT5: Concur

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

Office Notes

Concur - Chart dolphin.

2.10) Navy Restr Zone Buoy 0001

Survey Summary

Survey Position: 41° 23' 11.5" N, 072° 05' 18.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.04:47:48 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-293 / 413_1654

Contact/Point: 0001/1

Charts Affected: 13213_2, 12372_4, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted item.

NRT5 was unable to gather bathy data over this feature, visual inspections confirmed the item as a buoy demarking the restricted zone IVO a permanently moored inactive submarine (Nautilus SSn571) located at the USN Submarine Force Museum Pier. The buoy is a small black yokahoma with no markings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-293/413_1654	0001	0.00	000.0	Primary

Hydrographer Recommendations

NRT5: Recommends the permanantly moored sub be charted as a land feature and the area inshore of the buoy be charted as restricted.

S-57 Data

Geo object 1: Buoy, safe water (BOYSAW)

Attributes: COLOUR - 2:black

Office Notes

Concur - Defer to MCD NDB for final charting recommendation.

2.11 Navy Restr Zone Buoy 0005

Survey Summary

Survey Position: 41° 23' 18.5" N, 072° 05' 23.5" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.06:56:29 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-293 / 413_1654

Contact/Point: 0005/1

Charts Affected: 13213_2, 12372_4, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted item.

NRT5 was unable to gather bathy data on this feature. Visual investigation showed the contact to be a buoy demarking the restricted area IVO the USN Submarine base. The buoy is a small black yokahoma with no markings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-293/413_1654	0005	0.00	000.0	Primary

Hydrographer Recommendations

NRT5: Recommends the area be charted as restricted.

Chart restricted area around Navy base and buoy in current survey position.

S-57 Data

Geo object 1: Buoy, installation (BOYINB)

Attributes: COLOUR - 2:black

Office Notes

Concur - Defer to MCD NDB for final charting recommendation.

2.12) Dolphin North 0001

Survey Summary

Survey Position: 41° 22' 40.1" N, 072° 05' 47.3" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)**[None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.04:30:39 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-293 / 501_1550

Contact/Point: 0001/1

Charts Affected: 13213_2, 13213_1, 12372_4, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted piles dolphine. Visible.

NRT5 was able to visually confirm the existence of this dol, but unable to gather bathy due to its close proximity to moored barges.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-293/501_1550	0001	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss200/2008-293/503_1549	0005	2.82	268.4	Secondary

Hydrographer Recommendations

Chart Dolphin symbol

NRT5: Concur, the item should be charted as a Dol.

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

STATUS - 1:permanent

Office Notes

Concur - Chart dolphin.

2.13) Possible new pier extension 0003

Survey Summary

Survey Position: 41° 22' 43.2" N, 072° 05' 45.9" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2008-310.04:19:55 (11/05/2008)

Survey Line: s00024 / tj_3102_klein5000_sss200 / 2008-293 / 503_1549

Contact/Point: 0003/1

Charts Affected: 13213_2, 13213_1, 12372_4, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The investigation area was obstructed by a moored construction barge, NRT5 could gathered no bathy data at this location.

Feature Correlation

Address	Feature	Range	Azimuth	Status
s00024/tj_3102_klein5000_sss200/2008-293/503_1549	0003	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss200/2008-293/503_1549	0001	4.09	162.1	Secondary (grouped)

Hydrographer Recommendations

Recommend compiler conduct shoreline investigation of pier faces with orthoimagery and revise shoreline as applicable.

NRT5: Concur

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)

Attributes: CATSLC - 4:pier (jetty)

Office Notes

Concur with clarification - Defer to MCD NDB for final charting recommendation.

2.14) 217/23 Charted OBSTN

Survey Summary

Survey Position: 41° 19' 32.9" N, 072° 04' 59.5" W

Least Depth: 11.57 m (= 37.96 ft = 6.327 fm = 6 fm 1.96 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.972 m ; **TVU (TPEv)** ±0.243 m

Timestamp: 2009-117.15:07:43.584 (04/27/2009)

Survey Line: f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 026_1507

Profile/Beam: 217/23

Charts Affected: 13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The contact was developed with 100% Simrad EM3002 MBES, verified tides applied. The object is an OBSTN.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/026_1507	217/23	0.00	000.0	Primary
s00024/tj_3101_klein5000_sss100/2008-292/101_1247	0003	15.80	284.1	Secondary (grouped)
s00024/tj_3101_klein5000_sss100/2008-292/016_1329	0001	15.84	291.9	Secondary
s00024/noaa_auv600/2008-289/remus094	0001	16.01	287.8	Secondary (grouped)
s00024/tj_3102_klein5000_sss100/2008-292/300_1823	0001	16.18	292.2	Secondary
s00024/noaa_auv600/2008-290/remus393	0001	16.30	271.8	Secondary
s00024/noaa_auv600/2008-290/remus392	0001	16.31	273.0	Secondary (grouped)
s00024/noaa_auv600/2008-290/remus327	0001	16.86	307.1	Secondary
s00024/tj_3101_klein5000_sss200/2008-290/210_1722	0001	17.77	301.8	Secondary

Hydrographer Recommendations

Modify position of charted Obstn to current surveyed position. Change LD to 38 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

38ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

6 ¼fm (12300_1, 13006_1, 13003_1)

11.6m (5161_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes:
QUASOU - 6:least depth known
SORDAT - 20090427
TECSOU - 3:found by multi-beam
VALSOU - 11.571 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification - Delete charted 37 Obstn. Add 38 Obstn and danger curve.

Feature Images

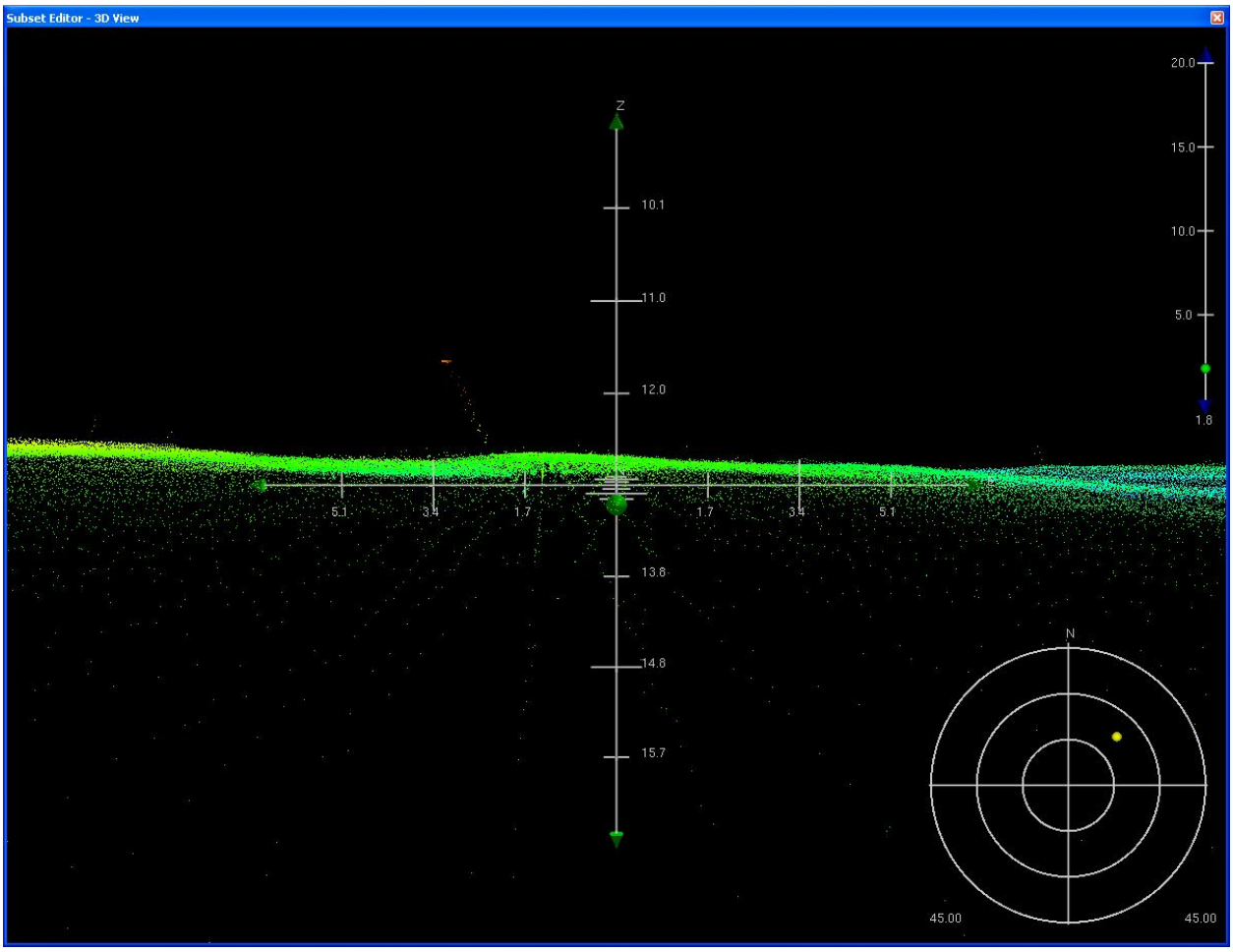


Figure 2.16.1

2.15) 500/138 RK

Survey Summary

Survey Position:	41° 18' 46.2" N, 072° 04' 27.2" W
Least Depth:	6.80 m (= 22.30 ft = 3.716 fm = 3 fm 4.30 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.966 m ; **TVU (TPEv)** ±0.213 m
Timestamp:	2009-117.14:56:57.821 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 033_1456
Profile/Beam:	500/138
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was developed with 100% Simrad EM3002 MBES, verfied tides applied. The contact is a rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/033_1456	500/138	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-289/111_1338	0004	1.11	333.3	Secondary
s00024/tj_3102_klein5000_sss200/2008-292/331_1600	0006	1.51	178.6	Secondary
s00024/tj_3102_klein5000_sss100/2008-289/110_1345	0004	3.79	161.2	Secondary (grouped)

Hydrographer Recommendations

Chart Rk with LD of 22 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

22ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

3 ¾fm (12300_1, 13006_1, 13003_1)

6.8m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	SORDAT - 20090430
	TECSOU - 3:found by multi-beam

VALSOU - 6.796 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart 22 Rk and danger curve.

Feature Images

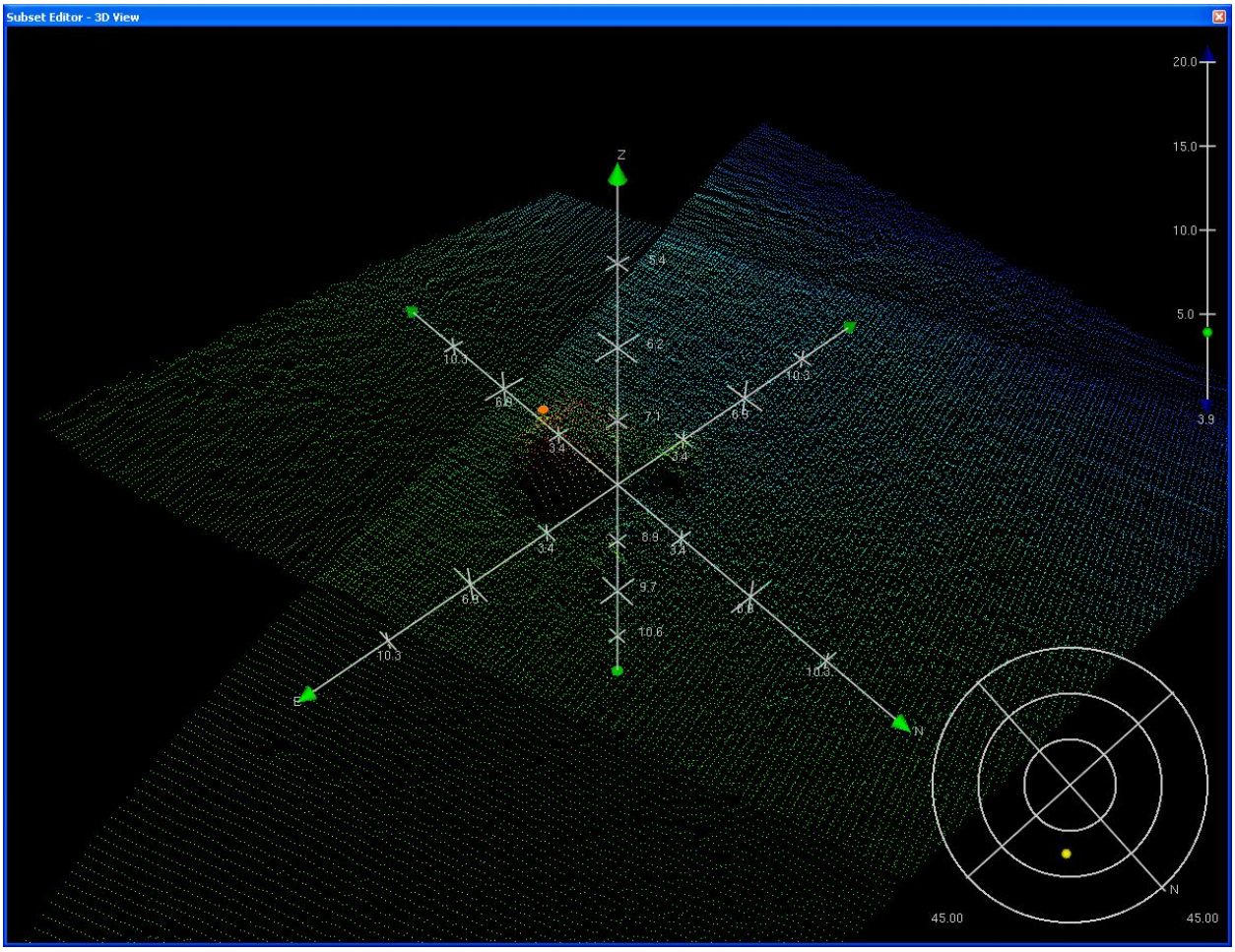


Figure 2.17.1

2.16) 134/87 RK

Survey Summary

Survey Position:	41° 18' 44.0" N, 072° 04' 29.9" W
Least Depth:	8.38 m (= 27.48 ft = 4.580 fm = 4 fm 3.48 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.965 m ; **TVU (TPEv)** ±0.221 m
Timestamp:	2009-117.14:54:39.569 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 034_1454
Profile/Beam:	134/87
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is a rock, LD shallower than charted soundings in the area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/034_1454	134/87	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-289/110_1345	0008	0.92	176.2	Secondary
s00024/tj_3102_klein5000_sss200/2008-289/216_1532	0002	2.05	167.6	Secondary

Hydrographer Recommendations

Chart Rk with LD of 27 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

27ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

4 ½fm (12300_1, 13006_1, 13003_1)

8.4m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	SORDAT - 20090430
	TECSOU - 3:found by multi-beam

VALSOU - 8.376 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart 27 Rk and danger curve.

Feature Images

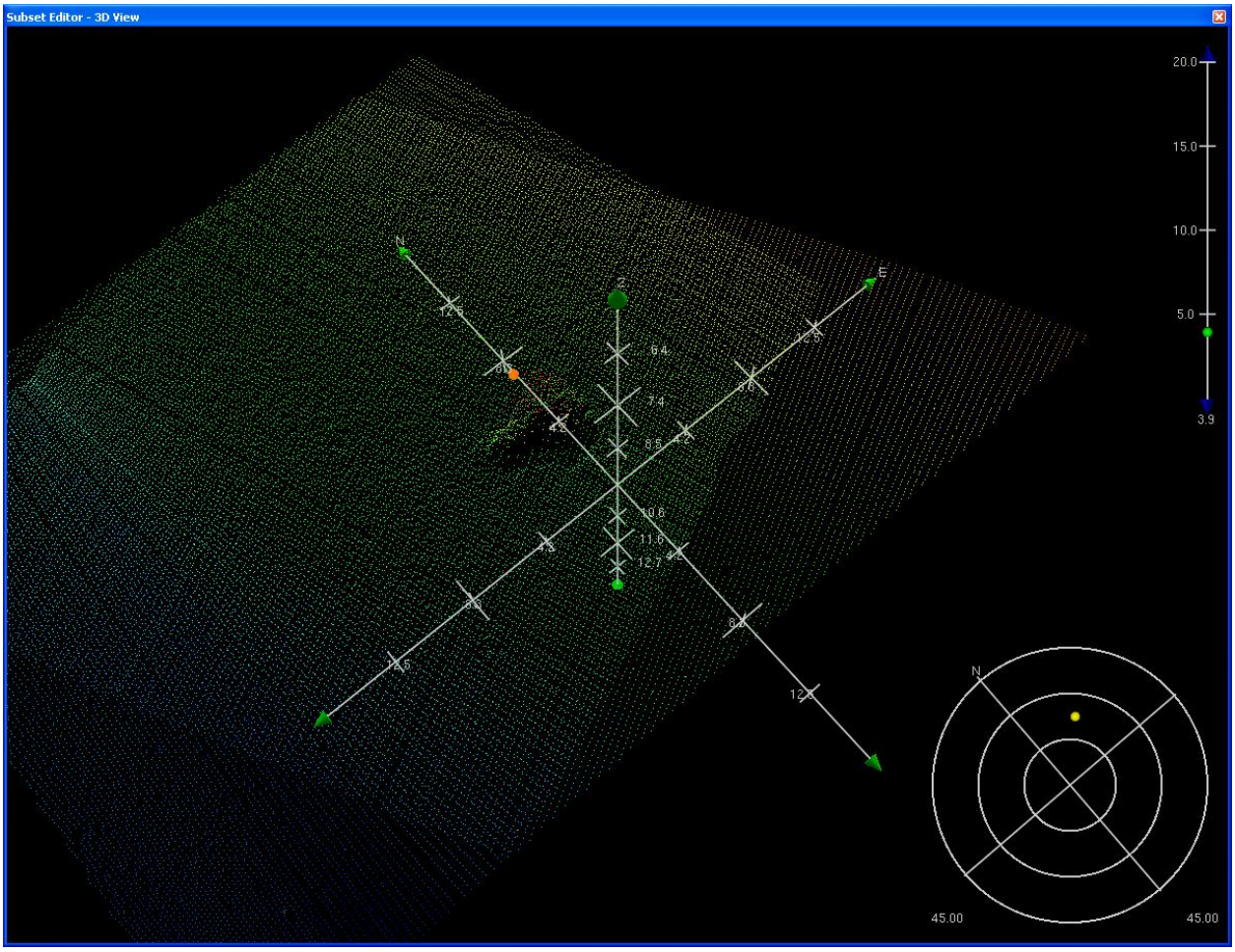


Figure 2.18.1

2.17) 162/85 Rky area

Survey Summary

Survey Position:	41° 18' 32.5" N, 072° 04' 23.8" W
Least Depth:	6.88 m (= 22.58 ft = 3.764 fm = 3 fm 4.58 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.964 m ; **TVU (TPEv)** ±0.220 m
Timestamp:	2009-117.14:51:57.734 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 041_1451
Profile/Beam:	162/85
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is several rocks, LD shallower than charted soundings in the area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/041_1451	162/85	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-292/314_1544	0004	4.90	208.0	Secondary
s00024/tj_3102_klein5000_sss200/2008-289/217_1522	0003	4.93	157.3	Secondary
s00024/tj_3102_klein5000_sss200/2008-292/333_1550	0002	5.55	178.5	Secondary

Hydrographer Recommendations

Chart Rky and update area charted soundings.

Cartographically-Rounded Depth (Affected Charts):

22ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

3 ¾fm (12300_1, 13006_1, 13003_1)

6.9m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	SORDAT - 20090430

TECSOU - 3:found by multi-beam

VALSOU - 6.883 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart notaion Rky.

Feature Images

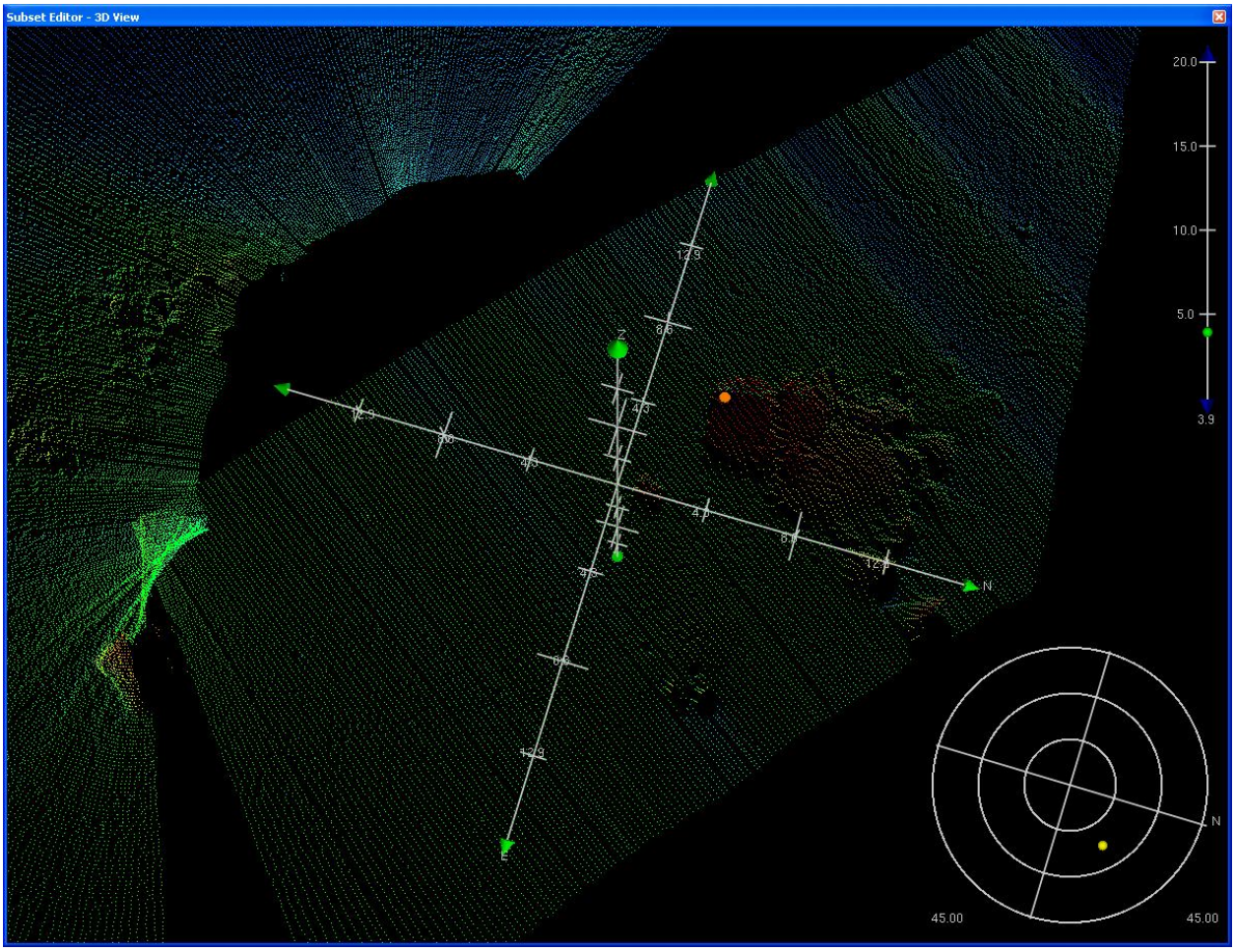


Figure 2.19.1

3 - Dangers to Navigation

3.1) DtoN 638/8 Obstn

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 18' 22.2" N, 072° 04' 45.2" W
Least Depth:	11.18 m (= 36.69 ft = 6.115 fm = 6 fm 0.69 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.974 m ; **TVU (TPEv)** ±0.263 m
Timestamp:	2009-117.14:44:50.561 (04/27/2009)
Survey Line:	f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 037_1443
Profile/Beam:	638/8
Charts Affected:	13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

This feature was found with 200% SSS and developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is a rock, LD shallower than charted sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/037_1443	638/8	0.00	000.0	Primary
s00024/tj_3102_klein5000_sss100/2008-289/124_1420	0001	8.15	343.8	Secondary

Hydrographer Recommendations

Modify the charted sounding to 36 ft MLLW and add Obstn danger symbol.

Cartographically-Rounded Depth (Affected Charts):

36ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

6fm (12300_1, 13006_1, 13003_1)

11.2m (5161_1)

S-57 Data

Geo object 1:	Obstruction (OBSTRN)
Attributes:	QUASOU - 6:least depth known
	TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 11.183 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart a 36 Obstn and danger curve.

Feature Images

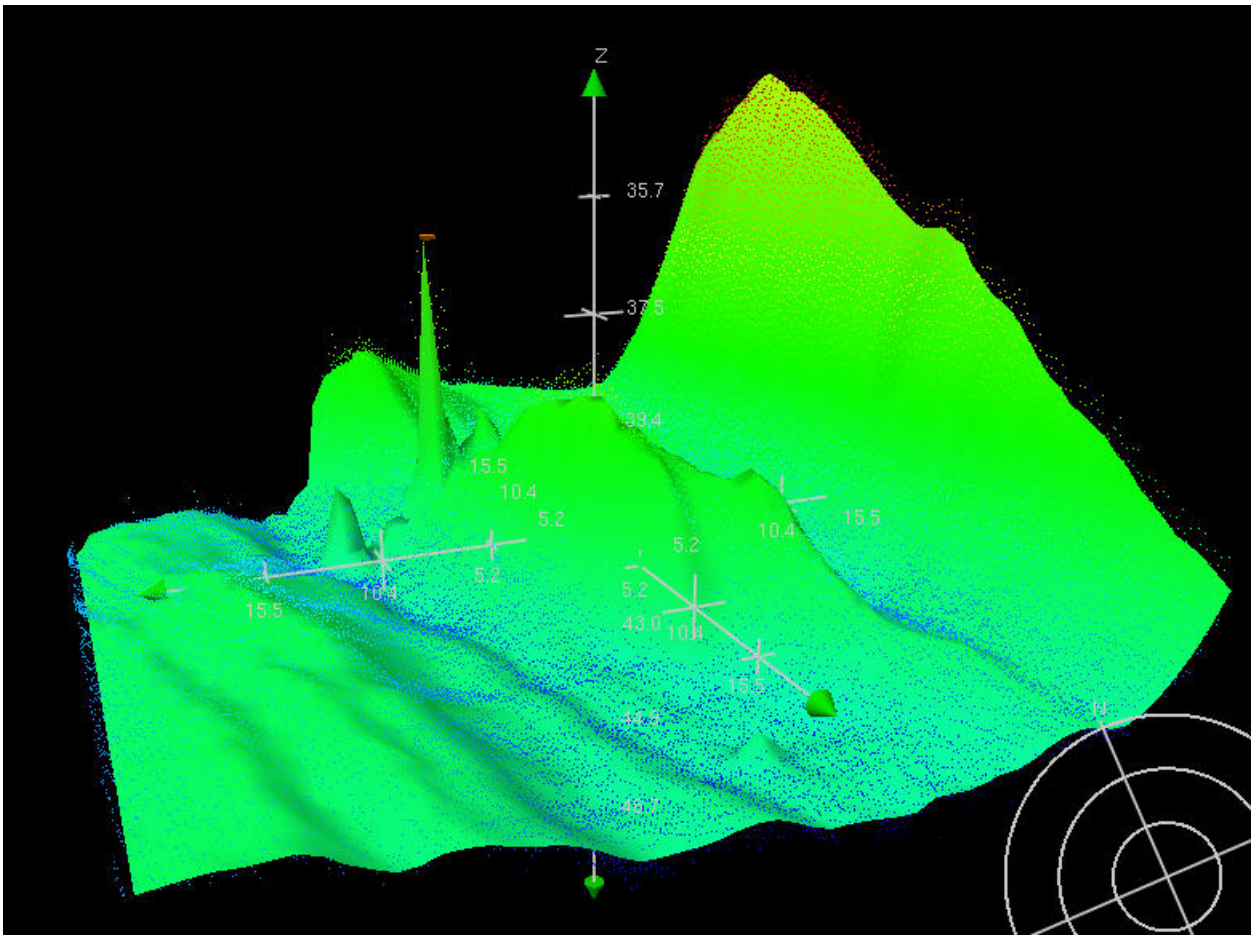


Figure 3.1.1

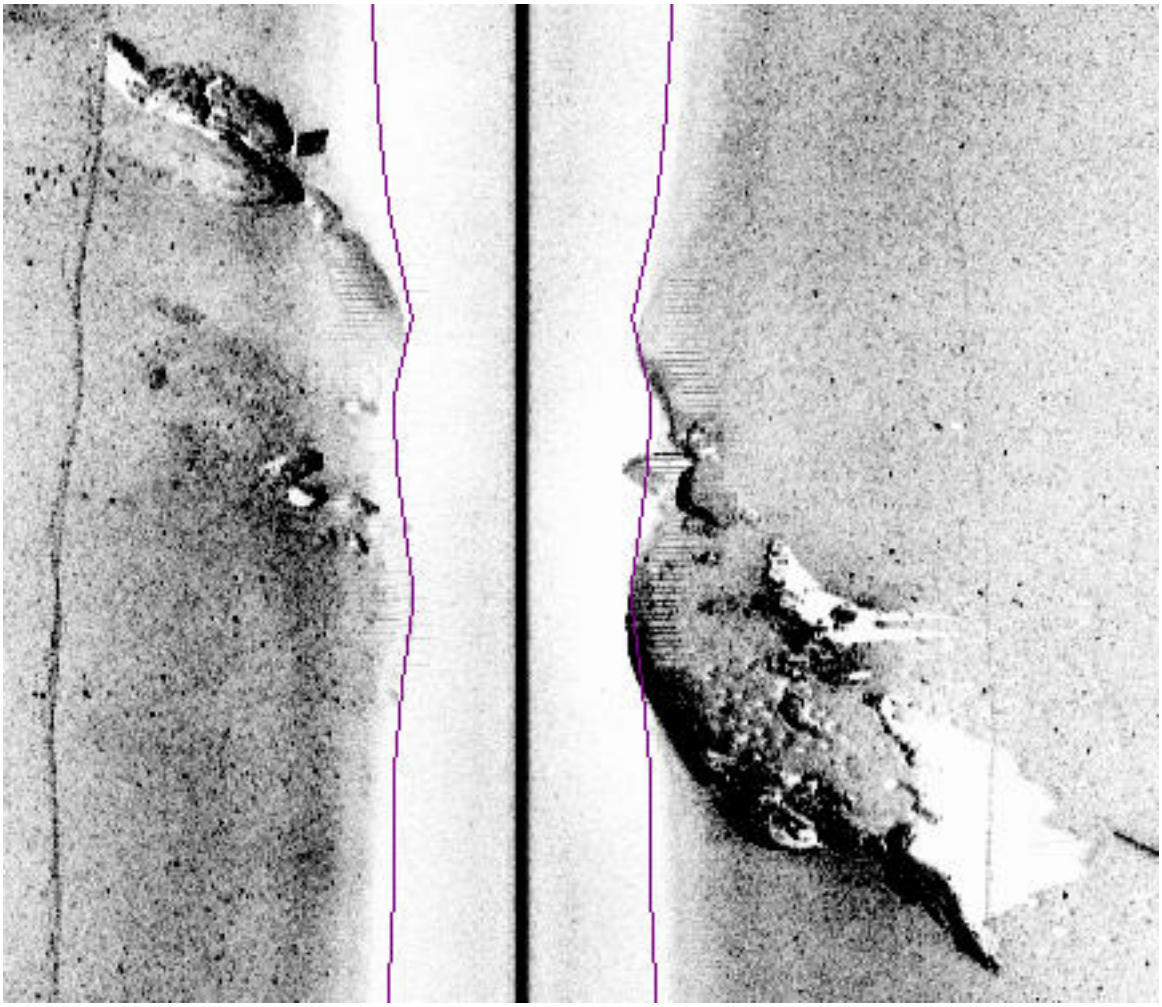


Figure 3.1.2

Figure 3.1.3

3.2) DtoN 530/145 Obstn

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 18' 21.0" N, 072° 04' 45.9" W

Least Depth: 11.15 m (= 36.58 ft = 6.097 fm = 6 fm 0.58 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.971 m ; **TVU (TPEv)** ±0.241 m

Timestamp: 2009-117.14:44:41.556 (04/27/2009)

Survey Line: f00565 / nrt5_s3002_em3002_mbes / 2009-117 / 037_1443

Profile/Beam: 530/145

Charts Affected: 13213_1, 13212_1, 12372_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The feature was found with 200% SSS and developed with 100% Simrad EM3002 MBES, verified tides applied. The contact is a Rock, LD shallower than charted soundings in the area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
f00565/nrt5_s3002_em3002_mbes/2009-117/037_1443	530/145	0.00	000.0	Primary
s00024/noaa_auv600/2008-291/remus604	0001	2.02	277.7	Secondary
s00024/noaa_auv600/2008-289/remus178	0001	35.02	232.9	Secondary (grouped)

Hydrographer Recommendations

Chart a dangerous Obstn with LD of 36 ft MLLW.

Cartographically-Rounded Depth (Affected Charts):

36ft (13213_1, 13212_1, 12372_1, 12354_1, 13205_1)

6fm (12300_1, 13006_1, 13003_1)

11.2m (5161_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: CATOBS - 1:snag / stump

QUASOU - 6:least depth known

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 11.150 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart a 36 Obstn and danger curve.

Feature Images

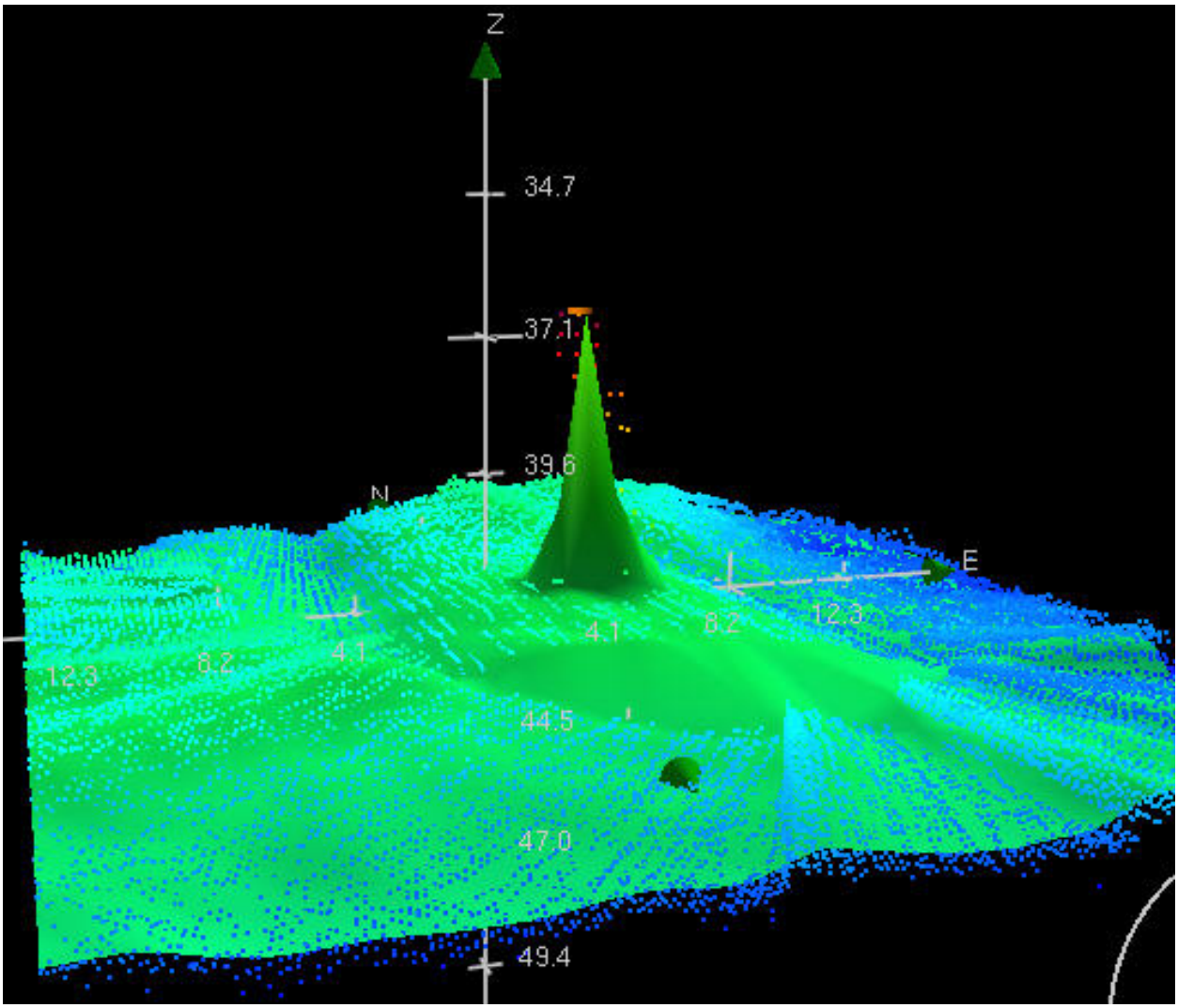


Figure 3.2.1

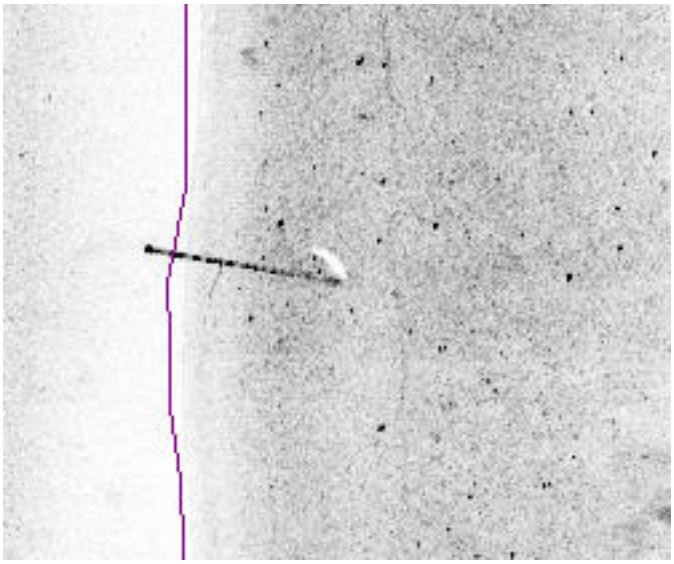
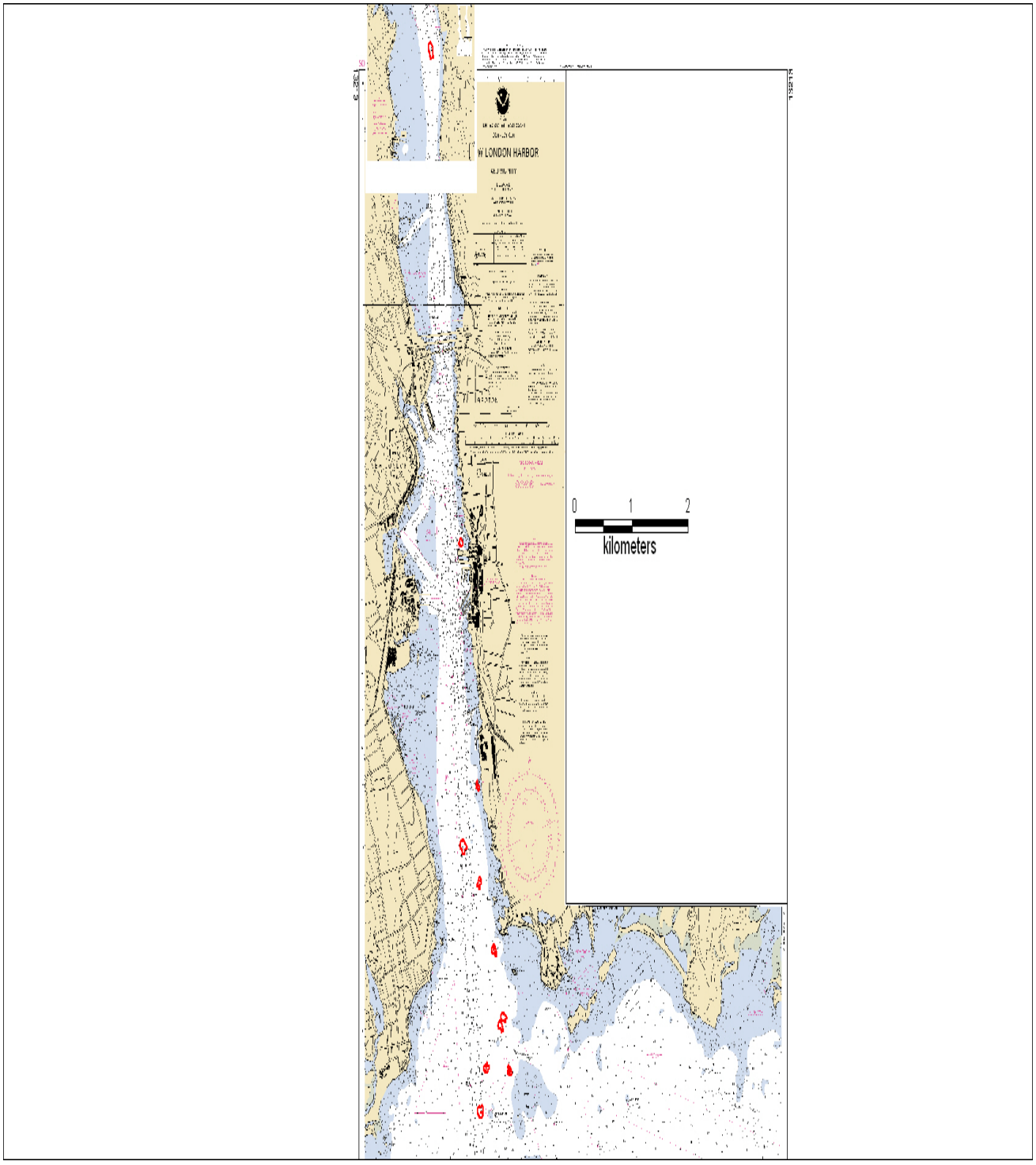


Figure 3.2.2

APPENDIX III

PROGRESS SKETCH



APPENDIX IV

TIDES AND WATER LEVELS

UNITED STATES DEPARMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : May 14, 2009

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B470-NRT5-2009
HYDROGRAPHIC SHEET: F00565

LOCALITY: New London Harbor, Eastern Long Island, CT
TIME PERIOD: April 27, 2009

TIDE STATION USED: 846-1490 New London, CT
Lat. 41° 21.7'N Long. 72° 05.4' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.839 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project OPR-B470-NRT5-2009, F00565 on April 27, 2009.

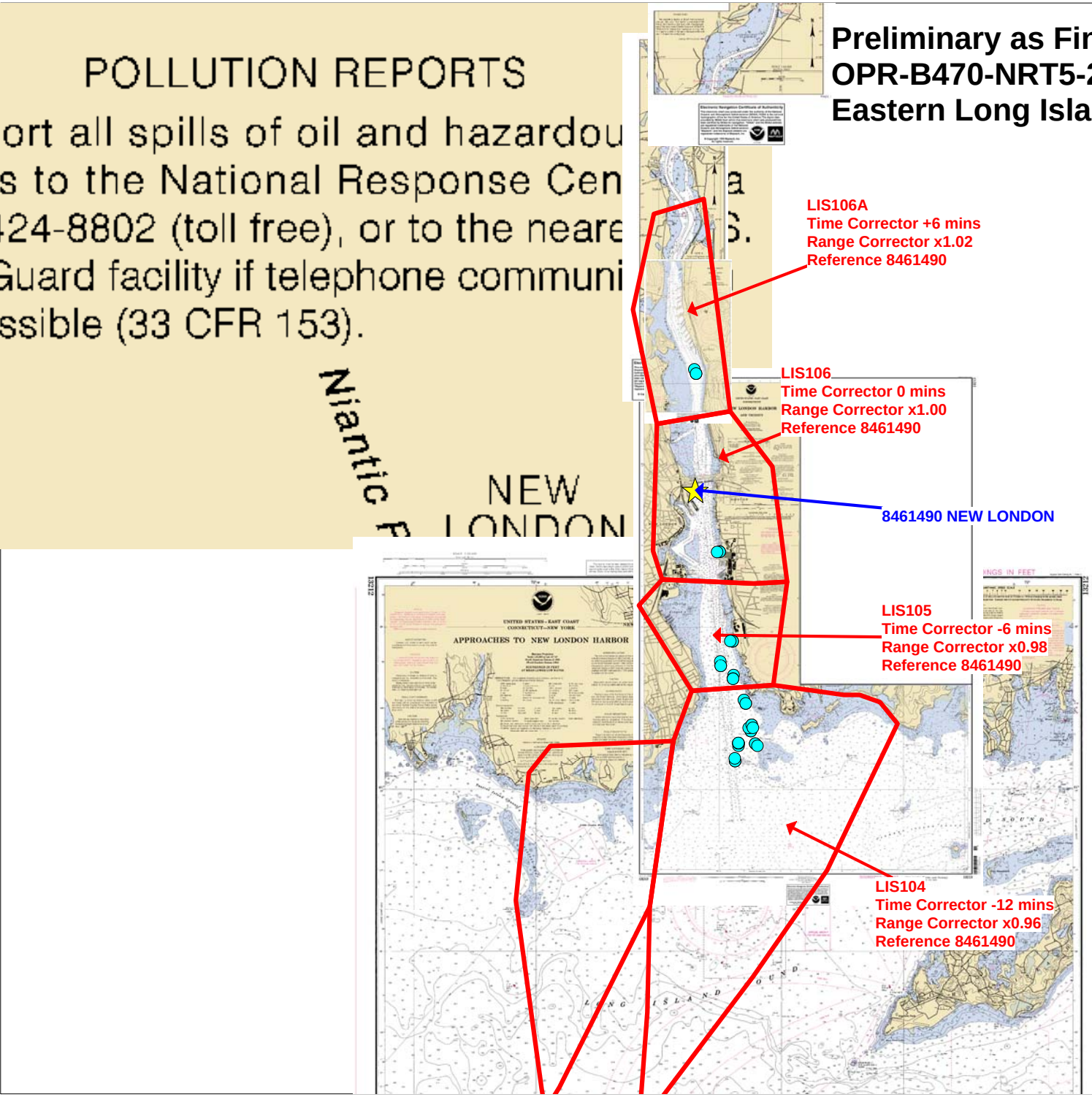
Please use the zoning file "B470NRT5CORP" submitted with the project instructions for Eastern Long Island, CT. Zones LIS104, LIS105, LIS106 and LIS106A are the applicable zones for F00565.

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

_____
CHIEF, OCEANOGRAPHIC DIVISION

Preliminary as Final Tidal Zoning for OPR-B470-NRT5-2009, F00565 Eastern Long Island Sound, CT



APPENDIX V
SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCES

V.1. COAST PILOT REPORT, NOAA FORM 77-6

No corrections or additions required.

V.2. BOTTOM SAMPLE, NOAA FORM 75-44

No bottom samples were taken.

V.3. AIDS TO NAVIGATION, NOAA FORM 76-40

No AToN's reports were submitted for this survey.

This Document is for Office Process use only and is intended to supplement, not supersede or replace, information/recommendations in the Descriptive or Evaluation Reports

S00024-F00565 COMPILATION LOG

General Survey Information	
REGISTRY No.	***S00024-F00565***
PROJECT No.	***S-B926-TJ-08 - OPR-B470-NRT5-09***
FIELD UNIT	***NOAA SHIP THOMAS JEFFERSON - NRT5***
DATE OF SURVEY	***10-15-2008 TO 04-27-2009***
LARGEST SCALE CHART	***13213, edition #41, 20040301***
SOUNDING UNITS	***feet***

Source Grids	**File Name**
	F00565_MBES_AHB_50CM_FINAL.HNS
Surfaces	***File Name***
Product Surface	***S00024-F00565-PS_50cm.hns***
Final HOBs	***File Name***
Survey Scale Soundings	***S00024_F00565_SS_Soundings.hob***
Chart Scale Soundings	***S00024-F00565_CS_Soundings.hob***
Feature Layer	***S00024-F00565_Features.hob***
Blue Notes	***S00024-F00565_BlueNotes.hob***

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Surveys S00024 (2008)-F00565 (2009)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Reports. Sections in this report refer to the corresponding sections of the Descriptive Reports.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

The following software was used to process and review data at the Atlantic Hydrographic Branch (AHB):

CARIS HIPS/SIPS version 6.1
CARIS BASE Manager 2.1
CARIS HOM ENC 3.3
PYDRO, version 8.7
CARIS S-57 Composer 2.0

B.2 QUALITY CONTROL

H-Cells

Project Instructions, B926-TJ-08 for survey S00024 (2008) required a side-scan-only survey be performed in support of the Department of Defense Maritime Homeland Defense project. Items located during S00024 (2008) operations were verified or disproved during F00565 (2009) operations. Bathymetry was only obtained for items investigated by survey F00565 (2009).

The chart-scale soundings in the H-Cell are a subset of the survey-scale soundings. Depth contours are not included in the H-Cell, because of the very small areas affected by the survey. The H-Cell contains several isolated features that do not fall within an M_COVR object.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC_CS.000) with all values measured in feet following NOAA sounding rounding rules.

The S00024-F00565 CARIS H-Cell final deliverables include the following products:

S00024_F00565_CS.000	1:10,000 Scale	S00024_F00565 Selected Soundings (Chart Scale)
S00024_F00565_SS.000	1:10,000 Scale	S00024_F00565 Selected Soundings (Survey Scale)

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by the field unit with no additional corrections required by Atlantic Hydrographic Branch personnel. The field unit applied verified water levels in conjunction with the preliminary tidal zoning which was accepted and approved by N/OPSI CO-OPS as the final zoning for F00565. Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW).

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 18. Office ENC processing of this survey required translating the datum to meet S-57 ENC requirements. The horizontal geodetic datum was translated to Latitude and Longitude (LLDG) World Geodetic System-84 (WGS-84) during CARIS Base Manager processing.

D. RESULTS AND RECOMMENDATIONS

Chart Comparison — **13213 (41st. Edition, Mar. /04**
Corrected through NM, Mar. 13/04
Corrected through LNM, Feb. 24/04
Scale 1:10,000

Hydrography

The charted Hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in Section D. of the Descriptive Report. The following should be noted:

A charted ***dangerous submerged obstruction*** in the vicinity of Latitude 41°22′09″N, Longitude 72°05′24″W was disproved by side scan sonar data. It is recommended that the charted ***dangerous submerged obstruction*** be deleted.

Adequacy of Survey

The side scan sonar imagery collected during this survey meets the Department of Defense Maritime Homeland Defense requirements.

Miscellaneous

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Chart used for compiling the present survey.

APPROVAL SHEET
S00024-F00565

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive review as per the Atlantic Hydrographic Branch Processing Manual and are verified to be accurate and complete except where noted.

Norris Wike

Digitally signed by Norris Wike
DN: cn=Norris Wike, o=NOAA, ou=AHB, email=norris.a.wike@noaa.gov, c=US
Date: 2009.06.16 08:16:37 -04'00'

Norris A. Wike
Cartographer
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved:

Digitally signed by Shepard Smith
DN: cn=Shepard Smith, o=NOAA, ou=AHB, email=shep.smith@noaa.gov, c=US
Date: 2009.06.16 08:31:46 -04'00'

Shep Smith
Commander, NOAA
Chief, Atlantic Hydrographic Branch

AWOIS and SURF Check completed
2009.06.26 08:30:45 -04'00'