

F-00513

NOAA FORM 76-35A

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

**DESCRIPTIVE REPORT**

*Type of Survey:* **ENC Validation and  
Hydrographic Surveys**  
*Registry Number:* **F00513**

**LOCALITY**

*State:* California  
*General Locality:* San Diego  
*Sub-locality:* San Diego Harbor and Mission Bay

**2009**  
CHIEF OF PARTY  
**Eric Moore**

LIBRARY & ARCHIVES

DATE

**HYDROGRAPHIC TITLE SHEET**

**F00513**

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: **California**

General Locality: **San Diego**

Sub-Locality: **San Diego Harbor and Mission Bay**

Scale: **1:5,000** Date of Survey: 9/8/2006-12/7/2006

Instructions Dated: March 2, 2006 Project Number: S-L920-NRT6-05

Vessel: **NOAA Survey Boat S-3003**

Chief of Party: **Eric Moore**

Surveyed by: **NOAA Navigation Response Team 6 Personnel**

Soundings by: **Kongsberg Simrad EM 3000**

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 (bold, red, italic font)***

Soundings in: **Meters at MLLW**

Remarks:

- 1) All Times are UTC.***
- 2) This is an ENC Validation Survey, with small areas of Hydrographic Coverage assigned.***
- 3) Projection is UTM Zone 11.***

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## **DESCRIPTIVE REPORT**

to accompany

HYDROGRAPHIC SURVEY F-00513

Scale of Survey: 1:5,000

Year of Survey: 2006

NOAA Navigation Response Team 6

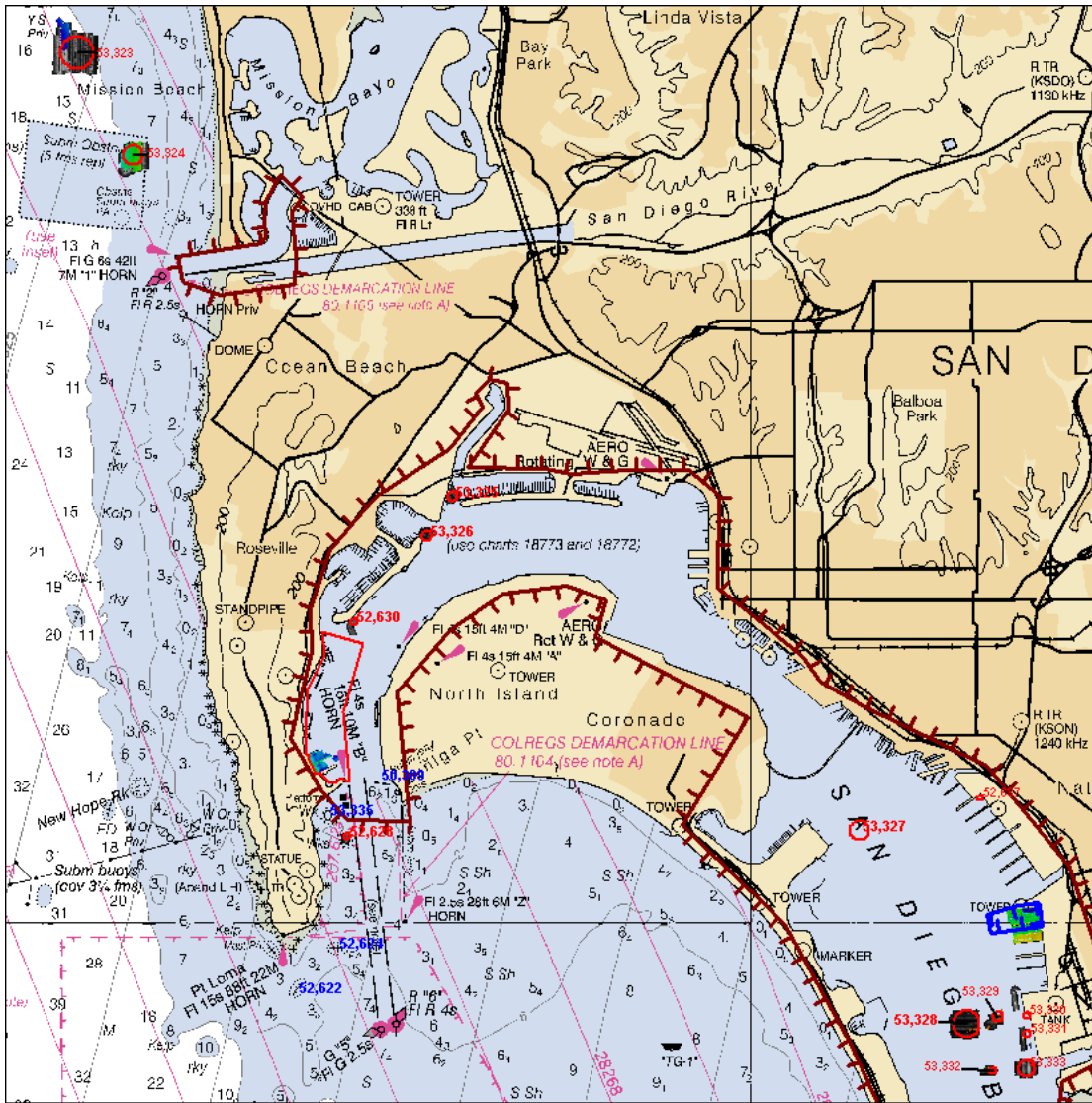
Ed Wernicke, Julia Ulhendorf, Eric Moore

### **A. AREA SURVEYED**

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter Instructions for Field Examination F-00513, San Diego, California. The original instructions are dated March 2, 2006. *Concur.*

This survey includes two areas of ENC validation, several assigned AWOIS investigations, and two small areas of bathymetry that were requested by local Navy facilities. *Concur.*

For complete survey limits, see the chartlet on the following page. *Concur with coverage chartlet.*



**Figure 1: Complete Survey Limits & Data Coverage. Maroon areas are ENC Validation areas, red circles are AWOIS items, and the red and blue polygons are areas requested for bathymetric survey by the Navy.**

## **B. DATA ACQUISITION AND PROCESSING**

### **B.1 EQUIPMENT**

Data were acquired by NOAA Survey boat S3003, which is a 10-meter hydrographic survey vessel with an average transducer draft of 1.1 meters. *Concur.*

NOAA Survey vessel S3003 acquired multi beam echo sounder (MBES) data with a Kongsberg Simrad EM 3000 and side scan sonar (SSS) data with a towed KLEIN 3000. Water column sound velocity data was acquired with a Sea-Bird SBE 19+ CTD. *Concur.*

NOAA Survey boat S3003 positioning and attitude data were determined with an Applanix POS/MV 320 Version 4 GPS-aided inertial navigation system. *Concur.*

Refer to the Data Acquisition and Processing Report (DAPR)\* for detailed equipment and vessel configuration information. *\*DAPR included with survey deliverables.*

### **B.2 QUALITY CONTROL**

#### **B.2.1 Side Scan Sonar Quality Control**

Daily confidence checks were made by observing the outer ranges of the side scan sonar images. A good check consisted of distinguishing contacts or sand waves across the entire range of the side scan trace. No unusual problems were encountered. *Concur.*

#### **B.2.2 Shallow Water Multibeam Quality Control**

Post-processing of SWMB data revealed a ping-skipping problem in multibeam data. Data coverage is still dense enough to meet HSSD requirements, and this problem has been mitigated during subsequent surveys. Refer to this project's DAPR for detailed discussion of SWMB system calibrations, data acquisition, and data processing. *Concur.*



### B.2.3 BASE Surfaces

Four CARIS HIPS BASE (*Bathymetry Associated with Statistical Error*) surfaces, which incorporate each sounding's total propagated error (TPE), were created. Each finalized BASE surface contains eight layers: depth, uncertainty, density, mean, standard deviation, hypothesis strength, hypothesis count and user nominated. Refer to this project's DAPR for detailed discussion of BASE Surface generation and processing. *Concur.*

Survey areas were generally small, but spread out over a larger geographic area, necessitating the creation of several BASE surfaces. *Concur.*

**Table 1: Fieldsheets, BASE Surfaces and BAG (Bathymetric Attributed Grid) surfaces created:**

<u>Fieldsheet</u>	<u>#BASE Surfaces</u>	<u>Resolution</u>	<u>Purpose</u>
AWOIS_B_0p5m	2	0.5m	Coverage & Finalized
AWOIS_C_1m	2	1m	Coverage & Finalized
Navy_M_Pier_1m	2	1m	Coverage & Finalized
Navy_Pier_10_1m	2	1m	Coverage & Finalized
AWOIS_B_0p5m		1m	BAG Generation
AWOIS_C_1m		1m	BAG Generation
Navy_M_Pier_1m		1m	BAG Generation
Navy_Pier_10_1m		1m	BAG Generation

Refer to this project's DAPR for detailed discussion of MBES system calibrations, data acquisition, and data processing. *Concur.*

### B.2.4 Crosslines

Areas of multibeam survey were either within small, enclosed pier spaces, or were developments over items located by SSS. Crosslines were not planned, but lines running perpendicular to planned lines were run for each of the pier surveys. BASE surfaces were examined and no systematic errors in the SWMB system were found. *Concur with clarification. Some investigation areas without crosslines.*

### B.3 CORRECTIONS TO ECHO SOUNDING

All methods or instruments used are detailed in the project DAPR.\* A table of all sound velocity casts is located in Separate II. *\*DAPR included with survey deliverables.*

## C. VERTICAL AND HORIZONTAL CONTROL

### C.1 VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) stations at), and the Physical Oceanographic Real Time System (PORTS) station at served as datum control for the survey area. The tide zoning file “L920NRT62005CORP” was originally applied during processing, but “F00513CORF\_Rev” was used for final processing following a smooth tide request in December 2008. The preliminary zones and correctors used for this survey are as follows:

**Table 2: Preliminary Tide Zones & Correctors:**

<b>Zone Name</b>	<b>Time Corrector(mins)</b>	<b>Range Ratio</b>	<b>Predicted Reference</b>
SDB1	0	x0.98	941-0170
SDB2	0	x1.00	941-0170
SDB3	0	x1.03	941-0170
SDB4	0	x1.04	941-0170
PAC2	0	x1.00	941-0230
PAC1	0	x0.93	941-0170

A Request for Smooth Tides was sent to N/OPS1 on November 6, 2008 and is included in Appendix IV Tides & Water Levels. Observed water levels from the N/OPS1 CO-OPS website were downloaded and applied to all sounding data with preliminary tide zoning. Refer to the 2006 DAPR\* for a summary of the methods

used to determine, evaluate, and apply tide corrections to sounding data. *Concur.*  
*\*DAPR included with survey deliverables.*

## C.2 HORIZONTAL CONTROL

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 11. *Concur.*

Horizontal position was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon station at Pt. Loma, CA (302 kHz). No horizontal control stations were established for this survey. *Concur.*

Horizontal dilution of precision (HDOP) was monitored daily on the ship and both launches. The observed HDOP values did not exceed 4.00. *Concur.*

## D. RESULTS AND RECOMMENDATIONS

### D.1 CHART COMPARISON

Data accuracy standards and bottom coverage requirements have been met and survey data for survey H11919 are adequate to supersede charted data in their common areas. *Concur.*

There are 3 raster charts and 2 ENC's affected by this survey:

**Table 3: Affected Charts:**

<u>Chart Number</u>	<u>Edition</u>	<u>Edition Date</u>	<u>Next Planned Edition</u>
18765	16 <sup>th</sup>	1/1/05	6/1/2010
18772	48 <sup>th</sup>	12/1/05	3/1/2007
18773	40 <sup>th</sup>	12/1/05	5/1/2006

<u>ENC Cell</u>	<u>Last Updated</u>	<u>Corresponding Chart</u>	<u>Version</u>	<u>Edition</u>
US5CA71M	6/24/2005	18772	2	3

US5CA72M	1/30/2006	18773	2	3
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### **Anchorage A-8**

Anchorage A-8, located in the southern area of San Diego Bay, is littered with numerous sunken wrecks and obstructions. Many derelict sailing and motor vessels are anchored in this area, and often sink in or near the charted anchorage. NRT6 was assigned two AWOIS item investigations in or near the anchorage, and located several wrecks and obstructions within the AWOIS search radii. These items were developed with SWMB. Most items warrant charting updates, as either wrecks or obstructions; this is noted in the Pydro PSS. In the PSS each item developed in or near the anchorage is noted with the Keyword "Anchorage A-8", and these items are also found in a separate template page. *Concur.*

Rather than charting each obstruction, it may create less "chart clutter" to denote an area on the chart in which numerous wrecks and obstructions are found. In the figure below, the area in which all of the wrecks and obstructions found during this survey is outlined in blue. *Concur.*

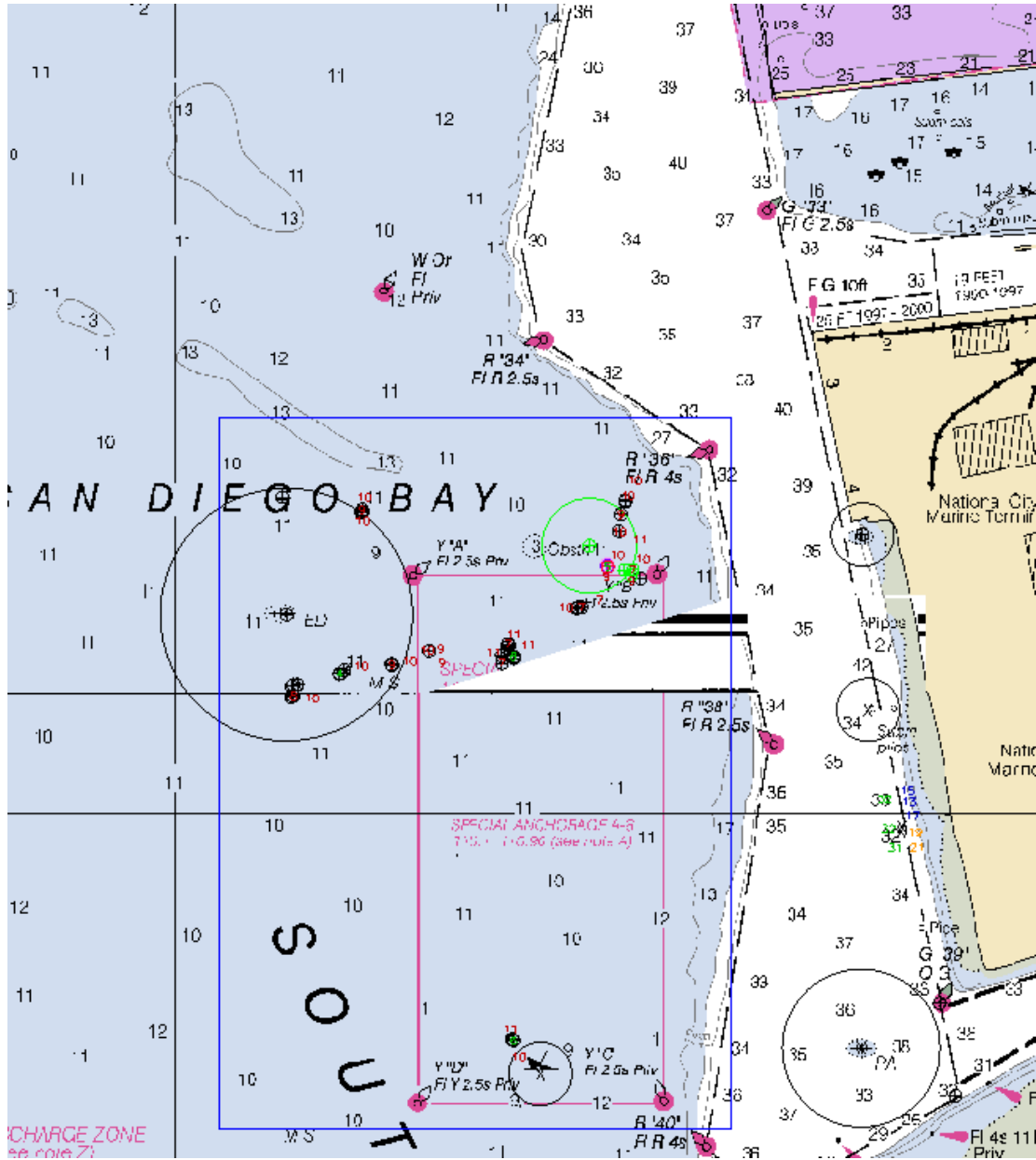


Figure 2: Numerous wrecks and obstructions are located in the area outlined in blue.

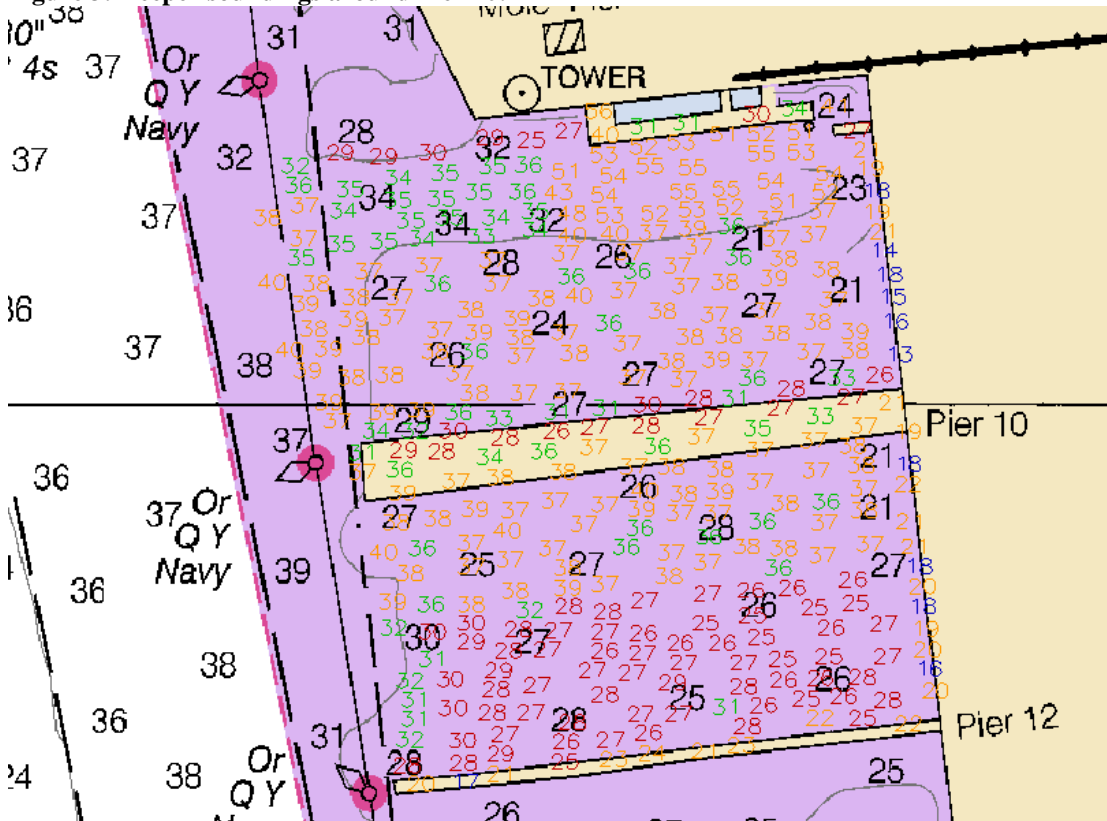
The Coast Pilot advises the mariner that numerous wrecks and obstructions exist in southeastern San Diego bay. The Hydrographer will recommend that this entry specifically mention Anchorage A-8. Steps have been taken, after completion of the survey, to clean the Anchorage by the local Port Authority. The Hydrographer will also recommend a complete survey of the anchorage once these efforts are completed.

**Concur.**

### D.1.1 General Agreement with Charted Soundings

Bathymetry collected for survey F00513 in other areas generally agreed with charted soundings. Survey results show bathymetry north and south of Navy Pier 10 to be deeper than charted. Recent dredging may be seen in the DTM of the area. **Concur.**

Figure 3: Deeper soundings around Pier 10:



### D.1.2 Dangers to Navigation (Dton's)

No Dton's were submitted for this survey. **Concur.**

### D.1.3 AWOIS Items

Item investigation reports for each full investigation AWOIS item are contained in Appendix II. *Concur.*

### D.1.4 Significant Uncharted Features

The item investigation reports describing significant uncharted features are contained in Appendix II. *Concur.*

## D.2 ADDITIONAL RESULTS

### D.2.1 Prior Surveys

This survey overlaps prior NOAA surveys:

**Table 4: Prior NOAA surveys**

<u>Registry Number</u>	<u>Scale</u>	<u>Year Surveyed</u>
H11015	10,000	2001
H09106	10,000	1970
H09106	10,000	1970
H09105	10,000	1970
H08920	10,000	1970
H08978	10,000	1968
H08135	10,000	1954
F00122	20,000	1954
H05680A	10,000	1934
H05680	10,000	1934
H05404	5,000	1934
H04744B	5,000	1928
H04744C	5,000	1928
H04781	5,000	1928
H04744A	5,000	1928

H04268	10,000	1923
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*Concur.*

### D.2.2 Aids to Navigation and Other Detached Positions

All identified floating aids to navigation within the survey area are consistent with the chart and serve their intended purpose. The positions of the lighted floating aids to navigation are consistent with the positions published in the *Light List*. Positions of requested AtoNs have been sent to NSD and MCD. A copy of the AtoN report may be found in Appendix 5. *Concur.*

### D.2.3 Bridges and Overhead Cables

All bridges and overhead cables are charted correctly. *Concur.*

### D.2.4 Ferry Routes

There are no ferry routes in the survey area. *Concur.*

### D.2.5 Submarine Cables and Pipelines

All submarine cables and pipelines are charted correctly. *Concur.*

### D.2.6 Shoreline

Mapinfo tables containing all shoreline data have been sent to NRB. Copies of these tables are included in Appendix 5. *Concur.*



**E. APPROVAL SHEET****S-L920-NRT6-05****San Diego****California****Survey Registry No. F00513**

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

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

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

- SEPARATES TO ACCOMPANY PROJECT S-L920-NRT6-05, F00513
- S-L920-NRT6-05 HORIZONTAL AND VERTICAL CONTROL REPORT
- 2006 DATA ACQUISITION AND PROCESSING REPORT

Approved and Forwarded:

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Eric Moore  
Physical Scientist Technician

# Descriptive Report

## Appendix 1: Dangers to Navigation

No Dangers to Navigation were submitted for this survey.

Descriptive Report  
Appendix 2: Survey Feature Report

# AWOIS Report

**Registry Number:** F00513  
**State:** California  
**Locality:** San Diego  
**Sub-locality:** San Diego Harbor and Mission Bay  
**Project Number:** S-L920-NRT6-05  
**Survey Date:**

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
18773	41st	10/01/2008	1:12,000 (18773_1)	USCG LNM: 11/11/2008 (06/09/2009) NGA NTM: 08/25/2007 (06/20/2009)
18773	41st	10/01/2008	1:12,000 (18773_2)	USCG LNM: 10/14/2008 (03/03/2009) NGA NTM: None (03/14/2009)
18772	48th	12/01/2005	1:20,000 (18772_1)	[L]NTM: ?
18765	16th	01/01/2005	1:100,000 (18765_1)	USCG LNM: 09/09/2008 (03/03/2009) NGA NTM: 05/24/2008 (03/14/2009)
18740	41st	04/01/2005	1:234,270 (18740_1)	[L]NTM: ?
18022	35th	08/01/2005	1:868,003 (18022_1)	[L]NTM: ?
18020	37th	09/01/2003	1:1,444,000 (18020_1)	[L]NTM: ?
501	12th	11/01/2002	1:3,500,000 (501_1)	[L]NTM: ?
530	31st	06/01/2005	1:4,860,700 (530_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_1)	[L]NTM: ?

\* 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	UNKNOWN	AWOIS	[no data]	[no data]	[no data]	---
1.2	UNKNOWN	AWOIS	[no data]	[no data]	[no data]	---
1.3	UNKNOWN	AWOIS	[no data]	[no data]	[no data]	---
1.4	UNKNOWN	AWOIS	[no data]	[no data]	[no data]	---
1.5	OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---
1.6	OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---

1.7	UNKNOWN	AWOIS	[no data]	[no data]	[no data]	---
1.8	UNKNOWN	AWOIS	[no data]	[no data]	[no data]	---
1.9	OBSTRUCTIONS	AWOIS	[no data]	[no data]	[no data]	---
1.10	UNKNOWN	AWOIS	[no data]	[no data]	[no data]	---
1.11	M/V POPEYE	AWOIS	[no data]	[no data]	[no data]	---

**1 - DR\_AWOIS**

**1.1) AWOIS #52628 - UNKNOWN****No Primary Survey Feature for this AWOIS Item**

**Search Position:** 32° 40' 43.4" N, 117° 13' 57.2" W  
**Historical Depth:** [None]  
**Search Radius:** 50  
**Search Technique:** S2,SD,ES  
**Technique Notes:** [None]

**History Notes:**

HISTORY ■ CL385/70-- ITEM#2, 1970, PMC-NOS: OBSTRUCTION AT 32-40-43.31N 117-13-54.14W REPORTED CHART DEFICIENCY DURING OPR-411 (1969)-AFTER DIVE INVESTIGATION 22 TON CRANE WITH 55FT BOOM AND A 20' x 9' BASE COMPOSED OF 12" H BEAMS AT ABOVE LOCATION, SPECIAL PURPOSE BUOY MARKING ITS POSITION. ■■ LNM 38/70 WRECK REMOVED AND BUOY DISCONTINUED. WRECK HAS BEEN REMOVED TO A DEPTH OF 9 FEET ■BELOW MLLW. THE WRECK BUOY, WR11 HAS BEEN DISCONTINUED. ■■ H11015-- SSS WAS NOT ACQUIRED. SUBSEQUENT DEVELOPMENT AT THE AWOIS TARGET LOCATED AN OBSTRUCTION RISING SIX FEET OFF THE BOTTOM TO A LEAST DEPTH OF 9 FEET. RECOMMENDED CHARTING AN OBSTRUCTION (WRECKAGE) WITH A LEAST DEPTH OF 10 FEET AT 32/40/43.385 - 117/13/57.147.

**Survey Summary**

**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

**Remarks:**

Charted wreckage corresponding to AWOIS item #52628. Retain charted Wreckage in current position

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 52628	0.00	000.0	Primary

**Hydrographer Recommendations**

Retain charted Wreckage in current position.

**S-57 Data**

[None]

## Office Notes

Concur.



## 1.2) AWOIS #52630 - UNKNOWN

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 42' 29.8" N, 117° 13' 53.1" W  
**Historical Depth:** [None]  
**Search Radius:** 50  
**Search Technique:** S2,SD,ES,DI  
**Technique Notes:** [None]

**History Notes:**

HISTORY ■ LNM51/89--12-18-89,11TH CDG; (NAD83) CA-SAN DIEGO BAY ADD WRECK FR (PA) AND LIGHTED BUOY W Or, Fl W (Priv maintd) (PA) AT 32-42-29.8N 117-13-53.1W

### Survey Summary

**Charts Affected:** 18773\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

**Remarks:**

Area was searched using 200% SSS, item not found.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 52630	0.00	000.0	Primary

### Hydrographer Recommendations

The Hydrographer recommends removing the charted wreck from the chart.

### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 2:dangerous wreck  
 WATLEV - 3:always under water/submerged

## Office Notes

Do not concur. Evidence for removal insufficient. Retain Wreck as charted.

### 1.3) AWOIS #53323 - UNKNOWN

#### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 47' 12.0" N, 117° 16' 36.0" W  
**Historical Depth:** [None]  
**Search Radius:** 250  
**Search Technique:** S2,ES,SD  
**Technique Notes:** [None]

#### History Notes:

LNM 45/85-- 10/30/85; A 33 FOOT VESSEL HAS SUNK IN APPROXIMATE POSITION 32°47.2'N - 117°16.6'W. (ENTERED CEH 2/06)

#### Survey Summary

**Charts Affected:** 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

No wreck was found within the AWOIS radius, however four objects that appear to be debris piles were found adjacent to the AWOIS search area.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53323	0.00	000.0	Primary

#### Hydrographer Recommendations

The Hydrographer recommends removing the Wreck PA from the chart, but charting the obstructions just to the north.

#### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 2:dangerous wreck  
WATLEV - 3:always under water/submerged

## Office Notes

Concur.

## 1.4) AWOIS #53324 - UNKNOWN

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 46' 21.2" N, 117° 16' 03.1" W  
**Historical Depth:** [None]  
**Search Radius:** 150  
**Search Technique:** VS,S2,ES,SD  
**Technique Notes:** [None]

#### History Notes:

LNM 57/71-- 12/15/71; REPORTS OF A VESSEL THAT IS PARTIALLY SUBMERGED. LOCATED 200 YARDS, 090° TRUE FROM THE NAVY OCEANOGRAPHIC TOWER LIGHTS (LL5). IT IS MARKED BY TWO FIXED RE LIGHTS. (ENTERED CEH 2/06)

### Survey Summary

**Charts Affected:** 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

AWOIS item not seen in SSS search radius.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53324	0.00	000.0	Primary

### Hydrographer Recommendations

Recommend removing Partially Submerged Wreck, but retaining charted obstruction.

### S-57 Data

**Geo object 1:** Wreck (WRECKS)

### Office Notes

Concur.

## 1.5) AWOIS #53325 - OBSTRUCTION

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 43' 32.1" N, 117° 12' 55.3" W  
**Historical Depth:** [None]  
**Search Radius:** 75  
**Search Technique:** S2,ES,MB,DI  
**Technique Notes:** [None]

#### History Notes:

UNKNOWN SOURCE-- UNKNOWN SOURCE ADDED PILE TO NOS CHART18773 BETWEEN 72 -75. ■ CL 952/75-- IN CHART LETTER 952/75, A GRAPHIC HAD THE PILE CIRCLED AND LABELED AS ITEM 103. IN A PARAGRAPH LABEL ITEM 103, IT STATED THAT "THE PILE CHARTED NEAR THE WEST END OF HARBOR ISLAND HAS BEEN REMOVED. REMOVAL WAS VERIFIED BY SIDE-SCAN SONAR SEARCH." THE PILE SYMBOL ON NOS CHART 18773 WAS LEFT ON THE CHART AND THE LABEL WAS REVISED TO SUBMERGED PILE. (ENTERED CEH 2/06)

### Survey Summary

**Charts Affected:** 18773\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Subm pile found within AWOIS radius but not significant for charting based on SSS shadow height.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53325	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss100/2006-291/sonar_data061018125800	0001	29.83	229.3	Secondary

### Hydrographer Recommendations

Remove Subm pile from chart.

### S-57 Data

[None]

## Office Notes

Concur. Remove Subm pile from chart.

## 1.6) AWOIS #53326 - OBSTRUCTION

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 43' 12.3" N, 117° 13' 10.3" W  
**Historical Depth:** [None]  
**Search Radius:** 75  
**Search Technique:** S2,ES,MB,DI  
**Technique Notes:** [None]

#### History Notes:

UNKNOWN SOURCE-- UNKNOWN SOURCE PLACED A DOL ON CHART 18773. SOMETIME BEFORE 1972, UNKNOWN SOURCE REVISED THE LABEL FROM DOL TO SIGN. ■ CL 952/75-- UNDER CHART LETTER 952/75 IN THE CHART HISTORY FOR CHART 18773, THE SIGN LOCATED AT 32°42.3' - 117°13.1' NAD 27, CHANGED FROM SIGN TO SUBMERGED PILE. (ENTERED CEH 2/06)

### Survey Summary

**Charts Affected:** 18773\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Search completed using SSS, item not found.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53326	0.00	000.0	Primary

### Hydrographer Recommendations

Hydrographer recommends removing charted submerged piling.

### S-57 Data

**Geo object 1:** Pile (PILPNT)

### Office Notes

Concur. Remove charted Subm pile.



## 1.7) AWOIS #53328 - UNKNOWN

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 39' 10.2" N, 117° 07' 53.1" W  
**Historical Depth:** [None]  
**Search Radius:** 200  
**Search Technique:** S2,ES,MB,SD,DI  
**Technique Notes:** CHARTED IN ABOUT 9 TO 11 FEET OF WATER. MIGHT WANT TO DO AT HW.

#### History Notes:

LNM 31/79-- A 100 X 40 FOOT BARGE IS REPORTED SUBMERGED IN POSITION 32°39'10" - 117°07'50". CHARTED ON NOS CHART 18773 AS SUBMERGED DANGEROUS WRECK SYMBOL AND LABELED REP 1979. ■ CL 1265/84-- USCG AUX; WRECK REPORTED TO BE REMOVED. CHANGED LABEL TO REP REMOVED 1984. ■ UNKNOWN SOURCE-- UNKNOWN SOURCE AROUND 1995, REVISED LABEL: "REP REMOVED 1984" AND TO "ED" ■ (ENTERED CEH 2/06)

### Survey Summary

**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Search conducted for charted wreck, wreck not found in charted position. However, numerous other wreckage was located in this anchorage that may correspond to AWOIS item.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53328	0.00	000.0	Primary

### Hydrographer Recommendations

The Hydrographer recommends removing the charted wreck at this position.

The Hydrographer recommends denoting area outlined in descriptive report with "Numerous sunken wrecks and obstructions". All wreckage and obstructions that fall within this warning are marked with keyword "Anchorage A-8". Please see the Chart Comparison section of the Descriptive Report for a detailed discussion of Anchorage A-8.

### S-57 Data

[None]

## Office Notes

Concur.

## 1.8) AWOIS #53330 - UNKNOWN

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 39' 14.3" N, 117° 07' 17.9" W  
**Historical Depth:** [None]  
**Search Radius:** 50  
**Search Technique:** S2,ES,DI,SD  
**Technique Notes:** [None]

#### History Notes:

LNM 27/88-- ADDED DANGEROUS WRECK AT 32°39'14.1" - 117°07'14.8" (NAD 27). (ENTERED CEH 2/06)

### Survey Summary

**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Radius searched, item not found. New construction fills most of search radius, see shoreline updates.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53330	0.00	000.0	Primary

### Hydrographer Recommendations

The Hydrographer recommends removing the AWOIS item from the chart.

### S-57 Data

**Geo object 1:** Wreck (WRECKS)

### Office Notes

Concur.

## 1.9) AWOIS #53331 - OBSTRUCTIONS

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 39' 05.3" N, 117° 07' 17.6" W  
**Historical Depth:** [None]  
**Search Radius:** 50  
**Search Technique:** S2,ES,DI  
**Technique Notes:** [None]

#### History Notes:

\*\*\*UNKNOWN SOURCE-- UNKNOWN SOURCE ADDED SUBMERGED PILES AT 32/39/05.31 - 117/07/17.58 AND 32/39/05.43 - 117/07/16.12. (ENTERED CEH 2/06)

### Survey Summary

**Charts Affected:** 18773\_1, 18773\_2, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Area searched to shoreline, items not found. Easternmost piling is now covered by new shoreline construction, see shoreline updates.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53331	0.00	000.0	Primary

### Hydrographer Recommendations

The Hydrographer recommends removing the two submerged piles, nothing was seen within the search radius.

### S-57 Data

**Geo object 1:** Pile (PILPNT)

### Office Notes

Concur.

## 1.10) AWOIS #53332 - UNKNOWN

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 32° 38' 46.7" N, 117° 07' 37.6" W  
**Historical Depth:** [None]  
**Search Radius:** 50  
**Search Technique:** VS,S2,DI  
**Technique Notes:** [None]

#### History Notes:

LNM 17/84-- VISIBLE WRECK IN POSITION 32/38/46.5 - 117/07/34.5 (NAD 27). (ENTERED CEH 2/06)

### Survey Summary

**Charts Affected:** 18773\_2, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

The item was not found in the search radius.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53332	0.00	000.0	Primary

### Hydrographer Recommendations

The Hydrographer recommends removing the charted Visible Wreck from the chart.

### S-57 Data

**Geo object 1:** Wreck (WRECKS)

### Office Notes

Do not concur. Remains of wreck were found. Remove wreck from currently charted position and chart remains of wreck in the surveyed position.

**1.11) AWOIS #53333 - M/V POPEYE****No Primary Survey Feature for this AWOIS Item**

**Search Position:** 32° 38' 48.0" N, 117° 07' 18.0" W  
**Historical Depth:** [None]  
**Search Radius:** 125  
**Search Technique:** S2,SD,ES  
**Technique Notes:** [None]

**History Notes:**

LN31/03-- THE M/V POPEYE SUNK IN SWEETWATER CHANNEL IN POSITION 32°38.8' - 117°07.3' NEAR MARKER 39. THE POSITION HAS BEEN MARKED BY TWO WHITE FENDERS. THE VESSEL POSITION MAY CHANGE DUE TO TIDAL CURRENTS. (ENTERED CEH 2/06)

**Survey Summary**

**Charts Affected:** 18773\_2, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

**Remarks:**

This item was not found in the search radius. This item may correspond to the wreck located just to the north, next to the National City Marine Terminal (see charting recommendation for that wreck).

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
Awois	AWOIS # 53333	0.00	000.0	Primary

**Hydrographer Recommendations**

The Hydrographer recommends removing the charted wreck.

**S-57 Data**

**Geo object 1:** Wreck (WRECKS)

**Office Notes**

**Concur.**

# Uncharted Features Report

**Registry Number:** F00513  
**State:** California  
**Locality:** San Diego  
**Sub-locality:** San Diego Harbor and Mission Bay  
**Project Number:** S-L920-NRT6-05  
**Survey Dates:** 09/08/2006 - 06/20/2007

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
18773	41st	10/01/2008	1:12,000 (18773_1)	USCG LNM: 11/11/2008 (06/09/2009) NGA NTM: 08/25/2007 (06/20/2009)
18773	41st	10/01/2008	1:12,000 (18773_2)	USCG LNM: 10/14/2008 (03/03/2009) NGA NTM: None (03/14/2009)
18772	48th	12/01/2005	1:20,000 (18772_1)	[L]NTM: ?
18765	16th	01/01/2005	1:100,000 (18765_1)	USCG LNM: 09/09/2008 (03/03/2009) NGA NTM: 05/24/2008 (03/14/2009)
18740	41st	04/01/2005	1:234,270 (18740_1)	[L]NTM: ?
18022	35th	08/01/2005	1:868,003 (18022_1)	[L]NTM: ?
18020	37th	09/01/2003	1:1,444,000 (18020_1)	[L]NTM: ?
501	12th	11/01/2002	1:3,500,000 (501_1)	[L]NTM: ?
530	31st	06/01/2005	1:4,860,700 (530_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_1)	[L]NTM: ?

\* 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	30ft Obstruction	Obstruction	9.14 m	32° 41' 18.3" N	117° 14' 15.8" W	---
1.2	31ft Obstruction	Obstruction	9.61 m	32° 41' 20.1" N	117° 14' 15.9" W	---
1.3	23ft Wreck	Wreck	7.09 m	32° 38' 59.1" N	117° 07' 15.6" W	---
1.4	5ft Obstruction	Obstruction	1.68 m	32° 39' 12.6" N	117° 07' 33.5" W	---
1.5	10fm Obstruction	Obstruction	18.37 m	32° 47' 21.0" N	117° 16' 42.2" W	---
1.6	10.2fm Obstruction	Shoal	19.12 m	32° 47' 26.0" N	117° 16' 45.4" W	---

1.7	4.6m Obstruction	Obstruction	8.51 m	32° 46' 21.6" N	117° 16' 06.6" W	---
1.8	8ft Obstruction	Obstruction	2.42 m	32° 39' 12.0" N	117° 07' 31.5" W	---
1.9	9ft Sounding	Obstruction	2.96 m	32° 39' 15.3" N	117° 07' 32.7" W	---
1.10	7ft Obstruction	Obstruction	2.30 m	32° 39' 12.5" N	117° 07' 31.9" W	---
1.11	7ft Obstruction	Obstruction	2.11 m	32° 39' 10.6" N	117° 07' 35.1" W	---
1.12	6ft Wreck	Wreck	2.05 m	32° 39' 08.0" N	117° 07' 39.2" W	---
1.13	9 ft Sounding	Obstruction	2.71 m	32° 39' 07.7" N	117° 07' 46.7" W	---
1.14	4ft Wreck	Wreck	1.20 m	32° 39' 07.2" N	117° 07' 49.9" W	---
1.15	8ft Sounding	Obstruction	2.45 m	32° 39' 06.0" N	117° 07' 52.7" W	---
1.16	6ft Obstruction	Obstruction	1.95 m	32° 38' 48.4" N	117° 07' 39.2" W	---
1.17	9ft Sounding	Obstruction	2.70 m	32° 39' 15.6" N	117° 07' 48.5" W	---
1.18	Obstruction with 5 ft Shadow	Obstruction	[None]	32° 38' 45.6" N	117° 07' 12.3" W	---
1.19	Obstruction with 4ft Shadow	Obstruction	[None]	32° 42' 24.2" N	117° 13' 53.3" W	---
1.20	Obstruction with 4ft Shadow	Obstruction	[None]	32° 42' 25.7" N	117° 13' 53.4" W	---
1.21	8ft Sounding	Obstruction	[None]	32° 39' 16.2" N	117° 07' 53.4" W	---
1.22	35ft Sounding	Obstruction	10.88 m	32° 41' 24.9" N	117° 14' 12.0" W	---
1.23	21ft Obstruction	Obstruction	6.34 m	32° 41' 15.0" N	117° 14' 14.1" W	---
1.24	8ft Wreck	Shoal	2.64 m	32° 38' 46.5" N	117° 07' 37.8" W	---



## **1 - DR\_UnCharted**

## 1.1) 30ft Obstruction

### Survey Summary

**Survey Position:** 32° 41' 18.3" N, 117° 14' 15.8" W  
**Least Depth:** 9.14 m (= 29.97 ft = 4.996 fm = 4 fm 5.97 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 2.015$  m ; TVU (TPEv)  $\pm 0.322$  m  
**Timestamp:** 2006-251.17:23:23.846 (09/08/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-251 / 000\_1721  
**Profile/Beam:** 864/18  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Sounding is on a piece of debris standing just under a meter off of the surrounding seafloor.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-251/000_1721	864/18	0.00	000.0	Primary
f00513/nrt6_s3003_em3000_nad83/2006-251/000_1728	915/28	16.93	315.2	Secondary

### Hydrographer Recommendations

Hydrographer recommends charting 30 ft obstruction at this position. Frequent vessel traffic and the object's proximity to a pier warrant its characterization as an obstruction.

#### Cartographically-Rounded Depth (Affected Charts):

30ft (18773\_1)

5fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

3fm 0ft (18765\_1)

9.1m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** VALSOU - 9.136 m

## Office Notes

Concur. Chart 30 foot obstruction.

### Feature Images

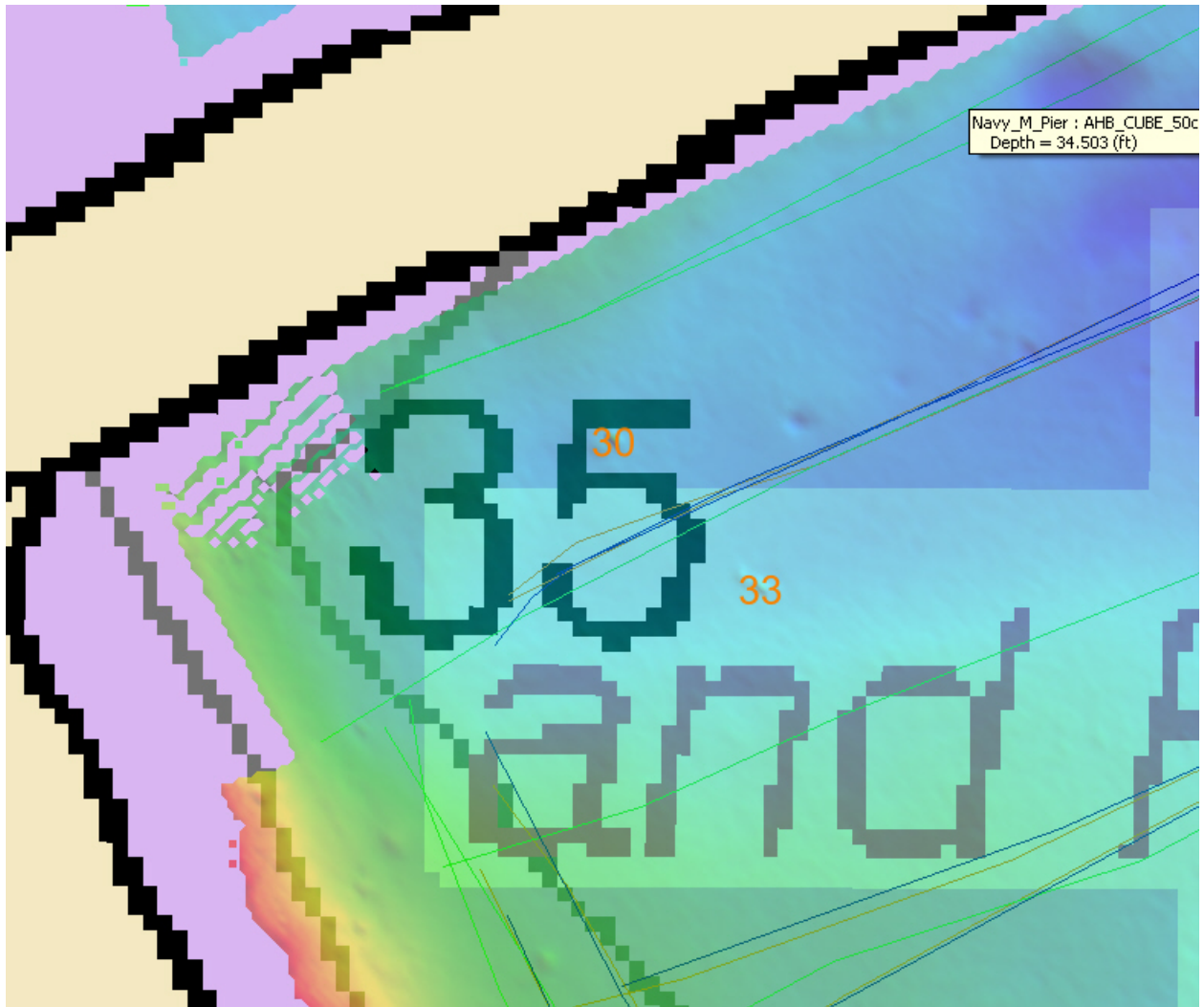


Figure 1.1.1



Figure 1.1.2

## 1.2) 31ft Obstruction

### Survey Summary

**Survey Position:** 32° 41' 20.1" N, 117° 14' 15.9" W  
**Least Depth:** 9.61 m (= 31.52 ft = 5.254 fm = 5 fm 1.52 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 2.023$  m ; TVU (TPEv)  $\pm 0.326$  m  
**Timestamp:** 2006-284.20:08:55.228 (10/11/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-284 / 000\_2006  
**Profile/Beam:** 1192/14  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

31 ft sounding on debris next to pier.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-284/000_2006	1192/14	0.00	000.0	Primary

### Hydrographer Recommendations

Recommend charting 31 ft. obstruction.

#### Cartographically-Rounded Depth (Affected Charts):

31ft (18773\_1)

5 ¼fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

5fm 1ft (18765\_1)

9.6m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 9.608 m

## Office Notes

Concur.

### Feature Images

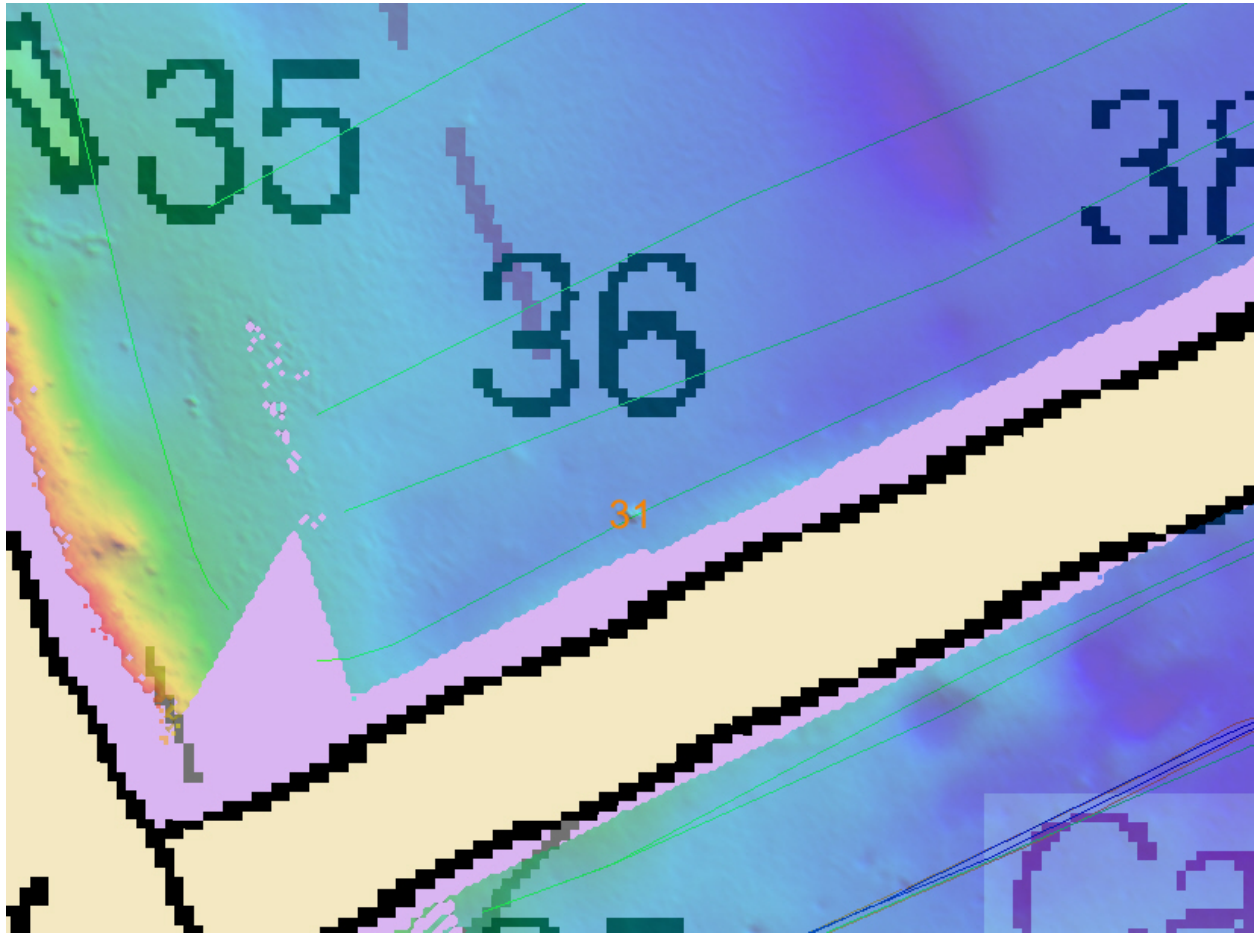


Figure 1.2.1



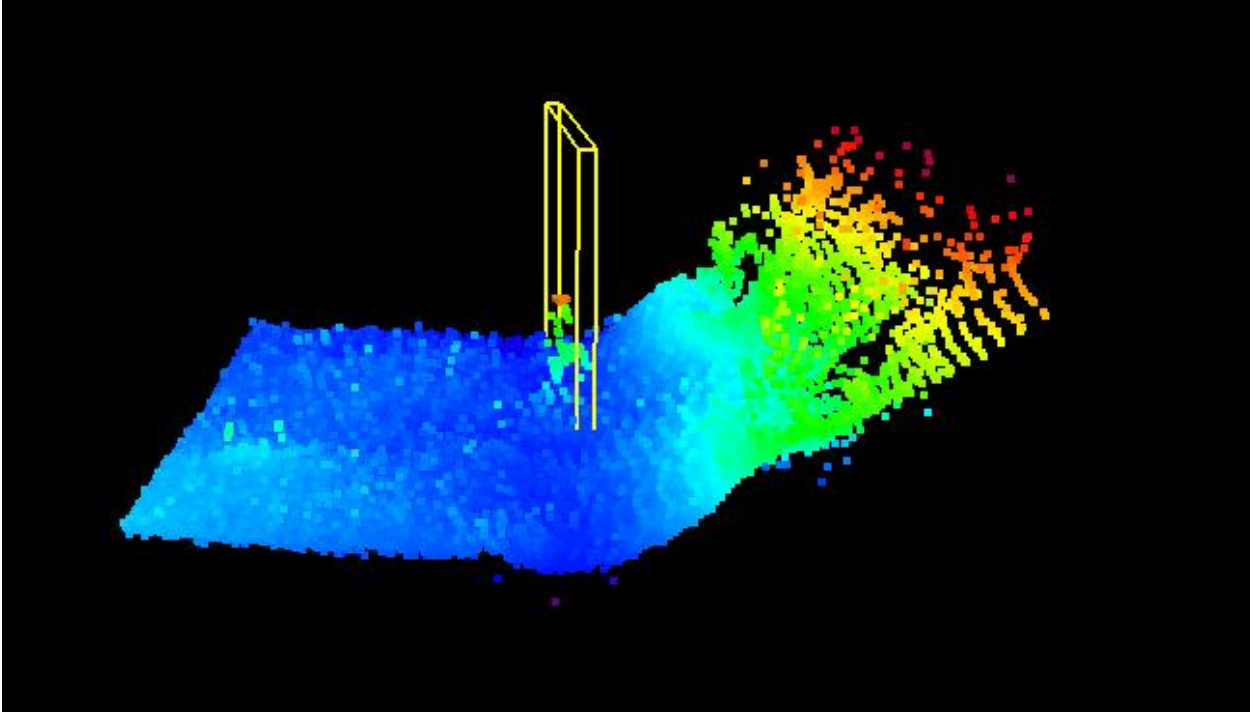


Figure 1.2.2

### 1.3) 23ft Wreck

#### Survey Summary

**Survey Position:** 32° 38' 59.1" N, 117° 07' 15.6" W  
**Least Depth:** 7.09 m (= 23.27 ft = 3.878 fm = 3 fm 5.27 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.102$  m ; **TVU (TPEv)**  $\pm 0.317$  m  
**Timestamp:** 2006-293.20:36:17.199 (10/20/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-293 / 000\_2036  
**Profile/Beam:** 134/17  
**Charts Affected:** 18773\_2, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Submerged wreck

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-293/000_2036	134/17	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-293/sonar_data061020121500	0001	7.31	189.7	Secondary

#### Hydrographer Recommendations

Chart as 23 ft. wreck at this position.

#### Cartographically-Rounded Depth (Affected Charts):

23ft (18773\_2)

3  $\frac{3}{4}$ fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

3fm 5ft (18765\_1)

7.1m (501\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Wreck (WRECKS)

**Attributes:** VALSOU - 7.093 m

## Office Notes

Concur.

Feature Images

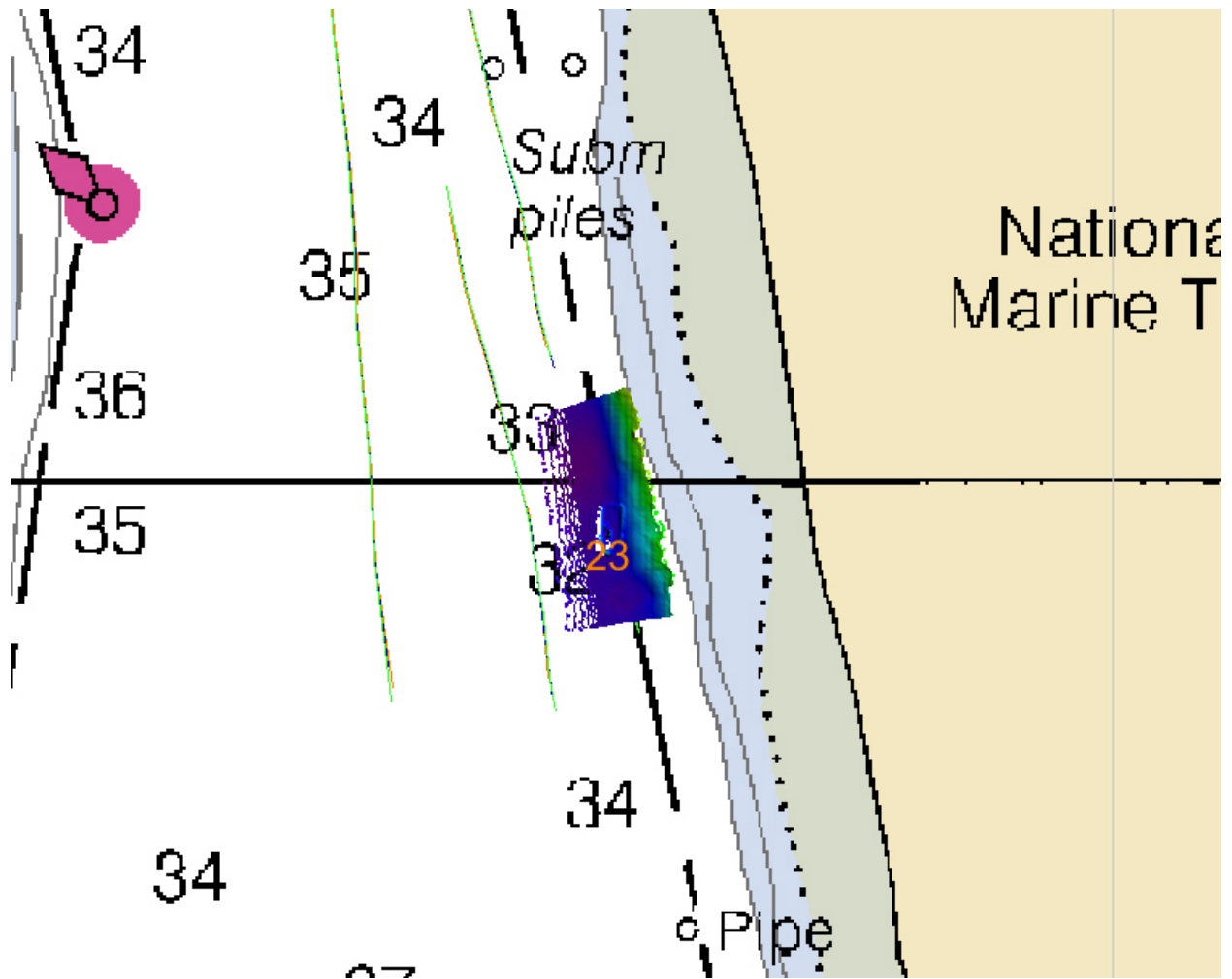


Figure 1.3.1

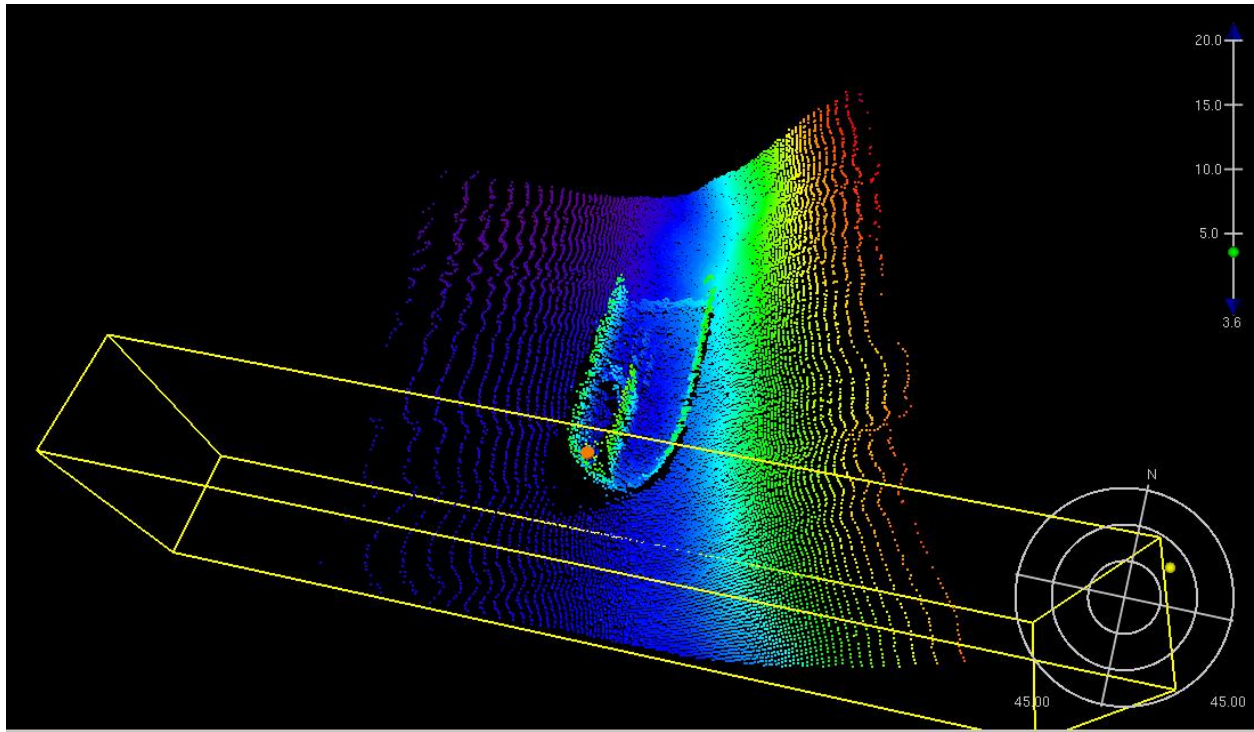


Figure 1.3.2

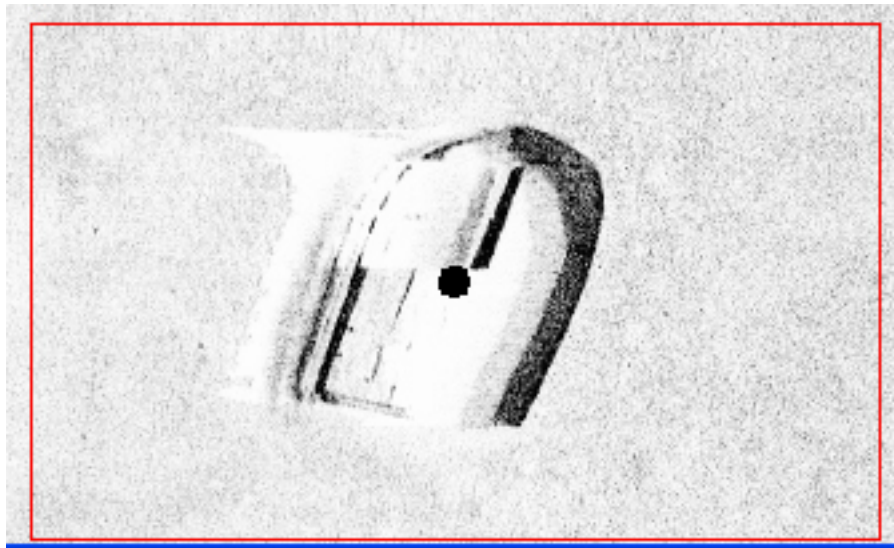


Figure 1.3.3

## 1.4) 5ft Obstruction

### Survey Summary

**Survey Position:** 32° 39' 12.6" N, 117° 07' 33.5" W  
**Least Depth:** 1.68 m (= 5.52 ft = 0.920 fm = 0 fm 5.52 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.998$  m ; TVU (TPEv)  $\pm 0.312$  m  
**Timestamp:** 2006-293.20:45:09.356 (10/20/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-293 / 000\_2044  
**Profile/Beam:** 162/9  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

5 ft obstruction.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-293/000_2044	162/9	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018134100	0001	1.23	158.7	Secondary
f00513/nrt6_s3003_klein3000_sss100/2006-291/sonar_data061018133500	0001	4.10	163.0	Secondary

### Hydrographer Recommendations

Chart as 5 ft obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

#### Cartographically-Rounded Depth (Affected Charts):

5ft (18773\_1)

0  $\frac{3}{4}$ fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

0fm 5ft (18765\_1)

1.7m (501\_1, 50\_1)

## S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 1.682 m

## Office Notes

Concur.

### Feature Images

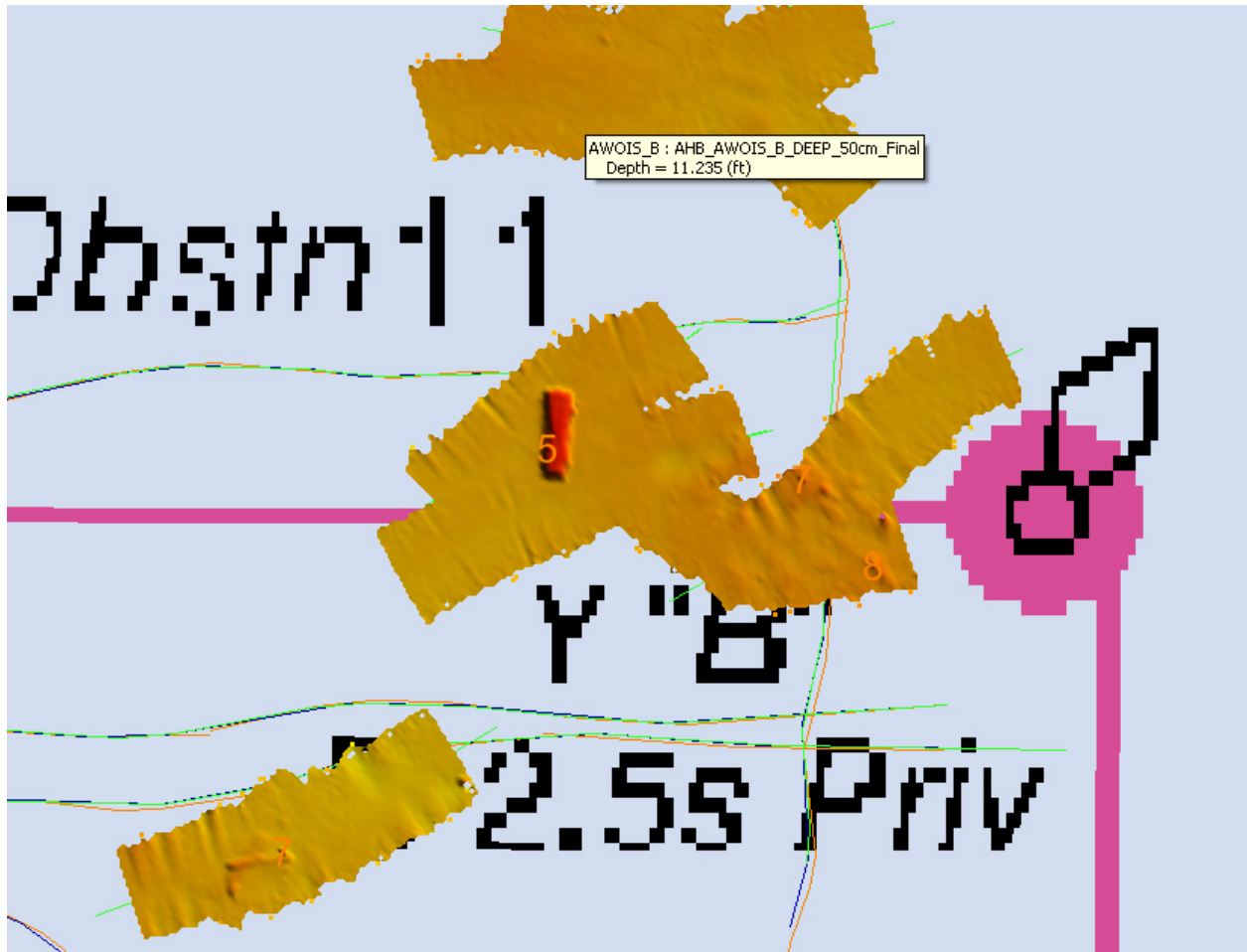


Figure 1.4.1



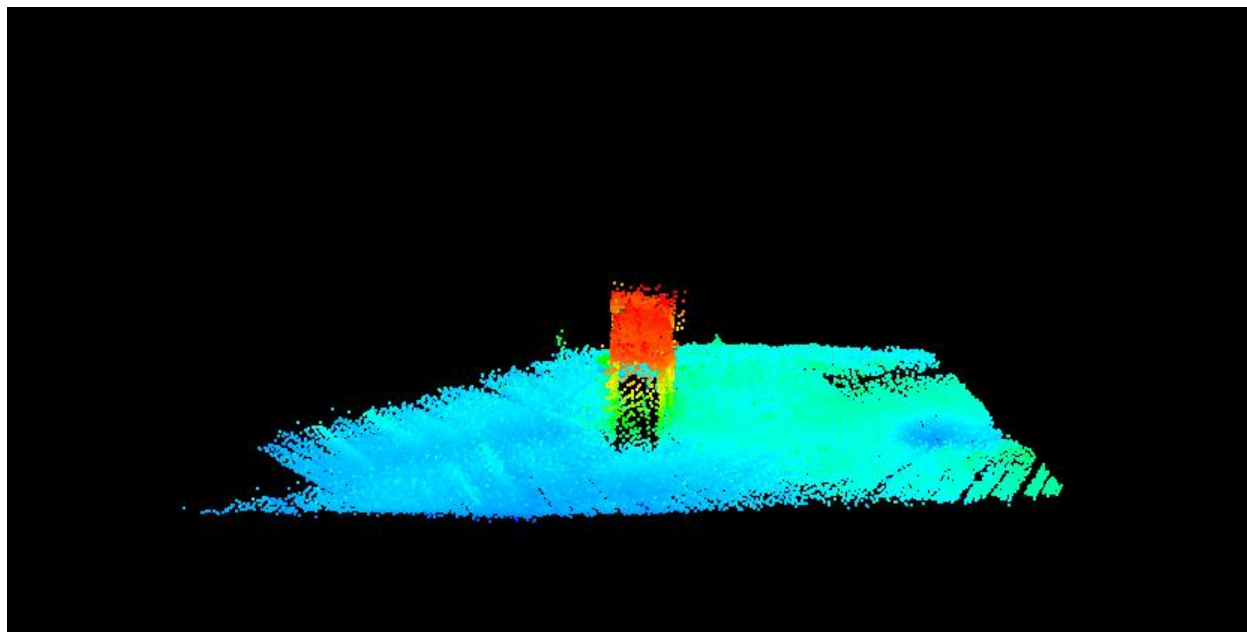


Figure 1.4.2

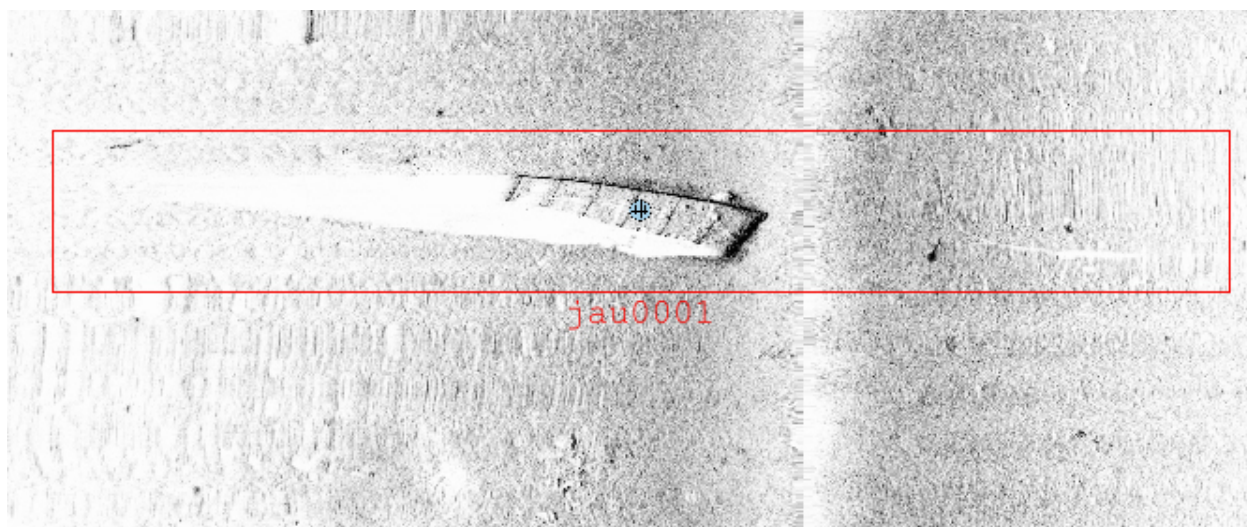


Figure 1.4.3

## 1.5) 10fm Obstruction

### Survey Summary

**Survey Position:** 32° 47' 21.0" N, 117° 16' 42.2" W  
**Least Depth:** 18.37 m (= 60.27 ft = 10.045 fm = 10 fm 0.27 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 2.152$  m ; TVU (TPEv)  $\pm 0.336$  m  
**Timestamp:** 2006-298.18:54:28.293 (10/25/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-298 / 123\_1852  
**Profile/Beam:** 438/107  
**Charts Affected:** 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Shoalest of two groups of debris mounds. This object is to the far right in image.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-298/123_1852	438/107	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-298/sonar_data061025113800	0001	8.63	009.9	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-298/sonar_data061025115100	0001	8.64	213.7	Secondary
f00513/nrt6_s3003_klein3000_sss100/2006-298/sonar_data061025113600	0001	13.83	195.0	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-298/sonar_data061025113800	0002	25.84	177.9	Secondary

### Hydrographer Recommendations

The hydrographer recommends charting a 10 fathom obstruction at this position.

#### Cartographically-Rounded Depth (Affected Charts):

10fm (18740\_1, 18022\_1, 18020\_1, 530\_1)

10fm 0ft (18765\_1)

18.4m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 18.371 m

**Office Notes**

Concur.

### Feature Images

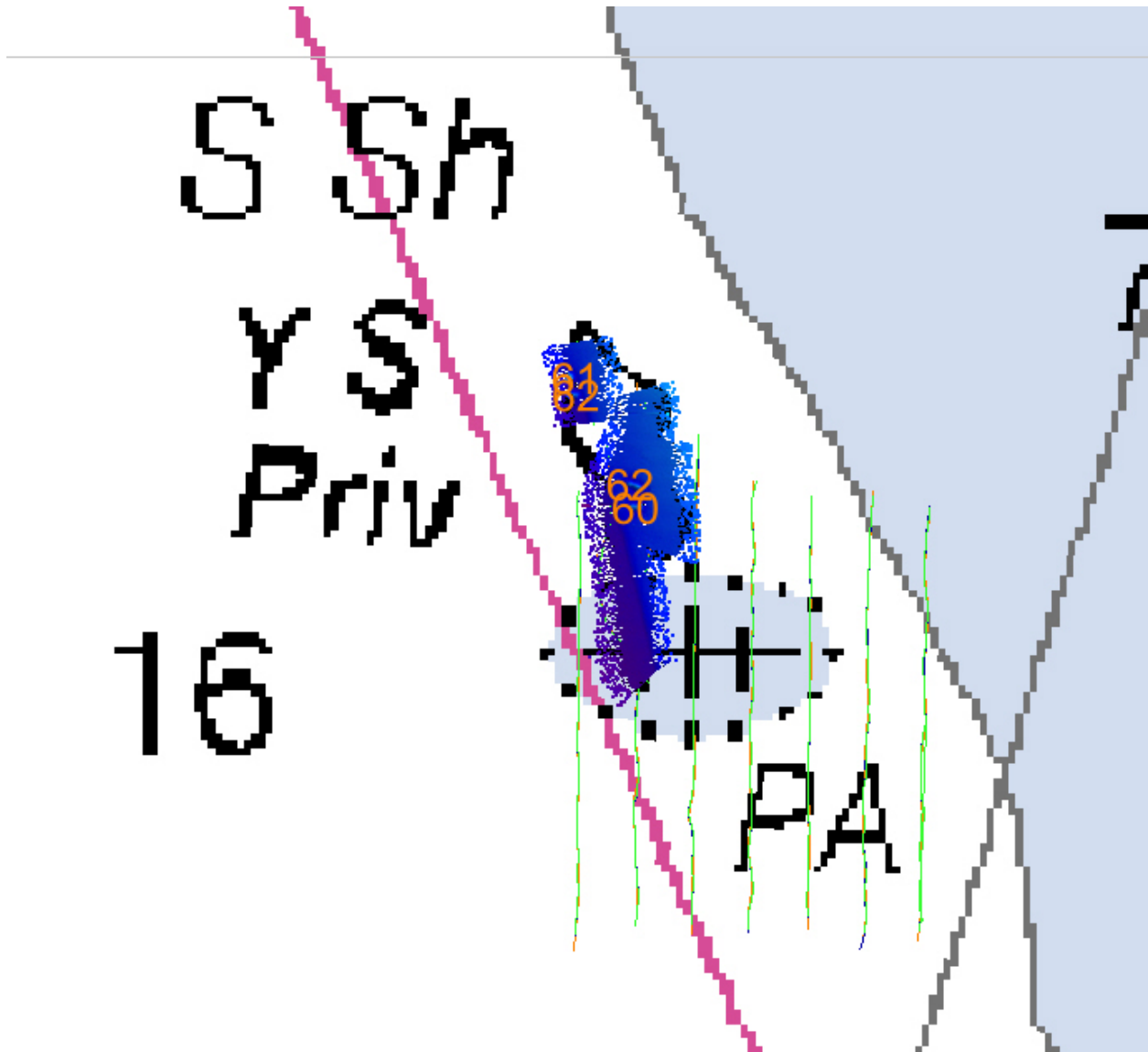


Figure 1.5.1

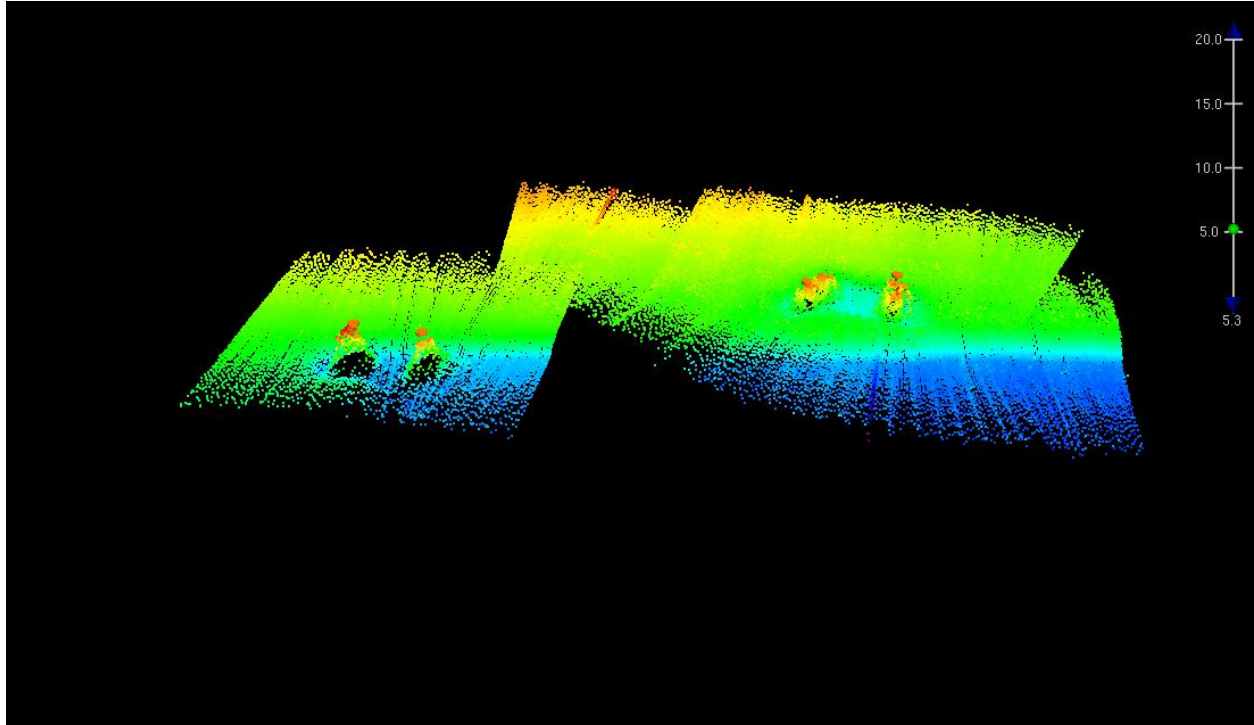


Figure 1.5.2

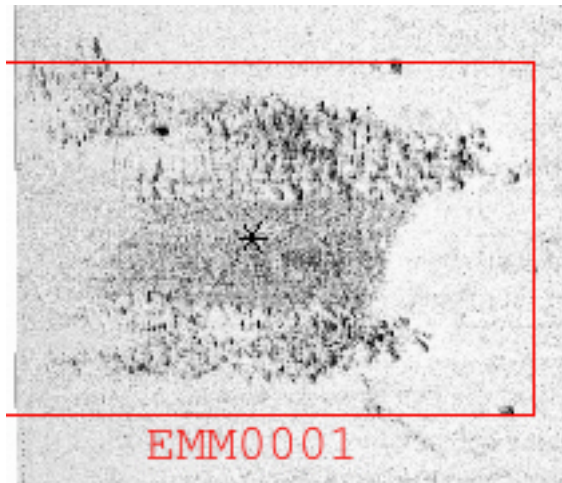


Figure 1.5.3

## 1.6) 10.2fm Obstruction

### Survey Summary

**Survey Position:** 32° 47' 26.0" N, 117° 16' 45.4" W  
**Least Depth:** 19.12 m (= 62.72 ft = 10.453 fm = 10 fm 2.72 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.240$  m ; **TVU (TPEv)**  $\pm 0.346$  m  
**Timestamp:** 2006-298.19:02:37.426 (10/25/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-298 / 124\_1902  
**Profile/Beam:** 67/18  
**Charts Affected:** 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

This sounding is located on the second debris pile from the left.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-298/124_1902	67/18	0.00	000.0	Primary

### Hydrographer Recommendations

The Hydrographer has recommended a 10.2 fathom obstruction be charted at the location of the shoaler debris pile.

### S-57 Data

[None]

### Office Notes

Do not concur. Shoaler sounding in close proximity.

## 1.7) 4.6fm Obstruction

### Survey Summary

**Survey Position:** 32° 46' 21.6" N, 117° 16' 06.6" W  
**Least Depth:** 8.51 m (= 27.93 ft = 4.656 fm = 4 fm 3.93 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 2.121$  m ; TVU (TPEv)  $\pm 0.401$  m  
**Timestamp:** 2006-298.20:02:13.933 (10/25/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-298 / 129\_2001  
**Profile/Beam:** 407/124  
**Charts Affected:** 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Charted obstruction, least depth 4.6 fms.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-298/129_2001	407/124	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-298/sonar_data061025132600	0001	9.05	163.5	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-298/sonar_data061025132400	0001	9.66	281.8	Secondary
f00513/nrt6_s3003_klein3000_sss100/2006-298/sonar_data061025131900	0001	13.78	030.1	Secondary

### Hydrographer Recommendations

Chart submerged obstruction as 4.6 fathom submerged obstruction.

#### Cartographically-Rounded Depth (Affected Charts):

4 ½fm (18740\_1, 18022\_1, 18020\_1, 530\_1)

4fm 4ft (18765\_1)

8.5m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 8.514 m

**Office Notes**

Concur.



### Feature Images

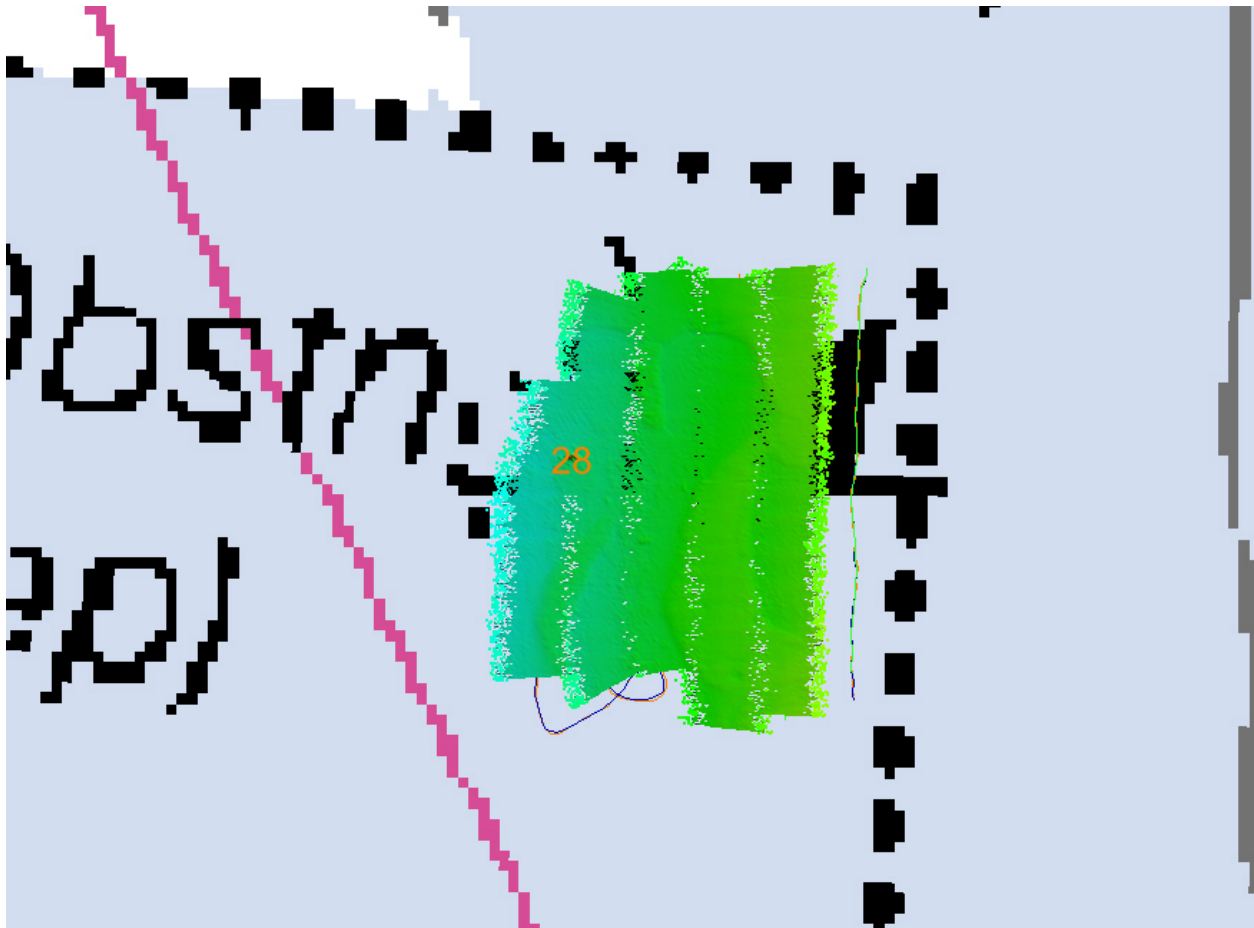


Figure 1.7.1

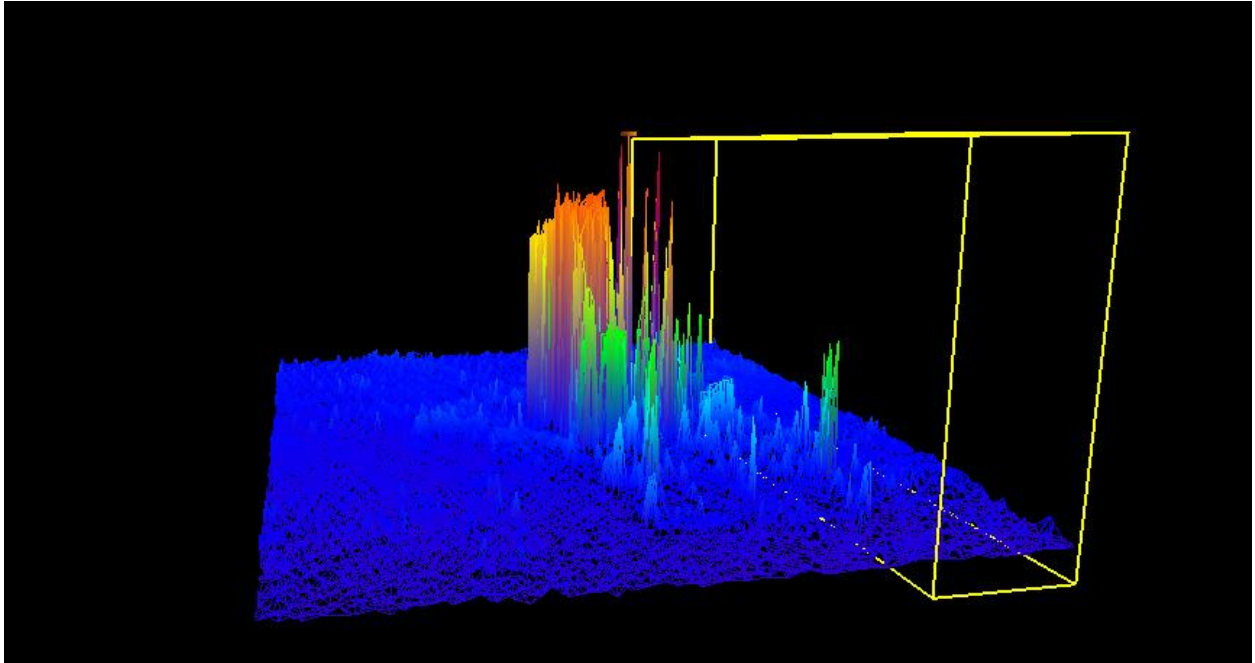


Figure 1.7.2

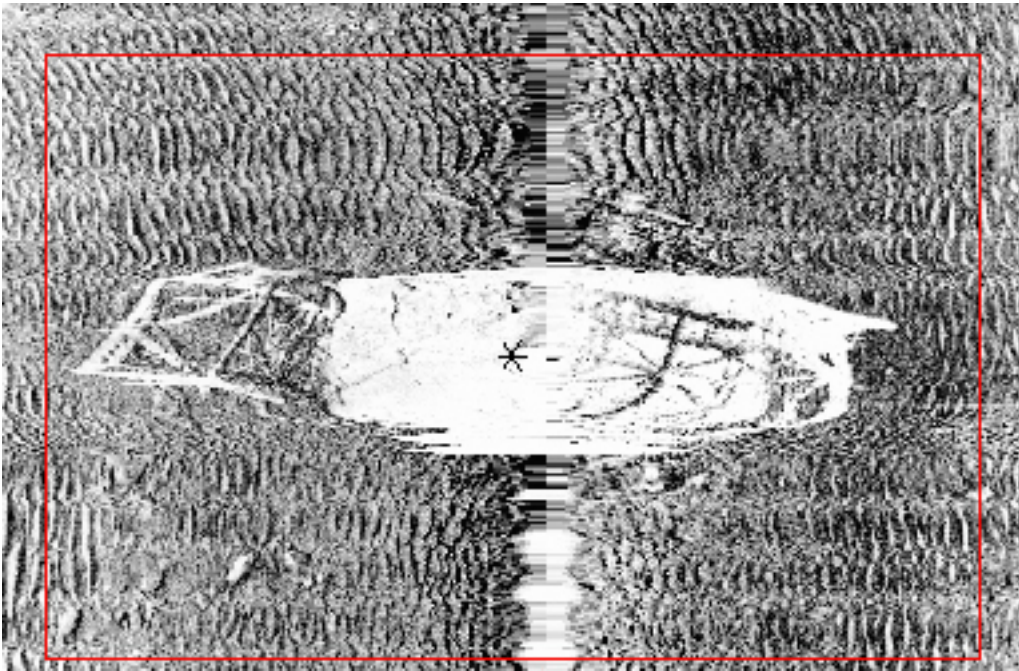


Figure 1.7.3

## 1.8) 8ft Obstruction

### Survey Summary

**Survey Position:** 32° 39' 12.0" N, 117° 07' 31.5" W  
**Least Depth:** 2.42 m (= 7.92 ft = 1.321 fm = 1 fm 1.92 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.118$  m ; **TVU (TPEv)**  $\pm 0.313$  m  
**Timestamp:** 2006-305.19:48:54.955 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 025\_1948  
**Profile/Beam:** 300/110  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

8 Ft obstruction, standing 2 ft from the surrounding seafloor. Object is designated sounding to the right.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/025_1948	300/110	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss100/2006-291/sonar_data061018134900	0001	15.14	109.1	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018135100	0001	28.09	119.0	Secondary

### Hydrographer Recommendations

Chart as 8 Ft obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** VALSOU - 2.415 m

### Office Notes

Do not concur. Shoaler obstruction in close proximity.

### Feature Images

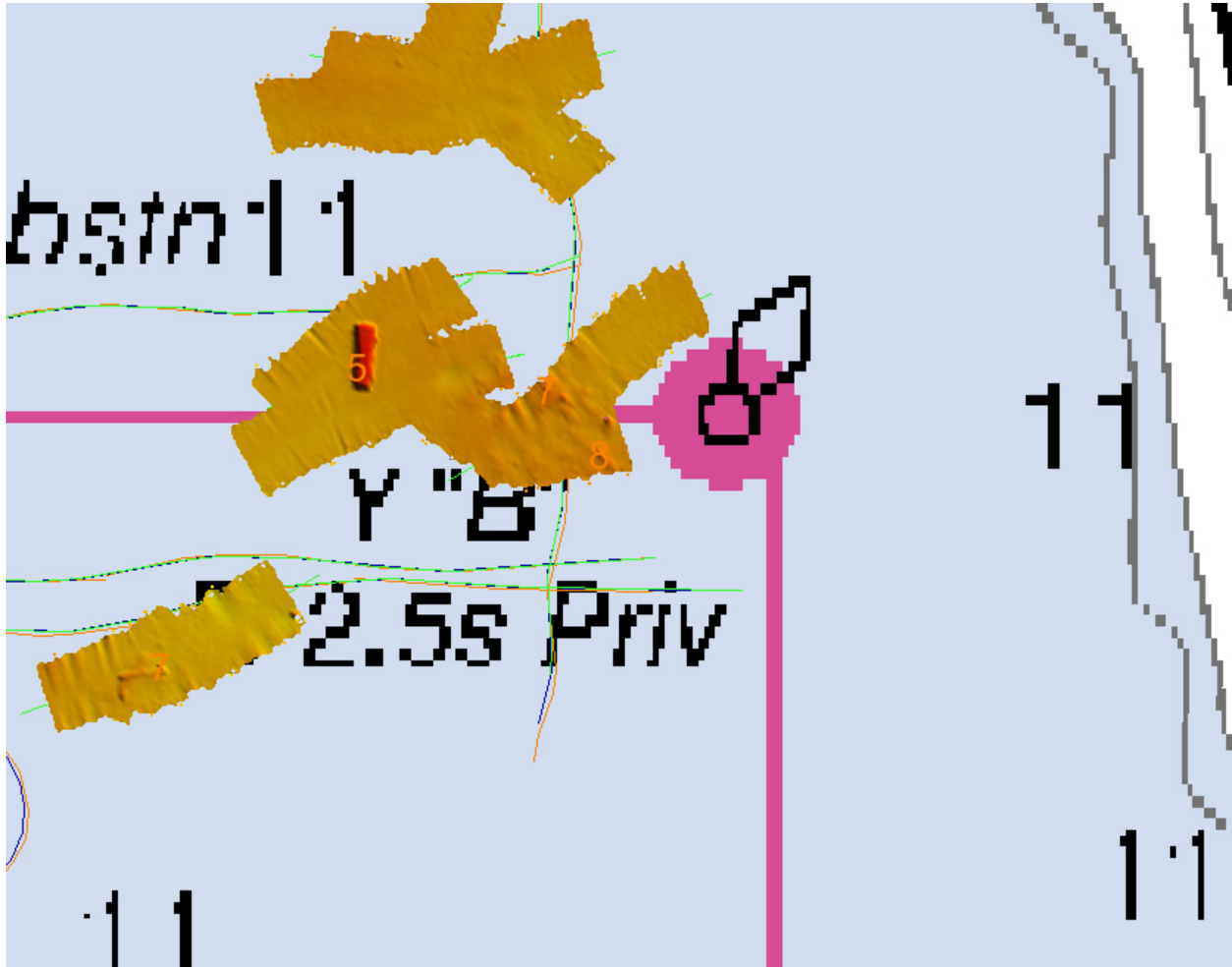
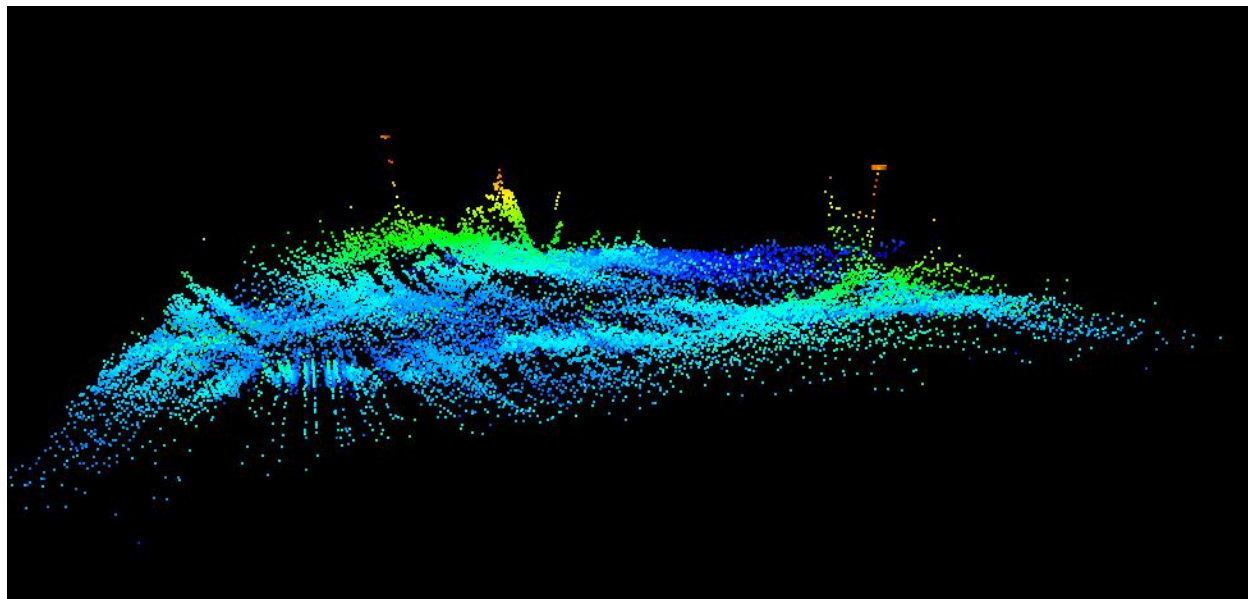
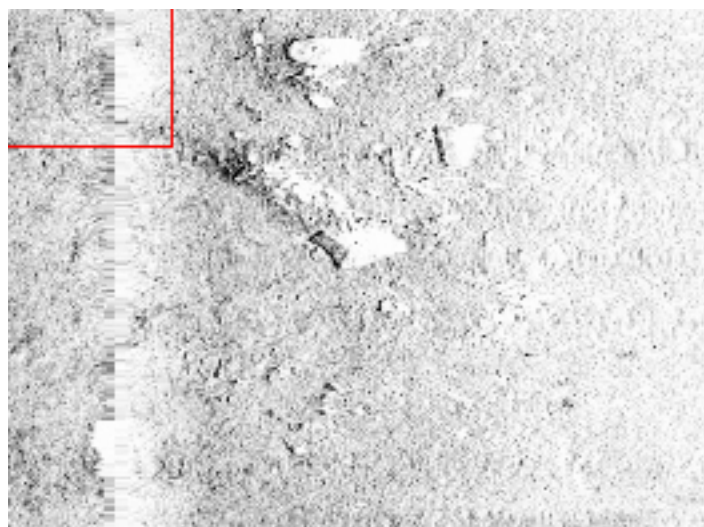


Figure 1.8.1



*Figure 1.8.2*



*Figure 1.8.3*

## 1.9) 9ft Sounding

### Survey Summary

**Survey Position:** 32° 39' 15.3" N, 117° 07' 32.7" W  
**Least Depth:** 2.96 m (= 9.71 ft = 1.618 fm = 1 fm 3.71 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 2.038$  m ; TVU (TPEv)  $\pm 0.314$  m  
**Timestamp:** 2006-305.19:41:52.927 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 029\_1941  
**Profile/Beam:** 447/119  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

9 FT obstruction

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/029_1941	447/119	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018135200	0002	22.02	200.5	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018135500	0001	23.66	198.7	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018135200	0001	26.45	005.7	Secondary

### Hydrographer Recommendations

Chart as 9 FT obstruction

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** VALSOU - 2.959 m

## Office Notes

Do not concur. Chart sounding.

## 1.10) 7ft Obstruction

### Survey Summary

**Survey Position:** 32° 39' 12.5" N, 117° 07' 31.9" W  
**Least Depth:** 2.30 m (= 7.56 ft = 1.260 fm = 1 fm 1.56 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.074$  m ; **TVU (TPEv)**  $\pm 0.315$  m  
**Timestamp:** 2006-305.19:50:22.765 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 058\_1950  
**Profile/Beam:** 207/124  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

7 ft obstruction. Object is designated sounding to the left in image.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/058_1950	207/124	0.00	000.0	Primary

### Hydrographer Recommendations

Chart as 7 ft obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

#### Cartographically-Rounded Depth (Affected Charts):

7ft (18773\_1)

1 ¼fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

1fm 1ft (18765\_1)

2.3m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 2.304 m



## Office Notes

Concur.

### Feature Images

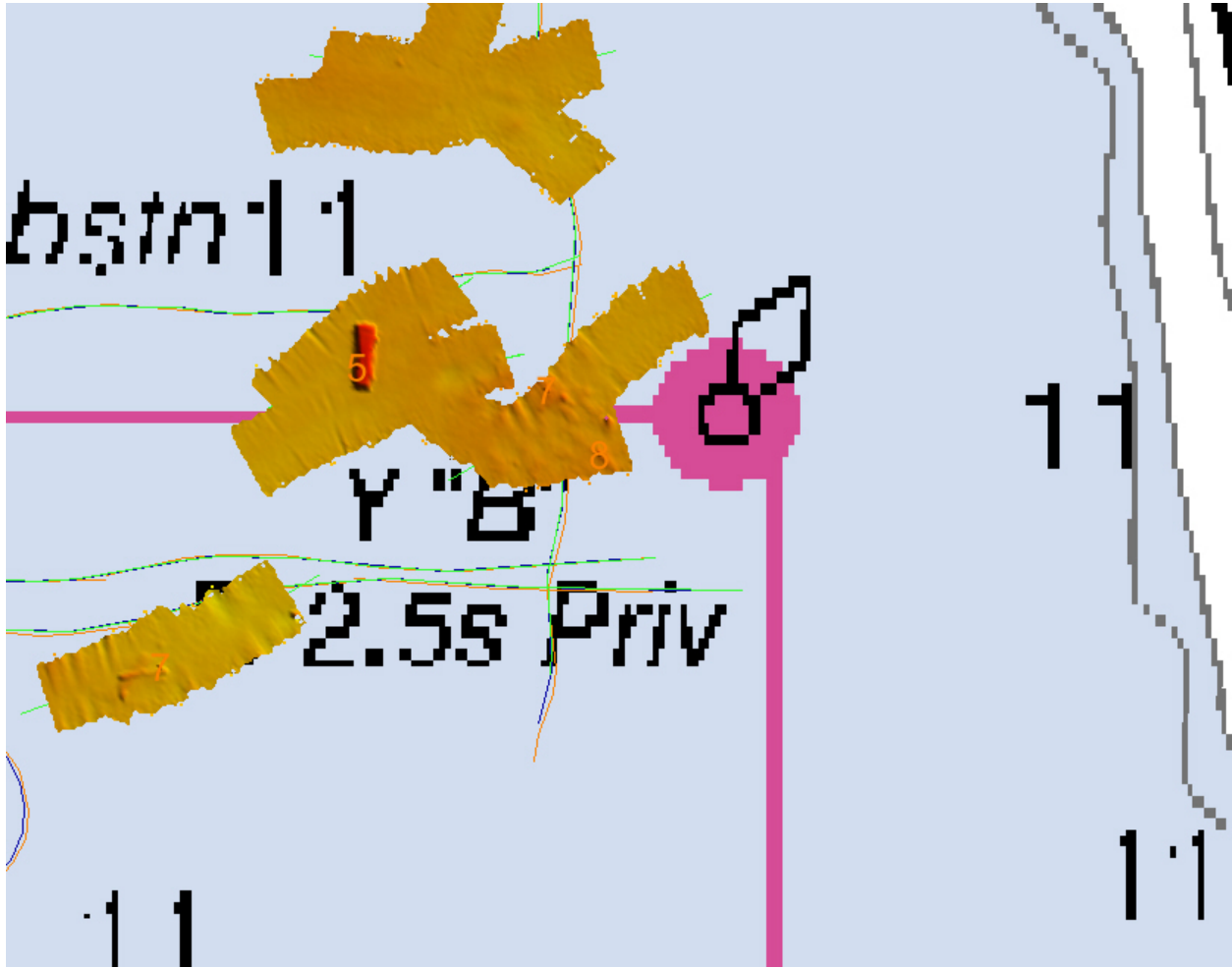
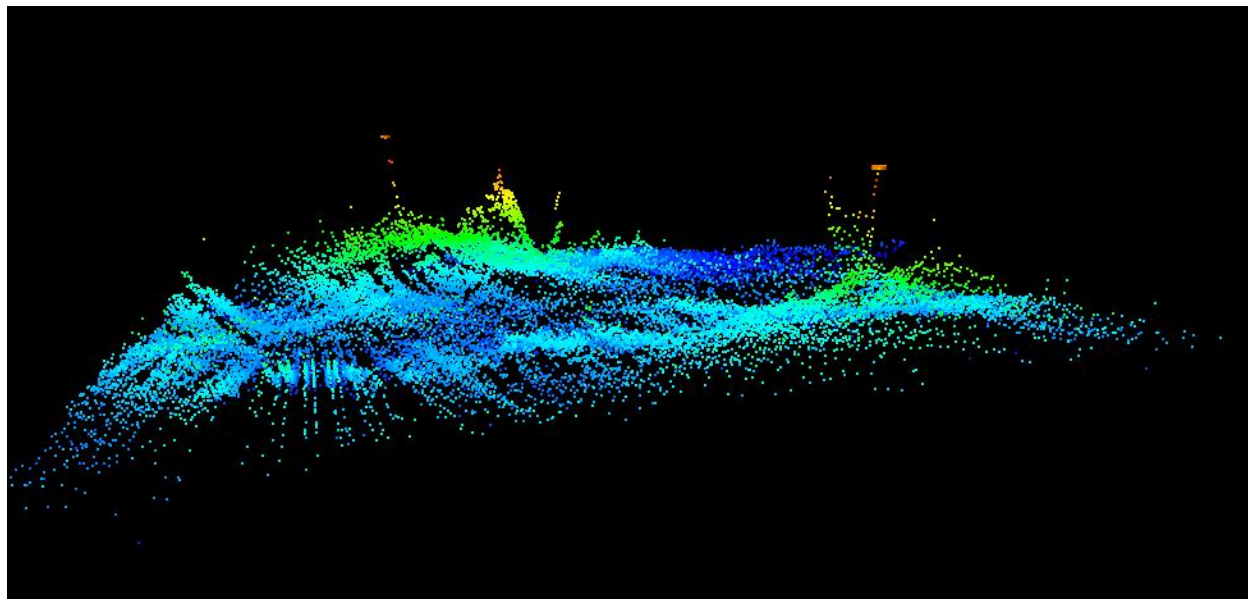


Figure 1.10.1



*Figure 1.10.2*



*Figure 1.10.3*

## 1.11) 7ft Obstruction

### Survey Summary

**Survey Position:** 32° 39' 10.6" N, 117° 07' 35.1" W  
**Least Depth:** 2.11 m (= 6.92 ft = 1.153 fm = 1 fm 0.92 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 2.047$  m ; TVU (TPEv)  $\pm 0.313$  m  
**Timestamp:** 2006-305.19:51:25.825 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 059\_1951  
**Profile/Beam:** 68/7  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

7 ft obstruction. Possibly a mooring line, next to sunken obstruction.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/059_1951	68/7	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss100/2006-291/sonar_data061018134800	0001	4.35	087.3	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018134100	0002	7.36	078.8	Secondary

### Hydrographer Recommendations

Chart as 7 ft obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

#### Cartographically-Rounded Depth (Affected Charts):

7ft (18773\_1)

1fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

1fm 1ft (18765\_1)

2.1m (501\_1, 50\_1)

## S-57 Data

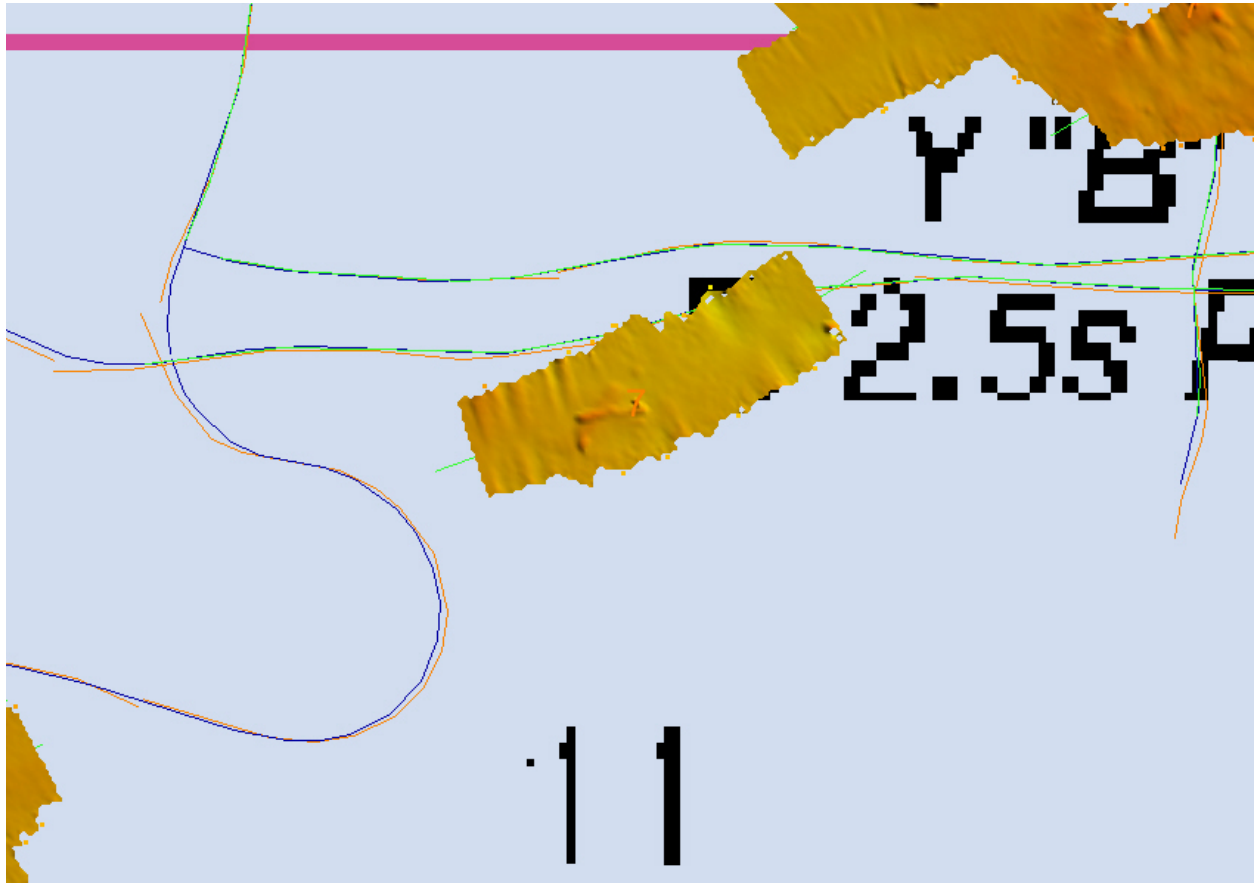
**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 2.109 m

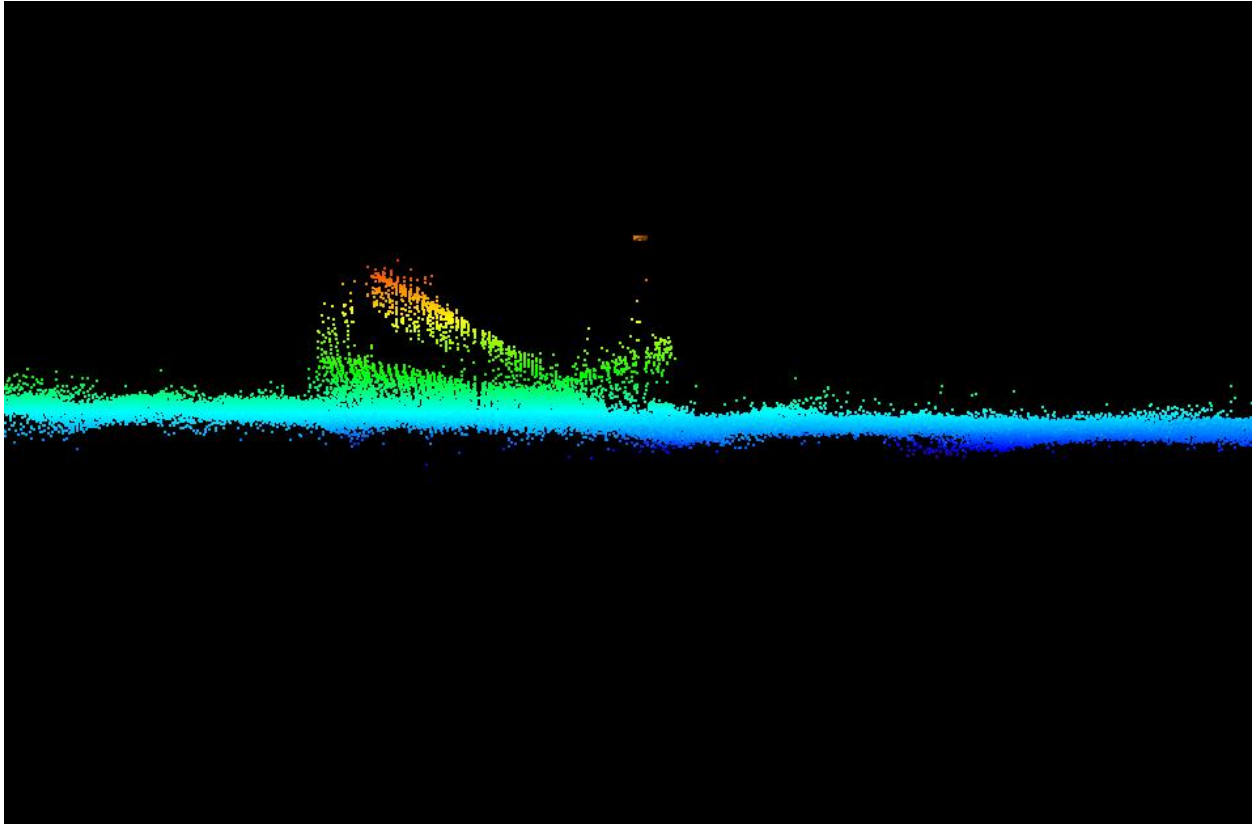
## Office Notes

Concur.

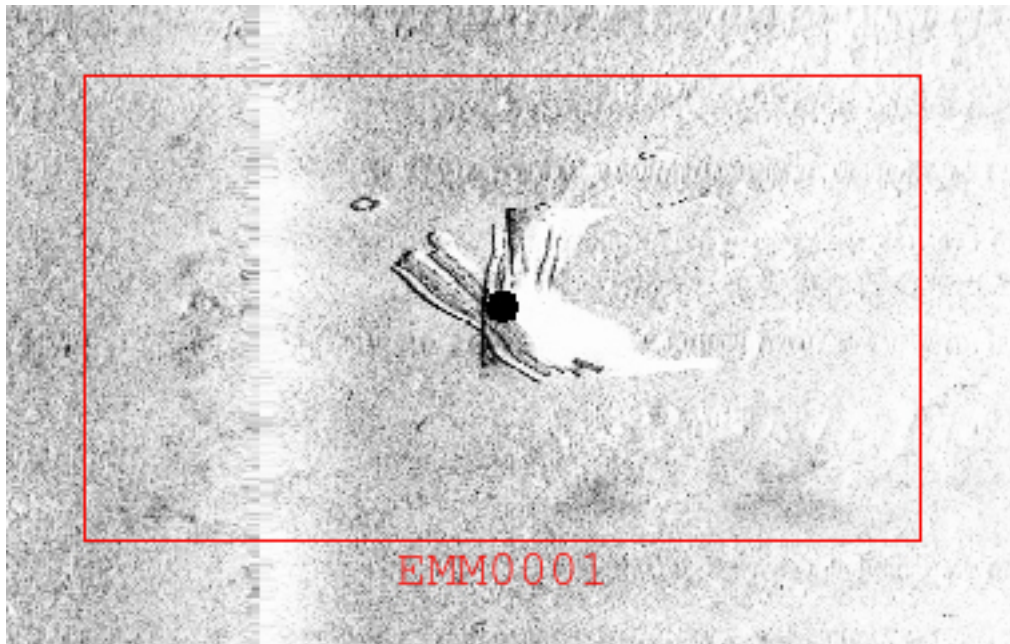
### Feature Images



*Figure 1.11.1*



*Figure 1.11.2*



*Figure 1.11.3*

## 1.12) 6ft Wreck

### Survey Summary

**Survey Position:** 32° 39' 08.0" N, 117° 07' 39.2" W  
**Least Depth:** 2.05 m (= 6.73 ft = 1.122 fm = 1 fm 0.73 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.077$  m ; **TVU (TPEv)**  $\pm 0.312$  m  
**Timestamp:** 2006-305.19:59:57.432 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 061\_1959  
**Profile/Beam:** 131/118  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

6 ft obstruction. Shoalest of several obstructions within a small area.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/061_1959	131/118	0.00	000.0	Primary
f00513/nrt6_s3003_em3000_nad83/2006-305/060_1955	139/31	16.84	145.5	Secondary
f00513/nrt6_s3003_em3000_nad83/2006-305/060_1956	92/4	18.64	094.5	Secondary
f00513/nrt6_s3003_klein3000_sss100/2006-291/sonar_data061018134700	0001	18.74	158.1	Secondary
f00513/nrt6_s3003_em3000_nad83/2006-305/060_1955	121/121	21.39	156.8	Secondary

### Hydrographer Recommendations

Chart as 6 ft obstruction. One obstruction symbol on the chart would encompass surrounding obstructions.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

#### Cartographically-Rounded Depth (Affected Charts):

6ft (18773\_1)

1fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

1fm 0ft (18765\_1)

2.1m (501\_1, 50\_1)



## S-57 Data

**Geo object 1:** Wreck (WRECKS)

**Attributes:** VALSOU - 2.051 m

## Office Notes

Concur with clarification. SSS indicates wreck. Chart as 6 foot wreck.

### Feature Images

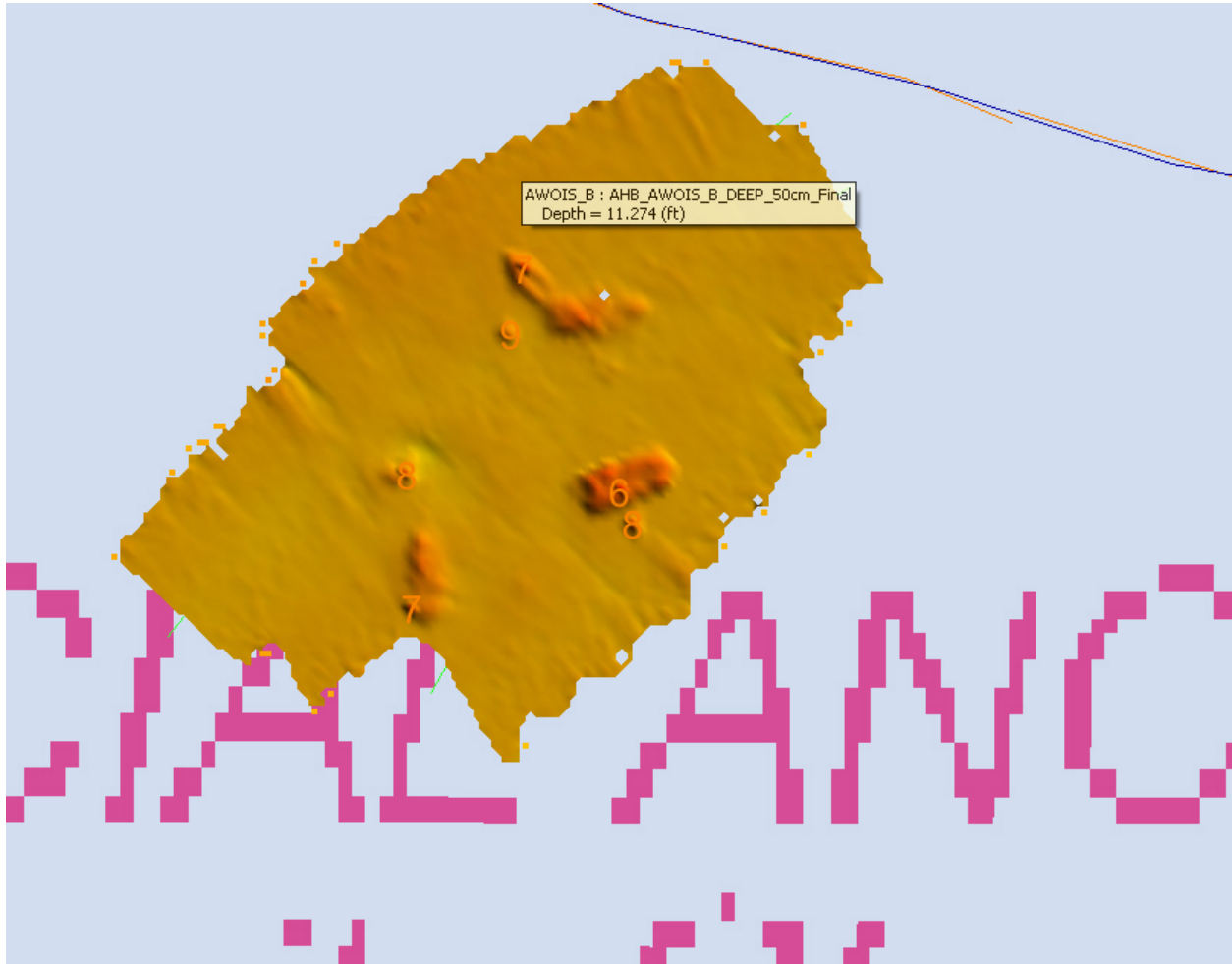


Figure 1.12.1

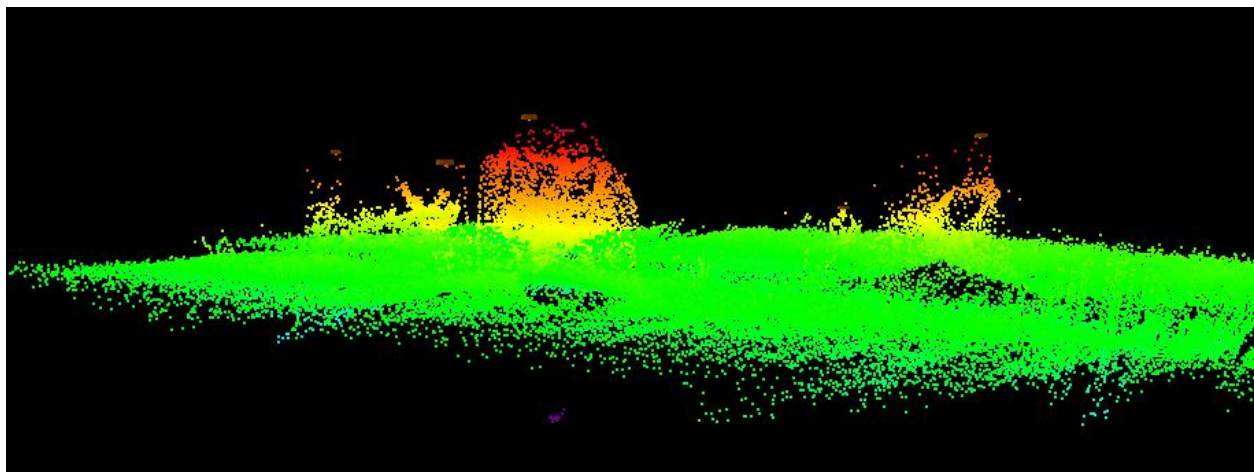
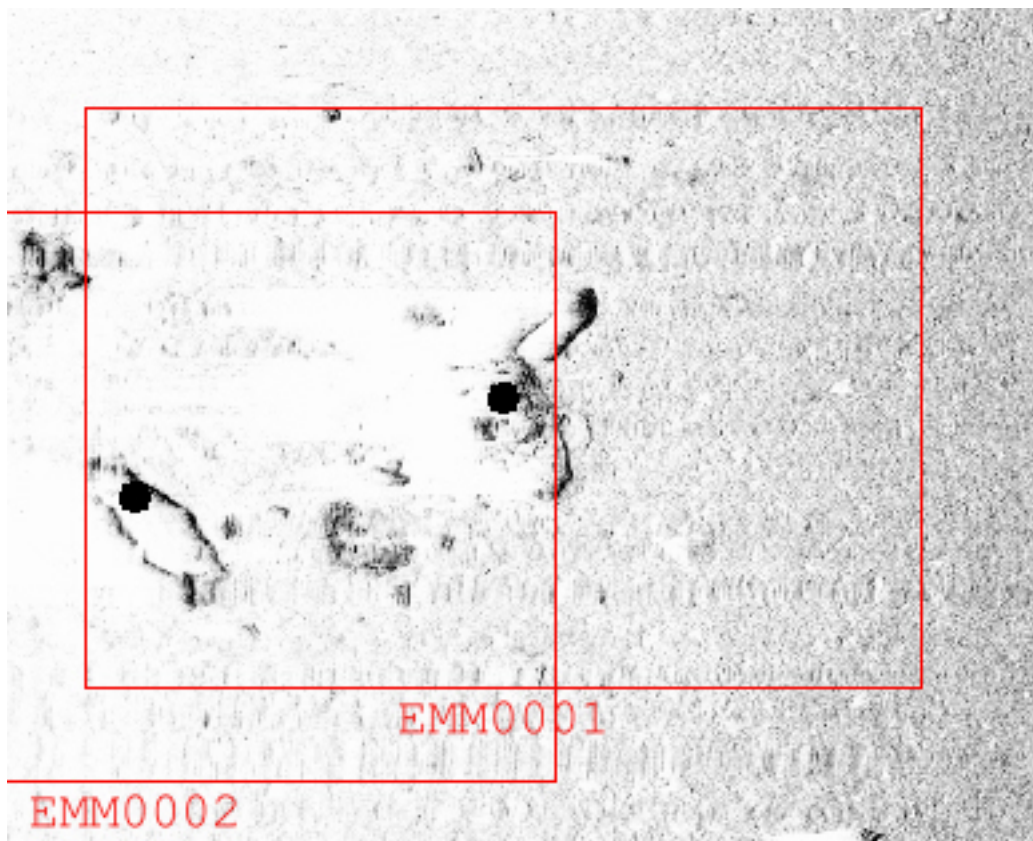


Figure 1.12.2



*Figure 1.12.3*

## 1.13) 9 ft Sounding

### Survey Summary

**Survey Position:** 32° 39' 07.7" N, 117° 07' 46.7" W  
**Least Depth:** 2.71 m (= 8.90 ft = 1.484 fm = 1 fm 2.90 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 2.121$  m ; TVU (TPEv)  $\pm 0.314$  m  
**Timestamp:** 2006-305.20:06:32.496 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 064\_2006  
**Profile/Beam:** 183/112  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

9 ft obstruction

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/064_2006	183/112	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018144600	0001	2.27	323.4	Secondary

### Hydrographer Recommendations

Chart as 9 ft obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** VALSOU - 2.714 m

### Office Notes

Do not concur. Chart sounding.

## 1.14) 4ft Wreck

### Survey Summary

**Survey Position:** 32° 39' 07.2" N, 117° 07' 49.9" W  
**Least Depth:** 1.20 m (= 3.92 ft = 0.654 fm = 0 fm 3.92 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 2.151$  m ; TVU (TPEv)  $\pm 0.315$  m  
**Timestamp:** 2006-305.20:09:18.920 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 065\_2009  
**Profile/Beam:** 169/59  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

4 ft Obstruction next to wreck.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/065_2009	169/59	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018144200	0001	9.26	231.7	Secondary

### Hydrographer Recommendations

Chart as 4 ft obstruction. Obstruction symbol will encompass wreck as well as obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

#### Cartographically-Rounded Depth (Affected Charts):

4ft (18773\_1)

0 ½fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

0fm 4ft (18765\_1)

1.2m (501\_1, 50\_1)

### S-57 Data

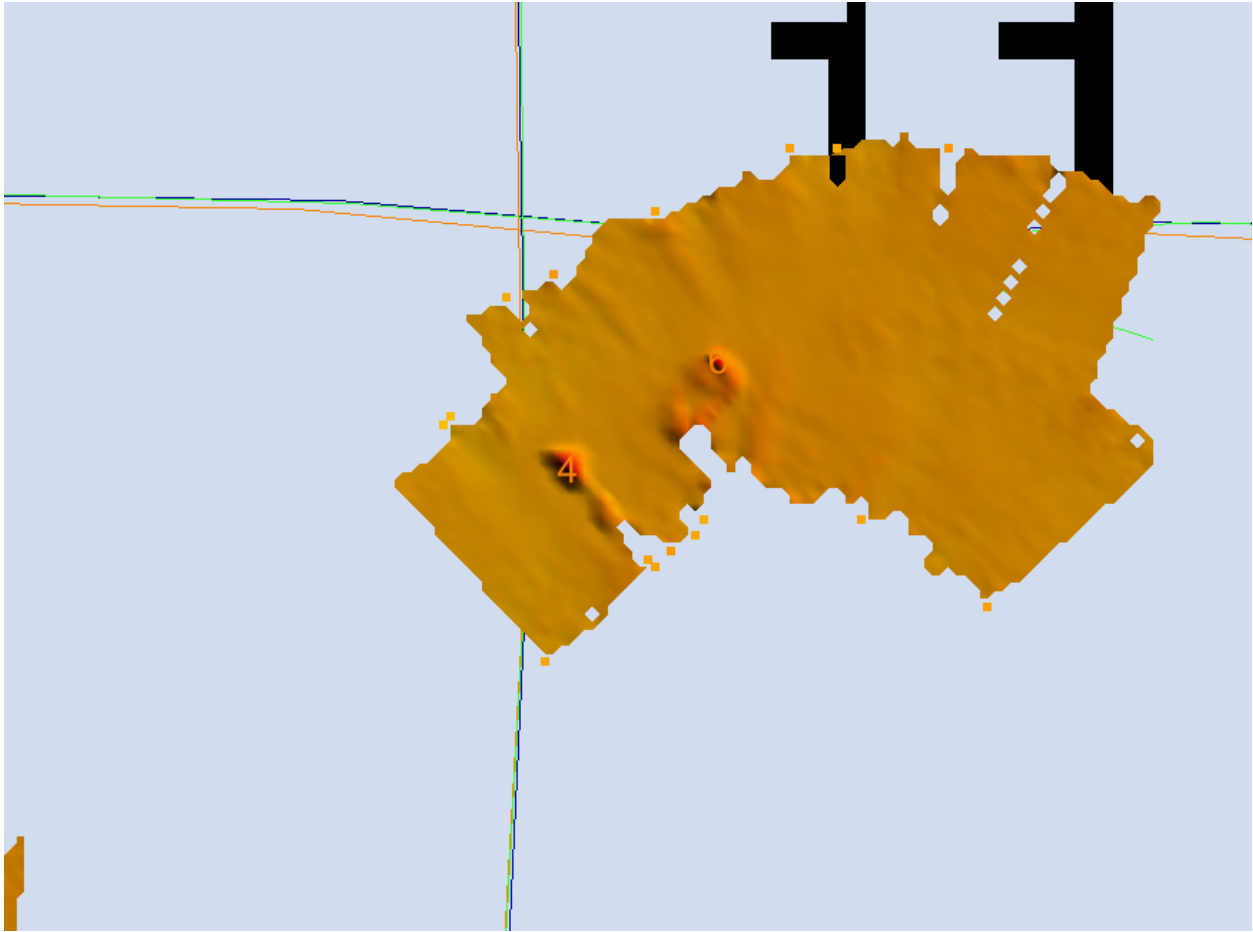
**Geo object 1:** Wreck (WRECKS)

**Attributes:** VALSOU - 1.196 m

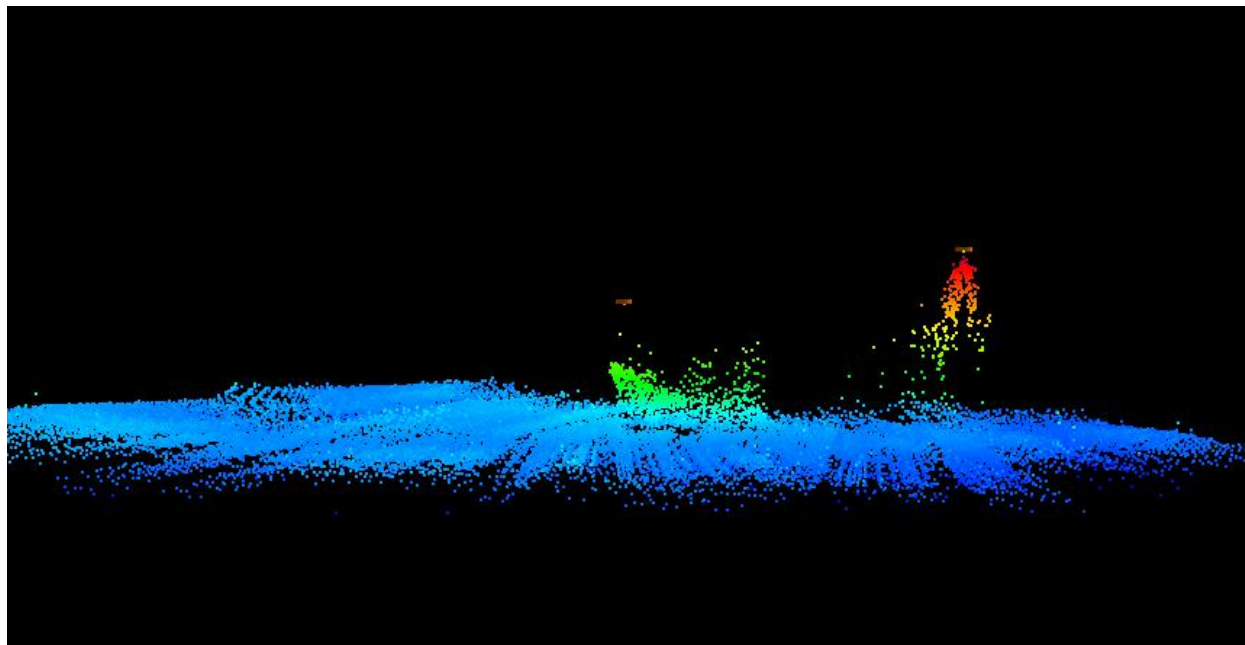
## Office Notes

Do not concur. 4 foot sounding is part of the wreck. Chart 4 foot wreck in this position.

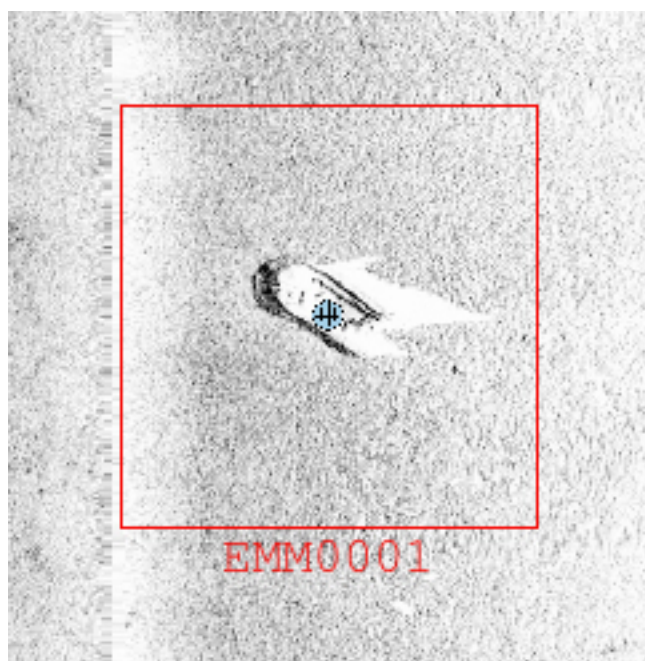
### Feature Images



*Figure 1.14.1*



*Figure 1.14.2*



*Figure 1.14.3*



## 1.15) 8ft Sounding

### Survey Summary

**Survey Position:** 32° 39' 06.0" N, 117° 07' 52.7" W  
**Least Depth:** 2.45 m (= 8.04 ft = 1.341 fm = 1 fm 2.04 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.056$  m ; **TVU (TPEv)**  $\pm 0.315$  m  
**Timestamp:** 2006-305.20:11:17.039 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 066\_2010  
**Profile/Beam:** 195/80  
**Charts Affected:** 18773\_1, 18773\_2, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

8 ft obstruction

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/066_2010	195/80	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018143500	0001	1.02	061.7	Secondary
f00513/nrt6_s3003_klein3000_sss100/2006-291/sonar_data061018142000	0002	3.72	055.5	Secondary
f00513/nrt6_s3003_klein3000_sss100/2006-291/sonar_data061018142000	0001	15.17	170.9	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018143500	0002	16.98	180.0	Secondary
f00513/nrt6_s3003_klein3000_sss100/2006-291/sonar_data061018141400	0001	18.81	200.3	Secondary

### Hydrographer Recommendations

Chart as 8 ft obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** VALSOU - 2.452 m

## Office Notes

Do not concur. Chart sounding.

## 1.16) 6ft Obstruction

### Survey Summary

**Survey Position:** 32° 38' 48.4" N, 117° 07' 39.2" W  
**Least Depth:** 1.95 m (= 6.41 ft = 1.068 fm = 1 fm 0.41 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.038$  m ; **TVU (TPEv)**  $\pm 0.315$  m  
**Timestamp:** 2006-305.20:17:15.210 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 067\_2016  
**Profile/Beam:** 192/57  
**Charts Affected:** 18773\_2, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

6 ft obstruction.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/067_2016	192/57	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss100/2006-293/sonar_data061020124900	0001	3.27	126.3	Secondary

### Hydrographer Recommendations

Chart as 6 ft obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

#### Cartographically-Rounded Depth (Affected Charts):

6ft (18773\_2)

1fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

1fm 0ft (18765\_1)

2.0m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 1.954 m

## Office Notes

Concur.

### Feature Images

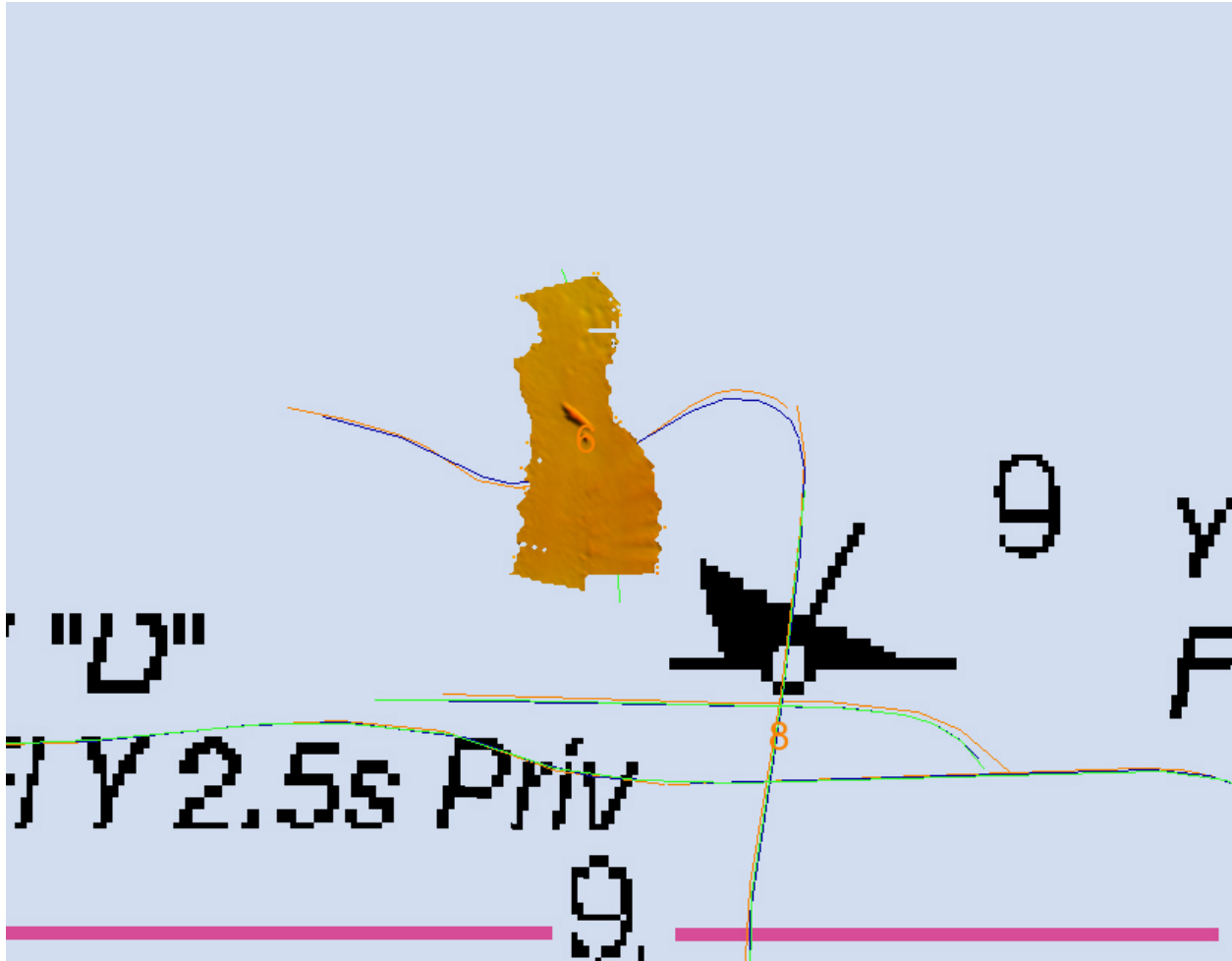
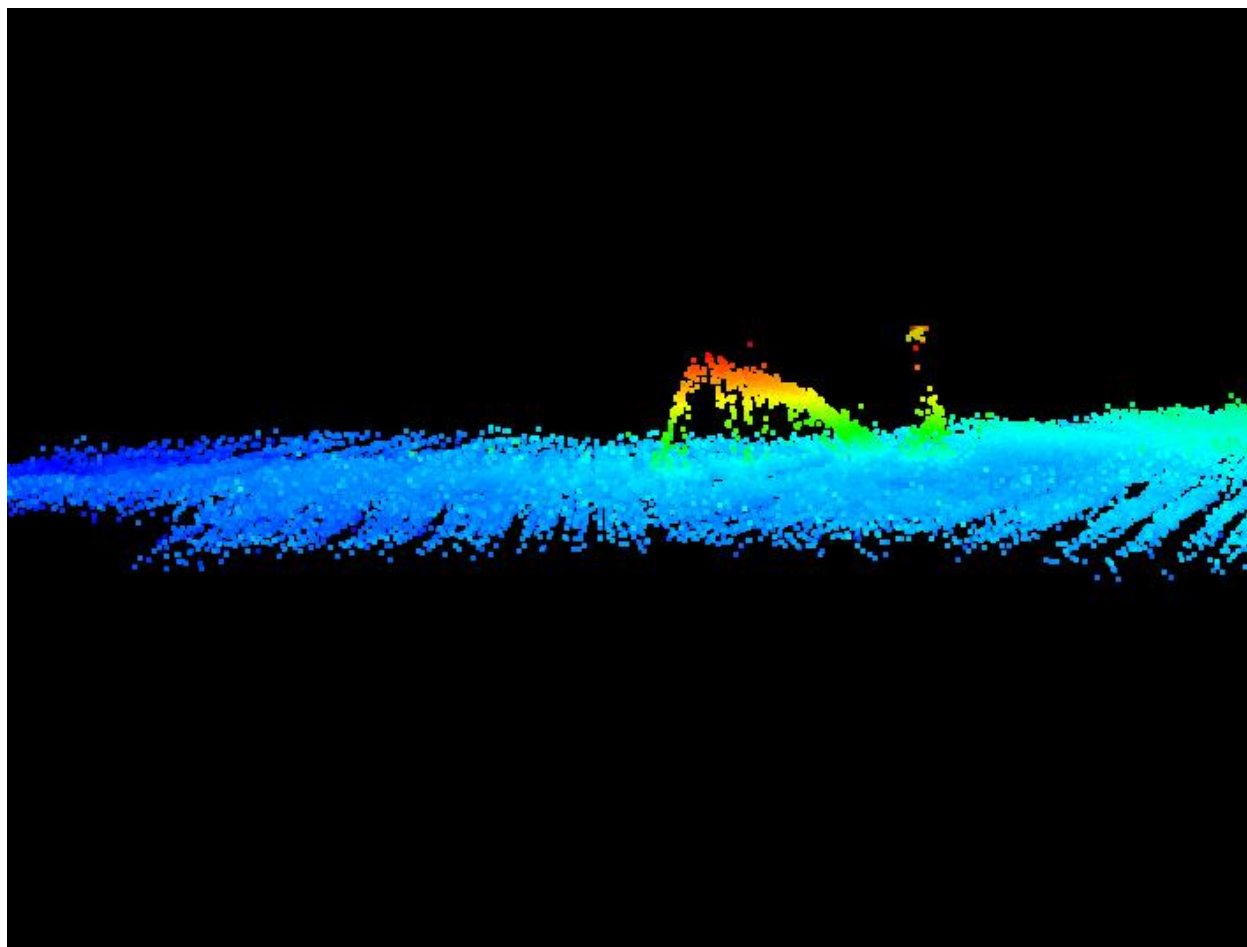
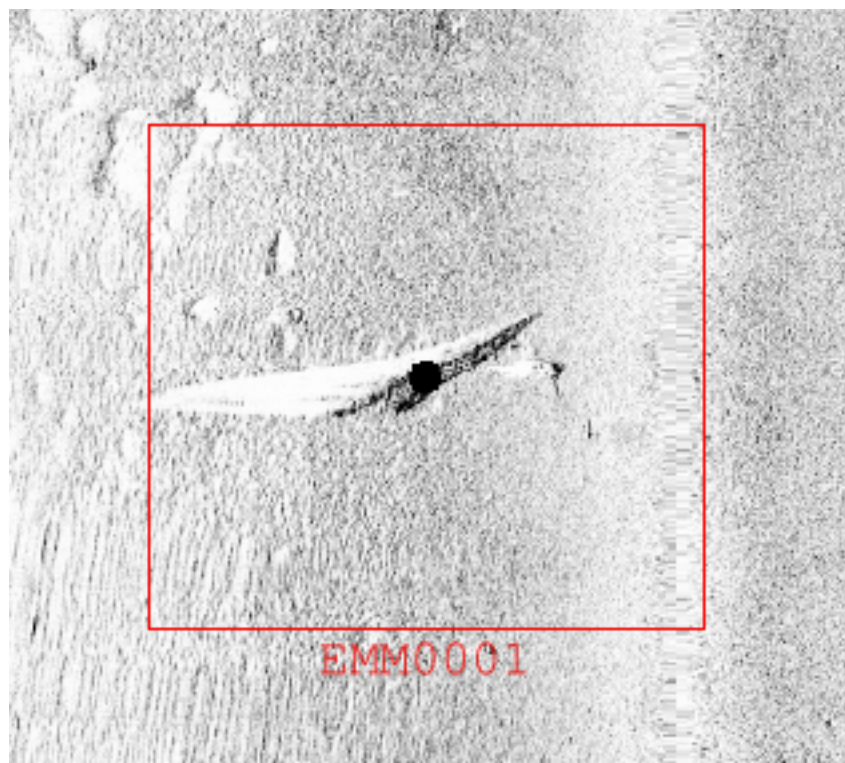


Figure 1.16.1



*Figure 1.16.2*



*Figure 1.16.3*

## 1.17) 9ft Sounding

### Survey Summary

**Survey Position:** 32° 39' 15.6" N, 117° 07' 48.5" W  
**Least Depth:** 2.70 m (= 8.86 ft = 1.477 fm = 1 fm 2.86 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.055$  m ; **TVU (TPEv)**  $\pm 0.315$  m  
**Timestamp:** 2006-305.20:23:11.782 (11/01/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-305 / 068\_2022  
**Profile/Beam:** 161/46  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

9 ft obstruction

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-305/068_2022	161/46	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018144700	0001	2.92	348.0	Secondary
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018144000	0001	4.36	028.5	Secondary

### Hydrographer Recommendations

Chart as 9 ft obstruction.

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** VALSOU - 2.701 m

### Office Notes

Do not concur. Chart sounding.



## 1.18) Obstruction with 5 ft Shadow

### Survey Summary

**Survey Position:** 32° 38' 45.6" N, 117° 07' 12.3" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2007-171.10:05:56 (06/20/2007)  
**Survey Line:** f00513 / nrt6\_s3003\_klein3000\_sss100 / 2006-293 / sonar\_data061020121900  
**Contact/Point:** 0001/1  
**Charts Affected:** 18773\_2, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Contact, 1.5m in height. Object not developed with SWMB, as object was located on the side of a sharply defined shoal. Shadow possibly distorted by sharp rise in depth.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_klein3000_sss100/2006-293/sonar_data061020121900	0001	0.00	000.0	Primary

### Hydrographer Recommendations

Obstruction significant, shadow height 5 feet. Chart obstruction.

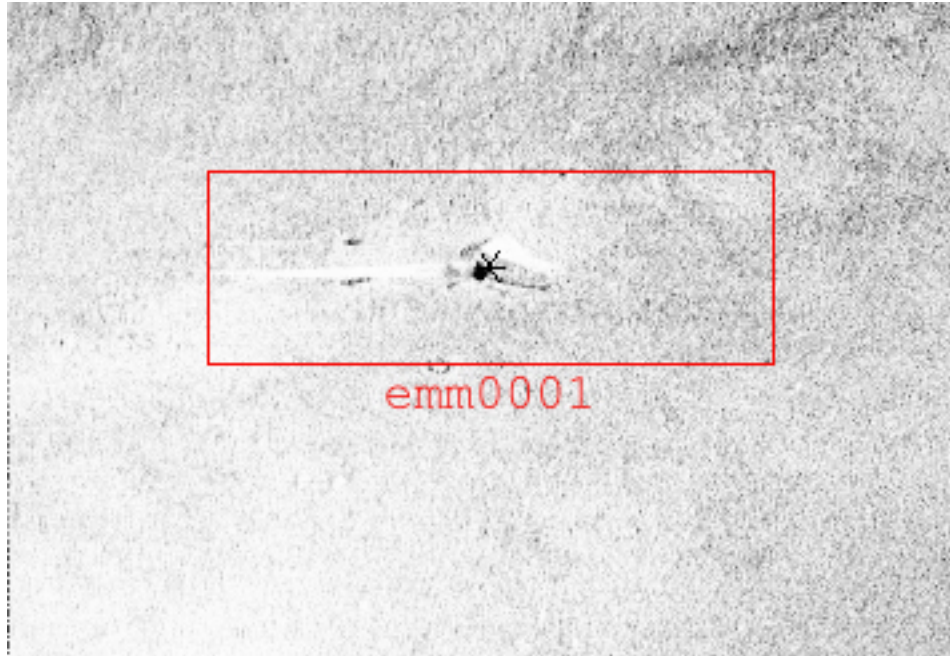
### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

### Office Notes

Concur with clarification. Chart obstruction with least depth unknown.

### Feature Images



*Figure 1.18.1*

## 1.19) Obstruction with 4ft Shadow

### Survey Summary

**Survey Position:** 32° 42' 24.2" N, 117° 13' 53.3" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2006-304.08:06:33 (10/31/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_klein3000\_sss200 / 2006-291 / sonar\_data061018121700  
**Contact/Point:** 0002/1  
**Charts Affected:** 18773\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

**Remarks:**

unknown debris not significant

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018121700	0002	0.00	000.0	Primary

### Hydrographer Recommendations

[None]

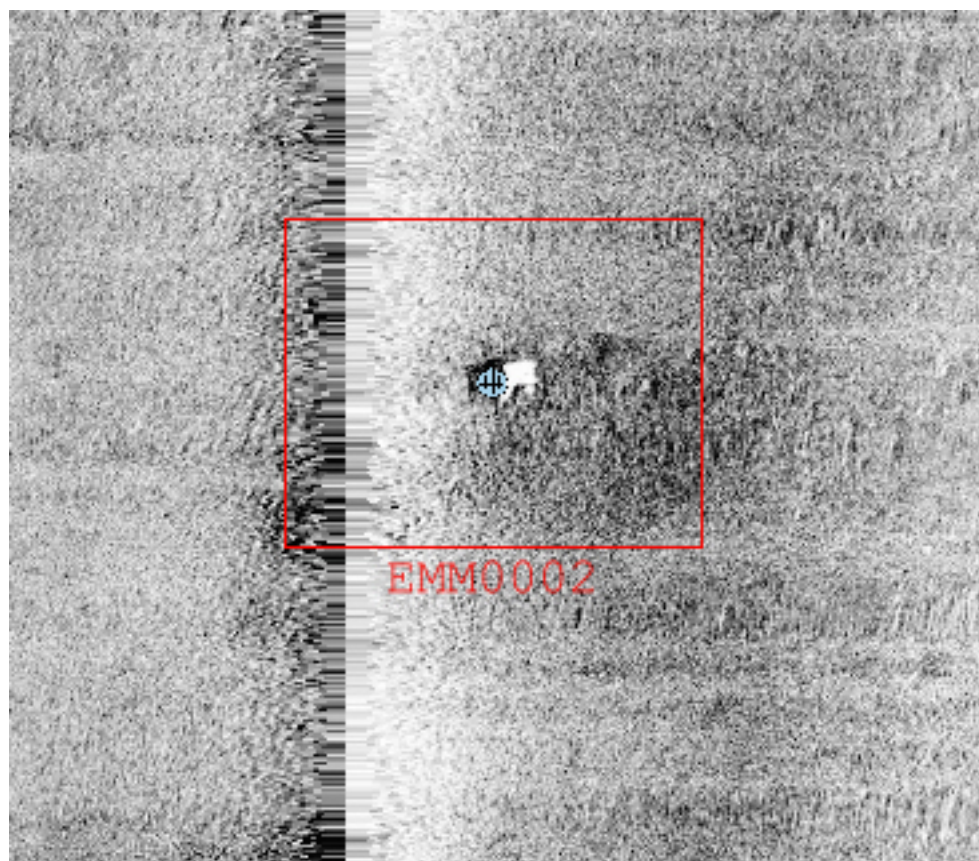
### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

### Office Notes

Do not concur. 4 foot shadow height. Chart 30 ft obstruction extrapolated from nearby soundings.

### Feature Images



*Figure 1.19.1*

## 1.20) Obstruction with 4ft Shadow

### Survey Summary

**Survey Position:** 32° 42' 25.7" N, 117° 13' 53.4" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2006-304.08:05:54 (10/31/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_klein3000\_sss200 / 2006-291 / sonar\_data061018121700  
**Contact/Point:** 0001/1  
**Charts Affected:** 18773\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

unknown debris not significant

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018121700	0001	0.00	000.0	Primary

### Hydrographer Recommendations

[None]

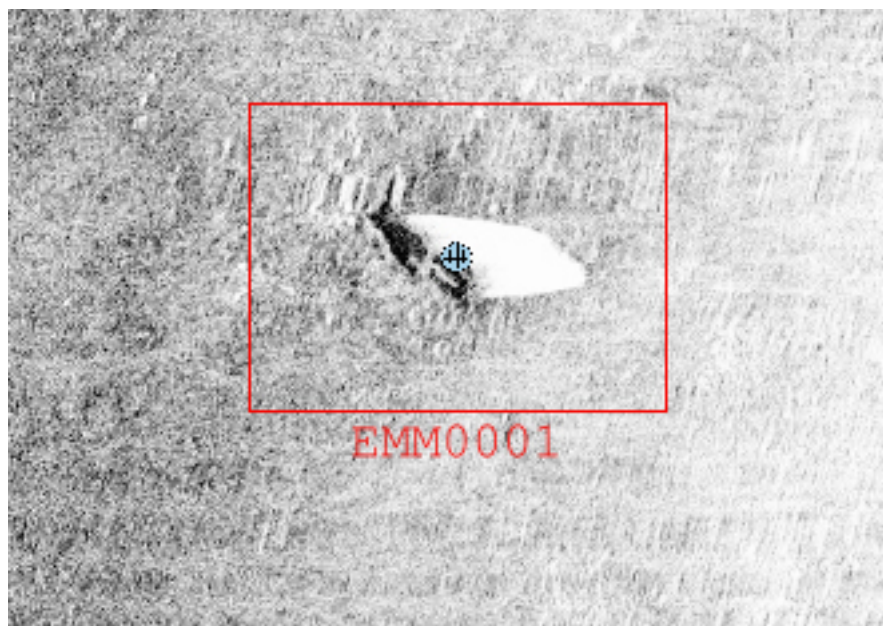
### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

### Office Notes

Do not concur. 4 foot shadow height. Chart 30 obstruction extrapolated from nearby soundings.

### Feature Images



*Figure 1.20.1*

## 1.21) 8ft Sounding

### Survey Summary

**Survey Position:** 32° 39' 16.2" N, 117° 07' 53.4" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2007-171.10:55:12 (06/20/2007)  
**Survey Line:** f00513 / nrt6\_s3003\_klein3000\_sss200 / 2006-291 / sonar\_data061018143800  
**Contact/Point:** 0001/1  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

small wreck, does not correspond to AWOIS item 53328. Not developed.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_klein3000_sss200/2006-291/sonar_data061018143800	0001	0.00	000.0	Primary

### Hydrographer Recommendations

This obstruction is one of many that lie within or near the boundary of Anchorage A-8. The Hydrographer recommends adding a note to the chart to the effect: "Numerous wrecks and obstructions exist in and around Anchorage A-8". Charting each obstruction separately may result in a cluttered and unreadable chart. Please see the Chart comparison section of the Descriptive Report for a thorough discussion of Anchorage A-8.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

### Office Notes

Do not concur. Evidence does not suggest a wreck. This is an obstruction. Import 8 foot spot sounding to account for obstruction as chart sounding.

## 1.22) 35ft Sounding

### Survey Summary

**Survey Position:** 32° 41' 24.9" N, 117° 14' 12.0" W  
**Least Depth:** 10.88 m (= 35.70 ft = 5.950 fm = 5 fm 5.70 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 2.013$  m ; **TVU (TPEv)**  $\pm 0.322$  m  
**Timestamp:** 2006-284.19:40:16.858 (10/11/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-284 / 000\_1939  
**Profile/Beam:** 269/29  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

36 ft sounding on bottom debris.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-284/000_1939	269/29	0.00	000.0	Primary
f00513/nrt6_s3003_em3000_nad83/2006-284/000_2013	46/37	0.25	095.9	Secondary

### Hydrographer Recommendations

Chart 36 ft. obstruction at this position. The location of the object near a pier, and the possibility of vessel traffic with low under-keel clearances warrant charting the object as an obstruction.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** VALSOU - 10.881 m

### Office Notes

Do not concur. Chart sounding.



## 1.23) 21ft Obstruction

### Survey Summary

**Survey Position:** 32° 41' 15.0" N, 117° 14' 14.1" W  
**Least Depth:** 6.34 m (= 20.79 ft = 3.465 fm = 3 fm 2.79 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.997$  m ; TVU (TPEv)  $\pm 0.317$  m  
**Timestamp:** 2006-251.17:48:20.821 (09/08/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_em3000\_nad83 / 2006-251 / 000\_1748  
**Profile/Beam:** 115/24  
**Charts Affected:** 18773\_1, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Bathymetric feature added by AHB. Debris mound.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_em3000_nad83/2006-251/000_1748	115/24	0.00	000.0	Primary
f00513/nrt6_s3003_klein3000_sss100/2006-251/sonar_data060908113600	0001	4.52	232.1	Secondary

### Hydrographer Recommendations

Chart 21 foot obstruction.

#### Cartographically-Rounded Depth (Affected Charts):

21ft (18773\_1)

3 ½fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

3fm 3ft (18765\_1)

6.3m (501\_1, 50\_1)

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)

**Attributes:** VALSOU - 6.336 m

**Office Notes**

Concur.

### Feature Images



Figure 1.23.1

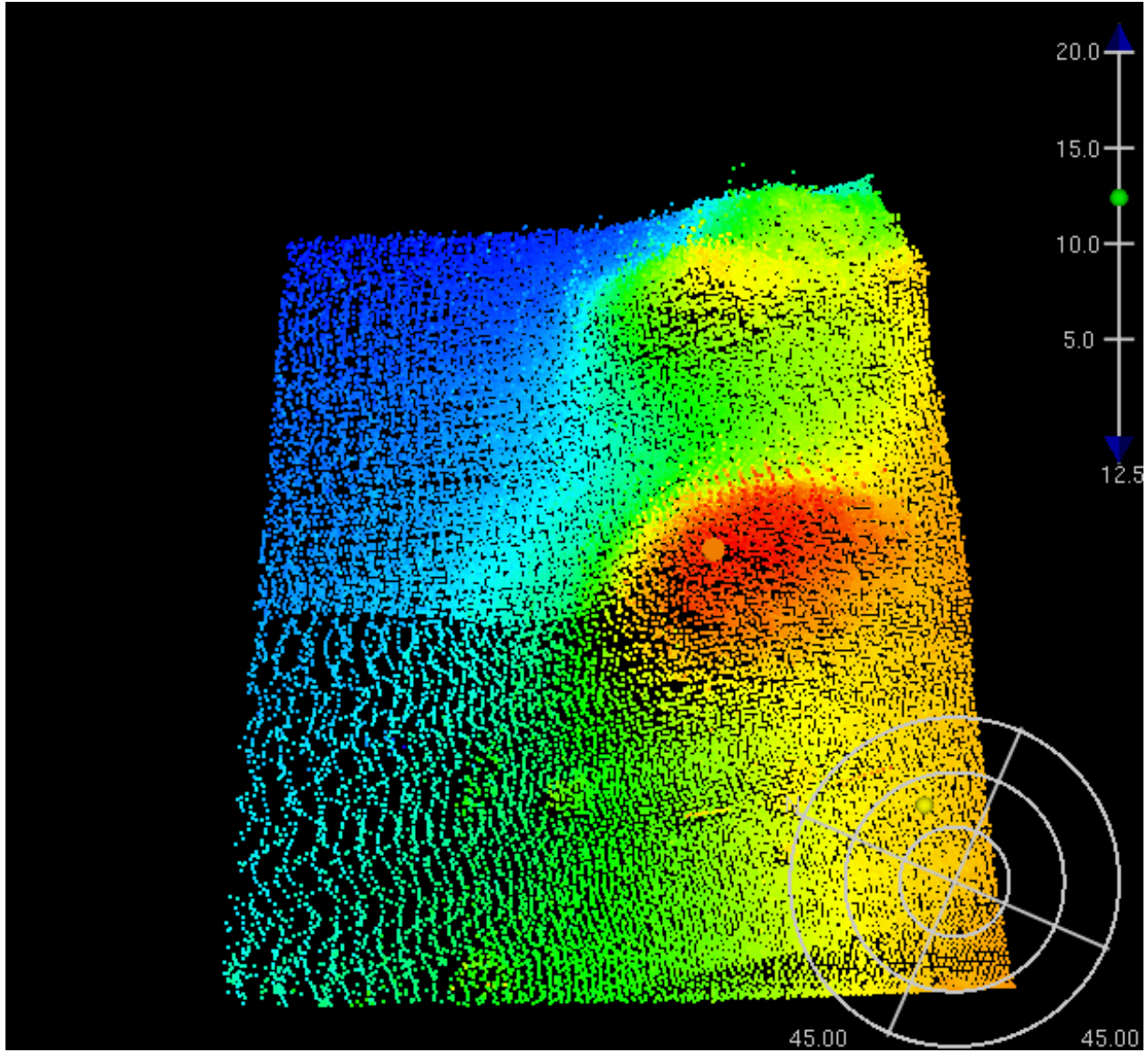
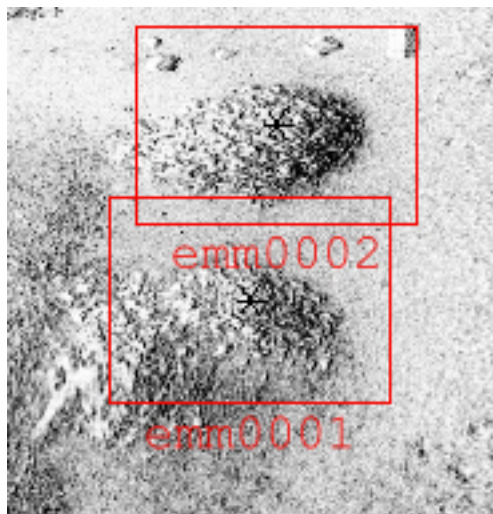


Figure 1.23.2



*Figure 1.23.3*

## 1.24) 8ft Wreck

### Survey Summary

**Survey Position:** 32° 38' 46.5" N, 117° 07' 37.8" W  
**Least Depth:** 2.64 m (= 8.65 ft = 1.442 fm = 1 fm 2.65 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.000$  m ; **TVU (TPEv)**  $\pm 1.000$  m  
**Timestamp:** 2006-293.19:33:36.304 (10/20/2006)  
**Survey Line:** f00513 / nrt6\_s3003\_sb / 2006-293 / 158\_1933  
**Profile/Beam:** 108/1  
**Charts Affected:** 18773\_2, 18772\_1, 18765\_1, 18740\_1, 18022\_1, 18020\_1, 501\_1, 530\_1, 50\_1

#### Remarks:

Added by AHB. Remains of wreck evident in SB and SSS. Designated sounding to ensure inclusion in grid.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
f00513/nrt6_s3003_sb/2006-293/158_1933	108/1	0.00	000.0	Primary

### Hydrographer Recommendations

[None]

#### Cartographically-Rounded Depth (Affected Charts):

8ft (18773\_2)

1 ½fm (18772\_1, 18740\_1, 18022\_1, 18020\_1, 530\_1)

1fm 2ft (18765\_1)

2.6m (501\_1, 50\_1)

### S-57 Data

[None]

### Office Notes

Concur. Chart remains of wreck.

## Feature Images



*Figure 1.24.1*

Descriptive Report  
Appendix 3: Final Progress Sketch & Survey  
Outline

Not submitted.



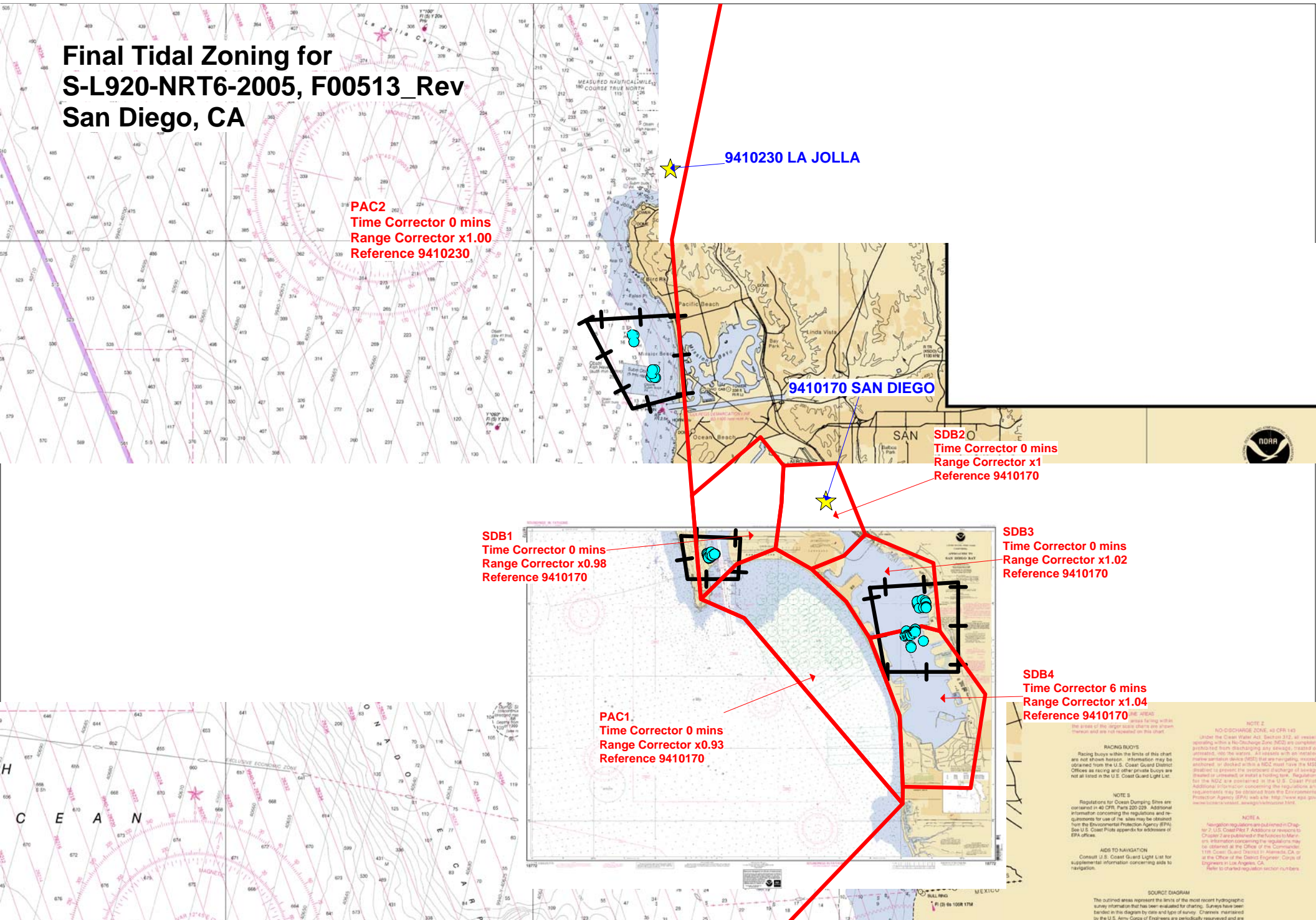
Descriptive Report  
Appendix 4: Tides and Water Levels



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



# Final Tidal Zoning for S-L920-NRT6-2005, F00513\_Rev San Diego, CA



**PAC2**  
 Time Corrector 0 mins  
 Range Corrector x1.00  
 Reference 9410230

9410230 LA JOLLA

9410170 SAN DIEGO

**SDB2**  
 Time Corrector 0 mins  
 Range Corrector x1  
 Reference 9410170

**SDB1**  
 Time Corrector 0 mins  
 Range Corrector x0.98  
 Reference 9410170

**SDB3**  
 Time Corrector 0 mins  
 Range Corrector x1.02  
 Reference 9410170

**PAC1**  
 Time Corrector 0 mins  
 Range Corrector x0.93  
 Reference 9410170

**SDB4**  
 Time Corrector 6 mins  
 Range Corrector x1.04  
 Reference 9410170



**NOTE 1**  
 The areas within the larger scale charts are shown in brown and are not repeated on this chart.

**RACING BUOYS**  
 Racing buoys within the limits of this chart are not shown here. Information may be obtained from the U.S. Coast Guard District Offices as racing and other private buoys are not all listed in the U.S. Coast Guard Light List.

**NOTE 2**  
 Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the water. All vessels with an installed marine sanitation device (MSD) that are required, removed, anchored, or docked at this a NDZ must have the MSD installed to prevent the prohibited discharge of sewage (treated or untreated) or toilet flushing water. Regulations for the NDZ are contained in the U.S. Coast Guard Additional Information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: <http://www.epa.gov/333/ndz/ndz.html>, always helicopter 3101.

**NOTE 3**  
 Regulations for Ocean Dumping Sites are contained in 46 CFR, Parts 200-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilot appendix for addresses of EPA offices.

**NOTE 4**  
 Navigation regulations are published in Chapter 2 of U.S. Coast Pilot 7. Additions or revisions to Chapter 2 are published in the Notices to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 11th Coast Guard District, in San Diego, CA or at the Office of the District Engineer, Corps of Engineers in Los Angeles, CA. Refer to charted regulation section numbers.

**SOURCE DIAGRAM**  
 The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been conducted by name and type of survey. Charting maintained by the U.S. Army Corps of Engineers are periodically reexamined and are

Descriptive Report  
Appendix 5: Supplemental Correspondence

---

**From:** "Patricio, Paul CIV CNRSW Port Ops, N31" <paul.patricio@navy.mil>  
**To:** "Oschmann, Lynn CDR COMTHIRDFLT, N3" <lynn.oschmann@navy.mil>; "Matthew Wilson" <Matthew.Wilson@noaa.gov>  
**Cc:** "Gerry.Wheaton" <Gerry.Wheaton@noaa.gov>; "Kenley, Daniel A QMC NAVBASE San Diego, N31" <daniel.kenley@navy.mil>; "Martin, Brett S CDR COMTHIRDFLT, N3" <brett.s.martin@navy.mil>; "Delgado, Raymond R CDR NAVOCEANO, FST" <raymond.delgado1@navy.mil>; "LCDR Rick Brennan, NOAA" <Richard.T.Brennan@noaa.gov>; "Ed Martin" <Ed.Martin@noaa.gov>  
**Sent:** Thursday, July 30, 2009 1:21 PM  
**Subject:** RE: Revised Alongside Pier Depths

Sorry for the delay in getting back to everyone....

As it stands, the only very small concern I have is the two depths at Pt Loma. I did some research and we only bring the sub "bow-in" on MIKE Pier so the 31ft high spot is not really a problem.

Let me know if you need anything else.

Thanks  
Paul

V/r  
Paul A. Patricio  
Harbor Master  
(619) 556-2772  
(619) 571-8019

-----Original Message-----

From: Oschmann, Lynn CDR COMTHIRDFLT, N3  
Sent: Monday, July 27, 2009 16:33  
To: 'Matthew Wilson'; Patricio, Paul CIV CNRSW Port Ops, N31  
Cc: Gerry.Wheaton; Kenley, Daniel A QMC NAVBASE San Diego, N31; Martin, Brett S CDR COMTHIRDFLT, N3; Delgado, Raymond R CDR NAVOCEANO, FST; LCDR Rick Brennan, NOAA; Ed Martin  
Subject: RE: Revised Alongside Pier Depths

Paul,

With these changes, then, your only concerns remaining are the 31 ft sounding by Mike pier and the 35 ft sounding by November pier, is that correct?

R,  
CDR Oschmann

CDR Lynn Oschmann (N312)  
C3F Oceanographer  
(619) 767-4889, DSN 577

[lynn.oschmann@navy.mil](mailto:lynn.oschmann@navy.mil)  
[lynn.oschmann@navy.smil.mil](mailto:lynn.oschmann@navy.smil.mil)

-----Original Message-----

From: Matthew Wilson [mailto:Matthew.Wilson@noaa.gov]

Sent: Monday, July 27, 2009 5:34

To: Patricio, Paul CIV CNRSW Port Ops, N31

Cc: Gerry.Wheaton; Kenley, Daniel A QMC NAVBASE San Diego, N31; Oschmann, Lynn CDR COMTHIRDFLT, N3; Martin, Brett S CDR COMTHIRDFLT, N3; Delgado, Raymond R CDR NAVOCEANO, FST; LCDR Rick Brennan, NOAA; Ed Martin

Subject: Revised Alongside Pier Depths

Paul,

Attached to this email is a revised version of the previous Powerpoint with updated alongside pier depths. The multibeam data was further edited based on the guidance received during the telecon last week regarding the fenders in place.

As you can see in the slides, the editing made a significant difference along the south side of Pier 10, increasing the alongside shoal depths from 32, 33 feet to 36, 37 feet. Alongside November and Mike Piers we saw an extra foot of depth increase in the shoalest depths, moving from the 32, 33 feet to 33, 34 feet. Sierra Pier was mostly unaffected.

I will move forward with the chart update selecting the shoalest chart soundings available which will fit without disrupting the shoreline.

Note these chart soundings will not include the shoalest depths alongside the piers, but this information will remain in the chart update documentation and has already been passed to you for your knowledge.

Thanks,

Matt

--

Respectfully,

Matthew J. Wilson  
Physical Scientist  
NOAA Atlantic Hydrographic Branch  
757-441-6862x112  
[matthew.wilson@noaa.gov](mailto:matthew.wilson@noaa.gov)

Patricio, Paul CIV CNRSW Port Ops, N31 wrote:

> Thanks Gerry...

>

> Matt,

>

> My name is Paul Patricio and I am the Harbor Master for Navy Region South West and will be your

primary point of contact for all matters related to the Navy bases. My assistant QMC Kenley will be my alternate if I am unavailable.

>

> Please send me the documents and how to call into the tele-conference on Thursday.

>

> Thanks

> Paul

>

> V/r

> Paul A. Patricio

> Harbor Master

> CNRSW Port Operations

> Office: (619) 556-2772

> Cell: (619) 571-8019

> NIPR: [paul.patricio@navy.mil](mailto:paul.patricio@navy.mil)

> SIPR: [paul.patricio@navy.smil.mil](mailto:paul.patricio@navy.smil.mil)

>

>

> -----Original Message-----

> From: Gerry.Wheaton [mailto:[Gerry.Wheaton@noaa.gov](mailto:Gerry.Wheaton@noaa.gov)]

> Sent: Monday, July 20, 2009 11:47

> To: Matthew Wilson; Patricio, Paul CIV CNRSW Port Ops, N31; Mark Taylor

> Cc: Oschmann, Lynn CDR COMTHIRDFLT, N3; [plibuda@portsofsandiego.org](mailto:plibuda@portsofsandiego.org); Fontana, Thomas V. CTR NAVREGSW, N32MPB Ops/Plans; Martin, Brett S CDR COMTHIRDFLT, N3; Delgado, Raymond R CDR NAVOCEANO, FST; LCDR Rick Brennan, NOAA; Ed Martin

> Subject: Re: San Diego Bay Chart Update

>

> Paul and Mark,

>

> Please see email from Matt Wilson sent to CDR Fontana and Mr. Libuda.

> Since CDR Fontana has retired and Paul has moved up at the SD Port, I have forward this email for your participation. The issue concerns the Navy Piers and a survey that will be applied to chart 18773.

>

> Gerry

>

>

> Oschmann, Lynn CDR COMTHIRDFLT, N3 wrote:

>

>> Matt and all,

>>

>> 1000 PST on Tue/Thu is our Admiral's brief at C3F, so tough time for us to make. Could we do 1300 PST on Thu, 23 Jul, or even 1200?

>>

>> R,

>> CDR Oschmann

>>

>>

>> CDR Lynn Oschmann (N312)

>> C3F Oceanographer

>> (619) 767-4889, DSN 577

>> [lynn.oschmann@navy.mil](mailto:lynn.oschmann@navy.mil)

>> [lynn.oschmann@navy.smil.mil](mailto:lynn.oschmann@navy.smil.mil)

>>

>> -----Original Message-----

>> From: Matthew Wilson [mailto:Matthew.Wilson@noaa.gov]

>> Sent: Monday, July 20, 2009 10:08

>> To: [plibuda@portsofsandiego.org](mailto:plibuda@portsofsandiego.org); Fontana, Thomas V. CTR NAVREGSW,  
>> N32MPB Ops/Plans

>> Cc: [Gerry.Wheaton@noaa.gov](mailto:Gerry.Wheaton@noaa.gov); Oschmann, Lynn CDR COMTHIRDFLT, N3;

>> Martin, Brett S CDR COMTHIRDFLT, N3; Delgado, Raymond R CDR NAVOCEANO,

>> FST; LCDR Rick Brennan, NOAA

>> Subject: San Diego Bay Chart Update

>>

>>

>> CDR Fontana, Mr. Libuda,

>>

>> Greeting from NOAA. We are currently compiling hydrographic survey

>> F00513 conducted in San Diego Bay to be applied to chart 18773. The Navy piers affected by this  
>> chart update include Mole Pier and Piers 10, 12, N, M, and S. We would like to ensure that the updated  
>> chart 18773 meets the needs of the Navy and the usage of these piers. We would like to solicit your  
>> feedback with regard to critical soundings and features found during survey and how to best represent  
>> this information on the chart to serve your usage.

>>

>> We propose to have a teleconference to discuss these items at 1000 PST on Thursday, July 23rd.  
>> Please let me know soonest if this time is convenient for you. The critical soundings and relevant  
>> features to be discussed will be provided in .ppt format for your review prior to the meeting.

>>

>> Also cc'ed on this email is CDR Oschmann and CDR Martin from THIRD FLEET and CDR  
>> Delgado from the Navy Fleet Survey Team, who will each be invited to the meeting also, for their input  
>> and awareness.

>>

>> --

>> Respectfully,

>>

>> Matthew J. Wilson

>> Physical Scientist

>> NOAA Atlantic Hydrographic Branch

>> 757-441-6862x112

>> [matthew.wilson@noaa.gov](mailto:matthew.wilson@noaa.gov)

>>

>>

>>

>

>



---

**From:** "Mark Taylor" <mtaylor@portofsandiego.org>  
**To:** "Matthew Wilson" <Matthew.Wilson@noaa.gov>  
**Sent:** Friday, July 31, 2009 2:46 PM  
**Subject:** Re: San Diego Bay Chart Update

Hi Matthew,

I checked with everyone and we have no objections or feedback on the new option. Looks good to us. Couple of new subjects: See that the "Temporarily Closed" notation has been added to "Special Anchorage A-8". Can you please send me the language that is found in "Note E".

Next subject: The following is from our Facility Security Officer regarding "Security Zones":

About the only Chart Change I would like to see is greater visibility for Security Zone at Cruise Ship Terminal Piers, i.e. put "magenta" markings on the chart like they have for Navy (USS Midway) Pier and a chart note that the Security Zones exist 100 yards around all cruise ships moving or moored in SD Bay. (By the way, I don't know why the Navy Pier qualifies for magenta markings. It may be a carry over from prior Navy (active duty) use of the pier and perhaps be removed at this time.)

Let us know if this is feasible.

Regards,

>>> Matthew Wilson <Matthew.Wilson@noaa.gov> 7/30/2009 11:29 AM >>>  
Mark,

After further consideration we have produced an alternative to the charting of the A-8 anchorage. This could be the preferred option as I realize it could be quite difficult to alter the extents of A-8 as I previously suggested.

As you can see in the attached Powerpoint, we have chosen some different methods of cartographic representation of some of the obstructions.

Considering this area is well outside the channel, adjacent to a closed area where mariners shouldn't be navigating, many of the obstructions can be represented with updated chart soundings (red font) to supersede the old chart soundings (black font). This will reduce the clutter, as the obstruction will be represented simply with a sounding and not the obstruction danger circle.

Also in one area we have grouped obstructions together in an Area Obstruction with a single least depth attached to it.

This option will reduce the clutter while still adequately representing all of the significant features, and we don't need to jump through the hoops of altering the bounds of A-8. This option seems to be the best compromise, and I'm going to go ahead and push it forward. If you or any of the Departments you had contacted have any feedback or objections, please let me know soonest. I welcome your input.

Thanks,  
Matt

--

Respectfully,

Matthew J. Wilson  
Physical Scientist  
NOAA Atlantic Hydrographic Branch  
757-441-6862x112  
matthew.wilson@noaa.gov

Mark Taylor wrote:

> Hi Matthew,  
>  
> I have forwarded your e-mail to our Environmental, Legal Departments  
> and Harbor Police Departments for their comments. At this time the  
> A-8 anchorage is temporarily closed until the wrecks are  
> removed. This work is currently scheduled to be completed by the end  
> of 2011 but may slip further due to funding issues. Will let you know  
> and thanks for the opportunity to comment.  
>  
> Regards,  
>  
>  
>  
> Mark Taylor  
> Marine Terminal Superintendent  
> Maritime Operations  
> Maritime Division  
> Port of San Diego  
>  
> (619) 686-6371  
> (619) 234-3965  
> mtaylor@portofsandiego.org  
>  
> >>> Matthew Wilson <Matthew.Wilson@noaa.gov> 7/27/2009 5:53 AM >>>  
>  
> Good Morning Mr. Taylor, Mr. Libuda,  
>  
> Last week a teleconference occurred with representatives from NOAA,  
> THIRD FLEET, and CNRSW Port Operations regarding an update to NOAA Chart  
> 18773. We would like to also get input from the Port of San Diego.  
>  
> Please see the attached Powerpoint, which is updated from the version I  
> emailed out last week.  
>  
> Much of the teleconference last week was regarding the shoalest  
> alongside pier depths of the surveyed Navy piers. Since the meeting,  
> the multibeam data around these piers was further edited based on  
> guidance from Paul Patricio regarding the fendering systems in place in

> this piers, and the updated alongside shoal depths are listed in the  
> attached Powerpoint.  
>  
> As observed in slides 5-7, there are several observed wrecks and  
> obstructions in and around Special Anchorage A-8. If each of these  
> wrecks and obstructions were to be charted in the standard fashion, this  
> part of the chart would be cluttered indeed. We would like to get your  
> thoughts on alternatives, such as extending the bounds of Anchorage A-8  
> to include these wrecks and obstructions. A note would be associated  
> with the box explaining there are many wrecks and obstructions in the  
> area, and a single least depth would be designated. Is this a viable  
> option? Do you have any other thoughts or ideas regarding A-8?  
>  
> Slides 8-10 show significant wrecks and obstructions found in other  
> locations on Chart 18773.  
>  
> We welcome any feedback you may have regarding any of the above items.  
> Please either reply to this email or call me at 757-441-6862 x112.  
> Thank you for your time.  
>  
> --  
> Respectfully,  
>  
> Matthew J. Wilson  
> Physical Scientist  
> NOAA Atlantic Hydrographic Branch  
> 757-441-6862x112  
> matthew.wilson@noaa.gov  
>

**ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT to ACCOMPANY  
SURVEY F00513 (2006)**

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

**A. AREA SURVEYED**

No changes from DR.

**B. DATA ACQUISITION AND PROCESSING**

**B.1 DATA PROCESSING**

The following software was used to process data at the Atlantic Hydrographic Branch:

HSTP PYDRO version 2.5  
CARIS HIPS/SIPS version 6.1 SP2  
CARIS Bathy Manager version 2.1 SP1  
CARIS HOM version 3.3 SP3  
CARIS S57 Composer version 2.0

**B.2. QUALITY CONTROL**

**B.2.1. H-Cell**

Along with several AWOIS investigations, the survey encompasses areas inside and in close proximity to Navy piers in San Diego. Drawing from past experience compiling around Navy facilities, it is considered propitious to coordinate with the appropriate Navy points of contact regarding the particular area in question. To involve the Navy in the compilation of the chart accomplishes some important goals. The first goal has a customer service focus, in that, during any step of the chart compilation certain cartographic options present themselves in how to represent particular data, we can confer with the Navy and choose the option to best serve their needs and usage of the piers in question. Secondly, involving the Navy during this stage of chart compilation alerts the appropriate Navy facilities to any particular hazards in the area, shoal soundings or obstructions, and to any specific challenges to chart compilation. This early coordination with the Navy works to alleviate any surprises or customer dissatisfaction with the final published chart, and the final product can be suitably tailored to fit the needs of the particular Navy facilities affected by the chart update.

For survey F00513, a teleconference was held on July 23, 2009, with the following personnel in attendance: Paul Patricio, (Navy Region Southwest Port Operations) and CDR Lynn Oschmann (THIRD FLEET Oceanographer) representing the Navy, and LCDR Rick Brennan, Ed Martin, and Matthew Wilson representing NOAA. Unfortunately representatives from the Port of San Diego were unable to attend.



Of particular concern to Navy port facilities are the shoal depths alongside piers. Under normal circumstances, multibeam data is rejected such that no soundings are produced which fall under or within 1m (a default value) of vertical pier faces. Based on guidance from Paul Patricio, the multibeam data was edited under the piers and around the piers correlating with the particular fendering systems in use at the piers in question (instead of the default 1 meter value, 14 feet was used for Pier 10, and 15 feet was used for Piers Mike, November, and Sierra). This methodology is described in the following slides.

A preliminary dense sounding set was generated from the edited multibeam bathymetry. Particular emphasis was given to the shoal soundings around each pier, which are highlighted below with red circles.

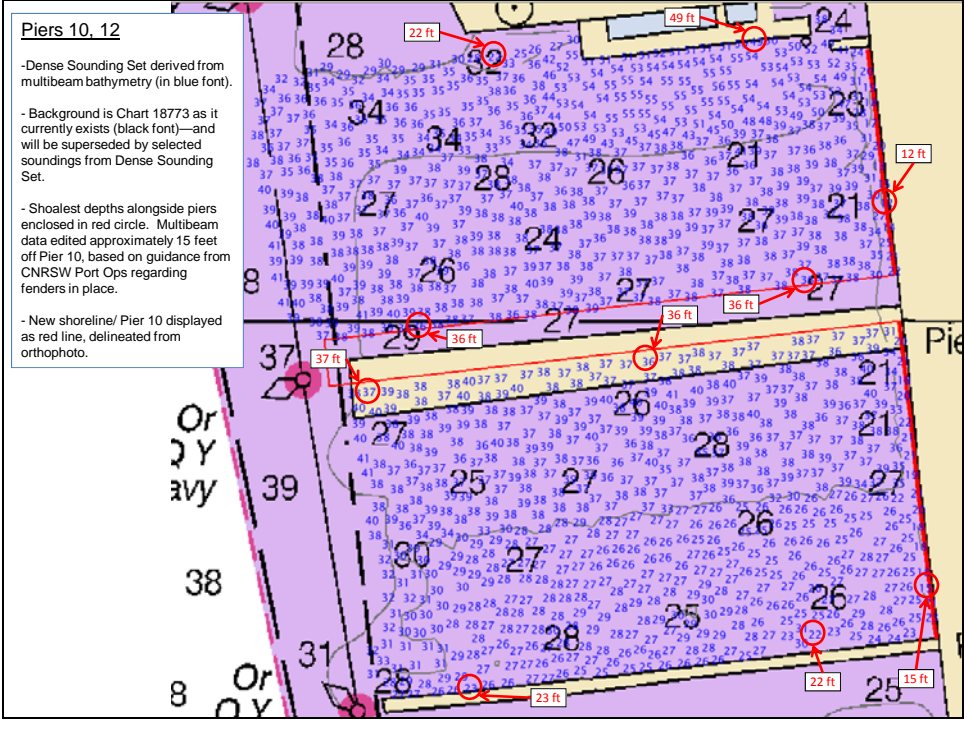
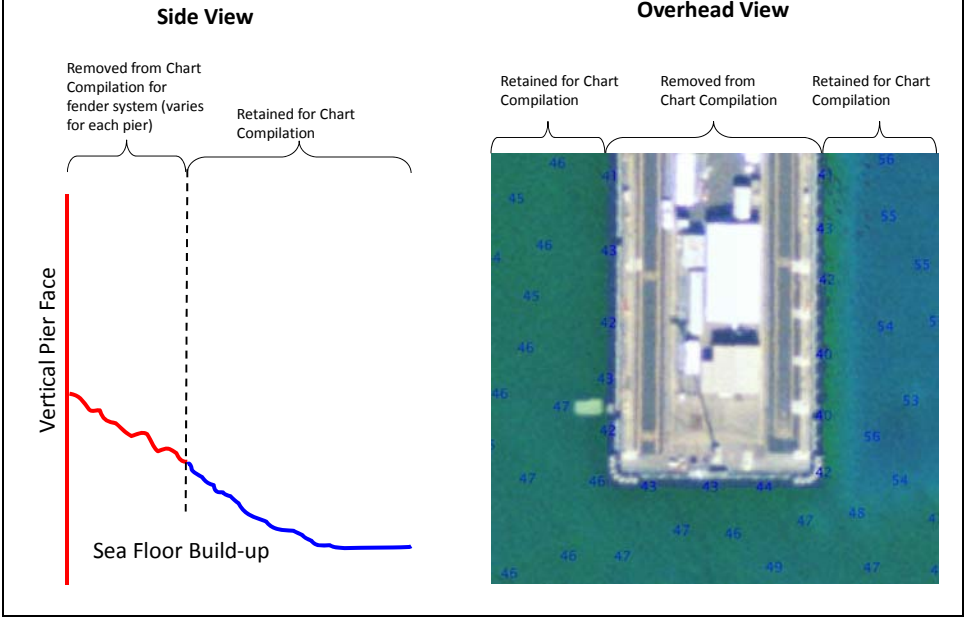
The following slides were distributed to the above Navy and NOAA personnel.

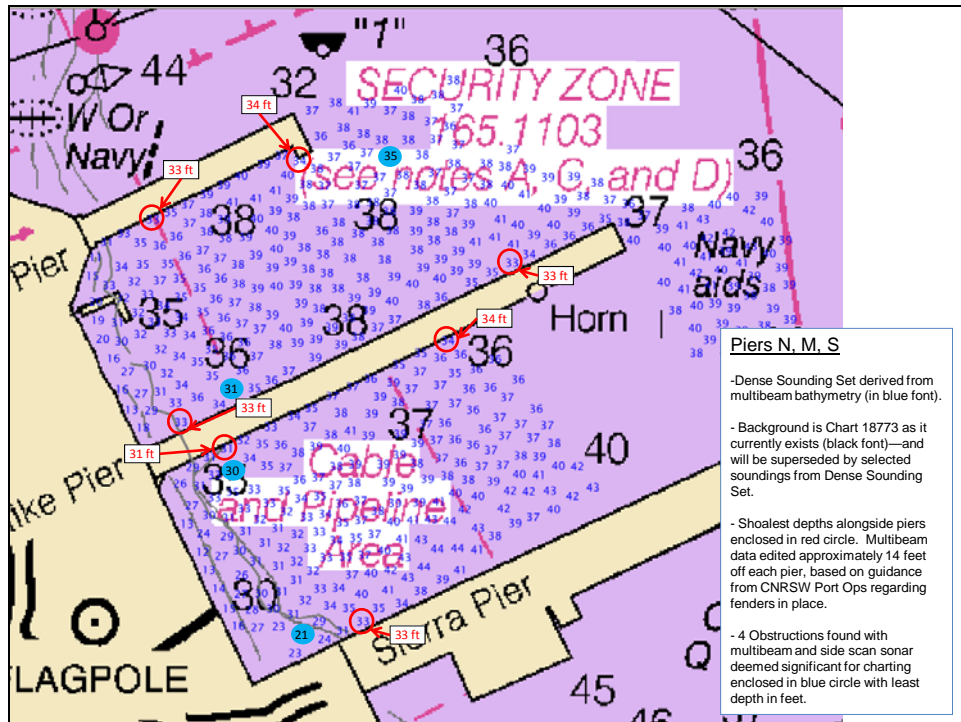
## **NOAA Chart 18773 San Diego Bay**

- Hydrographic Survey F00513—investigation survey of San Diego Bay conducted by NOAA Navigation Response Team 6 in 2006.
- Instructions were to evaluate assigned items from the AWOIS (Automated Wreck and Obstruction Information System) database.
- During survey, two areas of bathymetry were requested by local Navy facilities, in and around the following piers: 10, 12, M, N, S.
- Multibeam data was edited around the pier faces with the methodology described in the next slide (Slide 2), using orthophotos from 2006.
- An Obstruction is deemed worthy of charting if it rises either 1m or 10% of the water depth off the bottom.



### Pier Face Methodology For Chart Compilation





The challenge of chart compilation around piers is to address the most shoal depths pier-side. Normally, contours are utilized for this representation of shoal soundings, but this is not an option alongside sharp pier faces. In the past, the shoal sounding, as visualized at chart scale, would merely be nudged over slightly, so the sounding itself could fit on the chart without disrupting the shoreline or pier as charted. This is no longer considered a best practice within NOAA, as it has been decided the geographic integrity of the sounding should be preserved, and this should take priority over ease of chart compilation.

In order to address this challenge, the Navy was presented with three options:

- If the current observed shoal pier-side depths were not of concern to the Navy, chart soundings could be selected as normal, and the most shoal soundings would be chosen such that the shoreline was not disrupted. The most shoal depths alongside the piers would not be represented on the chart, however the Navy would have the detailed information of the location of the shoal soundings via the Powerpoint.
- The most shoal depths alongside each pier/berth could be represented in a tabular format somewhere on the chart.
- The most shoal depths alongside each pier/berth could be typed in font alongside each pier/berth.

Each pier was discussed with regards to observed shoal depth and the type of vessel which typically utilizes each berth. After discussion it was concluded that the observed shoal depths were not of concern (once the piers were edited according to the

fendering systems in use). The first option listed above was the most desired cartographic representation for the Navy. Hence the chart sounding selection in and around the affected San Diego piers does not include the most shoal depths alongside the piers. The most shoal depths were chosen that could fit at chart scale without disrupting the shoreline.

The obstructions in and around Piers Mike, November, and Sierra were of some concern to the Navy, and the exact positions were sent to the Navy to facilitate investigation.

The Navy personnel involved in the chart compilation requested that a preliminary draft chart 18452 be sent to them for their review prior to its publication. Mr. Joe Robinson of MCD was contacted regarding this request. Mr. Robinson informed AHB that they could facilitate this request, and to please send mailing addresses for the recipients of the preliminary chart. The Navy personnel who personally requested to see a copy of the preliminary chart 18452, and their respective mailing addresses, are as follows:

Paul Patricio  
3315 Buchanan ST  
BLDG 150  
Naval Base San Diego  
San Diego, CA 92136-5804

METOC Officer (N312)  
Commander Third Fleet  
53690 Tomahawk Drive STE 338  
San Diego, CA 92147-5004

Commander U.S. Pacific Fleet  
Attn: Fleet Oceanographer  
250 Makalapa Drive, Bldg 352  
Pearl Harbor, HI 96860-3131

AHB respectfully requests that MCD send the above recipients a copy of the chart 18773 prior to its publication, as a means of soliciting their input and to ensure the final product meets their needs. As explained above, this prior coordination will alleviate surprises or customer dissatisfaction with the final published chart.

Representatives from the Port of San Diego were contacted regarding possible charting options relating to the numerous wrecks and obstructions observed in and around Special Anchorage A-8. In addition to A-8, their input was solicited regarding various other wrecks and obstructions found throughout the port.

The numerous wrecks and obstructions around Anchorage A-8 was initially concerning due to the amount of clutter it would bring to the chart should each significant wreck and obstruction be charted. Initially it was suggested that a box be placed on the chart to encompass all of the features with a single least depth attached to it, as the field unit had suggested. However, the addition of such an area, or altering the Anchorage A-8 bounds, would require a great deal of coordination among various port authorities, and the end result may have been unfavorable while consuming a great deal of time. An



alternative was developed and presented to the Port of San Diego for their input, feedback, and concurrence. The clutter was reduced by representing many of the obstructions with a chart sounding. This decision was justified by the fact that the obstructions were located well outside of the channel, in close proximity to the Special Anchorage A-8, which is closed, hence mariners should not be navigating in this area. The final result was presented to the Port of San Diego where it was disseminated amongst the Environmental, Legal, and Harbor Police Departments for their comments. The second, alternative option was well-received amongst each Department, and thus this option is carried forward in the compilation of the H-Cell.

One request came from the Facility Security Officer:

“About the only Chart Change I would like to see is greater visibility for Security Zone at Cruise Ship Terminal Piers, i.e. put "magenta" markings on the chart like they have for Navy (USS Midway) Pier and a chart note that the Security Zones exist 100 yards around all cruise ships moving or moored in SD Bay. (By the way, I don't know why the Navy Pier qualifies for magenta markings. It may be a carry over from prior Navy (active duty) use of the pier and perhaps be removed at this time.)”

This request has been forwarded on to the Regional Navigation Manager and is included in this report for awareness.

The final products of the review of this survey were 50cm resolution surfaces in the two areas of multibeam bathymetry around the Navy piers and the areas around AWOIS investigations, and a 1m resolution surface which encompasses the areas of singlebeam. As described above, the multibeam data was edited around the Navy piers to exclude soundings under and around the piers out to the extents of the fendering system in use. After editing, the surfaces were re-finalized. The shoal layer was extracted from the singlebeam surface and combined with the multibeam surfaces.

A dense sounding set was created from the final combined surface using a shoal-biased radius of 1mm at the scale of the largest scale chart (1:12,000). Depth curves were hand drawn and are included in the H-Cell for reference only.

The meta layers were hand drawn to encompass the multibeam coverage in each survey area. Separate M\_CSCL meta layers were created for the two areas of bathymetry which fall outside the bounds of the largest scale chart 18773 (1:12,000), and are encompassed within chart 18765 (1:100,000).

Bottom samples were not required for this survey. Only one seabed area fell within the meta coverage, hence a single charted seabed area was imported from the ENC and into the H-Cell as a SBDARE object.

The true extents of Pier 10 varied significantly from what is currently charted. The current extents of the pier, as observed in 2006 orthophotos from USGS, are included in the H-Cell as SLCONS objects. In addition, the correct extents of the shoreline along the National City Marine Terminal are also included as SLCONS objects. Finally, a small pier was observed between November and Mike Piers. This pier was delineated from orthoimagery and is included in the H-Cell as a SLCONS object.

The pre-compilation components of the H-Cell include the dense sounding selection and chart sounding selection (SOUNDG), features (BOYSPP, DEPARE, MORFAC, OBSTRN, SBDARE, SLCONS, WRECKS), meta layers (M\_COVR, M\_CSCL, M\_QUAL), and cartographic blue notes (\$CSYMB). All of the components with the exception of the dense sounding selection and depth curves were exported into S-57 format in order to create the H-Cell deliverable. Similarly, the dense sounding

selection and depth curves were exported into S-57 format separately, and then both S-57 files were processed in Caris HOM to convert the metric units to feet. The final products are two S-57 files, one that contains the chart soundings, features, meta objects, and blue notes (F00513\_CS), and one that contains the dense sounding selection and depth curves (F00513\_SS). Finally, quality assurance checks were performed utilizing Caris S-57 Composer version 2.0.

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to the Marine Chart Division, Silver Spring, Maryland.

**F00513 CARIS H-Cell final deliverables include the following products:**

F00513_CS.000	1:12,000 Scale	F00513 H-Cell with Chart Scale Selected Soundings
F00513_SS.000	1:5,000 Scale	F00513 Selected Soundings (Survey Scale)

**B.2.2. Junctions**

No contemporary surveys exist for junctioning.

**C. VERTICAL AND HORIZONTAL CONTROL**

Final corrections were applied by the field unit and no other tidal corrections were required.

**D. RESULTS AND RECOMMENDATIONS**

**D.1 CHART COMPARISON**

**18773 (41<sup>st</sup> Edition, 10/01/2008)**

Corrected through NM 07/11/2009  
 Corrected through LNM 06/20/2009  
 Scale 1:12,000

**18765 (16<sup>th</sup> Edition, 01/01/2005)**

Corrected through NM 07/11/2009  
 Corrected through LNM 06/30/2009  
 Scale 1:100,000

**ENC Comparison**

**US5CA72M**

San Diego Bay  
 Edition 16  
 Application Date 2009-07-08  
 Issue Date 2009-07-08  
 Chart 18773

## **US3CA70M**

San Diego to Santa Rosa Island

Edition 11

Application Date 2008-08-21

Issue Date 2009-07-27

Chart 18740

### **D.1.1 Hydrography**

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section “D” and Appendix 1&2 of the Descriptive Report. The following exceptions are noted:

- a. The charted obstruction located at 32-39-13.66488N, 117-07-37.93008W was disproved with multibeam and side scan sonar. Recommend to remove the obstruction from the chart.
- b. The charted wreck located at 32-39-10.15128N, 117-07-53.65560W was disproved with singlebeam and side scan sonar. Recommend to remove the wreck from the chart.
- c. The charted pipes located at 32-39-09.61884N, 117-07-18.00336W were disproved with side scan sonar. Recommend to remove the pipes from the chart.
- d. A submerged obstruction with a least depth of 4 fms, 4 feet was found at 32-46-21.6178N, 117-16-06.6428W, inside the area obstruction on chart 18765 located at 32-46-10N, 117-16-28W. Recommend to change the text accompanying this obstruction from “Subm Obstn (5 fms rep)” to “Subm Obstn” and to include the 4 fms, 4 feet sounding within the obstruction danger circle.
- e. The charted Fish Haven on Chart 18765 located at approximately 32-46-10N, 117-16-30W has a minimum depth of 8 fms (see screen capture below).



## **D.2. ADDITIONAL RESULTS**

### **D.2.1. Aids to Navigation**

No changes from DR.

## **D.3. 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 Charts and Electronic Navigation Charts (ENC) used for compiling the present survey.

## **D.4. ADEQUACY OF SURVEY**

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

**APPROVAL SHEET  
F00513**

**Initial Approvals:**

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 reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

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**Matthew J. Wilson**  
Physical Scientist  
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: \_\_\_\_\_  
**Richard Brennan**  
LCDR, NOAA  
Chief, Atlantic Hydrographic Branch