

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey

Field No.

Registry No. H11605

LOCALITY

State *Washington*

General Locality *Seattle*

Sublocality *Elliott Bay Off Magnolia Bluff*

2006-2007

CHIEF OF PARTY

Kathryn Simmons

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28
(11-72)

U.S DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY No

HYDROGRAPHIC TITLE SHEET

H11605

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

FIELD No.

**NRT3-5-01-
07**

State: Washington

General Locality: Seattle

Sub-Locality: Elliott Bay off of Magnolia Bluff

Scale: 1:5000

Date of Survey: November. 14, 2006 –March 20, 2007

Instructions dated: September 29, 2006

Project No. : OPR-S-N912-NRT3-06

Vessel: NOAA Survey Launch S1212

Chief of party: Kathryn Simmons

Surveyed by: Kathryn Simmons, Janice Landsfeld, Kurt Mueller

Soundings by echo sounder, hand lead, pole Single Beam and Multibeam Echosounders

Graphic record scaled by: NRT-3

Graphic record checked by: NRT-3

Automated Plot:

Verification by: *Atlantic Hydrographic Branch Personnel*

Soundings in fathoms **feet** meters at MLW MLLW

Red, Bold, Italic notes in the Descriptive Report were made during Office Processing.

REMARKS: *All times UTC.*

Projection is UTM Zone 10.

Descriptive Report to Accompany H11605

Scale 1:5000

2007

Navigation Response Team 3

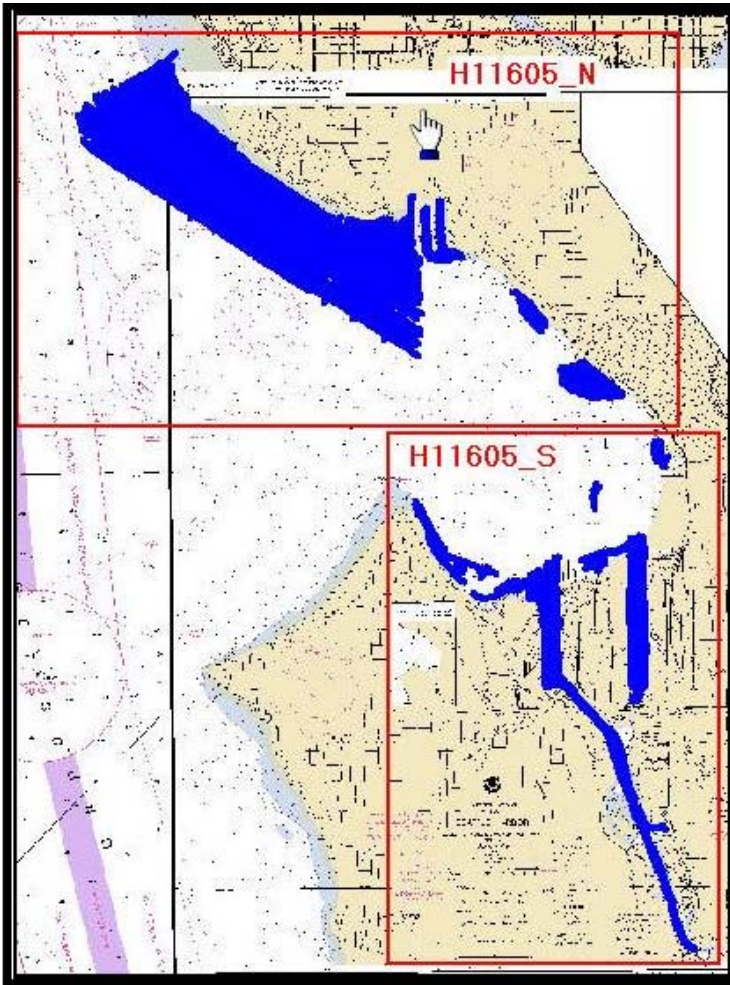
Team Leader: Kathryn Simmons

A. AREA SURVEYED

This basic hydrographic survey was conducted in accordance with Port Instructions OPR-S-N912-NRT3-06*, Washington, Seattle, Elliott Bay, issued September 29, 2006. The Port of Seattle was identified as an area requiring bathymetry and ENC updates in response to frequent requests received by the Regional Navigation Manager. The hydrographic survey area off of Magnolia Bluff was requested by the Puget Sound Pilots. This general anchorage area is used by deep-draft vessels waiting for berth in Seattle. Soon after commencement of the project, the pilots also requested that the Duwamish Waterway be resurveyed. To facilitate data management the survey areas were separated into two field sheets: H11605N and H11605S. *Concur.*

The area surveyed extends from latitude 47°39'06.5"N, southward to latitude 47°32'25.4"N, and from longitude 122°27'05.0"W, eastward to longitude 122°19'48.4"W. The total area of hydrography is approximately 2.8 square nautical miles as shown below. *Concur.*

**Filed with original field records.*



H11605 is the only hydrographic survey in Project OPR-N912-NRT3-06 and includes hydrographic data, side scan data, and detached positions.

B. DATA ACQUISITION AND PROCESSING *See also Evaluation Report.*

Data acquisition was conducted from November 14, 2006 (DN 318) through April 20, 2007 (DN 110)

B1. Equipment and Vessels

NRT3's survey vessel, NOAA Survey Launch S1212, is equipped with an Odom single beam transducer, a Klein side scan sonar system and a Simrad EM3000 SWMB echosounder and was used to acquire single-beam and multi-beam echosounder data as well as side scan sonar data, and detached positions.

Launch S1212, a 27-foot, SeaArk Commander (SAMA115510000), was acquired in January 2001. In August 2004 the hull was extended to 30 feet to accommodate the weight of the two 150-horsepower Yamaha four-stroke outboards which power the vessel. The launch is eight feet wide, displaces 4.8 tons, has a static draft of 0.4 meters and is equipped with a Dell Pentium IV PC for running the primary acquisition software.

Trimble backpack and GeoXT DGPS systems were used to position fixed aids to navigation and other high water features. These positions have been submitted directly to the Marine Chart Division via NRB's Fast Track procedure. *Concur.*
See Data Acquisition and Processing Report (DAPR)*.

B2. Quality Control

Crossline Data

In the primary survey area, 5.86 nautical miles of crosslines were acquired. Comparison with mainscheme data shows excellent agreement. *Concur.*

See also Data Acquisition and Processing Report*.

B3. Corrections to Echo Soundings

See Data Acquisition and Processing Report*.

B4. Data Processing

Four CARIS BASE surfaces were created for each field sheet: (1) 0.5 meter resolution, (2) 1.0 meter resolution, (3) 1.0 meter resolution combining the above two surfaces and (4) the combined BASE surface, finalized. *Concur.*

See also Data Acquisition and Processing Report*.

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

C1. Tides and Water Levels

See Data Acquisition and Processing Report*.

C2. Horizontal Datum

The horizontal control datum for this project is North American Datum of 1983 (NAD83).

C3. Position Control

See Data Acquisition and Processing Report*.

**Filed with original field records.*

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

D1. Chart Comparison

Survey results were compared with the latest revisions of the affected raster charts and ENC's available for download from the NOAA website.	Chart No.	Date	Edition
Scale	18449	October 2003	18th
1:25,000	18450	February 2004	18th

LNM

Sep 9/03
Jan. 27/04
1:10,000

	ENC Cell	Edition/Update
LNM	US5WA15M	4/1
Feb 12/08	US5WA14M	4/1

Issue Date

2/5/2008
11/27//2007
Feb12/08

Comparison of Soundings

Survey data were compared with the charts using contour lines and sounding plots generated by CARIS Field Sheet Editor and Mapinfo/Vertical Mapper.

Comparison of Non-Sounding Features

High water shoreline updates have been submitted directly to Marine Chart Division via the Navigation Response Branch.. The S-57 file(F00523 ShorelineUpdates.000) is included in Appendix V for information.

AWOIS Items

Twenty-one AWOIS items are included in this survey. Survey findings and charting recommendations are discussed in Pydro and included in the Pydro-generated Feature Report. **Concur.**

Dangers to Navigation

Five Dangers to Navigation were found during the course of this survey and submitted to Marine Chart Division. See Appendix I. *Concur.*

D2. Additional Results

Comparison with Prior Surveys

The following prior surveys are the primary sources for charted soundings and features.	<u>Registry Number</u>
<u>Year Surveyed</u>	F00468
2001	F00419
2000	H11025
1999	H10798
1995	H09168
1970	H09167
1970	H05846
1946	H07076
1936	H05724
1935	H05709
1935	H05844
1935	H05845

Scale

10,000
 10,000
 5,000
 5,000
 5,000
 5,000
 1,200
 10,000
 5,000
 20,000
 5,000
 5,000
 1935

These surveys were not addressed individually, except in those instances in which they represented the source of AWOIS items or other soundings or features throughout the survey. See H11605_Feature_Report.pdf for investigation discussions and disposition recommendations. The hydrographer believes the current survey is adequate to supercede all prior surveys in their common areas. *Concur with clarification, adequate to supercede all prior surveys in their common areas unless otherwise specified.*

Aids to Navigation

New positions were acquired on some fixed aids to navigation. The updated position and attribute data have been submitted directly to NOAA’s Marine Chart Division via the Navigation Response Branch. A text file of the positions (F00523_ATON.txt) is included in Appendix V. *Concur.*

Bridges, Cables, Pipelines

Where feasible, charted bridges, cables, and pipelines were visually confirmed. Submerged features within the surveyed area were located with SWMB hydrography and discrepancies were addressed in the PSS Feature Report. *Concur.*

Statistics

Quantities	
150.64	
120.97	
21.55	
2.26	
5.86	
2.8	
2.0	
27	
0	
21	
0	

Description

- Total Linear Nautical Miles
- Mainscheme Multibeam
- Side Scan Sonar
- Development
- Crosslines
- Square Nautical Miles Hydrography
- Square Nautical Miles SSS
- Velocity Casts
- Bottom Samples
- AWOIS Items

Tide Stations Installed
Position Control Stations Established
0

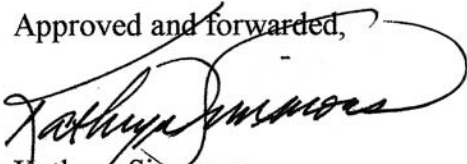
E. APPROVAL SHEET

Standard field surveying and processing procedures were followed in producing this survey in accordance with the Navigation Response Branch Operations Manual, the Field Procedures Manual and NOS Hydrographic Surveys Specifications and Deliverables.

The data were reviewed daily during acquisition and processing.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded to Atlantic Hydrographic Branch and should be attached to H11605 for final review and processing.

Approved and forwarded,



Kathryn Simmons
Team Leader

APPENDIX I
DANGER TO NAVIGATION RECORDS

OPR-S-N912-NRT3-06

Registry Number: H11605
State: Washington
Locality: Seattle
Sub-locality: Elliott Bay Off of Magnolia Bluff
Project Number: OPR-S-N912-NRT3-06
Survey Dates: 12/01/2006 - 03/27/2007

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
18450	18th	02/01/2004	1:10,000 (18450_1)	USCG LNM: 01/29/2008 (03/04/2008) NGA NTM: 08/09/1997 (03/08/2008)
18449	18th	10/01/2003	1:25,000 (18449_1)	[L]NTM: ?
18474	8th	10/01/2003	1:40,000 (18474_1)	[L]NTM: ?
18445	31st	04/01/2006	1:80,000 (18445_1)	[L]NTM: ?
18441	45th	04/01/2006	1:80,000 (18441_1)	[L]NTM: ?
18440	28th	12/01/2005	1:150,000 (18440_1)	[L]NTM: ?
18003	20th	11/01/2006	1:736,560 (18003_1)	[L]NTM: ?
18007	32nd	07/01/2005	1:1,200,000 (18007_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	DTON-1 AWOIS 53451 revise wreck	Wreck	17.50 m	47° 38' 25.4" N	122° 25' 35.6" W	53451
1.2	DTON-2 Revise sewer	Shoal	3.68 m	47° 37' 48.8" N	122° 23' 56.4" W	---
1.3	DTON-3 24ft revise Obstn	Obstruction	7.50 m	47° 37' 37.6" N	122° 23' 12.0" W	---
1.4	DTON-4 Revise sewer	Obstruction	9.04 m	47° 37' 45.6" N	122° 23' 57.3" W	---
1.5	DTON-5 7ft Obstn	Obstruction	2.35 m	47° 38' 01.7" N	122° 24' 22.9" W	---

1 - Danger To Navigation

1.1) Profile/Beam - 1121/91 from h11605 / s1212_simrad / 2006-335 / 178_2139

DANGER TO NAVIGATION

Primary Feature for AWOIS Item #53451

Search Position: 47° 38' 24.5" N, 122° 25' 38.6" W
Historical Depth: [None]
Search Radius: 250
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 47° 38' 25.4" N, 122° 25' 35.6" W
Least Depth: 17.50 m (= 57.41 ft = 9.569 fm = 9 fm 3.41 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.726 m ; **TVU (TPEv)** ±0.382 m
Timestamp: 2006-335.21:43:59.367 (12/01/2006)
Survey Line: h11605 / s1212_simrad / 2006-335 / 178_2139
Profile/Beam: 1121/91
Charts Affected: 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS 53451: The wreck is in two pieces and the high point is at the northeast end of the eastmost section, approximately 70 meters from the center point of the charted symbol. This section is approximately 62 meters long is oriented toward 218.5 degrees true. The western section is approximately 60 meters long and is oriented toward 191 degrees true. Dive investigation determined least depth to be 17.17 meters/56.3 feet.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2006-335/178_2139	1121/91	0.00	000.0	Primary
h11605/s1212sss_100/2007-065/sonar_data070307193000	0001	5.88	292.1	Secondary (grouped)
h11605/s1212sss_100/2007-065/sonar_data070307193000	0002	16.49	036.9	Secondary (grouped)
h11605/s1212sss_200/2007-074/sonar_data070316180900	0003	27.99	039.9	Secondary (grouped)

h11605/s1212sss_200/2007-074/sonar_data070316180900	0004	51.91	059.6	Secondary (grouped)
AWOIS Items	AWOIS # 53451	67.85	065.5	Secondary (grouped)
h11605/s1212sss_100/2007-065/sonar_data070307185900	0001	87.92	100.3	Secondary (grouped)

Hydrographer Recommendations

Revise position charted wreck. Delete text PA. Chart least depth.

Cartographically-Rounded Depth (Affected Charts):

57ft (18449_1)

9 ½fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

9fm 3ft (18474_1, 18445_1)

17.5m (501_1, 50_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

- Attributes:**
- CATWRK - 2:dangerous wreck
 - CONVIS - 2:not visual conspicuous
 - OBJNAM - Wreck
 - QUASOU - 1:depth known
 - SORDAT - 20070320
 - SORIND - Us,Us,Nsurf,H11605
 - TECSOU - 3:found by multi-beam
 - VALSOU - 17.500 m
 - VERDAT - 12:Mean lower low water
 - WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. DTON-1 Delete AWOIS 53451 charted dangerous wreck, least depth 57 ft and text "Wk". Chart dangerous wreck, least depth 57 ft and text "Wk" at the survey position. Update AWOIS database.

1.2) Profile/Beam - 5465/7 from h11605 / s1212_simrad / 2007-068 / 005_1750

DANGER TO NAVIGATION

Survey Summary

Survey Position: 47° 37' 48.8" N, 122° 23' 56.4" W
Least Depth: 3.68 m (= 12.08 ft = 2.013 fm = 2 fm 0.08 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.448 m ; **TVU (TPEv)** ± 0.396 m
Timestamp: 2007-068.18:00:25.194 (03/09/2007)
Survey Line: h11605 / s1212_simrad / 2007-068 / 005_1750
Profile/Beam: 5465/7
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Offshore end of charted sewer line is 155 meters seaward of charted position.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-068/005_1750	5465/7	0.00	000.0	Primary
h11605/s1212sss_200/2007-074/sonar_data070316190300	0004	4.92	143.0	Secondary

Hydrographer Recommendations

Extend charted pipeline as surveyed; revise 12-foot contour

Cartographically-Rounded Depth (Affected Charts):

- 12ft (18450_1, 18449_1)
- 2fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
- 2fm 0ft (18474_1, 18445_1)
- 3.7m (501_1, 50_1)

S-57 Data

Geo object 1: Pipeline, submarine/on land (PIPSOL)
Attributes: CATPIP - 4:sewer

PRODCT - 12:iron ingots

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

STATUS - 1:permanent

Office Notes

Concur with clarification. DTON-2 Revise sewer and delete 12 ft sounding at terminus. Recommend investigation and charting of near shore location of sewer where H11605 data does not exist.

1.3) Profile/Beam - 382/114 from h11605 / s1212_simrad / 2007-086 / 021_2026

DANGER TO NAVIGATION

Survey Summary

Survey Position: 47° 37' 37.6" N, 122° 23' 12.0" W
Least Depth: 7.50 m (= 24.61 ft = 4.102 fm = 4 fm 0.61 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.500 m ; **TVU (TPEv)** ± 0.424 m
Timestamp: 2007-086.20:27:38.588 (03/27/2007)
Survey Line: h11605 / s1212_simrad / 2007-086 / 021_2026
Profile/Beam: 382/114
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Dive investigation of submerged obstruction located a rectangular, deteriorating metal container. Diver least depth of 7.5 meters marked in bathymetry by designated sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-086/021_2026	382/114	0.00	000.0	Primary
h11605/s1212sss_100/2007-065/sonar_data070307173100	0001	19.31	081.6	Secondary

Hydrographer Recommendations

Chart sounding on obstruction.

Cartographically-Rounded Depth (Affected Charts):

- 24ft (18450_1, 18449_1)
- 4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
- 4fm 0ft (18474_1, 18445_1)
- 7.5m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CONDTN - 2:ruined
NATCON - 7:metal
QUASOU - 1:depth known
SORDAT - 20070320
SORIND - Us,Us,Nsurf,H11605
TECSOU - 3:found by multi-beam
VALSOU - 7.502 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Shown on chart 18450 as dangerous obstruction, least depth 24 ft and text "Obstn".
Revise obstruction to the survey position with a least depth of 24 ft and text "Obstn".

1.4) Profile/Beam - 1216/115 from h11605 / s1212_simrad / 2007-064 / 169_2053

DANGER TO NAVIGATION

Survey Summary

Survey Position: 47° 37' 45.6" N, 122° 23' 57.3" W
Least Depth: 9.04 m (= 29.66 ft = 4.943 fm = 4 fm 5.66 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.509 m ; **TVU (TPEv)** ±0.447 m
Timestamp: 2007-064.20:57:22.371 (03/05/2007)
Survey Line: h11605 / s1212_simrad / 2007-064 / 169_2053
Profile/Beam: 1216/115
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Offshore end uncharted feature; appears to be submerged pipeine.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-064/169_2053	1216/115	0.00	000.0	Primary
h11605/s1212sss_100/2007-074/sonar_data070316192800	0005	7.26	232.5	Secondary

Hydrographer Recommendations

Chart new pipeline and designated sounding

Cartographically-Rounded Depth (Affected Charts):

29ft (18450_1, 18449_1)
 5fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
 4fm 5ft (18474_1, 18445_1)
 9.0m (501_1, 50_1)

S-57 Data

Geo object 1: Pipeline, submarine/on land (PIPSOL)

Attributes: CATPIP - 4:sewer
INFORM - DTON-4 Revise sewer
SORDAT - 20070320
SORIND - US,US,nsurf,H11605

Office Notes

Concur with clarification. DTON-4 Revise sewer and delete 29 ft sounding at terminus. Recommend investigation and charting of near shore location of sewer where H11605 data does not exist.

1.5) Profile/Beam - 4583/122 from h11605 / s1212_simrad / 2007-086 / 020_1929

DANGER TO NAVIGATION

Survey Summary

Survey Position: 47° 38' 01.7" N, 122° 24' 22.9" W
Least Depth: 2.35 m (= 7.70 ft = 1.283 fm = 1 fm 1.70 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.421 m ; **TVU (TPEv)** ±0.341 m
Timestamp: 2007-086.19:36:10.145 (03/27/2007)
Survey Line: h11605 / s1212_simrad / 2007-086 / 020_1929
Profile/Beam: 4583/122
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged feature with a least depth of 7.7 feet is located seaward of the 12-foot contour and rises 4 foot above surrounding depths

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-086/020_1929	4583/122	0.00	000.0	Primary
h11605/s1212sss_100/2007-074/sonar_data070316192800	0003	0.85	099.1	Secondary

Hydrographer Recommendations

Chart surveyed sounding.

Cartographically-Rounded Depth (Affected Charts):

- 7ft (18450_1, 18449_1)
- 1 ¼fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
- 1fm 1ft (18474_1, 18445_1)
- 2.3m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: INFORM - chart obstn
QUASOU - 6:least depth known
SORDAT - 20070320
SORIND - Us,Us,Nsurf, H11605
TECSOU - 3:found by multi-beam
VALSOU - 2.347 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Submitted as DTON-5. Delete charted 7 ft sounding. Chart dangerous obstruction, least depth 7 ft and text "Obstn".

APPENDIX II
FEATURE REPORT

OPR-S-N912-NRT3-06

Registry Number: H11605
State: Washington
Locality: Seattle
Sub-locality: Elliott Bay Off of Magnolia Bluff
Project Number: OPR-S-N912-NRT3-06
Survey Dates: 12/01/2006 - 06/11/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
18450	18th	02/01/2004	1:10,000 (18450_1)	USCG LNM: 01/29/2008 (03/04/2008) NGA NTM: 08/09/1997 (03/08/2008)
18449	18th	10/01/2003	1:25,000 (18449_1)	[L]NTM: ?
18474	8th	10/01/2003	1:40,000 (18474_1)	[L]NTM: ?
18445	31st	04/01/2006	1:80,000 (18445_1) 1:40,000 (18445_6)	[L]NTM: ?
18441	45th	04/01/2006	1:80,000 (18441_1)	[L]NTM: ?
18448	34th	07/01/2006	1:80,000 (18448_1)	[L]NTM: ?
18440	28th	12/01/2005	1:150,000 (18440_1)	[L]NTM: ?
18003	20th	11/01/2006	1:736,560 (18003_1)	[L]NTM: ?
18007	32nd	07/01/2005	1:1,200,000 (18007_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	Retain Pier Ruins	Shoal	5.01 m	47° 34' 41.3" N	122° 20' 34.1" W	---
1.2	Revise 3ft Obstrn	Obstruction	0.94 m	47° 37' 50.2" N	122° 23' 48.7" W	---
1.3	Retain dol	Shoal	2.90 m	47° 35' 18.0" N	122° 21' 06.9" W	---
1.4	Retain Dols	Dolphin	0.00 m	47° 34' 45.9" N	122° 20' 36.0" W	---

1.5	Delete disproved charted Dolphins	GP	0.00 m	47° 35' 24.1" N	122° 20' 34.9" W	---
1.6	Delete two dolphins	GP	0.00 m	47° 35' 24.4" N	122° 20' 58.9" W	---
1.7	Delete disproved subm dol	GP	0.00 m	47° 35' 17.6" N	122° 21' 06.4" W	---
1.8	Delete charted Dol.	GP	0.00 m	47° 35' 12.1" N	122° 21' 49.8" W	---
1.9	Delete snag	Obstruction	0.00 m	47° 37' 43.6" N	122° 23' 14.3" W	---
1.10	Delete pier/ruins	GP	0.00 m	47° 34' 14.3" N	122° 21' 07.4" W	---
1.11	Revise bridge	GP	0.00 m	47° 34' 16.9" N	122° 21' 15.9" W	---
1.12	delete log boom and dols	GP	0.00 m	47° 33' 24.8" N	122° 20' 31.6" W	---
1.13	Delete dol	GP	0.00 m	47° 33' 26.1" N	122° 20' 34.9" W	---
1.14	Revise shoreline	GP	0.00 m	47° 34' 53.0" N	122° 21' 29.9" W	---
1.15	Revise shoreline	GP	0.00 m	47° 35' 23.9" N	122° 20' 34.2" W	---
2.1	Delete disproved dol	GP	0.00 m	47° 37' 33.4" N	122° 22' 40.9" W	---
3.1	AWOIS 53453 revise west ruins	Shoal	1.56 m	47° 37' 33.1" N	122° 22' 34.7" W	53453
3.2	AWOIS 52502	Wreck	63.56 m	47° 35' 48.6" N	122° 21' 05.1" W	52502
3.3	AWOIS 52501 revise wreck	Wreck	53.31 m	47° 35' 16.1" N	122° 22' 17.8" W	52501
3.4	AWOIS 52568 Subm pile	AWOIS	[no data]	[no data]	[no data]	---
3.5	AWOIS 52570 Retain dols	AWOIS	[no data]	[no data]	[no data]	---
3.6	AWOIS 52572 delete 2 dols	AWOIS	[no data]	[no data]	[no data]	---
3.7	AWOIS 52574 Delete Subm Pile	AWOIS	[no data]	[no data]	[no data]	---
3.8	AWOIS 52575 Retain ruins	AWOIS	[no data]	[no data]	[no data]	---
3.9	AWOIS 53454 Retain Subm Pile	AWOIS	[no data]	[no data]	[no data]	---
3.10	AWOIS 53455 Delete Subm Pile	AWOIS	[no data]	[no data]	[no data]	---
3.11	AWOIS 53456 Delete Pier Ruins	AWOIS	[no data]	[no data]	[no data]	---
3.12	AWOIS 53457 delete 3 subm dols	AWOIS	[no data]	[no data]	[no data]	---
3.13	AWOIS 53458 Delete Subm Piles	AWOIS	[no data]	[no data]	[no data]	---
3.14	AWOIS 53459 revise charted Subm Dols	AWOIS	[no data]	[no data]	[no data]	---
3.15	AWOIS 53461 Sounding	AWOIS	[no data]	[no data]	[no data]	---
3.16	AWOIS 53462 retain pier ruins	AWOIS	[no data]	[no data]	[no data]	---
3.17	AWOIS 53460 retain pier ruins	AWOIS	[no data]	[no data]	[no data]	---
3.18	AWOIS 53452 revise west ruins	Shoal	2.04 m	47° 37' 33.2" N	122° 22' 39.0" W	53452
3.19	AWOIS 52571 revise South	Obstruction	9.14 m	47° 35' 11.8" N	122° 21' 46.1" W	52571
3.20	AWOIS 52571 revise North	Obstruction	10.97 m	47° 35' 12.4" N	122° 21' 46.1" W	52571
3.21	AWOIS 52569 Subm Dolphin	Obstruction	5.22 m	47° 35' 19.2" N	122° 21' 03.0" W	52569
4.1	DTON-1 AWOIS 53451 revise wreck	Wreck	17.50 m	47° 38' 25.4" N	122° 25' 35.6" W	53451
4.2	DTON-2 Revise sewer	Shoal	3.68 m	47° 37' 48.8" N	122° 23' 56.4" W	---
4.3	DTON-3 24ft revise Obstn	Obstruction	7.50 m	47° 37' 37.6" N	122° 23' 12.0" W	---

4.4	DTON-4 Revise sewer	Obstruction	9.04 m	47° 37' 45.6" N	122° 23' 57.3" W	---
4.5	DTON-5 7ft Obstn	Obstruction	2.35 m	47° 38' 01.7" N	122° 24' 22.9" W	---

1 - Charted Features

1.1) Profile/Beam - 164/98 from h11605 / s1212_simrad / 2007-102 / 022_1628

Survey Summary

Survey Position: 47° 34' 41.3" N, 122° 20' 34.1" W
Least Depth: 5.01 m (= 16.43 ft = 2.738 fm = 2 fm 4.43 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.419 m ; **TVU (TPEv)** ± 0.232 m
Timestamp: 2007-102.16:28:52.625 (04/12/2007)
Survey Line: h11605 / s1212_simrad / 2007-102 / 022_1628
Profile/Beam: 164/98
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Feature plots over charted submerged structure

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-102/022_1628	164/98	0.00	000.0	Primary
h11605/s1212sss_200/2007-086/sonar_data070327160100	0004	4.54	032.9	Secondary
h11605/s1212sss_100/2007-086/sonar_data070327161200	0001	7.43	142.0	Secondary

Hydrographer Recommendations

Retain charted submerged structure; chart soundings from survey

Cartographically-Rounded Depth (Affected Charts):

- 16ft (18450_1, 18449_1)
- 2 ¾fm (18448_1, 18440_1, 18003_1, 18007_1, 530_1)
- 2fm 4ft (18445_6, 18474_1, 18445_1)
- 5.0m (501_1, 50_1)

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)

CONDTN - 2:ruined

INFORM - Confirmed by survey H11605, Retain as charted

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

Office Notes

Concur with clarification. Pier Ruins confirmed by survey H11605. Retain as charted with updated S-57 SORDAT and SORIND feature attribution.

1.2) Profile/Beam - 1972/19 from h11605 / s1212_simrad / 2007-088 / 004_1846

Survey Summary

Survey Position: 47° 37' 50.2" N, 122° 23' 48.7" W
Least Depth: 0.94 m (= 3.08 ft = 0.514 fm = 0 fm 3.08 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.381 m ; **TVU (TPEv)** ±0.198 m
Timestamp: 2007-088.18:51:07.961 (03/29/2007)
Survey Line: h11605 / s1212_simrad / 2007-088 / 004_1846
Profile/Beam: 1972/19
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Found charted dangerous obstruction, least depth 3 ft.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-088/004_1846	1972/19	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3ft (18450_1, 18449_1)
 0 ½fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 3ft (18474_1, 18445_1)
 .9m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: INFORM - revise obstn
 QUASOU - 6:least depth known
 SORDAT - 20070320

SORIND - US,US,nsurf,H11605

TECSOU - 3:found by multi-beam

VALSOU - 0.940 m

WATLEV - 3:always under water/submerged

Office Notes

Shown on chart 18450 as dangerous obstruction, least depth 3 ft and text "Obstn". Revise obstruction to the survey position with a least depth of 3 ft and text "Obstn".

1.3) Profile/Beam - 1103/4 from h11605 / s1212_simrad / 2007-102 / 019_1642

Survey Summary

Survey Position: 47° 35' 18.0" N, 122° 21' 06.9" W
Least Depth: 2.90 m (= 9.53 ft = 1.588 fm = 1 fm 3.53 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.440 m ; **TVU (TPEv)** ± 0.409 m
Timestamp: 2007-102.16:45:06.731 (04/12/2007)
Survey Line: h11605 / s1212_simrad / 2007-102 / 019_1642
Profile/Beam: 1103/4
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Shown in MB and SSS.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-102/019_1642	1103/4	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

9ft (18450_1, 18449_1)
 1 ½fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 1fm 3ft (18445_6, 18474_1, 18445_1)
 2.9m (501_1, 50_1)

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin
 INFORM - Retain charted dolphin.
 SORDAT - 20070320

SORIND - US,US,nsurf,H11605

Office Notes

Retain charted dolphin.

1.4) GP No. - 1 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 34' 45.9" N, 122° 20' 36.0" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-148.13:50:03 (05/28/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 1
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Office processing determined that the charted Dols were not disproved.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	1	0.00	000.0	Primary

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin
 INFORM - Delete disproved Dols

Office Notes

Retain charted dolphins and text "dols".

1.5) GP No. - 4 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 35' 24.1" N, 122° 20' 34.9" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-148.15:57:25 (05/28/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 4
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Office processing determined that the charted dolphins do not exist.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	4	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin
 INFORM - Delete disproved charted Dolphins.
 SORDAT - 20070320
 SORIND - US,US,nsurf,H11605

Office Notes

Delete two disproved charted Dolphins.

1.6) GP No. - 5 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 35' 24.4" N, 122° 20' 58.9" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-152.17:12:58 (06/01/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 5
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	5	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin
 INFORM - Delete two disproved dolphins.
 SORDAT - 20070320
 SORIND - US,US,nsurf,H11605

Office Notes

Office processing determined that the two charted dolphins approximately 30 meters east of the charted pier do not exist. Delete two charted dolphins. Chart survey soundings in common area.

1.7) GP No. - 6 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 35' 17.6" N, 122° 21' 06.4" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-153.09:10:16 (06/02/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 6
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Office processing determined the feature does not exist.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	6	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin
 INFORM - Delete dol
 SORDAT - 20070320
 SORIND - US,US,nsurf,H11605

Office Notes

Delete disproved charted Submerged dolphin.

1.8) GP No. - 7 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 35' 12.1" N, 122° 21' 49.8" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-153.10:19:50 (06/02/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 7
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Office processing determined the feature does not exist.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	7	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin

Office Notes

Delete disproved charted Dolphin. Chart survey soundings in the common area.

1.9) GP No. - 9 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 37' 43.6" N, 122° 23' 14.3" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-160.14:22:10 (06/09/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 9
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Office processing determined that the charted Dols do no exist.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	9	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
 INFORM - Delete snag
 SORDAT - 20070320
 SORIND - US,US,survey,H11605

VALSOU - 0.00 m

Office Notes

Delete disproved charted dangerous obstruction "Snag". Chart survey soundings in the common area.

1.10) GP No. - 10 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 34' 14.3" N, 122° 21' 07.4" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-161.12:01:24 (06/10/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 10
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	10	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)
 INFORM - delet pier
 SORDAT - 20070320
 SORIND - US,US,survy,H11605

Office Notes

Delete charted shoreline construction, pier/ruins feature. The feature was not observed by the field unit as a bearing feature or existing in the bathymetry. Additionally, during office processing unregistered aerial photography was viewed through maps.live.com which also did not contain the feature.

1.11) GP No. - 11 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 34' 16.9" N, 122° 21' 15.9" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-161.12:06:30 (06/10/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 11
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	11	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: INFORM - revise Bridge
 SORDAT - 20070320
 SORIND - US,US,survey,H11605

Office Notes

The charted Swing Bridge is represented incorrectly. Orthoimagery review determined this bridge to be a fixed bridge. Recommend reviewing source data and revising as necessary for both the raster and ENC.

1.12) GP No. - 12 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 33' 24.8" N, 122° 20' 31.6" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-161.12:27:33 (06/10/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 12
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	12	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin
 INFORM - delete boom / dols
 SORDAT - 20070320
 SORIND - US,US,survy,H11605

Office Notes

Delete charted Log Boom and associated two dolphins feature. The feature was not observed by the field unit as a bearing feature or existing in the bathymetry. Additionally, during office processing unregistered aerial photography was viewed through maps.live.com which also did not contain the feature. Recommend review of RSD shoreline. See also Evaluation Report.

1.13) GP No. - 13 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 33' 26.1" N, 122° 20' 34.9" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-161.12:32:01 (06/10/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 13
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	13	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

[None]

Office Notes

Delete charted dolphin. The feature was not observed by the field unit as a bearing feature or existing in the bathymetry. Additionally, during office processing unregistered aerial photography was viewed through

maps.live.com which also did not contain the feature. Recommend review of RSD shoreline. See also Evaluation Report.

1.14) GP No. - 17 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 34' 53.0" N, 122° 21' 29.9" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-161.16:56:52 (06/10/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 17
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	17	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18445_6, 18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)

Office Notes

Charted piers and associated shoreline does not exist as charted based on the best available orthoimagery from SEP2005. Additionally, charted pier is inconsistent with survey data. Recommend review and revision of shoreline by RSD shoreline data. Area identified by bluenote in the CS H-Cell.

1.15) GP No. - 18 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 35' 23.9" N, 122° 20' 34.2" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-162.10:49:58 (06/11/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 18
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	18	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)
 INFORM - revise shoreline

Office Notes

Charted piers and associated shoreline does not exist as charted based on the best available orthoimagery from SEP2005. Additionally, charted pier is inconsistent with survey data. Recommend review and revision of shoreline by RSD shoreline data. Area identified by bluenote in the CS H-Cell.

2 - New Features

2.1) GP No. - 8 from ChartGPs - Digitized

Survey Summary

Survey Position: 47° 37' 33.4" N, 122° 22' 40.9" W
Least Depth: 0.00 m (= 0.00 ft = 0.000 fm = 0 fm 0.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-160.09:29:50 (06/09/2009)
GP Dataset: ChartGPs - Digitized
GP No.: 8
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Office processing determined that the charted Dols do no exist.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	8	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (18450_1, 18449_1)
 0fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
 0fm 0ft (18474_1, 18445_1)
 .0m (501_1, 50_1)

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin
 INFORM - Delete disproved dol.
 SORDAT - 20070320
 SORIND - US,US,survey,H11605

Office Notes

Delete disproved charted Dolphin. Chart survey soundings in the common area.

3 - AWOIS Features

3.1) Profile/Beam - 207/70 from h11605 / s1212_simrad / 2007-088 / 006_2009

Primary Feature for AWOIS Item #53453

Search Position: 47° 37' 32.7" N, 122° 22' 35.3" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 47° 37' 33.1" N, 122° 22' 34.7" W
Least Depth: 1.56 m (= 5.12 ft = 0.854 fm = 0 fm 5.12 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.384 m ; **TVU (TPEv)** ± 0.190 m
Timestamp: 2007-088.20:09:38.357 (03/29/2007)
Survey Line: h11605 / s1212_simrad / 2007-088 / 006_2009
Profile/Beam: 207/70
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

See AWOIS 54453. Shoal depth over charted pier ruins

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-088/006_2009	207/70	0.00	000.0	Primary
AWOIS Items	AWOIS # 53453	17.18	043.3	Secondary

Hydrographer Recommendations

Revise position charted ruins; chart depths from current survey

Cartographically-Rounded Depth (Affected Charts):

5ft (18450_1, 18449_1)

0 ¾fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

0fm 5ft (18474_1, 18445_1)

1.6m (501_1, 50_1)

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)

Attributes: CATSLC - 4:pier (jetty)

CONDTN - 2:ruined

INFORM - revise ruins

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

Office Notes

Concur with clarification. AWOIS Item 53453, revise pier ruins to the survey position. Update AWOIS database.

3.2) Profile/Beam - 130/30 from h11605 / s1212_simrad / 2007-102 / 033_1538

Primary Feature for AWOIS Item #52502

Search Position: 47° 35' 48.6" N, 122° 21' 05.5" W
Historical Depth: 63.40 m
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 47° 35' 48.6" N, 122° 21' 05.1" W
Least Depth: 63.56 m (= 208.53 ft = 34.755 fm = 34 fm 4.53 ft)
TPU ($\pm 1.96\sigma$): **THU (TPE_h)** ± 3.698 m ; **TVU (TPE_v)** ± 1.408 m
Timestamp: 2007-102.15:38:42.796 (04/12/2007)
Survey Line: h11605 / s1212_simrad / 2007-102 / 033_1538
Profile/Beam: 130/30
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS 52502 History: H-10798/98--OPR-N903-RA; SWBM FOUND AN UNCHARTED RISING 8M FF THE BOTTOM WITH A LEAST DEPTH OF 208 FT IN 47 35 48.6N, 122 21 05.5W. ENTERED 8/99 MCR
 Found as chartedm

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-102/033_1538	130/30	0.00	000.0	Primary
AWOIS Items	AWOIS # 52502	8.27	094.4	Secondary
h11605/s1212sss_100/2007-085/sonar_data070326165900	0001	40.19	100.8	Secondary (grouped)

Hydrographer Recommendations

OK as charted.

Cartographically-Rounded Depth (Affected Charts):

208ft (18450_1, 18449_1)

35fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)

35fm (18474_1, 18445_1)

64m (501_1, 50_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
OBJNAM - AWOIS 52502
QUASOU - 6:least depth known
SORDAT - 20070320
SORIND - US,US,nsurf,H11605
TECSOU - 3:found by multi-beam
VALSOU - 63.560 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Delete AWOIS Item 52502 charted non-dangerous submerged wreck, sounding "208" ft and text "Wk". Chart non-dangerous submerged wreck, sounding "208" ft and text "Wk" at the survey position. Update AWOIS database.

3.3) Profile/Beam - 124/67 from h11605 / s1212_simrad / 2007-102 / 070_1829

Primary Feature for AWOIS Item #52501

Search Position: 47° 35' 16.1" N, 122° 22' 17.6" W
Historical Depth: 50.90 m
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 47° 35' 16.1" N, 122° 22' 17.8" W
Least Depth: 53.31 m (= 174.89 ft = 29.149 fm = 29 fm 0.89 ft)
TPU (±1.96σ): **THU (TPEh)** ±3.018 m ; **TVU (TPEv)** ±0.359 m
Timestamp: 2007-102.18:29:32.644 (04/12/2007)
Survey Line: h11605 / s1212_simrad / 2007-102 / 070_1829
Profile/Beam: 124/67
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

History: H-10798/98--OPR-N903-RA; SWBM FOUND AN UNCHARTED RISING 9 M OFF THE BOTTOM, LEAST DEPTH WAS 167 FT IN 47 35 16.1N, 122 22 17.6W. UPDATED 8/99 MCR

Charted Depth of wreck (140 feet) not confirmed; Least depth 53.3 meters/175 feet

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-102/070_1829	124/67	0.00	000.0	Primary
AWOIS Items	AWOIS # 52501	4.54	272.4	Secondary

Hydrographer Recommendations

Retain charted wreck; revise least depth

Cartographically-Rounded Depth (Affected Charts):

175ft (18450_1, 18449_1)

29fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)

29fm (18445_6, 18474_1, 18445_1)

53m (501_1, 50_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
QUASOU - 1:depth known
SORDAT - 20070320
SORIND - Us,Us,Nsurf,H11605
TECSOU - 3:found by multi-beam
VALSOU - 53.307 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Delete AWOIS 52501 charted non-dangerous wreck, least depth 140 ft and text "Wk". Chart non-dangerous wreck, least depth 175 ft and text "Wk" at the survey position. Update AWOIS database.

3.4) AWOIS #52568 - AWOIS 52568 Subm pile

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 36' 04.2" N, 122° 20' 23.2" W
Historical Depth: [None]
Search Radius: 30
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

HISTORY: CL678/82--PMC, CHART CORRECTION LETTER, 1982; REVISION TO SHORELINE INDICATED ON CHART SECTION. PILES INDICATED IN THE VICINITY OF PILE NOW CHARTED IN 47-36-04.16 N 122-20-23.23 W, NAD 83. ENTERED 2/00 MCR FOO468/2000--OPR-N411-NRB: ITEM NOT INVESTIGATED. RETAIN AS CHARTED. UPDATED 8/03 MCR

Findings: The charted submerged pile is on the SW corner of a built-up area - probably the site of a dismantled pier. A submerged pile was observed on the sonagram on top of the built-up area but the position is distorted due to changing course of the vessel. The pile itself was not distinguishable on the steep slope in the built-up area with SWMB. (Seaward of the AWOIS item are two rows of submerged moorings for the floating ferry fender structure.)

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 52568	0.00	000.0	Primary

Hydrographer Recommendations

Retain charted feature; chart soundings from current survey.

S-57 Data

Geo object 1: Pile (PILPNT)

Office Notes

Do not concur. Office processing determined data was sufficient to disprove submerged pile. Delete charted AWOIS Item 52568 dangerous submerged pile and text "subm pile". Update AWOIS database.

3.5) AWOIS #52570 - AWOIS 52570 Retain dols

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 34' 59.6" N, 122° 21' 41.2" W
Historical Depth: [None]
Search Radius: 20
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

HISTORY: CL1541/74--USPS REPORT, 1974; PILE REPORTED CL530/85--USPS REPORT, 1985; PILE NOT SEEN. FOO468/2000--OPR-N411-NRB; CONCRETE DOLPHIN WAS LOCATED IN THE POSITION OF ITEM AT 47 34 59.6, 122 21 41.23. REMOVE SUBMERGED PILE AND ADD DOL TO THE CHART. UPDATED 8/03 MCR

Findings: The dol at the AWOIS position is visible and this AWOIS item should be removed from the AWOIS data base.

The charted submerged dols charted south of the AWOIS item were not evident on 200% side scan coverage - a charted pile is visible at that location as well.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 52570	0.00	000.0	Primary

Hydrographer Recommendations

Retain charted dols. Delete text "Subm dols"

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin

INFORM - retain

Office Notes

Concur with clarification. Retain AWOIS 52570 charted dol and text "dols". Additionally retain submerged dols and text "Subm dols" charted approximately 50 meters due south.

3.6) AWOIS #52572 - AWOIS 52572 delete 2 dols

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 35' 10.2" N, 122° 21' 58.9" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

HISTORY: H-9167/70--PILES AND DOLPHINS LOCATED BY SURVEY. POSITION OF SEAWARD MOST PILE TO THE EAST IS 47-35-10.17 N 122-21-58.93 W. ****SORCE UNKNOWN: A ROW OF PILES FROM POS. 47-35-10.81 N 122-22-02.02 W TO 47-35-06.94N 122-22-01.29W APPEARS ON THE FIRST EDITION OF CHART 18450, JUNE 1965. H10749/99-- RA-5-1-98; HYDOGRAPHIC COVERAGE OF THE AREA, HOWEVER, THE PILES AND DOLS WERE NOT ADDRESSED AND HAVE BEEN REVISED TO SUBMERGED EXCEPT FOR THE PILE IN POS 47-35-09.82N 122-22-04.3W. FOO468/2000--OPR-N411-NRB; VISIBLE PILES WERE LOCATED AND SHOWN ON SURVEY. UPDATED 8/03 MCR.

Findings: Submerged piles are not charted at the AWOIS position; however, the two charted visible dols are gone. They were not seen on 200% side scan coverage, nor were they located with full SWMB coverage.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 52572	0.00	000.0	Primary

Hydrographer Recommendations

delete dols

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)

Attributes: CATMOR - 1:dolphin

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

Office Notes

Concur with clarification. Delete AWOIS Item #53458 two charted charted dols. Update AWOIS database.

3.7) AWOIS #52574 - AWOIS 52574 Delete Subm Pile

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 35' 21.9" N, 122° 22' 41.0" W
Historical Depth: [None]
Search Radius: 20
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

HISTORY: H-9167/70-- PRIVATELY MAINTAINED AID SHOWN. CHARTED IN POSITION 47-35-21.85 N 122-22-41.03 W H10749/99-- RA-5-1-98; HYDOGRAHIC COVERAGE OF THE AREA, HOWEVER, THE FEATURE WAS NOT ADDRESSED AND HAS BEEN REVISED TO SUBMERGED. FOO468/2000--OPR-N411-NRB; NOT INVESTIGATED

Findings: A private aid was not visible nor was a significant obstruction observed on the side scan sonargram or located with SWMB. The submerged pile is charted in 86 feet of water and the shore drops off steeply. The inshore area is strewn with ruins and other debris and marked by buoys indicating a recreational dive area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 52574	0.00	000.0	Primary

Hydrographer Recommendations

Delete submerged pile. Chart soundings from current survey.

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
 INFORM - Delete disproved subm pile

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Delete AWOIS Item #52574 charted Submerged Pile. Update AWOIS database.

3.8) AWOIS #52575 - AWOIS 52575 Retain ruins

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 35' 22.3" N, 122° 22' 43.1" W
Historical Depth: [None]
Search Radius: 20
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

HISTORY H-9167/70-- LOG BOOM FEATURE SHOWN, SEAWARD EXTENT OF FEATURE IS IN POS.47-35-22.27 N 122-22-43.07 NAD 83. W. DASHED LINES SHOWN THE CHART ARE LOGS TIED TO DOLPHINS. FOO468/2000--OPR-N411-NRB; NOT INVESTIGATED

Findings: Log Boom Area and charted piles are gone. Area is littered with ruins and other debris and is used by recreational divers. Buoys mark the dive area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 52575	0.00	000.0	Primary

Hydrographer Recommendations

Retain submerged ruins. Delete visible pile and 'Log Boom' text.

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 6:foul area
 CONDTN - 2:ruined
 INFORM - Retain ruins

NATCON - 6:wooden

QUASOU - 1:depth known

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

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

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Geo object 2: Pile (PILPNT)

Office Notes

Concur with clarification. Retain AWOIS Item 52575, pier ruins as charted. Delete two visible piles and text "Log boom". Update AWOIS database.

3.9) AWOIS #53454 - AWOIS 53454 Retain Subm Pile

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 37' 12.7" N, 122° 21' 48.3" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

H5846/1935-- SUBMERGED PILING WAS ADDEED TO CHART THROUGH HYDRO SURVEY 5846. THE SUBMERGED PILING WAS FROM AN OLD WHARF.(ENTERED CEH 9/06)

Findings: The submerged piling is charted in less than 6 feet of water and was not observed on 200\$ side scan coverage nor was it visible at any time over the course of this survey. The position was not accessible for SWMB coverage.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53454	0.00	000.0	Primary

Hydrographer Recommendations

Delete charted submerged piling,

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
 INFORM - retain
 SORDAT - 20070320

SORIND - US,US,nsurf,H11605

TECSOU - 3:found by multi-beam

Office Notes

Do not concur. Office processing determined the feature was not disproved. Retain AWOIS Item #53454 charted Submerged Pile. Update AWOIS database.

3.10) AWOIS #53455 - AWOIS 53455 Delete Subm File

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 37' 06.3" N, 122° 21' 41.7" W
Historical Depth: [None]
Search Radius: 40
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

H5846/1935-- SUBMERGED PILING WAS ADDEED TO CHART THROUGH HYDRO SURVEY 5846. THE SUBMERGED PILING WAS FROM AN OLD WHARF. (ENTERED CEH 9/06)

Findings: 200% side scan coverage was acquired along with development SWMB over the charted pipelines bracketing the AWOIS item. The feature was not located.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53455	0.00	000.0	Primary

Hydrographer Recommendations

Delete Subm File; Retain pipelines; chart soundings from current survey.

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
 INFORM - delete
 SORDAT - 20070320
 SORIND - US,US,nsurf,H11605

Office Notes

Concur with clarification. Delete AWOIS Item #53455 charted Submerged Pile. Update AWOIS database.
Retain sewers as charted.

3.11) AWOIS #53456 - AWOIS 53456 Delete Pier Ruins

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 35' 03.4" N, 122° 20' 35.5" W
Historical Depth: [None]
Search Radius: 50
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

L893/80-- FILLED IN AREA BETWEEN PIERS. THE CHARTED RUINS COULD BE REMAINS OF PIER 31. (ENTERED CEH 9/06)

Findings: Charted submerged ruins were not found with 200% SSS investigation or with SWMB coverage.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53456	0.00	000.0	Primary

Hydrographer Recommendations

Delete charted ruins and text "Subm ruins." Chart surveyed soundings

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)
 CONDTN - 2:ruined
 INFORM - Delete disproved Pier Ruins.

Office Notes

Concur with clarification. Delete AWOIS 53456 charted pier ruins and text "Subm ruins". Update AWOIS database.

3.12) AWOIS #53457 - AWOIS 53457 delete 3 subm dols

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 34' 20.8" N, 122° 20' 40.5" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

History: H5845/35-- THE HYDRO SURVEY ADDED THREE PILES TO THE CHART AT THE CHARTED POSITION 47/34/20.81 - 122/20/40.55, 47/35/19.89 - 122/20/40.98 AND 47/34/19.30 - 122/20/41.16. T12519-- 1963-64; TOPO REVISED THE THREE ABOVE PILES TO SUBMERGED PILES. ALSO, THIS TOPO ADDED ANOTHER SUBMERGED PILE AT 47/34/18.70 - 122/20/41.11. H9167/70-- THIS HYDRO SURVEY ADDED ANOTHER SUBMERGED PILE IN THE AREA AT 47/34/18.92 - 122/20/41.24. (ENTERED CEH 9/06)

Findings: SSS coverage was not acquired; however, no submerged dols were found during SWMB investigation over the AWOIS location.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53457	0.00	000.0	Primary

Hydrographer Recommendations

Delete pile symbol and "Subm dols" text, chart soundings from current survey.

S-57 Data

Geo object 1: Mooring/warping facility (MORFAC)
Attributes: CATMOR - 1:dolphin

INFORM - delete

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

Geo object 2: Pile (PILPNT)

Office Notes

Concur with clarification, Delete AWOIS Item 53457 three charted submerged dols. Update AWOIS database.

3.13) AWOIS #53458 - AWOIS 53458 Delete Subm Piles

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 35' 22.4" N, 122° 20' 35.0" W
Historical Depth: [None]
Search Radius: 20
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

H10798-- HYDRO SURVEY ADDED SUBMERGED PILES IN AREA OF 47/35/22.40 - 122-20-34.97. (ENTERED CEH 9/06)

Findings: A built-up area was found in the vicinity of the charted submerged piles; however, submerged obstructions were not found with 200% SSS and SWMB coverage

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53458	0.00	000.0	Primary

Hydrographer Recommendations

Delete submerged pile, chart soundings from present survey.

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
 INFORM - Delete charted Submerged Piles and adjacent Pier Ruins.
 QUASOU - 2:depth unknown
 SORDAT - 20070320

SORIND - US,US,nsurf,H11605

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Delete AWOIS Item #53458 charted Submerged Piles. Additionally, delete charted adjacent Pier Ruins located directly to the south southwest. Update AWOIS database.

3.14) AWOIS #53459 - AWOIS 53459 revise charted Subm Dols

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 35' 25.4" N, 122° 20' 48.8" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

POSSIBLE SOURCE WAS 304/89-- ADDED 37 DOLS IN THE AREA. H10798-- REVISED VISIBLE DOLPHINES TO SUBMERGED DOLS AT 47/35/25.38 - 122/20/48.80, 47/35/24.69 - 122/20/50.94, 47/35/23.61 - 122/20/53.12 AND 47/35/22.49 - 122/20/55.95.

No evidence of submerged dols was found with 200% SSS or object detection SWMB coverage. However, visible dols are located along shore and at the AWOIS position.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53459	0.00	000.0	Primary
h11605/s1212sss_200/2007-085/sonar_data070326173200	0011	0.96	070.9	Secondary
h11605/s1212sss_200/2007-085/sonar_data070326173200	0010	34.78	256.0	Secondary

Hydrographer Recommendations

Delete Text Subm Dols; Retain charted visible dols.

S-57 Data

[None]

Office Notes

Concur with clarification. AWOIS Item #53459, Delete four charted Submerged Dolphins and text "Subm Dols". Two of the supposedly submerged dolphins were found by the survey to exist as functioning dolphins at the charted position. Chart two Dolphins at positions of Latitude 47-35-25.377 N, Longitude 122-20-48.720 W and Latitude 47-35-23.615 N, Longitude 122-20-53.115 W. Update AWOIS database.

3.15) AWOIS #53461 - AWOIS 53461 Sounding

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 34' 46.7" N, 122° 20' 37.9" W
Historical Depth: 5.49 m
Search Radius: 75
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

H11025-- ADDED A 18 FOOT SOUNDING AT THE CHARTED POSITION ON CHART 18449 AT 47/34/46.69 - 122/20/37.89. CHART 18450, WHICH IS THE LARGER SCALE CHART, DOES NOT HAVE THE 18 FOOT SOUNDING AND THE 18 FT AND 30 FT DEPTH CURVES ARE MORE INSHORE COMPARED TO CHART 18449.

Nothing found with 200% side scan coverage or SWMB.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53461	0.00	000.0	Primary

Hydrographer Recommendations

Chart Soundings from Current Survey

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: INFORM - no action

Office Notes

Concur with clarification. AWOIS Item #53461 is disproved and not shown on the charts. No charting action is required. Update AWOIS database.

3.16) AWOIS #53462 - AWOIS 53462 retain pier ruins

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 35' 40.9" N, 122° 22' 58.8" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

H-5844- HYDRO SURVEY ADDED ROWS OF PILING AT 47/35/40.86 - 122/22/58.83, 47/35/40.95 - 122/23/00.37 AND 47/35/46.11 - 122/23/13.87. ALSO ADDED A SUBM PILING AT 47/35/36.97 - 122/22/55.49. (ENTERED CEH 9/2006)

Findings: 200% side scan and SWMB coverage was acquired. The ruins are charted on a very steep slope. The near-shore ruins were not visible and none of the charted feature was evident on the sonargram or found with SWMB.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53462	0.00	000.0	Primary

Hydrographer Recommendations

Delete charted ruins. Chart soundings from current survey.

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)
 CONDTN - 2:ruined

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

Office Notes

Do not concur. Office processing determined the feature was not disproved. Retain AWOIS Item #53462 charted pier ruins. Update AWOIS database.

3.17) AWOIS #53460 - AWOIS 53460 retain pier ruins

No Primary Survey Feature for this AWOIS Item

Search Position: 47° 35' 29.0" N, 122° 22' 53.6" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

H9167-- ADDED PIERS IN RUINS AT 47/35/32.39 - 122/22/52.57 AND 47/35/28.98 - 122/22/53.57. ALSO ADDED SUBMERGED PILINGS AT 47/35/36.09 - 122/22/55.08 AND 47/35/35.93 - 122/22/55.58. (ENTERED CEH 9/06)

Findings: Numerous visible piles in this location - positions submitted to MCD with F00523.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS Items	AWOIS # 53460	0.00	000.0	Primary

Hydrographer Recommendations

Retain charted ruins

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)
Attributes: CATSLC - 4:pier (jetty)
 CONDTN - 2:ruined
 SORDAT - 20070320
 SORIND - US,US,nsurf,H11605

Office Notes

Concur with clarification. Retain AWOIS Item #53460 charted pier ruins. Update AWOIS database.

3.18) Profile/Beam - 288/112 from h11605 / s1212_simrad / 2007-088 / 009_2018

Primary Feature for AWOIS Item #53452

Search Position: 47° 37' 32.8" N, 122° 22' 38.9" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:
 [unknown]

Survey Summary

Survey Position: 47° 37' 33.2" N, 122° 22' 39.0" W
Least Depth: 2.04 m (= 6.68 ft = 1.114 fm = 1 fm 0.68 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.394 m ; **TVU (TPEv)** ±0.230 m
Timestamp: 2007-088.20:19:55.122 (03/29/2007)
Survey Line: h11605 / s1212_simrad / 2007-088 / 009_2018
Profile/Beam: 288/112
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

The area of submerged ruins is slightly West of the charted ruins and although no distinct ruins were observed on the sonagram, sediment has accreted in the vicinity.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-088/009_2018	288/112	0.00	000.0	Primary
AWOIS Items	AWOIS # 53452	13.03	350.8	Secondary
h11605/s1212sss_200/2007-086/sonar_data070327171200	0006	24.75	170.9	Secondary

Hydrographer Recommendations

Revise charted submerged ruins and contours as surveyed. Chart offshore least depth as surveyed.

Cartographically-Rounded Depth (Affected Charts):

6ft (18450_1, 18449_1)

1fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

1fm 0ft (18474_1, 18445_1)

2.0m (501_1, 50_1)

S-57 Data

Geo object 1: Shoreline Construction (SLCONS)

Attributes: CATSLC - 4:pier (jetty)

CONDTN - 2:ruined

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

Office Notes

Concur with clarification. AWOIS Item 53452, revise pier ruins to the survey position. Update AWOIS database.

3.19) Profile/Beam - 1378/110 from h11605 / s1212_simrad / 2007-085 / 016_1915

Primary Feature for AWOIS Item #52571

Search Position: 47° 35' 12.5" N, 122° 21' 46.9" W
Historical Depth: [None]
Search Radius: 0
Search Technique: VS,S2,ES,SD,MB
Technique Notes: SEARCH 30M ABOUT THE POSITIONS LISTED IN HISTORY (BELOW)

History Notes:

HISTORY ■ H-9167/70--DOLPHINS SHOWN AND CHARTED IN NAD 83 POSTIONS ■ 47-35-10.7 N 122-21-47.44 W ■ 47-35-11.41 N 122-21-46.68 W ■ 47-35-12.55 N 122-21-46.86 W ■ ****SOURCE UNKNOWN--PILE CHARTED IN 47-35-12.55 N 122-21-46.86 W ■ H10749/99-- RA-5-1-98; HYDOGRAPHIC COVERAGE OF THE AREA, HOWEVER, THE FEATURE WAS NOT ADDRESSED AND HAS BEEN REVISED TO SUBMERGED. ■ FOO468/2000--OPR-N411-NRB; TWO OBSTRUCTIONS WERE LOCATED IN THE SEARCH AREA. AN OBSTRUCTION WITH A LEAST DEPTH OF 28 FT. WAS LOCATED IN POS. 47 35 11.67, 122 21 46.15 AND A PRESENTLY CHARTED OBSTRUCTION WITH A LEAST DEPTH ALSO OF 28 FT. UPDATED 8/03 MCR

Survey Summary

Survey Position: 47° 35' 11.8" N, 122° 21' 46.1" W
Least Depth: 9.14 m (= 30.00 ft = 5.001 fm = 5 fm 0.00 ft)
TPU (±1.96σ): THU (TPEh) ±1.529 m ; TVU (TPEv) ±0.423 m
Timestamp: 2007-085.19:20:00.154 (03/26/2007)
Survey Line: h11605 / s1212_simrad / 2007-085 / 016_1915
Profile/Beam: 1378/110
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS 52571 - Least depth on southmost of two charted submerged obstructions.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-085/016_1915	1378/110	0.00	000.0	Primary
h11605/s1212sss_200/2007-085/sonar_data070326180100	0002	6.69	258.1	Secondary (grouped)

h11605/s1212sss_100/2007-085/sonar_data070326174100	0005	11.29	081.4	Secondary (grouped)
h11605/s1212sss_100/2007-085/sonar_data070326174100	0004	14.38	252.2	Secondary (grouped)
h11605/s1212sss_200/2007-085/sonar_data070326180100	0004	15.77	072.5	Secondary (grouped)
AWOIS duplicate	AWOIS # 52571	27.21	143.8	Secondary

Hydrographer Recommendations

Revise depth and position of charted obstruction

Cartographically-Rounded Depth (Affected Charts):

30ft (18450_1, 18449_1)

5fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)

5fm 0ft (18445_6, 18474_1, 18445_1)

9.1m (501_1, 50_1)

S-57 Data

- Geo object 1:** Obstruction (OBSTRN)
- Attributes:**
 - CATOBS - 1:snag / stump
 - INFORM - Revise obstrn
 - QUASOU - 6:least depth known
 - SORDAT - 20070320
 - SORIND - US,US,nsurf,H11605
 - TECSOU - 3:found by multi-beam
 - VALSOU - 9.145 m
 - WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Revise AWOIS 52571 southern of two charted obstructions to the survey position with a least depth of 30 ft.

3.20) Profile/Beam - 1380/41 from h11605 / s1212_simrad / 2007-085 / 016_1915

Primary Feature for AWOIS Item #52571

Search Position: 47° 35' 12.5" N, 122° 21' 46.9" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:
 [unknown]

Survey Summary

Survey Position: 47° 35' 12.4" N, 122° 21' 46.1" W
Least Depth: 10.97 m (= 35.99 ft = 5.999 fm = 5 fm 5.99 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.526 m ; **TVU (TPEv)** ±0.260 m
Timestamp: 2007-085.19:20:00.555 (03/26/2007)
Survey Line: h11605 / s1212_simrad / 2007-085 / 016_1915
Profile/Beam: 1380/41
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS 52571- One of two submerged obstructions located with 200% SSS and SWMB. Least depth on northmost charted obstruction

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-085/016_1915	1380/41	0.00	000.0	Primary
h11605/s1212sss_200/2007-085/sonar_data070326180100	0001	5.45	245.7	Secondary (grouped)
h11605/s1212sss_100/2007-085/sonar_data070326174100	0003	10.87	245.8	Secondary (grouped)
AWOIS Items	AWOIS # 52571	16.30	111.1	Secondary (grouped)

Hydrographer Recommendations

Revise depth and position of charted obstruction

Cartographically-Rounded Depth (Affected Charts):

36ft (18450_1, 18449_1)

6fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)

4fm 0ft (18445_6, 18474_1, 18445_1)

11.0m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CATOBS - 1:snag / stump
INFORM - Revise obstrn
QUASOU - 6:least depth known
SORDAT - 20070320
SORIND - US,US,nsurf,H11605
TECSOU - 3:found by multi-beam
VALSOU - 10.971 m
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Revise AWOIS 52571 northern of two charted obstructions Submerged dolphins to the survey position with a least depth of 36 ft.

3.21) Profile/Beam - 630/3 from h11605 / s1212_simrad / 2007-102 / 019_1642

Primary Feature for AWOIS Item #52569

Search Position: 47° 35' 19.8" N, 122° 21' 03.0" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 47° 35' 19.2" N, 122° 21' 03.0" W
Least Depth: 5.22 m (= 17.14 ft = 2.857 fm = 2 fm 5.14 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.563 m ; **TVU (TPEv)** ± 0.691 m
Timestamp: 2007-102.16:44:02.271 (04/12/2007)
Survey Line: h11605 / s1212_simrad / 2007-102 / 019_1642
Profile/Beam: 630/3
Charts Affected: 18450_1, 18449_1, 18445_6, 18474_1, 18441_1, 18445_1, 18448_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Office processing determined a least depth of the charted submerged dolphin of 17 ft.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-102/019_1642	630/3	0.00	000.0	Primary
h11605/s1212sss_200/2007-085/sonar_data070326173200	0004	9.81	195.5	Secondary
h11605/s1212sss_100/2007-085/sonar_data070326171800	0006	13.01	201.2	Secondary
AWOIS Items	AWOIS # 52569	17.28	180.1	Secondary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

17ft (18450_1, 18449_1)

2 ¾fm (18441_1, 18448_1, 18440_1, 18003_1, 18007_1, 530_1)

2fm 5ft (18445_6, 18474_1, 18445_1)

5.2m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: INFORM - Chart dangerous submerged dolphin

QUASOU - 6:least depth known

SORDAT - 20070320

SORIND - US,US,nsurf,H11605

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

VALSOU - 5.224 m

WATLEV - 3:always under water/submerged

Office Notes

Delete AWOIS 52569 charted submerged dolphin and text "Subm dol". Chart dangerous submerged dolphin, least depth 17 ft and text "Subm dol" at the survey position. Update AWOIS database.

4 - Dangers to Navigation

4.1) Profile/Beam - 1121/91 from h11605 / s1212_simrad / 2006-335 / 178_2139

DANGER TO NAVIGATION

Primary Feature for AWOIS Item #53451

Search Position: 47° 38' 24.5" N, 122° 25' 38.6" W
Historical Depth: [None]
Search Radius: 250
Search Technique: [unknown]
Technique Notes: [unknown]

History Notes:

[unknown]

Survey Summary

Survey Position: 47° 38' 25.4" N, 122° 25' 35.6" W
Least Depth: 17.50 m (= 57.41 ft = 9.569 fm = 9 fm 3.41 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.726 m ; **TVU (TPEv)** ±0.382 m
Timestamp: 2006-335.21:43:59.367 (12/01/2006)
Survey Line: h11605 / s1212_simrad / 2006-335 / 178_2139
Profile/Beam: 1121/91
Charts Affected: 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

AWOIS 53451: The wreck is in two pieces and the high point is at the northeast end of the eastmost section, approximately 70 meters from the center point of the charted symbol. This section is approximately 62 meters long is oriented toward 218.5 degrees true. The western section is approximately 60 meters long and is oriented toward 191 degrees true. Dive investigation determined least depth to be 17.17 meters/56.3 feet.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2006-335/178_2139	1121/91	0.00	000.0	Primary
h11605/s1212sss_100/2007-065/sonar_data070307193000	0001	5.88	292.1	Secondary (grouped)
h11605/s1212sss_100/2007-065/sonar_data070307193000	0002	16.49	036.9	Secondary (grouped)

h11605/s1212sss_200/2007-074/sonar_data070316180900	0003	27.99	039.9	Secondary (grouped)
h11605/s1212sss_200/2007-074/sonar_data070316180900	0004	51.91	059.6	Secondary (grouped)
AWOIS Items	AWOIS # 53451	67.85	065.5	Secondary (grouped)
h11605/s1212sss_100/2007-065/sonar_data070307185900	0001	87.92	100.3	Secondary (grouped)

Hydrographer Recommendations

Revise position charted wreck. Delete text PA. Chart least depth.

Cartographically-Rounded Depth (Affected Charts):

57ft (18449_1)

9 ½fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)

9fm 3ft (18474_1, 18445_1)

17.5m (501_1, 50_1)

S-57 Data

- Geo object 1:** Wreck (WRECKS)
- Attributes:**
 - CATWRK - 2:dangerous wreck
 - CONVIS - 2:not visual conspicuous
 - OBJNAM - Wreck
 - QUASOU - 1:depth known
 - SORDAT - 20070320
 - SORIND - Us,Us,Nsurf,H11605
 - TECSOU - 3:found by multi-beam
 - VALSOU - 17.500 m
 - VERDAT - 12:Mean lower low water
 - WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. DTON-1 Delete AWOIS 53451 charted dangerous wreck, least depth 57 ft and text "Wk". Chart dangerous wreck, least depth 57 ft and text "Wk" at the survey position. Update AWOIS database.

4.2) Profile/Beam - 5465/7 from h11605 / s1212_simrad / 2007-068 / 005_1750

DANGER TO NAVIGATION

Survey Summary

Survey Position: 47° 37' 48.8" N, 122° 23' 56.4" W
Least Depth: 3.68 m (= 12.08 ft = 2.013 fm = 2 fm 0.08 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.448 m ; **TVU (TPEv)** ± 0.396 m
Timestamp: 2007-068.18:00:25.194 (03/09/2007)
Survey Line: h11605 / s1212_simrad / 2007-068 / 005_1750
Profile/Beam: 5465/7
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Offshore end of charted sewer line is 155 meters seaward of charted position.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-068/005_1750	5465/7	0.00	000.0	Primary
h11605/s1212sss_200/2007-074/sonar_data070316190300	0004	4.92	143.0	Secondary

Hydrographer Recommendations

Extend charted pipeline as surveyed; revise 12-foot contour

Cartographically-Rounded Depth (Affected Charts):

- 12ft (18450_1, 18449_1)
- 2fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
- 2fm 0ft (18474_1, 18445_1)
- 3.7m (501_1, 50_1)

S-57 Data

Geo object 1: Pipeline, submarine/on land (PIPSOL)

Attributes: CATPIP - 4:sewer
PRODCT - 12:iron ingots
SORDAT - 20070320
SORIND - US,US,nsurf,H11605
STATUS - 1:permanent

Office Notes

Concur with clarification. DTON-2 Revise sewer and delete 12 ft sounding at terminus. Recommend investigation and charting of near shore location of sewer where H11605 data does not exist.

4.3) Profile/Beam - 382/114 from h11605 / s1212_simrad / 2007-086 / 021_2026

DANGER TO NAVIGATION

Survey Summary

Survey Position: 47° 37' 37.6" N, 122° 23' 12.0" W
Least Depth: 7.50 m (= 24.61 ft = 4.102 fm = 4 fm 0.61 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.500 m ; **TVU (TPEv)** ± 0.424 m
Timestamp: 2007-086.20:27:38.588 (03/27/2007)
Survey Line: h11605 / s1212_simrad / 2007-086 / 021_2026
Profile/Beam: 382/114
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Dive investigation of submerged obstruction located a rectangular, deteriorating metal container. Diver least depth of 7.5 meters marked in bathymetry by designated sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-086/021_2026	382/114	0.00	000.0	Primary
h11605/s1212sss_100/2007-065/sonar_data070307173100	0001	19.31	081.6	Secondary

Hydrographer Recommendations

Chart sounding on obstruction.

Cartographically-Rounded Depth (Affected Charts):

- 24ft (18450_1, 18449_1)
- 4fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
- 4fm 0ft (18474_1, 18445_1)
- 7.5m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: CONDTN - 2:ruined
NATCON - 7:metal
QUASOU - 1:depth known
SORDAT - 20070320
SORIND - Us,Us,Nsurf,H11605
TECSOU - 3:found by multi-beam
VALSOU - 7.502 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Shown on chart 18450 as dangerous obstruction, least depth 24 ft and text "Obstn".
Revise obstruction to the survey position with a least depth of 24 ft and text "Obstn".

4.4) Profile/Beam - 1216/115 from h11605 / s1212_simrad / 2007-064 / 169_2053

DANGER TO NAVIGATION

Survey Summary

Survey Position: 47° 37' 45.6" N, 122° 23' 57.3" W
Least Depth: 9.04 m (= 29.66 ft = 4.943 fm = 4 fm 5.66 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.509 m ; **TVU (TPEv)** ± 0.447 m
Timestamp: 2007-064.20:57:22.371 (03/05/2007)
Survey Line: h11605 / s1212_simrad / 2007-064 / 169_2053
Profile/Beam: 1216/115
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Offshore end uncharted feature; appears to be submerged pipeline.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-064/169_2053	1216/115	0.00	000.0	Primary
h11605/s1212sss_100/2007-074/sonar_data070316192800	0005	7.26	232.5	Secondary

Hydrographer Recommendations

Chart new pipeline and designated sounding

Cartographically-Rounded Depth (Affected Charts):

29ft (18450_1, 18449_1)
 5fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
 4fm 5ft (18474_1, 18445_1)
 9.0m (501_1, 50_1)

S-57 Data

Geo object 1: Pipeline, submarine/on land (PIPSOL)

Attributes: CATPIP - 4:sewer
INFORM - DTON-4 Revise sewer
SORDAT - 20070320
SORIND - US,US,nsurf,H11605

Office Notes

Concur with clarification. DTON-4 Revise sewer and delete 29 ft sounding at terminus. Recommend investigation and charting of near shore location of sewer where H11605 data does not exist.

4.5) Profile/Beam - 4583/122 from h11605 / s1212_simrad / 2007-086 / 020_1929

DANGER TO NAVIGATION

Survey Summary

Survey Position: 47° 38' 01.7" N, 122° 24' 22.9" W
Least Depth: 2.35 m (= 7.70 ft = 1.283 fm = 1 fm 1.70 ft)
TPU (±1.96σ): **THU (TPEh)** ±1.421 m ; **TVU (TPEv)** ±0.341 m
Timestamp: 2007-086.19:36:10.145 (03/27/2007)
Survey Line: h11605 / s1212_simrad / 2007-086 / 020_1929
Profile/Beam: 4583/122
Charts Affected: 18450_1, 18449_1, 18474_1, 18441_1, 18445_1, 18440_1, 18003_1, 18007_1, 501_1, 530_1, 50_1

Remarks:

Submerged feature with a least depth of 7.7 feet is located seaward of the 12-foot contour and rises 4 foot above surrounding depths

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11605/s1212_simrad/2007-086/020_1929	4583/122	0.00	000.0	Primary
h11605/s1212sss_100/2007-074/sonar_data070316192800	0003	0.85	099.1	Secondary

Hydrographer Recommendations

Chart surveyed sounding.

Cartographically-Rounded Depth (Affected Charts):

- 7ft (18450_1, 18449_1)
- 1 ¼fm (18441_1, 18440_1, 18003_1, 18007_1, 530_1)
- 1fm 1ft (18474_1, 18445_1)
- 2.3m (501_1, 50_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: INFORM - chart obstn
QUASOU - 6:least depth known
SORDAT - 20070320
SORIND - Us,Us,Nsurf, H11605
TECSOU - 3:found by multi-beam
VALSOU - 2.347 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification. Submitted as DTON-5. Delete charted 7 ft sounding. Chart dangerous obstruction, least depth 7 ft and text "Obstn".

APPENDIX V
SUPPLEMENTAL CORRESPONDENCE

F00523_ATON.txt

1C 0000005758

00001,BOYSPP,Point,47-37-20.68N,122-22-04.37W,RECDAT=20070322,SORDAT=20070322,CATS
PM=13,PICREP=FishPenLight.JPG;Fish Pen.JPG,BOYSHP=5,OBJNAM=Elliott Bay Fish Pen Lights
(2),INFORM=LLN 16852

1C 0000005759

00001,BOYSPP,Point,47-37-19.63N,122-22-02.92W,RECDAT=20070322,SORDAT=20070322,CATS
PM=13,PICREP=FishPenLight.JPG;Fish Pen.JPG,BOYSHP=5,OBJNAM=Elliott Bay Fish Pen Lights
(2),INFORM=LLN 16852

1C 0000005756

00001,BOYSPP,Point,47-37-20.68N,122-22-04.37W,RECDAT=20070322,SORDAT=20070322,CATS
PM=13,PICREP=FishPenLight.JPG;Fish Pen.JPG,BOYSHP=5,OBJNAM=Elliott Bay Fish Pen Lights
(2),INFORM=LLN 16852

1C 0000005757

00001,BOYSPP,Point,47-37-19.63N,122-22-02.92W,RECDAT=20070322,SORDAT=20070322,CATS
PM=13,PICREP=FishPenLight.JPG;Fish Pen.JPG,BOYSHP=5,OBJNAM=Elliott Bay Fish Pen Lights
(2),INFORM=LLN 16852

1C 0000005854

00001,BCNSPP,Point,47-35-02.29N,122-22-13.15W,BCNSHP=1,CATSPM=13,COLOUR=8,RECDAT
=20070417,SORDAT=20070417

1C 0000005855

00001,BCNSPP,Point,47-35-02.75N,122-22-16.12W,BCNSHP=1,CATSPM=13,COLOUR=8,RECDAT
=20070417,SORDAT=20070417

1C 0000005856 00001,LIGHTS,Point,47-35-02.29N,122-22-13.15W,CATLIT=4,remrks=Light on
mooring platform,recomd=Revise position charted light,RECDAT=20070417,SORDAT=20070417

1C 0000005857 00001,LIGHTS,Point,47-35-02.75N,122-22-16.12W,CATLIT=4,remrks=Light on
mooring platform,recomd=Revise position charted light,RECDAT=20070417,SORDAT=20070417

1C 0000005874

00001,BCNSPP,Point,47-35-17.95N,122-21-06.96W,BCNSHP=1,CATSPM=14,13,COLOUR=UNKN
OWN,remrks=Uncharted light on Dol,recomd=Chart New

Navaid,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00592a.JPG

1C 0000005875

00001,BCNSPP,Point,47-35-18.29N,122-21-04.05W,BCNSHP=1,CATSPM=13,14,COLOUR=UNKN
OWN,NATCON=6,remrks=uncharted light,recomd=Chart new

navaid,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00587a.JPG;DSC00588.JPG

1C 0000005876 00001,LIGHTS,Point,47-35-17.95N,122-21-06.96W,COLOUR=3,remrks=uncharted
light,recomd=chart red light,RECDAT=20070417,SORDAT=20070417

1C 0000005877 00001,LIGHTS,Point,47-35-18.29N,122-21-04.05W,COLOUR=6,remrks=uncharted
light,recomd=chart yellow light on

dol,PICREP=DSC00588.JPG,RECDAT=20070417,SORDAT=20070417

1C 0000006071

00001,BCNSPP,Point,47-36-09.87N,122-20-27.15W,BCNSHP=1,CATSPM=14,13,COLOUR=3,remrk
s=Navaid is on fender,recomd=Revise position charted

light,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00630.JPG

1C 0000006072

00001,BCNSPP,Point,47-36-07.46N,122-20-27.14W,BCNSHP=1,CATSPM=14,13,COLOUR=3,remrk

F00523_ATON.txt

s=Navaid is on fender,recomd=Revise position charted
light,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00630.JPG
1C 0000006073
00001,BCNSPP,Point,47-36-07.65N,122-20-27.18W,BCNSHP=1,CATSPM=14,13,COLOUR=3,remrk
s=Navaid is on fender,recomd=Revise position charted
light,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00630.JPG
1C 0000006074
00001,BCNSPP,Point,47-36-09.68N,122-20-27.16W,BCNSHP=1,CATSPM=14,13,COLOUR=3,remrk
s=Navaid is on fender,recomd=Revise position charted
light,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00630.JPG
1C 0000006075
00001,LIGHTS,Point,47-36-09.87N,122-20-27.15W,CATLIT=UNKNOWN,COLOUR=6,recomd=Revi
se position charted lights,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00631.JPG
1C 0000006077
00001,LIGHTS,Point,47-36-07.46N,122-20-27.14W,CATLIT=UNKNOWN,COLOUR=6,recomd=Revi
se position charted lights,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00631.JPG
1C 0000006078
00001,LIGHTS,Point,47-36-07.65N,122-20-27.18W,CATLIT=UNKNOWN,COLOUR=6,recomd=Revi
se position charted lights,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00631.JPG
1C 0000006079
00001,LIGHTS,Point,47-36-09.68N,122-20-27.16W,CATLIT=UNKNOWN,COLOUR=6,recomd=Revi
se position charted lights,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00631.JPG
1C 0000006076
00001,LIGHTS,Point,47-36-09.11N,122-20-23.18W,CATLIT=UNKNOWN,COLOUR=3,recomd=Revi
se position charted lights,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00629.JPG;Ferry
Landing Range.JPG,OBJNAM=Colman Ferry Terminal Lights (2),INFORM=LLN
16855,remrks=Range lights
1C 0000006081
00001,BCNSPP,Point,47-36-09.11N,122-20-23.18W,BCNSHP=1,CATSPM=16,COLOUR=UNKNOW
N,OBJNAM=Colman Ferry Terminal Light (2),remrks=Range Lights,recomd=Revise
position/attributes,RECDAT=20070417,SORDAT=20070417,PICREP=DSC00628.JPG;DSC00627.JP
G
1C 0000005753
00001,BOYSPP,Point,47-37-20.68N,122-22-04.37W,CATSPM=13,BOYSHSP=5,OBJNAM=Elliott Bay
Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322,PICREP=FishPenLight.JPG;Fish
Pen.JPG,COLOUR=7,COLPAT=UNKNOWN
1C 0000005768
00001,LIGHTS,Point,47-37-20.68N,122-22-04.37W,COLOUR=6,PICREP=FishPenLight.JPG;Fish
Pen.JPG,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322
1C 0000005752
00001,BOYSPP,Point,47-37-19.63N,122-22-02.92W,CATSPM=13,PICREP=FishPenLight.JPG;Fish
Pen.JPG,BOYSHSP=5,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

F00523_ATON.txt

1C 0000005769

00001,LIGHTS,Point,47-37-20.68N,122-22-04.37W,COLOUR=6,PICREP=FishPenLight.JPG;Fish Pen.JPG,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

1C 0000005770

00001,LIGHTS,Point,47-37-20.68N,122-22-04.37W,COLOUR=6,PICREP=FishPenLight.JPG;Fish Pen.JPG,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

1C 0000005755

00001,BOYSPP,Point,47-37-20.68N,122-22-04.37W,CATSPM=13,PICREP=FishPenLight.JPG;Fish Pen.JPG,BOYSHP=5,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

1C 0000005772

00001,LIGHTS,Point,47-37-19.63N,122-22-02.92W,COLOUR=6,PICREP=FishPenLight.JPG;Fish Pen.JPG,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

1C 0000005773

00001,LIGHTS,Point,47-37-19.63N,122-22-02.92W,COLOUR=6,PICREP=FishPenLight.JPG;Fish Pen.JPG,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

1C 0000005754

00001,BOYSPP,Point,47-37-19.63N,122-22-02.92W,CATSPM=13,PICREP=FishPenLight.JPG;Fish Pen.JPG,BOYSHP=5,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

1C 0000005774

00001,LIGHTS,Point,47-37-19.63N,122-22-02.92W,COLOUR=6,PICREP=FishPenLight.JPG;Fish Pen.JPG,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

1C 0000005775

00001,LIGHTS,Point,47-37-20.68N,122-22-04.37W,COLOUR=6,PICREP=FishPenLight.JPG;Fish Pen.JPG,OBJNAM=Elliott Bay Fish Pen Lights (2),INFORM=LLN
16852,RECDAT=20070322,SORDAT=20070322

1C 0000005422 00001,LIGHTS,Point,47-35-25.77N,122-20-45.72W,OBJNAM=East Waterway Pier Light,INFORM=LLN 16860,CATLIT=4,COLOUR=3

1C 0000005421 00001,LIGHTS,Point,47-35-25.77N,122-20-45.72W,OBJNAM=East Waterway Pier Light,INFORM=LLN 16860,CATLIT=4,COLOUR=3

1C 0000005479

00001,LIGHTS,Point,47-35-25.77N,122-20-45.72W,CATLIT=4,RECDAT=20070322,SORDAT=2007 0322,OBJNAM=East Waterway Pier Light,INFORM=LLN 16860,COLOUR=3

1C 0000005502

00001,LIGHTS,Point,47-35-25.77N,122-20-45.72W,CATLIT=4,RECDAT=20070322,SORDAT=2007 0322,OBJNAM=East Waterway Pier Light,INFORM=LLN 16860,COLOUR=3

0_0000036349 00001,LIGHTS,Point,47-35-25.77N,122-20-45.72W,OBJNAM=East Waterway Pier Light,INFORM=LLN 16860,CATLIT=4,COLOUR=3

1C 0000005486

F00523_ATON.txt

00001,LIGHTS,Point,47-35-25.77N,122-20-45.72W,CATLIT=4,RECDAT=20070322,SORDAT=20070322,OBJNAM=East Waterway Pier Light,INFORM=LLN 16860,COLOUR=3

1C 0000005481

00001,LIGHTS,Point,47-35-25.77N,122-20-45.72W,CATLIT=4,RECDAT=20070322,SORDAT=20070322,OBJNAM=East Waterway Pier Light,INFORM=LLN 16860,COLOUR=3

0_0000036330

00001,BCNSPP,Point,47-35-25.77N,122-20-45.72W,BCNSHP=1,CATSPM=16,COLOUR=3,OBJNAM=East Waterway Pier Light,INFORM=LLN 16860

Least_Depth_Report--Magnolia_wreck.txt

LEAST DEPTH REPORT, VELOCITY PROGRAM, Version 8.83

PROJECT: NRT3_WRECK_INVEST

SURVEY: NRT3_WRECK_INVEST DATE OF DIVE: 04-03-2007

NOAA UNIT: NRT-3 PACIFIC YEAR 2007

AWOIS NUMBER: NONE FIX NUMBER: 1 CONTACT NUMBER: 1

CAST INSTRUMENT: SBE19 SEACAT S/N:2039 CD:4/7/2006
DAY OF CAST (UTC): 086 TIME OF CAST (UTC): 18:42

DIVER GAUGE SERIAL NUMBER: MINITROLL_20280
DAY OF DIVE (UTC): 093 TIME OF LD MEASUREMENT (UTC): 16:48
LATITUDE OF DIVE: 47/38/24.52 N
LONGITUDE OF DIVE: 122/25/38.58 W
PREDIVE GAUGE PRESSURE (psia): 14.83
GAUGE PRESSURE AT DESIGNATED LEAST DEPTH (psia): 41.61

RESULTS

COMPUTED LEAST DEPTH (m): 18.49
TIDE CORRECTOR (m): -1.32
CORRECTED LEAST DEPTH (m): 17.17

COMMENTS AND RECOMMENDATIONS:

Least_Depth_Report--Smith_Cove_obstruction.txt

LEAST DEPTH REPORT, VELOCITY PROGRAM, Version 8.83

PROJECT: NRT3_WRECK_INVEST

SURVEY: NRT3_WRECK_INVEST DATE OF DIVE: 04-03-2007

NOAA UNIT: NRT-3 PACIFIC YEAR 2007

AWOIS NUMBER: NONE FIX NUMBER: 1 CONTACT NUMBER: 1

CAST INSTRUMENT: SBE19 SEACAT S/N:2039 CD:4/7/2006
DAY OF CAST (UTC): 086 TIME OF CAST (UTC): 18:42

DIVER GAUGE SERIAL NUMBER: MINITROLL_20280
DAY OF DIVE (UTC): 093 TIME OF LD MEASUREMENT (UTC): 17:59
LATITUDE OF DIVE: 47/37/37.60 N
LONGITUDE OF DIVE: 122/23/10.36 W
PREDIVE GAUGE PRESSURE (psia): 14.83
GAUGE PRESSURE AT DESIGNATED LEAST DEPTH (psia): 26.42

RESULTS

COMPUTED LEAST DEPTH (m): 8.04
TIDE CORRECTOR (m): -0.52
CORRECTED LEAST DEPTH (m): 7.52

COMMENTS AND RECOMMENDATIONS:

Dive Investigation Report

Field Unit: NRT3

Investigation Date: 2007/04/03

Project Number:

Survey Registry Number:

Divers: Lomnický, Foss, Van Waes

DLDG Serial Number: 20280 (MiniTROLL)

CONTACT INFORMATION

Contact Name: PA Wreck

Contact Position (Lat/Long): 47°38'24.52" N, 122°25'38.58" W

Correlating Contacts:

Correlating AWOIS Item:

INVESTIGATION SUMMARY

Search Time: 1648 UTC

Search Radius: N/A

Water Depth: Approx. 20m

Water Visibility: 15m

Weather/Sea State: Clear, calm, 1.5kt current

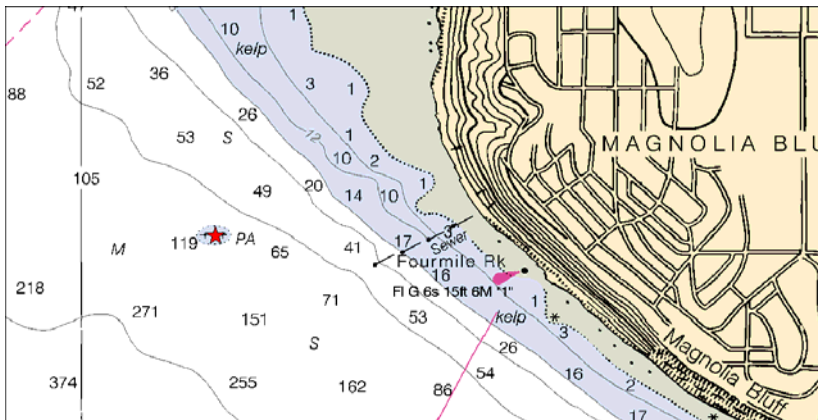
Bottom Terrain: gentle slope E-W; mud/sand

Investigation Methods Used: MBES, visual identification, DLDG (MiniTROLL) for least depth

Item Description: Wreck of cargo barge or small ship. Investigated easternmost of two wrecks. Sitting upright on bottom, bow facing east.

Sketch:

Site:



Bathy:

LEAST DEPTH DETERMINATION

DLDG Surface Pressure: 14.83 psia

Raw DLDG Least Depth: 18.49m

DLDG Pressure at Least Depth: 41.61 psia

Tide Corrector: -1.32m

Time of Least Depth: 1648 UTC

Corrected DLDG Least Depth: 17.17m

Dive Investigation Report

Field Unit: NRT3

Investigation Date: 2007/04/03

Project Number:

Survey Registry Number:

Divers: Lomnický, Foss, Van Waes

DLDG Serial Number: 20280 (MiniTROLL)

CONTACT INFORMATION

Contact Name: Smith Cove Obstruction

Contact Position (Lat/Long): 47/37/37.60 N, 122/23/10.36 W

Correlating Contacts:

Correlating AWOIS Item:

INVESTIGATION SUMMARY

Search Time: 1759 UTC

Search Radius: N/A

Water Depth: Approx. 10m

Water Visibility:

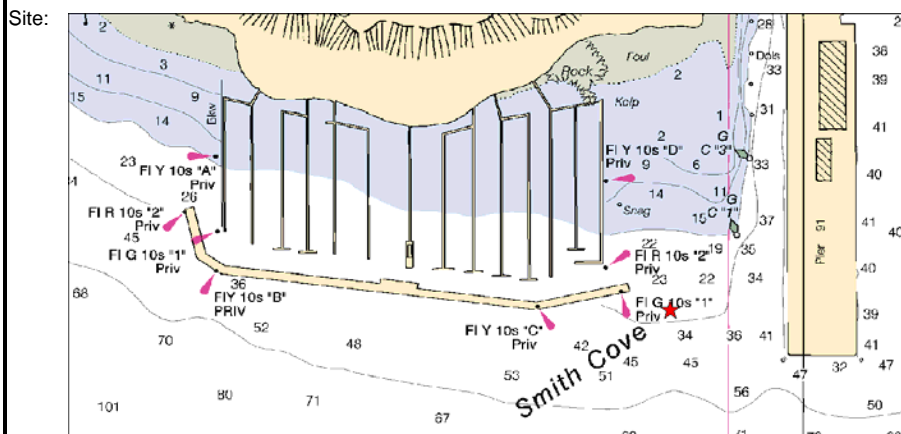
Weather/Sea State: Clear, calm

Bottom Terrain:

Investigation Methods Used: MBES, visual identification, DLDG (MiniTROLL)

Item Description: Decrepit remains of shipping or other container. Metal, deteriorating.

Sketch:



Bathy:

LEAST DEPTH DETERMINATION

DLDG Surface Pressure: 14.83 psia

Raw DLDG Least Depth: 8.04m

DLDG Pressure at Least Depth: 26.42 psia

Tide Corrector: -0.52m

Time of Least Depth: 1759 UTC

Corrected DLDG Least Depth: 7.52m



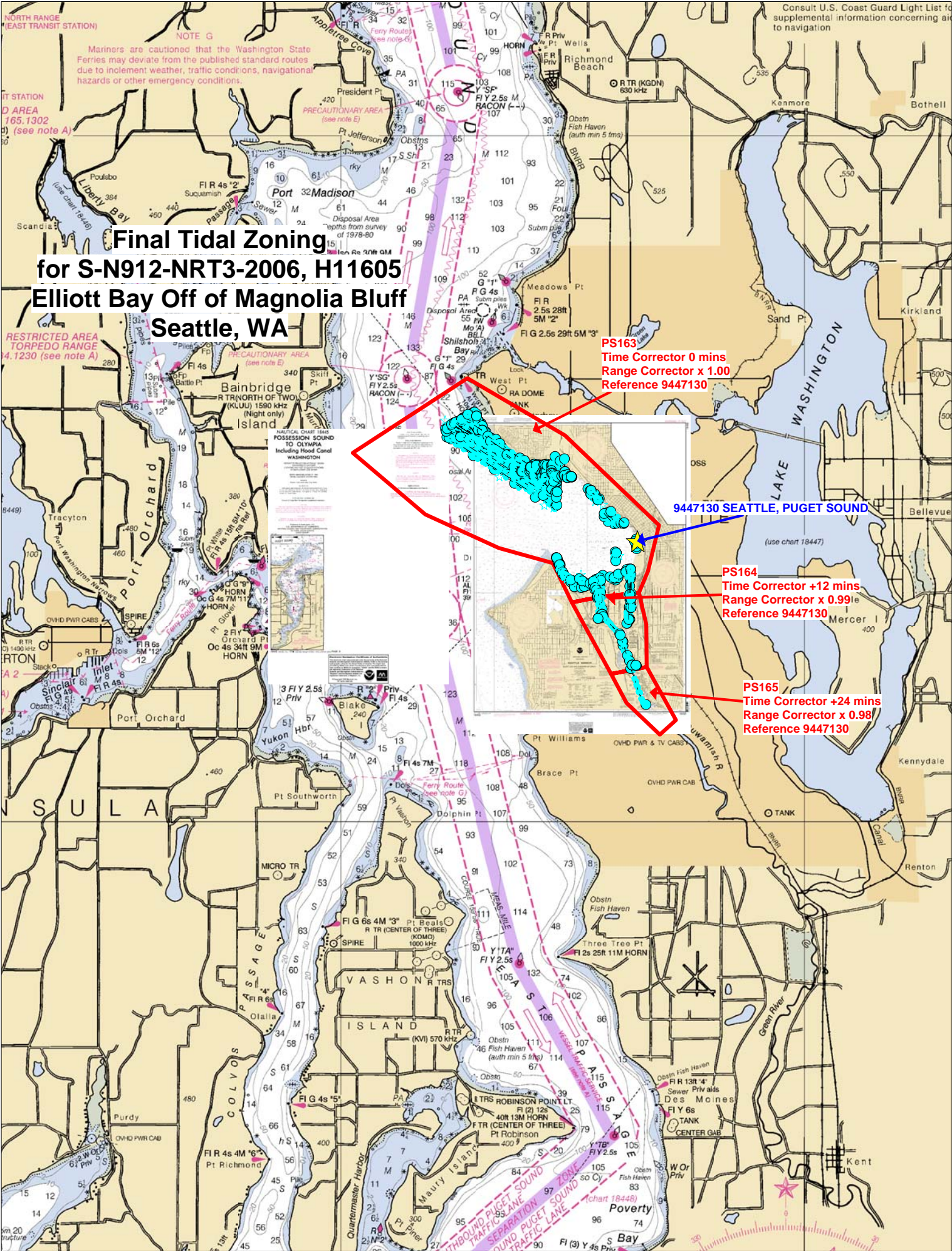
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Silver Spring, Maryland 20910



Final tide zone node point locations for S-N912-NRT3-2006, H11605

Format: Tide Station (in recommended order of use)
 Average Time Correction (in minutes)
 Range Correction
 Longitude in decimal degrees (negative value denotes Longitude West),
 Latitude in decimal degrees

	Tide Station Order	AVG Time Correction	Range Correction
Zone PS163	9447130	0	1.00
-122.43138 47.661495			
-122.493204 47.634317			
-122.454132 47.611852			
-122.414475 47.59963			
-122.385315 47.594109			
-122.375054 47.579733			
-122.367429 47.5808			
-122.355342 47.582049			
-122.346968 47.582703			
-122.338891 47.583299			
-122.333988 47.591203			
-122.328061 47.607913			
-122.378777 47.640654			
-122.43138 47.661495			
Zone PS164	9447130	+12	0.99
-122.375054 47.579733			
-122.353937 47.553643			
-122.3347 47.556213			
-122.334939 47.571738			
-122.338891 47.583299			
-122.346968 47.582703			
-122.355342 47.582049			
-122.367429 47.5808			
-122.375054 47.579733			
Zone PS165	9447130	+24	0.98
-122.3347 47.556213			
-122.353937 47.553643			
-122.345612 47.543072			
-122.327622 47.531509			
-122.318915 47.536796			
-122.3347 47.556213			



Consult U.S. Coast Guard Light List for supplemental information concerning aid to navigation

NORTH RANGE (EAST TRANSIT STATION)

NOTE G

Mariners are cautioned that the Washington State Ferries may deviate from the published standard routes due to inclement weather, traffic conditions, navigational hazards or other emergency conditions.

RESTRICTED AREA TORPEDO RANGE 165.1302 (see note A)

Final Tidal Zoning for S-N912-NRT3-2006, H11605 Elliott Bay Off of Magnolia Bluff Seattle, WA

RESTRICTED AREA TORPEDO RANGE 14.1230 (see note A)

PS163
Time Corrector 0 mins
Range Corrector x 1.00
Reference 9447130

9447130 SEATTLE, PUGET SOUND

PS164
Time Corrector +12 mins
Range Corrector x 0.99
Reference 9447130

PS165
Time Corrector +24 mins
Range Corrector x 0.98
Reference 9447130

CHART 18447

THROUGH PUGET SOUND SEPARATION TRAFFIC LANE
SEPARATION TRAFFIC LANE
THROUGH PUGET SOUND SEPARATION TRAFFIC LANE

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

- IV. CONTOUR LAYER:
 - a. Use a Depth List: **H11605_NOAA_depth_curves_2_list.txt**
 Depth List: **0.00, 0.914, 1.829, 3.658, 5.486, 9.144, 18.288, 91.440, 146.304, 182.880**
 - i. Create contour lines:
 - 1. Line Object: DEPCNT
 - 2. Value Attribute: VALDCO

- V. SOUNDING SELECTION:
 - a. Selection Criteria:
 - i. Radius
 - ii. Shoal biased
 - iii. Use Single-Defined Radius: distance on ground (m)
 - iv. Filter: Generalized !=1

- VI. FEATURES:
 - a. Brought in from Survey
 Total No. 13
 - b. Brought in from ENC
 ENC: #
 Total No. 13

- VII. META-OBJECTS:
 - a. M_COVR attributes

Acronym	Value
SORDAT	20070320
CATCOV	Coverage available
SORIND	Us,Us,Survy,H11605

- b. M_QUAL attributes

Acronym	Value
CATZOC	zone of confidence U (data not assessed)
INFORM	H11605,OPR-S-N912-NRT3-06
POSACC	10
SORDAT	20070320
SORIND	Us,Us,Survy,H11605
SUREND	20070320
SURSTA	20061114
TECSOU	3

- c. DEPARE attributes

Acronym	Value
DRVALV 1	0.277-194.440/0.760-32.373/8.282-64.338/6.535-25.886/63.560-75.609/0.014-40.438/1.485-40.366/1.690-70.154
DRVALV2	194.44
SORDAT	20070320
SORIND	Us,Us,Survy,H11605

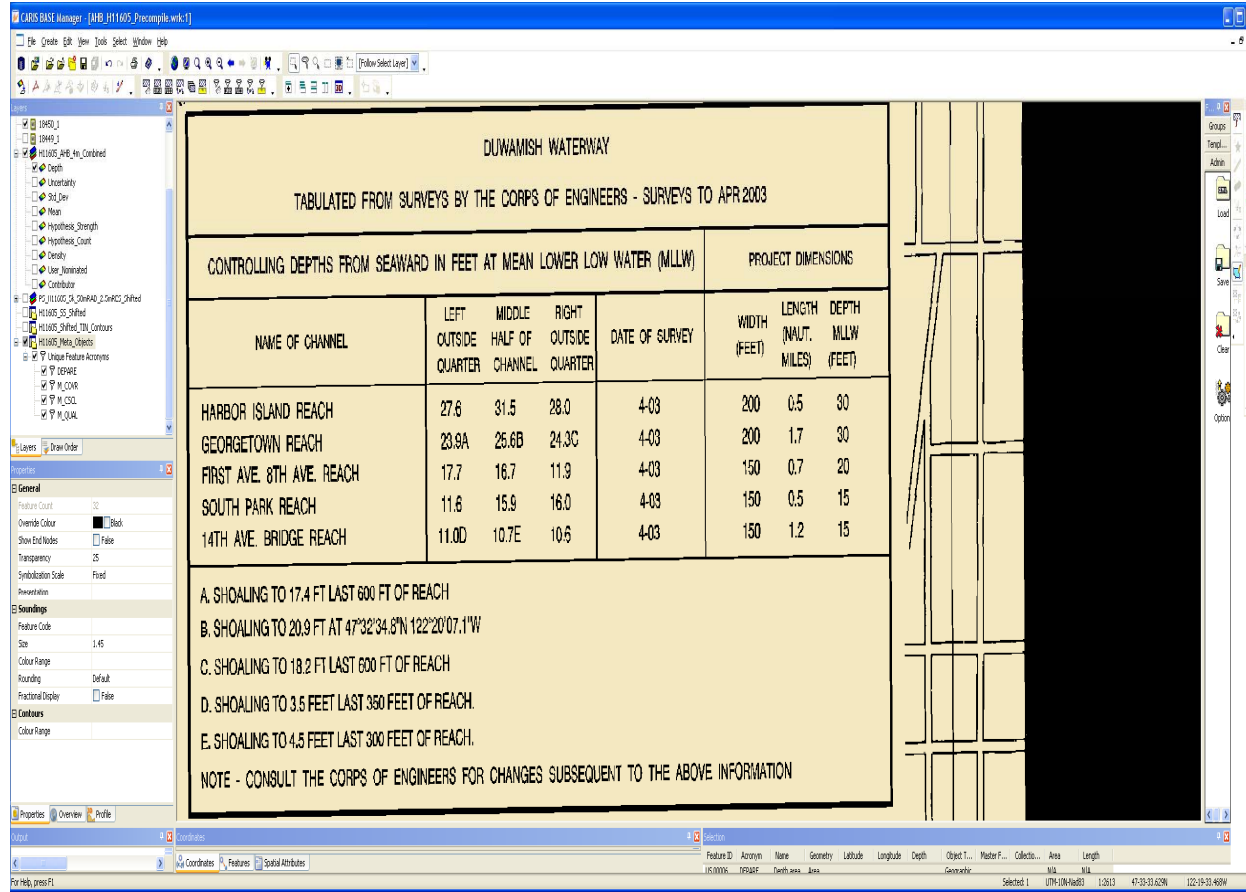
- d. M_CSCL attributes

Acronym	Value
CSCALE	1:10,000
SORDAT	20070320
SORIND	Us,Us,Survy,H11605

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VIII. NOTES:

H11605 encompasses a number of USACE dredged channels areas w/ the following tabulated depths associated w/ them. AHB compared these depths to the most recent bathymetry (H11605 SS soundings) and forwarded the updated sounding info to the NW navigation manager for use by USACE.

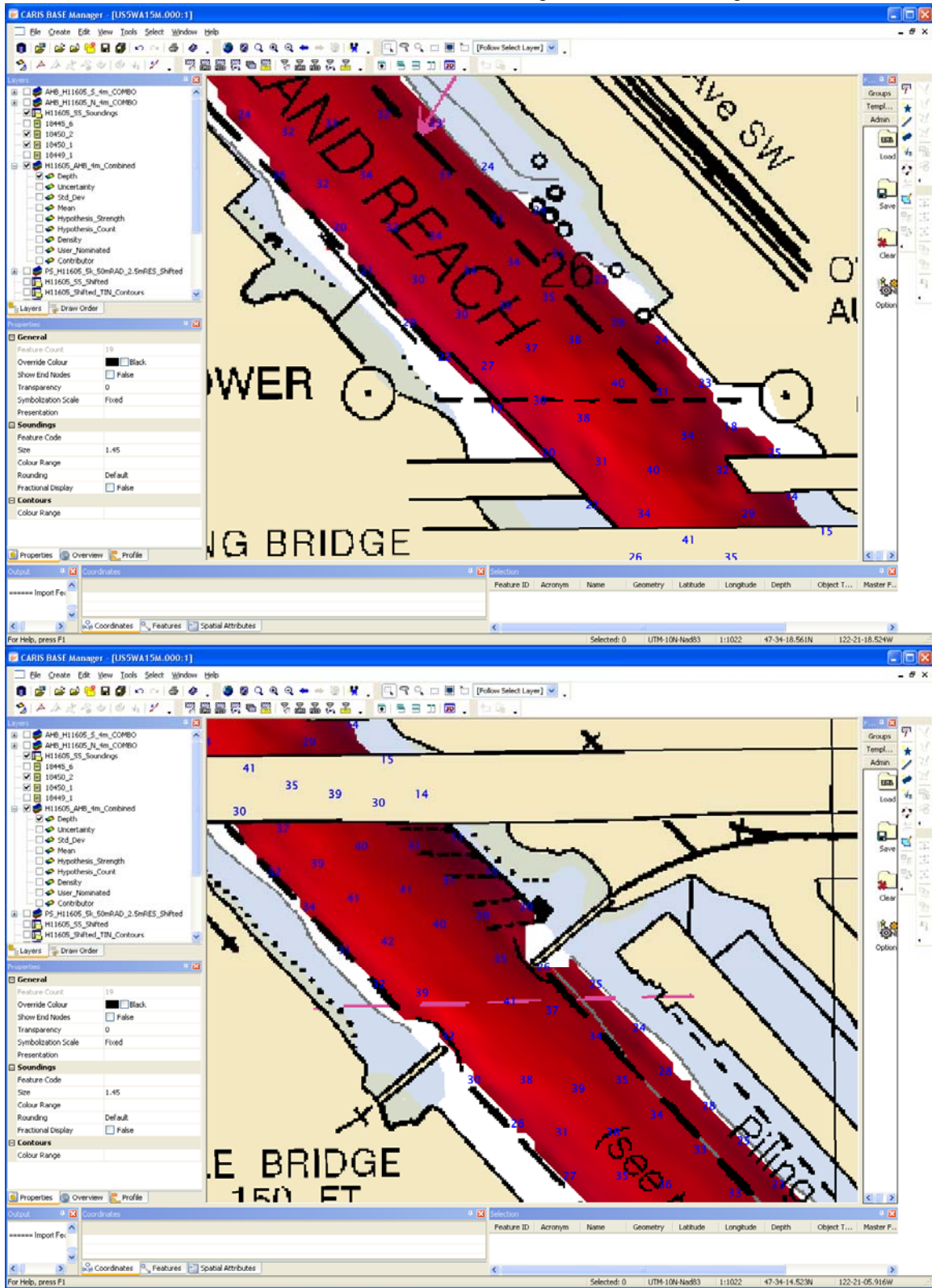


IX.

Harbor Isl. Reach:

Version 1.0

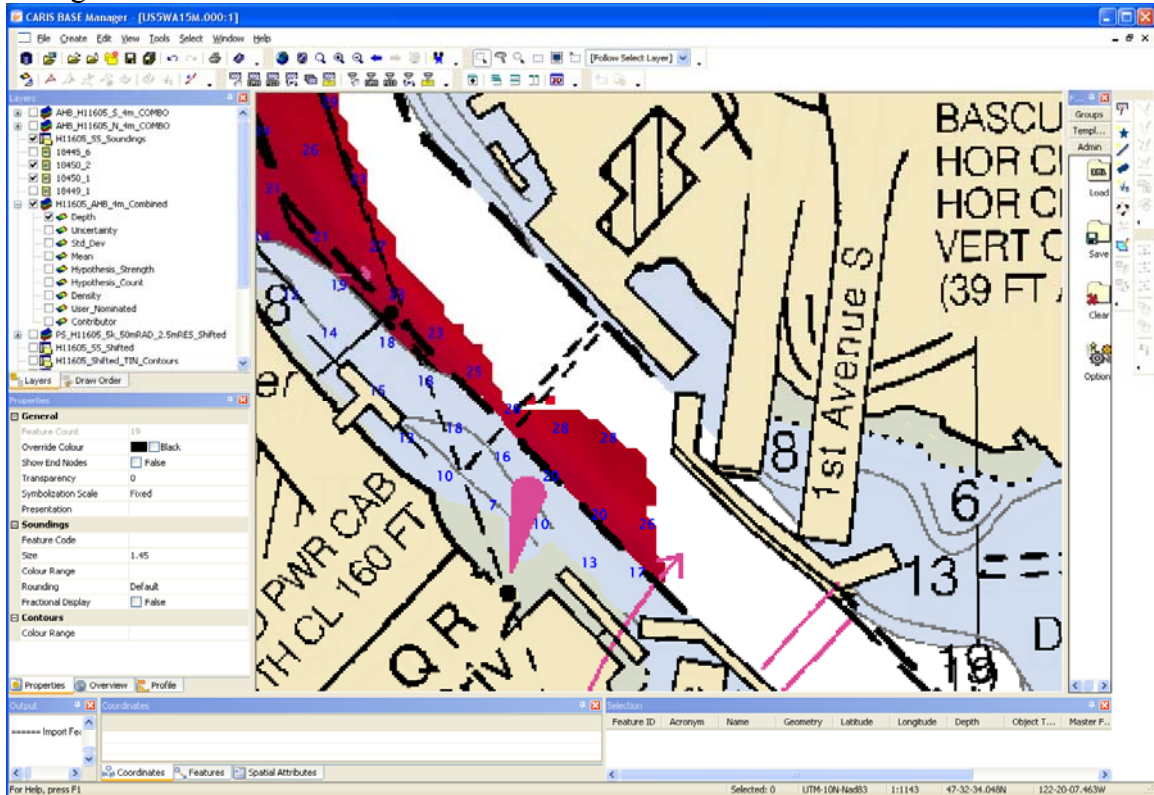
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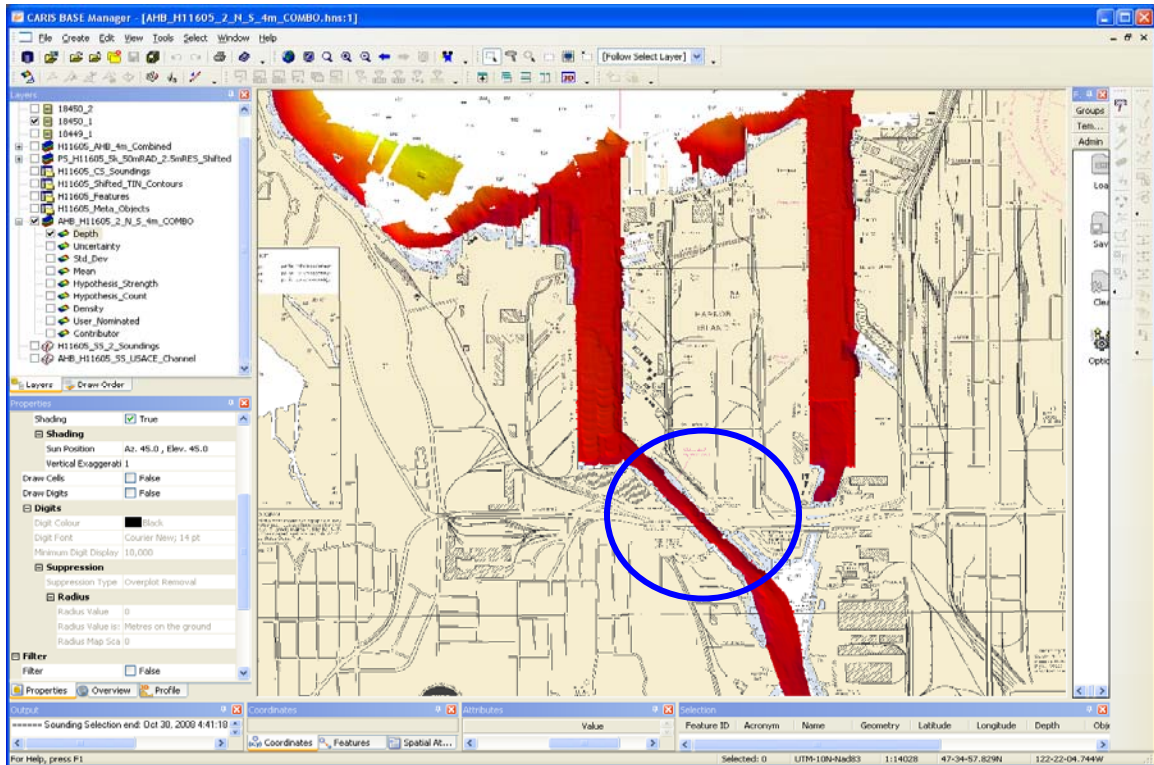
Version 1.0

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Georgetown Reach:

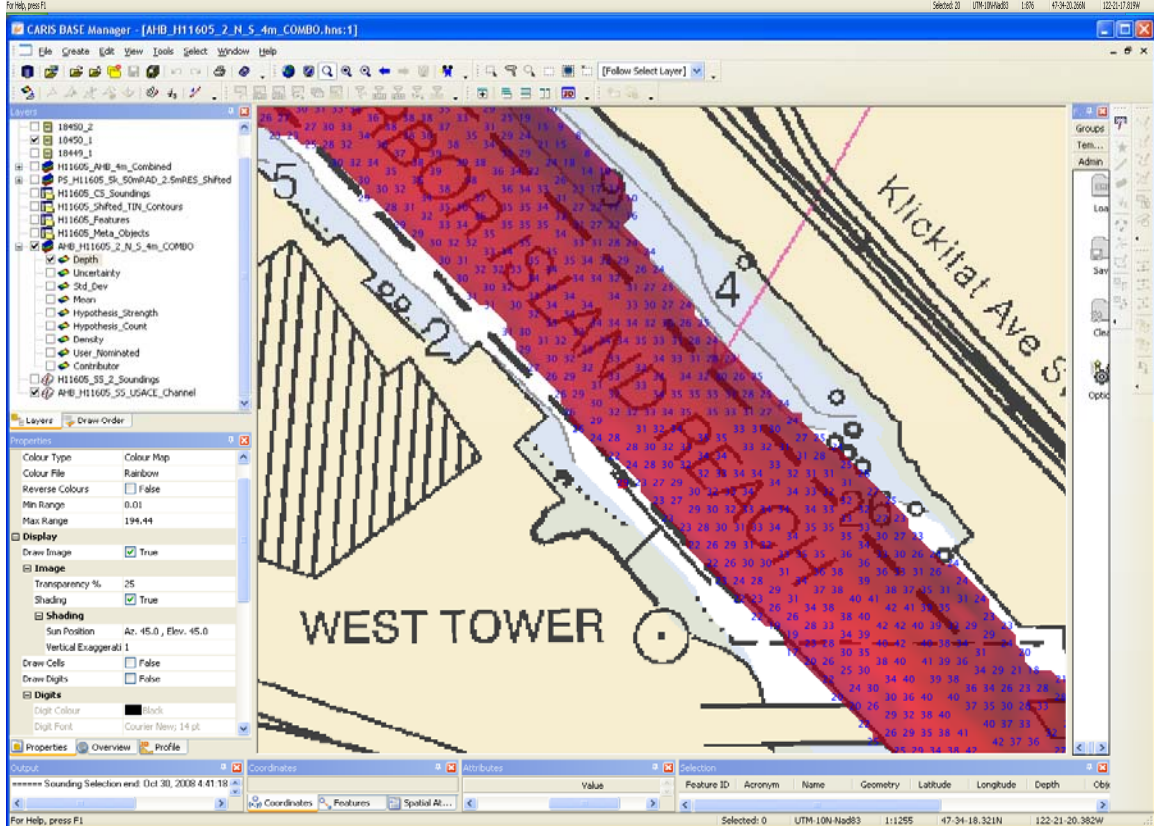
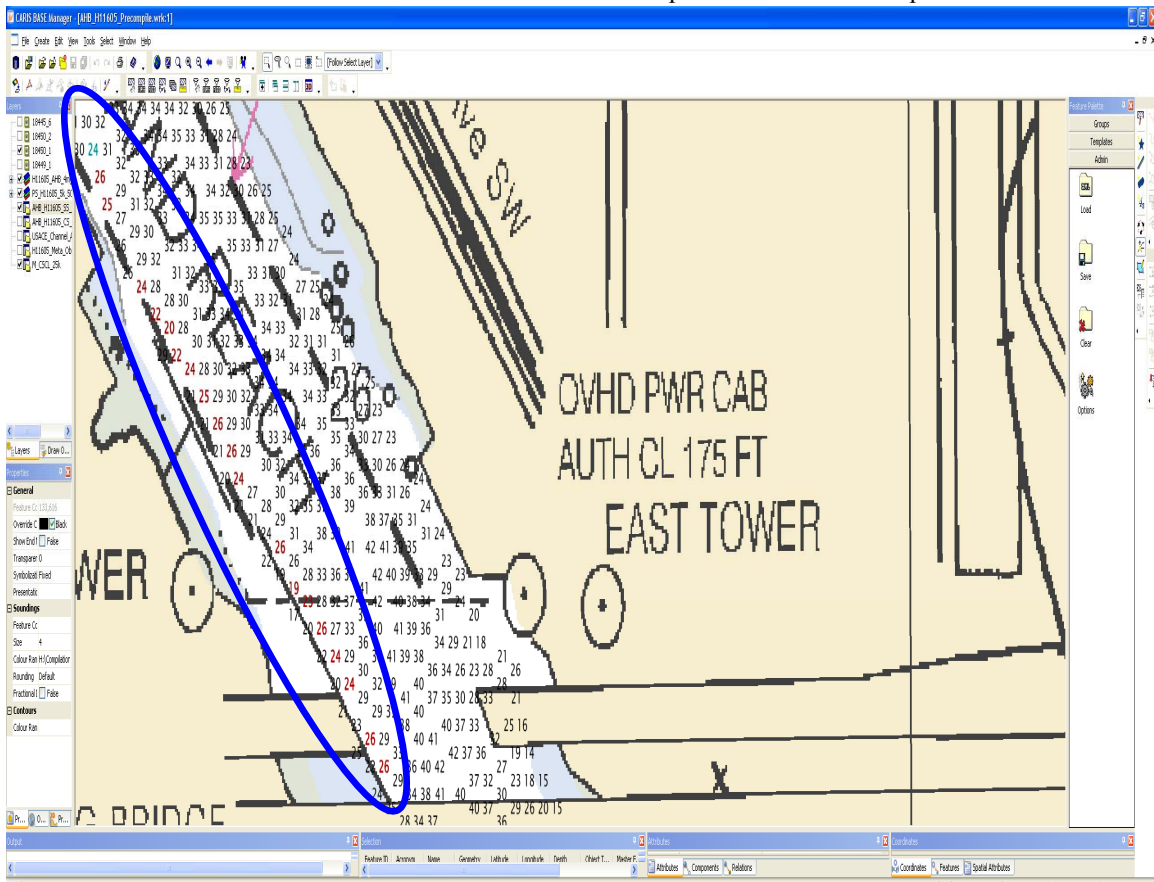


USACE:



Version 1.0

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**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Survey H11605 (1:5000)**

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.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

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.

HSTP PYDRO version 9.4 r2680
CARIS HIPS/SIPS version 6.1 SP1
CARIS Bathy Manager version 2.1
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM version 3.3
CARIS S57 Composer version 2.0
MAPINFO 9.0 RB36

B.2. QUALITY CONTROL

B.2.1. H-Cell

The AHB source depth grid for the survey's nautical chart update product entailed the creation of a single combined grid at four meter resolution from six depth thresholded source grids of 0.5, 1, and 4 meter resolutions. The survey scale selected soundings were extracted from the four meter grid. The selected sounding set is more than 16-32 times the number of charted depths generated at a scale of 1:5,000. The chart scale selected soundings are a subset of the survey scale selected soundings at a scale of 1:10,000. The surface model was referenced when selecting the chart scale soundings, to ensure that the selected soundings portrayed the bathymetry within the common area.

The pre-compilation products or components (Stand Alone HOB files (SAHOB)) are detailed in the Pre-Compile Process Log attached at the end of this document. The SAHOB files included, sounding selections (SOUNDG), features (WRECKS, OBSTNS, SBDARE, BCNSPP, BOYSPP, MORFAC, WEDKLP), meta objects (M_COVR, M_QUAL, M_CSCL), depth areas (DEPARE) and cartographic Blue Notes (\$CSYMB,\$LINES). The individual SAHOB files were inserted into one BASE Editor feature layer and exported to S57 format in order to create the H-Cell deliverable.

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

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

The H11605 CARIS H-Cell final deliverables include the following products:

H11605_CS.000	1:10,000 Scale	H11605 H-Cell with Chart Scale Selected Soundings
H11605_SS.000	1:5,000 Scale	H11605 Selected Soundings, Contours (Survey Scale)

B.2.2. Junctions

No contemporary surveys exist for junctioning.

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by the field unit/office personnel with no additional correction required by Atlantic Hydrographic Branch. The field unit/office personnel applied verified water levels in conjunction with the final zoning for H11605. Sounding datum is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at Tacoma, WA (944-6484) served as datum control for the survey area.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 10. Office ENC processing of this survey required translating the datum to meet S-57 ENC requirements.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON:

18450 (18th Edition, 20040201)
Corrected through NM 01/10/2009
Corrected through LNM 12/30/2008
Scale 1:10,000

18449 (18th Edition, 20031001)
Corrected through NM 01/10/2009
Corrected through LNM 12/30/2008
Scale 1:25,000

ENC Comparison

US5WA15M
Seattle Harbor
Edition 7
Update Application Date 2009-03-12 Issue
Date 2009-03-12
References: Chart 18450

D.1.1 Hydrography

The charted shoreline for chart 18450 was found to be in need of updating in several locations. Areas of significant disagreement with H11605 survey area are denoted with bluenotes in the H11605_CS.000 H-Cell. Recommend revision of these areas with contemporary RSD shoreline data.

D.2.1. Aids to Navigation

All ATON's addressed and positioned are discussed in the DR. AHB recommends deferring the charting disposition of these navigational aids to Marine Chart Division, Nautical Data Branch.

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
H11605

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, and 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.

Leonard Tyson
Hydrographic Intern
Atlantic Hydrographic Branch

Edward A. Owens
Physical Scientist
Atlantic Hydrographic Branch

I have compiled 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: _____
Shepard Smith
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch