H11368

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey **HYDROGRAPHIC**

Field No. **RA-10-16-04**

Registry No. **H-11368**

LOCALITY

State **Alaska**

General Locality **Eastern Prince William Sound**

Sublocality **Busby Island to Point Freemantle**

2004

CHIEF OF PARTY

CDR John W. Humphrey, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-11368

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.
RA 10-16-04

State **Alaska**

General Locality **Eastern Prince William Sound**

Sublocality **Busby Island to Point Freemantle**

Scale **1:10,000** Date of Survey **8/31/2004 - 9/12/2004**

Instructions Date **7/20/2004** Project No. **OPR-P132-RA-04**

Vessel **RA4 (1016), RA5 (1006), RA6 (1015), RA2 (1101), RA1 (1103)**

Chief of Party **Commander John W. Humphrey, NOAA**

Surveyed by **Rainier Personnel**

Seabeam/Elac 1180, Ross

Soundings taken by echo sounder, hand lead, pole **Knudson 320M, Reson SeaBat 8101, 8125**

Graphic record scaled by **RAINIER PERSONNEL**

Graphic record checked by **RAINIER PERSONNEL**

Evaluation by **R. Shipley** Automated plot by **HP Design Jet 1050C**

Verification by **E. Domingo, R. Shipley**

Soundings in **Fathoms** at **MLLW**

REMARKS: **All times are UTC.**

Revisions and annotations appearing as endnotes were generated during office processing.

As a result, page numbering may be interrupted or non-sequential.

All seperates are filed with the hydrographic data.

All depths listed in this report are referenced to MLLW unless otherwise noted. UTM Projection (zone 6).

Descriptive Report to Accompany Hydrographic Survey H11368

Project OPR-P132-RA-04
Eastern Prince William Sound, Alaska
Scale 1:10,000
August - September 2004
NOAA Ship RAINIER
Chief of Party: Commander John W. Humphrey, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P132-RA-04, dated July 20, 2004, Draft Standing Project Instructions dated March 23, 2004, and NOS Hydrographic Specifications and Deliverables dated March 2003. The survey area is Busby Island to Point Freemantle This survey corresponds to sheet "C" in the sheet layout provided with the Letter Instructions.

One hundred percent shallow-water multibeam (SWMB) coverage was obtained in the survey area in waters 8 meters and deeper. In 4-8 meters of water coverage was obtained as much as possible and to acquire least depths over significant features or shoals, as appropriate for this survey. Vertical-beam echo sounder (VBES) data were acquired in depths from 4 to 20 meters to define the four-meter curve and to aid in the planning of SWMB data acquisition.[1]

Data acquisition was conducted from August 31, 2004 to September 12, 2004 (DN 244 to 256).

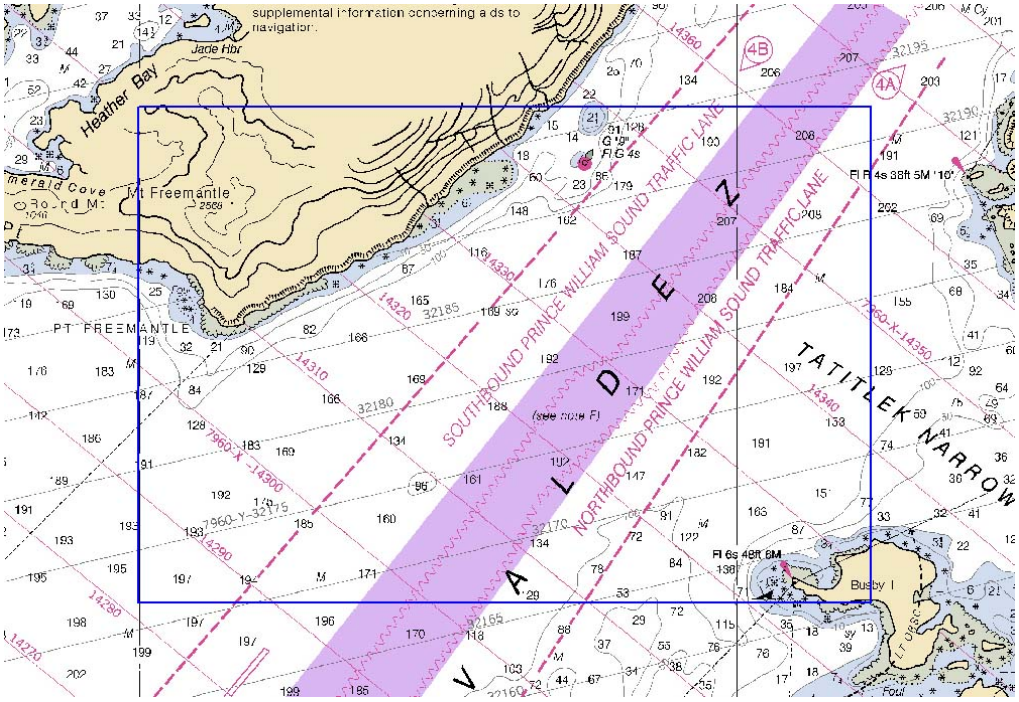


Figure 1. H11368 Survey Limits

B. DATA ACQUISTION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *OPR-P132-RA-04 Data Acquisition and Processing Report* (DAPR)[2], submitted under separate cover. Items specific to this survey, and any deviations from the aforementioned report are discussed in the following sections.

B1. Equipment and Vessels

Data were acquired by the RAINIER survey launches 1006, 1015, 1016, 1101, and 1103. Vessels 1006, 1015, and 1016 were used to acquire shallow-water multibeam (SWMB) soundings and sound velocity profiles. Vessels 1101 and 1103 were used to acquire vertical-beam echo soundings (VBES) and detached positions (DPs) for shoreline.

No unusual vessel configurations were used for data acquisition.[3]

B2. Quality Control

Crosslines

Vertical Beam Echo Sounder (VBES) crosslines including shoreline buffer lines totaled 18.60 nautical miles, comprising 8.70% of main scheme hydrography. VBES crosslines were manually compared to VBES and SWMB mainscheme lines for consistency in CARIS subset mode. Crosslines generally agreed within .75 meter of mainscheme hydrography. The Hydrographer flagged as "rejected" VBES data that did not met accuracy standards defined in the NOS Hydrographic Surveys Specifications and Deliverables Manual (HSSDM) with no determent to data coverage.

Shallow-Water Multibeam (SWMB) crosslines totaled 10.75 nautical miles, comprising 10.03% of SWMB hydrography. The main scheme bathymetry was manually compared to the XL nadir beams in CARIS subset mode and agreed well, with differences averaging less than 0.5 meter.

Through manual examination of the data and statistical analysis of data, accuracy standards for this survey have been met.[4]

Junctions

The following contemporary surveys junctions with H11368.

Registry #	Scale	Date	Junction side
H11349	1:10,000	2004	North
H11351	1:10,000	2004	East
H11366	1:10,000	2004	South

Data from H11368 were compared with data from H11349, H11351, and H11366 using CARIS HIPS Subset, attributing sounding color by survey, allowing the hydrographer to differentiate data between surveys. Cursory comparisons shows agreement of less then three quarter meter in common areas shoaler than 100 meters. In waters deeper than 100 meters, differences of one to three meters were noted.

Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after the application of smooth tides.[5]

Prior Surveys

A comparison reveals significant difference in sounding depths between this survey and H10568. Depths from H11368 are consistently deeper than soundings from H10568, averaging approximately 14 meters in both shallow and deep waters. The consistent nature of the difference suggests that tides may have been incorrectly applied for survey H10568.[6]

Data Quality Factors

Areas of low data density exist in depths greater than 220 meters. Several small holidays exist within these depths. Two large holidays exist, however due to surrounding bathymetry and water depth, it was not deemed critical to obtain coverage in these areas. The larger of the two is approximately 640 meters x 130 meters at a depth of 380 meters centered at approximately 60/56/53.145 N 146/50/14.329 W. The second holiday is approximately 360 meters x 80 meters at a depth of 220 meters centered at approximately 60/55/8.079 N 146/58/55.091 W.[7]

B3. Data Reduction

Data reduction procedures for survey H11368 conform to those detailed in the *OPR-P132-RA-04 DAPR.*

C. VERTICAL AND HORIZONTAL CONTROL

A summary of horizontal and vertical control for this survey follows.[8]

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacon at Potato Point (298 kHz) were utilized during this survey. Launch-to-launch DGPS performance checks using U.S. Coast Guard beacon at Cape Hinchinbrook (292 kHz) as the check station were performed in accordance with Section 3.2 of the Field Procedure Manual (FPM). Copies of the performance checks are included in the Supplemental Correspondence section of this descriptive report.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide station at Valdez, AK (945-4240) served as control for datum determination and as the primary source for water level reducers for survey H11368.

No secondary gauges were required.

All data were reduced to MLLW using unverified observed tides from station Valdez, AK using the tide file 9454240.tid and time and height correctors using the zone corrector file P132RA2004CORP.zdf.

The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing. A request for delivery of final approved (smooth) tides for survey H11368 was forwarded to N/OPS1 on September 15, 2004. A copy of the request is included in Appendix IV.[9]

D. RESULTS AND RECOMMENDATIONS

D.1 Automated Wreck and Obstruction Information System (AWOIS) Investigations

An investigation determined that AWOIS item 52117 corresponds to a charted (16707) foul area. A single beam buffer line was run around the foul to update the extents and is included in the H11368 MapInfo Shoreline Updates (See Fig. 2). A Detached Position (1103_256_55) and photo (See Fig. 3) were taken on the largest of the awash rocks and entered into the H11368 Pydro session.[10]

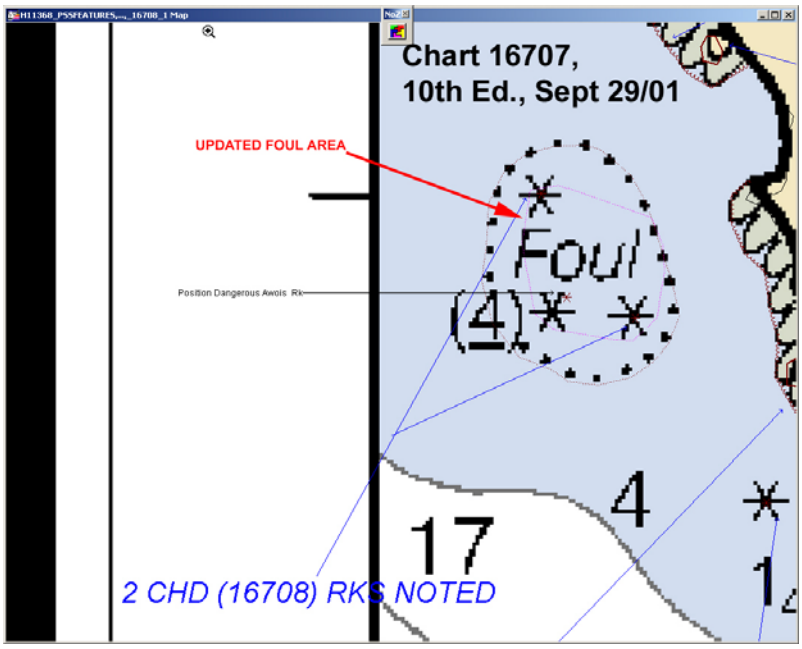


Figure 2. Updated Foul Area

Figure 3. Photo of AWOIS Dangerous Rocks Awash

D.2 Chart Comparison

Survey H11368 was compared with charts 16707 (11th Ed.; Sept. 2004, 1:40,000) and chart 16708 (26h Ed.; Oct. 2004 1:40,000).[11]

Chart 16707

Depths from survey H11368 agreed with chart 16707 within one half fathoms in waters shallower than 20 fathoms. Sounding from H11119 tended to be slightly shoaler than charted sounding in 20 fathoms. In waters deeper than 20 fathoms, sounding generally agreed with chart 16707 within one fathom, with no bias toward shoaler or deeper soundings. In many instances, this survey found shoaler soundings between charted soundings, especially near the western shore of the sheet. This can be attributed to the rocky near-shore bottom combined with increased bottom coverage using SWMB.[12]

Chart 16708

Depths from survey H11368 agreed with chart 16708 within one fathom with no bias towards shoaler or deeper soundings in near shore areas. In waters deeper than 150 fathoms, sounding generally agreed with chart 16708 within one to three fathoms, with bias toward shoaler soundings from survey H11368. In many instances, this survey found shoaler soundings

between charted soundings, especially in the near shore areas. This can be attributed to increased bottom coverage using SWMB.[13]

D.3 Shoreline

Shoreline Source

Vector photogrammetric projects GC10539 and GC10540 were supplied by N/NGS3 in the form of cartographic feature files (CFF). RAINIER conducted shoreline verification of the CFF. In the absence of CFF MHW or CFF MLLW, RAINIER personnel digitized the largest scale charts in MapInfo and displayed in HYPACK for field verification. In addition, features shown on the current editions of charts 16707 and 16708, that were not depicted on the shoreline source document were digitized in MapInfo by RAINIER personnel and displayed in Hypack for field verification.

Shoreline Verification

Shoreline verification was conducted near predicted low water in accordance with the Standing Project Instructions and FPM sections 6.1 and 6.2. Detached positions (DPs) taken during shoreline verification were recorded in HYPACK and on DP forms, and processed in Pydro. These indicate revisions to features and features not found on the verified shoreline. In addition, annotations describing shoreline were recorded on hard copy plots of digital shoreline. DP forms are included in Section I of the *Separates to be Included with Survey Data*.[14]

A detailed Detached Position and Bottom Sample plot[15] in MapInfo format is provided showing all detached positions with notes relating to each feature. The updated shoreline and features are also depicted on the final sounding plot. Verified CFF shoreline that did not require revision is in MapInfo table H11368_CFF_Shoreline and shown in black. New MHW features and changes to the MHW shoreline and displayed in red, CFF or charted, are displayed in pink on the "H1368_ShorelineUpdates" Mapinfo table. Charted shoreline, when used for reference purposes or when source data were not available, is depicted in the MapInfo table "H11368_Charted_Shoreline" and displayed in brown (chart 16707) and green (chart 16708).

Source Shoreline Changes and New Features

The features found during this survey generally match those of the source shoreline. Several revisions and new features were found and are depicted on the final Detached Position plot. Charted rocks were often identified as high points or extents of new ledges and are annotated as such on the DP plot.

Features positioned with a DP that required further discussion are flagged as "Report" in Pydro. The Hydrographer's remarks, recommendations, survey methods and investigation summary were exported to a report for these features. The report, H11368_Shoreline_Report is included in the supplemental correspondence section of the Descriptive Report.

Charted Features

Charted items associated with a detached position that required additional discussion were flagged as “Report” in the Pydro session (H1368.pss). The investigation and survey methods used to verify or disprove an item are described in the "Remarks and Recommendation” tabs in Pydro. A report, H1368_Shoreline_Report with these items was generated and is included in Appendix/Supplemental Correspondence/H11368_Shoreline_Report.pdf.[16]

Recommendations

The Hydrographer recommends that the shoreline as depicted on the Detached Position supersede and complement shoreline information compiled on the CFF and charts as noted.[17] In addition, field notes made by the Hydrographer, including verification of source features or charted features if no source shoreline was available are submitted in the digital MapInfo file “H1368_ShorelineNotes.”

D.4 Dangers to Navigation

No Dangers to Navigation (DTONs) were found within the limits of H11368.[18]

D.5 Aids to Navigation

The position and characteristics of the charted green buoy positioned at approximately 60/57/9.1N 146/52/30.5W are sufficiently charted and required no further investigation.[19]

E. APPROVAL

As Chief of Party, I have ensured that standard field surveying and processing procedures were followed in producing this survey in accordance with the Hydrographic Manual, Fourth Edition, Hydrographic Survey Guidelines, Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables, as updated in 2003.

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 for final review and processing to N/CS34, Pacific Hydrographic Branch.

Survey H1368 is complete and adequate to supersede charted soundings[20] in their common areas. No additional work is required for this survey.[21]

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

Title	Date Sent	Office
Data Acquisition and Processing Report for OPR-P132-RA-04	Feb. 16, 2005	N/CS34
Tides and Water Levels Package for OPR-P132-RA-04	Feb. 15, 2005	N/OPS1
Coast Pilot Report for OPR-P132-RA-04	Feb. 15, 2005	N/CS26

Approved and Forwarded:

John W. Humphrey
Commander, NOAA
Commanding Officer

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

Survey Sheet Manager:

John J. Lomnicky
Lieutenant (Junior Grade), NOAA

Field Operations Officer:

Kevin T. Slover
Lieutenant, NOAA

Revisions Compiled During Office Processing and Certification

[1] Concur.
[2] Filed with the Project Records.
[3] Concur.
[4] Concur with hydrographer's statements.
[5] Concur with clarification. Junction comparisons were made with H11349, H11351, and H11366. Sounding and depth curves are in good agreement and a "Junctions" note has been added to the smooth sheets.
[6] Do not concur. A comparison was made with H10568 during office processing. Soundings are in good agreement.
[7] Concur.
[8] A complete description of vertical and horizontal control for survey H11368 can be found in the OPR-P132-RA-04 *Horizontal and Vertical Control Report* filed with the Project Records.
[9] Appendix IV is filed with the hydrographic records. Approved Tide Note dated May 9, 2005 is attached to this report.
[10] A Printout of the AWOIS Report is included in Appendix VI of this report.
[11] Survey H11368 was compared to chart 16713 during office processing with generally good agreement.
[12] Concur with hydrographer's statements.
[13] Concur with hydrographer's statements.
[14] Filed with the Hydrographic Records.
[15] Filed with the Hydrographic Records.
[16] Filed with the Hydrographic Records.
[17] Concur.
[18] Concur.
[19] Concur. The evaluator recommends to chart the aid using latest ATONIS information.
[20] Insert "and features"
[21] Concur with hydrographer's statements.

Registry Number: H11368

State: Alaska

Locality: Eastern Prince William Sound

Sub-locality: Busby Island to Freemantle Point

Project Number: OPR-P132-RA-04

Survey Dates: August 31, 2004 - September 12, 2004

Charts Affected

Number	Version	Date	Scale
16707	10th Ed.	09/29/2001	1:40000
16713	2nd Ed.	01/19/2002	1:50000
16708	25th Ed.	10/06/2001	1:79291
16700	28th Ed.	07/01/2003	1:200000
16013	29th Ed.	11/01/2003	1:969761
531	22nd Ed.	03/01/2004	1:2100000
500	8th Ed.	06/01/2003	1:3500000
50	6th Ed.	06/01/2003	1:10000000

Features

Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude
1103_246_307	Rock	-1.59 m	60° 57' 35.158" N	146° 53' 17.874" W
1103_246_328	Rock	-0.25 m	60° 56' 50.683" N	146° 54' 41.720" W
1103_246_329	Rock	-0.32 m	60° 56' 50.437" N	146° 54' 43.455" W
1103_246_347	Rock	-0.77 m	60° 56' 29.070" N	146° 55' 25.294" W
1103_246_350	Rock	-0.56 m	60° 56' 28.323" N	146° 55' 29.753" W
1103_246_351	Rock	0.94 m	60° 56' 27.329" N	146° 55' 31.743" W
1103_246_352	Rock	-0.75 m	60° 56' 34.308" N	146° 55' 24.093" W
1103_246_362	Sounding	-3.05 m	60° 56' 22.670" N	146° 55' 52.389" W
1103_246_363	Rock	-0.46 m	60° 56' 25.206" N	146° 55' 48.103" W
1103_246_390	Rock	0.79 m	60° 56' 17.621" N	146° 56' 24.918" W
1103_246_391	Sounding	-2.73 m	60° 56' 18.547" N	146° 56' 15.332" W
1103_256_392	Rock	-2.10 m	60° 57' 04.962" N	146° 54' 31.745" W

1103_256_394	Rock	1.81 m	60° 56' 34.354" N	146° 55' 14.302" W
1103_256_55	Rock	-1.65 m	60° 55' 56.783" N	146° 59' 12.157" W
1103_256_66	Sounding	5.12 m	60° 56' 12.021" N	146° 59' 24.217" W
1103_256_64	Rock	15.65 m	60° 55' 49.255" N	146° 58' 07.583" W
OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]

1 - New Features

1.1) 1103_246_307 New Rk (5)

Survey Summary

Survey Position:	60° 57' 35.158" N, 146° 53' 17.874" W
Least Depth:	-1.59 m
Timestamp:	2004-246.17:07:51.000 (09/02/2004)
DP Dataset:	h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp
Profile/Beam:	1/1
Charts Affected:	16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (16707_1, 16713_1, 531_1)

-1.6m (500_1, 50_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	INFORM - New Rk
	QUASOU - 2:depth unknown
	VALSOU - -1.588 m
	WATLEV - 4:covers and uncovers

Office Notes

Concur. Chart new rock

1.2) 1103_246_328 New Rk (1)

Survey Summary

Survey Position: 60° 56' 50.683" N, 146° 54' 41.720" W

Least Depth: -0.25 m

Timestamp: 2004-246.17:28:27.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 2/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (16707_1, 16713_1, 531_1)

-.3m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - -0.249 m

WATLEV - 5:awash

Office Notes

Concur. Chart new rock

1.3) 1103_246_329 New Rk (1)

Survey Summary

Survey Position: 60° 56' 50.437" N, 146° 54' 43.455" W

Least Depth: -0.32 m

Timestamp: 2004-246.17:35:22.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 3/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (16707_1, 16713_1, 531_1)

-.3m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - -0.321 m

WATLEV - 5:awash

Office Notes

Concur. Chart new rock

1.4) 1103_246_347 New Rk (3)

Survey Summary

Survey Position: 60° 56' 29.070" N, 146° 55' 25.294" W

Least Depth: -0.77 m

Timestamp: 2004-246.17:51:17.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 4/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	4/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 2ft (16707_1, 16713_1, 531_1)

-.8m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - -0.765 m

WATLEV - 4:covers and uncovers

Office Notes

Concur. Chart new rock uncovers 3 ft. as shown on the smooth sheet.

1.5) 1103_246_350 New Rk (2)

Survey Summary

Survey Position: 60° 56' 28.323" N, 146° 55' 29.753" W

Least Depth: -0.56 m

Timestamp: 2004-246.17:54:44.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 5/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	5/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 2ft (16707_1, 16713_1, 531_1)

-.6m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - -0.559 m

WATLEV - 5:awash

Office Notes

Concur. Chart new rock uncovers 2 ft as shown on the smooth sheet.

1.6) 1103_246_351 New Rk 0.5Rk

Survey Summary

Survey Position: 60° 56' 27.329" N, 146° 55' 31.743" W

Least Depth: 0.94 m

Timestamp: 2004-246.17:56:16.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 6/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	6/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16708_1, 16700_1, 16013_1)

0fm 3ft (16707_1, 16713_1, 531_1)

.9m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - 0.943 m

WATLEV - 5:awash

Office Notes

Concur. Chart new 0fm 3ft Rk.

1.7) 1103_246_352 New Rk (3)

Survey Summary

Survey Position: 60° 56' 34.308" N, 146° 55' 24.093" W

Least Depth: -0.75 m

Timestamp: 2004-246.18:01:10.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 7/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	7/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 2ft (16707_1, 16713_1, 531_1)

-.8m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - -0.751 m

WATLEV - 4:covers and uncovers

Office Notes

Concur. Chart new rock uncovers 3 ft. as shown on the smooth sheet.

1.8) 1103_246_362 CFF Rk is HP New Ldg

Survey Summary

Survey Position: 60° 56' 22.670" N, 146° 55' 52.389" W

Least Depth: -3.05 m

Timestamp: 2004-246.18:11:13.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 8/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CFF Rk is HP New Ldg

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	8/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ½fm (16708_1, 16700_1, 16013_1)

-1fm 4ft (16707_1, 16713_1, 531_1)

-3.1m (500_1, 50_1)

S-57 Data

[None]

Office Notes

Concur. Chart new ledge.

1.9) 1103_246_363 New Rk (2)

Survey Summary

Survey Position: 60° 56' 25.206" N, 146° 55' 48.103" W

Least Depth: -0.46 m

Timestamp: 2004-246.18:16:36.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 9/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	9/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 1ft (16707_1, 16713_1, 531_1)

-.5m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - -0.462 m

WATLEV - 5:awash

Office Notes

Concur. Chart new rock uncovers 2 ft as shown on the smooth sheet.

1.10) 1103_246_390 New Rk cov 2 ft

Survey Summary

Survey Position: 60° 56' 17.621" N, 146° 56' 24.918" W

Least Depth: 0.79 m

Timestamp: 2004-246.18:49:52.000 (09/02/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp

Profile/Beam: 10/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	10/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 2ft (16707_1, 16713_1, 531_1)

.8m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - 0.786 m

WATLEV - 5:awash

Office Notes

Concur. Chart new rock uncovers 2 ft as shown on the smooth sheet.

1.11) 1103_246_391CFF Rk HP New Ldg

Survey Summary

Survey Position:	60° 56' 18.547" N, 146° 56' 15.332" W
Least Depth:	-2.73 m
Timestamp:	2004-246.18:52:28.000 (09/02/2004)
DP Dataset:	h11368 / 1103_nonechosounder_dp / 2004-246 / 1103_246_dp
Profile/Beam:	11/1
Charts Affected:	16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CFF Rk HP New Ldg

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-246/1103_246_dp	11/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ½fm (16708_1, 16700_1, 16013_1)

-1fm 3ft (16707_1, 16713_1, 531_1)

-2.8m (500_1, 50_1)

S-57 Data

[None]

Office Notes

Concur. Chart new ledge.

1.12) 1103_256_392 Rks are Boulders on Beach

Survey Summary

Survey Position: 60° 57' 04.962" N, 146° 54' 31.745" W

Least Depth: -2.10 m

Timestamp: 2004-256.15:38:16.000 (09/12/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-256 / 1103_256_dps

Profile/Beam: 1/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

2 Chd (16707) Rks are Boulders on Beach

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-256/1103_256_dps	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1fm (16708_1, 16700_1, 16013_1)

-1fm 1ft (16707_1, 16713_1, 531_1)

-2.1m (500_1, 50_1)

S-57 Data

[None]

Office Notes

Retain charted rocks. Charted rocks were not fully disproved.

1.13) 1103_256_394 New Rk 1 Rk

Survey Summary

Survey Position: 60° 56' 34.354" N, 146° 55' 14.302" W

Least Depth: 1.81 m

Timestamp: 2004-256.15:52:22.000 (09/12/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-256 / 1103_256_dps

Profile/Beam: 2/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-256/1103_256_dps	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (16708_1, 16700_1, 16013_1)

-1fm 0ft (16707_1, 16713_1, 531_1)

1.8m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - New Rk

QUASOU - 1:depth known

VALSOU - 1.808 m

WATLEV - 5:awash

Office Notes

Concur. Chart new 0fm 5ft Rk.

1.14) 1103_256_55 Rk (6)

Survey Summary

Survey Position: 60° 55' 56.783" N, 146° 59' 12.157" W

Least Depth: -1.65 m

Timestamp: 2004-256.16:44:01.000 (09/12/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-256 / 1103_256_dps

Profile/Beam: 3/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Position Dangerous Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-256/1103_256_dps	3/1	0.00	000.0	Primary

Hydrographer Recommendations

Retain charted foul

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (16707_1, 16713_1, 531_1)

-1.7m (500_1, 50_1)

S-57 Data

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

Attributes: INFORM - Position Dangerous Rk

QUASOU - 1:depth known

VALSOU - -1.654 m

WATLEV - 5:awash

Office Notes

Retain foul area and chart rock as shown on the smooth sheet.

1.15) 1103_256_66 Islet Disproval

Survey Summary

Survey Position: 60° 56' 12.021" N, 146° 59' 24.217" W

Least Depth: 5.12 m

Timestamp: 2004-256.17:16:47.000 (09/12/2004)

DP Dataset: h11368 / 1103_echosounder_dp / 2004-256 / 1103_256_dps

Profile/Beam: 2/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd (16707) Islet Disproval

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_echosounder_dp/2004-256/1103_256_dps	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2 ¾fm (16708_1, 16700_1, 16013_1)

2fm 5ft (16707_1, 16713_1, 531_1)

5.1m (500_1, 50_1)

S-57 Data

[None]

Office Notes

Concur with clarification. The islet was visually disproved. However, full multibeam coverage was not obtained in the area. A rock may be present. Recommend charting a rock awash at the islet location.

1.16) 1103_256_64 Rk Disproval

Survey Summary

Survey Position: 60° 55' 49.255" N, 146° 58' 07.583" W

Least Depth: 15.65 m

Timestamp: 2004-256.17:08:43.000 (09/12/2004)

DP Dataset: h11368 / 1103_echosounder_dp / 2004-256 / 1103_256_dps

Profile/Beam: 1/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd (16707) Rk Disproval

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_echosounder_dp/2004-256/1103_256_dps	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

8 ½fm (16708_1, 16700_1, 16013_1)

8fm 3ft (16707_1, 16713_1, 531_1)

15.6m (500_1, 50_1)

S-57 Data

[None]

Office Notes

Concur.

2 - AWOIS Features

2.1) 1103_256_55 Rk (6)

Primary Feature for AWOIS Item #52117

Search Position: 60° 55' 60.000" N, 146° 59' 30.000" W

Historical Depth: [None]

Search Radius: 400

Search Technique: VS,ES,##

Technique Notes: SURVEY REQUIREMENT COMMENTS CONDUCT A SEARCH TO DETERMINE THE EXTENT AND LEAST DEPTHS OF ìROCKS IN THE VICINITY OF CHARTED NOTE AS GIVEN IN THE HISTORY ìBELOW.

History Notes:

BP104500/78--USGS TOPO/HYDRO SURVEY, 1978; A DANGEROUS ìUNCHARTED ROCKS NOTATION IS SHOWN FROM POS. LAT.60-55-52, ìLONG.146-59-00W TO LAT.60-56-10N, LONG.147-00-06W (POS. CONVERTED ìTO NAD 83 BY NADCON). (ENTERED 5/94 MCR)

Survey Summary

Survey Position: 60° 55' 56.783" N, 146° 59' 12.157" W

Least Depth: -1.65 m

Timestamp: 2004-256.16:44:01.000 (09/12/2004)

DP Dataset: h11368 / 1103_nonechosounder_dp / 2004-256 / 1103_256_dps

Profile/Beam: 3/1

Charts Affected: 16707_1, 16713_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Position Dangerous Rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11368/1103_nonechosounder_dp/2004-256/1103_256_dps	3/1	0.00	000.0	Primary
P132-RA-04-Awois	AWOIS # 52117	285.39	110.4	Secondary

Hydrographer Recommendations

Retain charted foul

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (16707_1, 16713_1, 531_1)

-1.7m (500_1, 50_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	INFORM - Position Dangerous Rk
	QUASOU - 1:depth known
	VALSOU - -1.654 m
	WATLEV - 5:awash

Office Notes

Retain foul area and chart rock as shown on the smooth sheet.

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : May 9th, 2005

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: ~~OPR-P139-TC-2004~~ OPR-P132-RA-2004
HYDROGRAPHIC SHEET: H11368

LOCALITY: Busby Island to Freemantle Point, PWS, AK
TIME PERIOD: August 31 - September 12, 2004

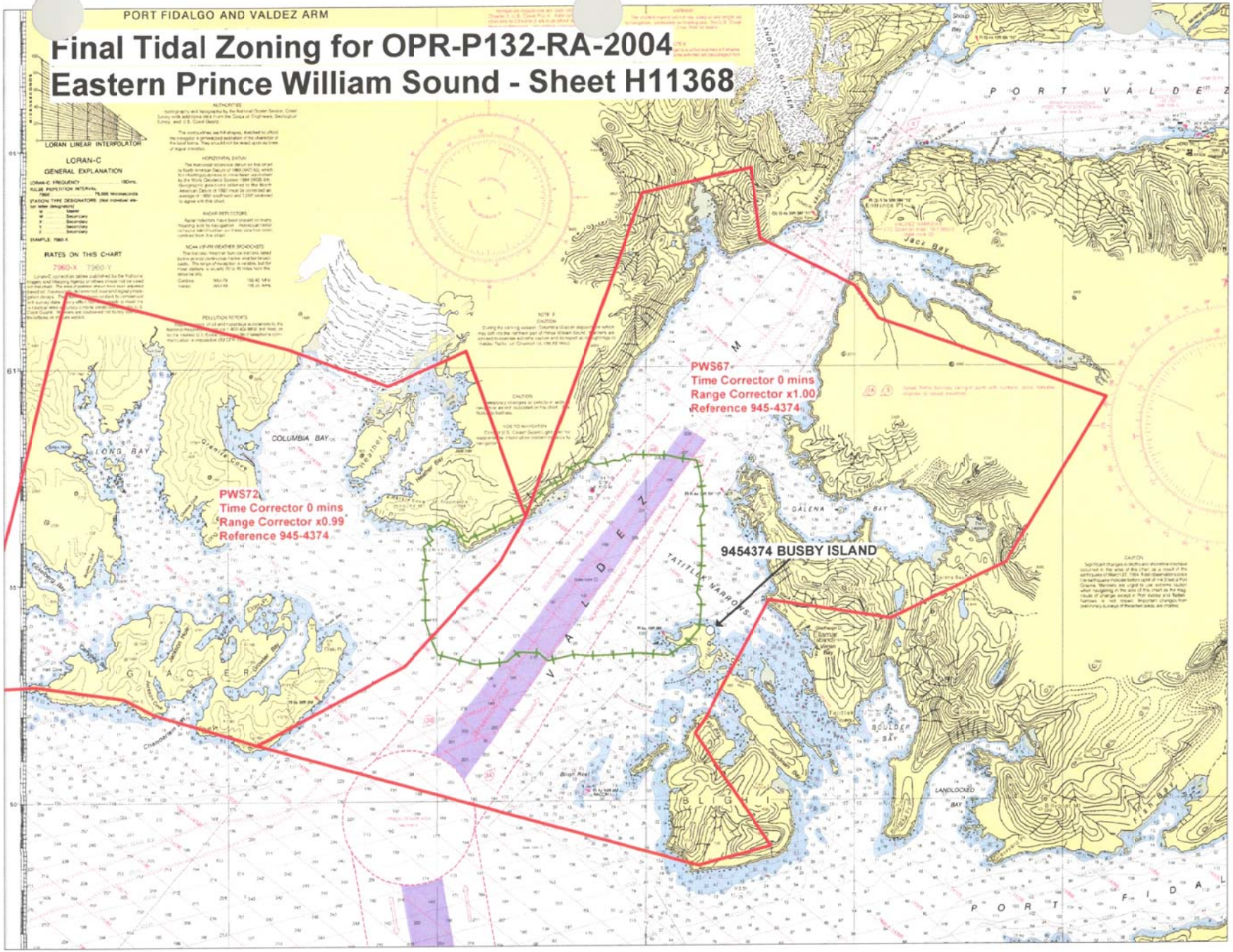
TIDE STATION USED: 945-4374 Busby Island, AK
Lat. 60 53.9'N Long. 146 46.9' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.360 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: PWS67 & PWS72

Refer to attachments for zoning information.

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

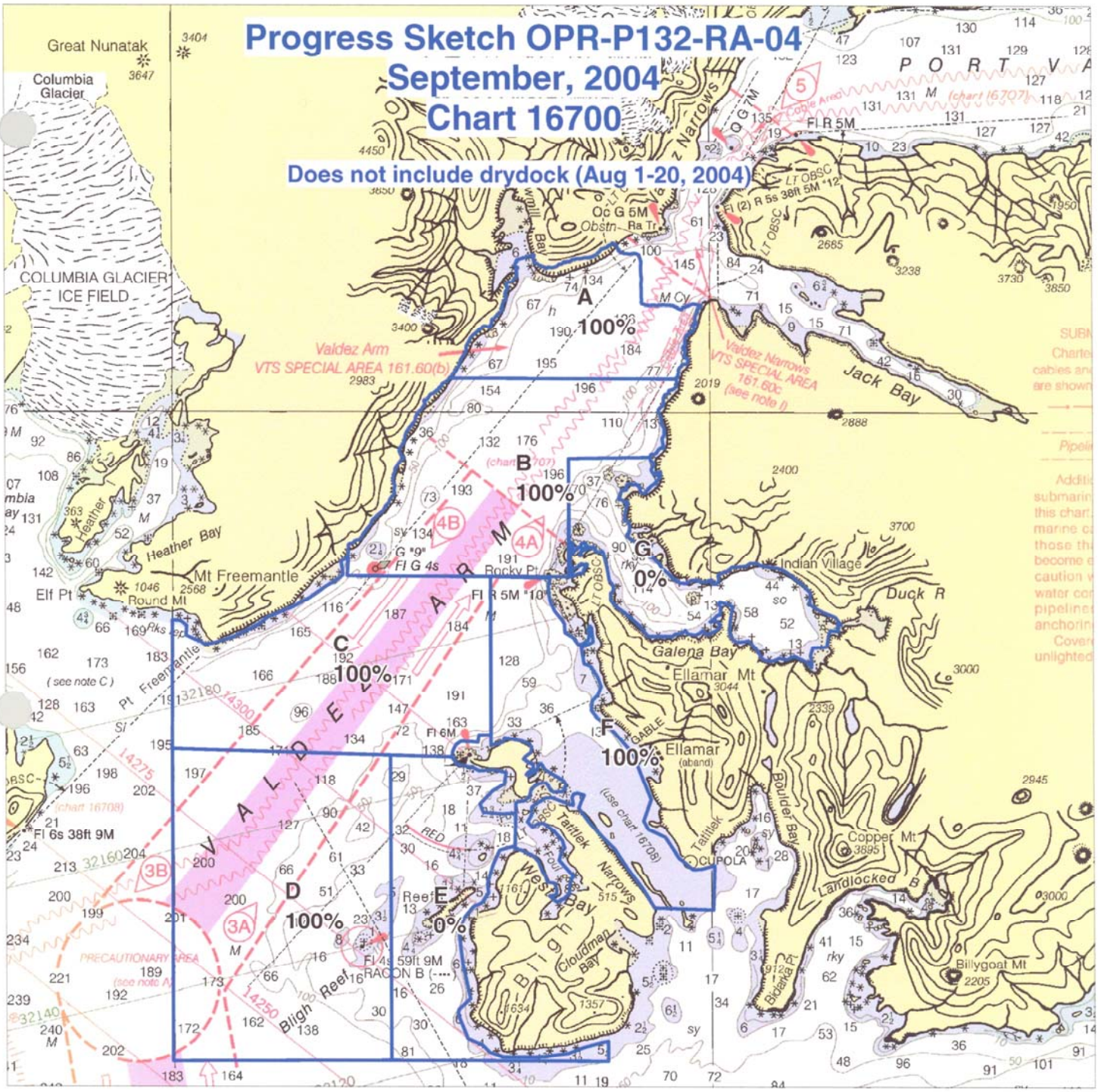
Thomas W. Meier 5/16/05
CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION


PORT FIDALGO AND VALDEZ ARM
Final Tidal Zoning for OPR-P132-RA-2004
Eastern Prince William Sound - Sheet H11368
PWS67
Time Corrector 0 mins
Range Corrector x1.00
Reference 945-4374
PWS72
Time Corrector 0 mins
Range Corrector x0.99
Reference 945-4374
9454374 BUSBY ISLAND
COLUMBIA BAY
LONG BAY
GALENA BAY
BOULDER BAY
LANDLOCKED BAY
TATITLEK NARROWS
VALDEZ
GLACIER
BLIGH
PORT VALDEZ
PORT FIDALGO
LORAN LINEAR INTERPOLATOR
LORAN-C
GENERAL EXPLANATION
RATES ON THIS CHART

Final tide zone node point locations for OPR-P132-RA-2004, H11368

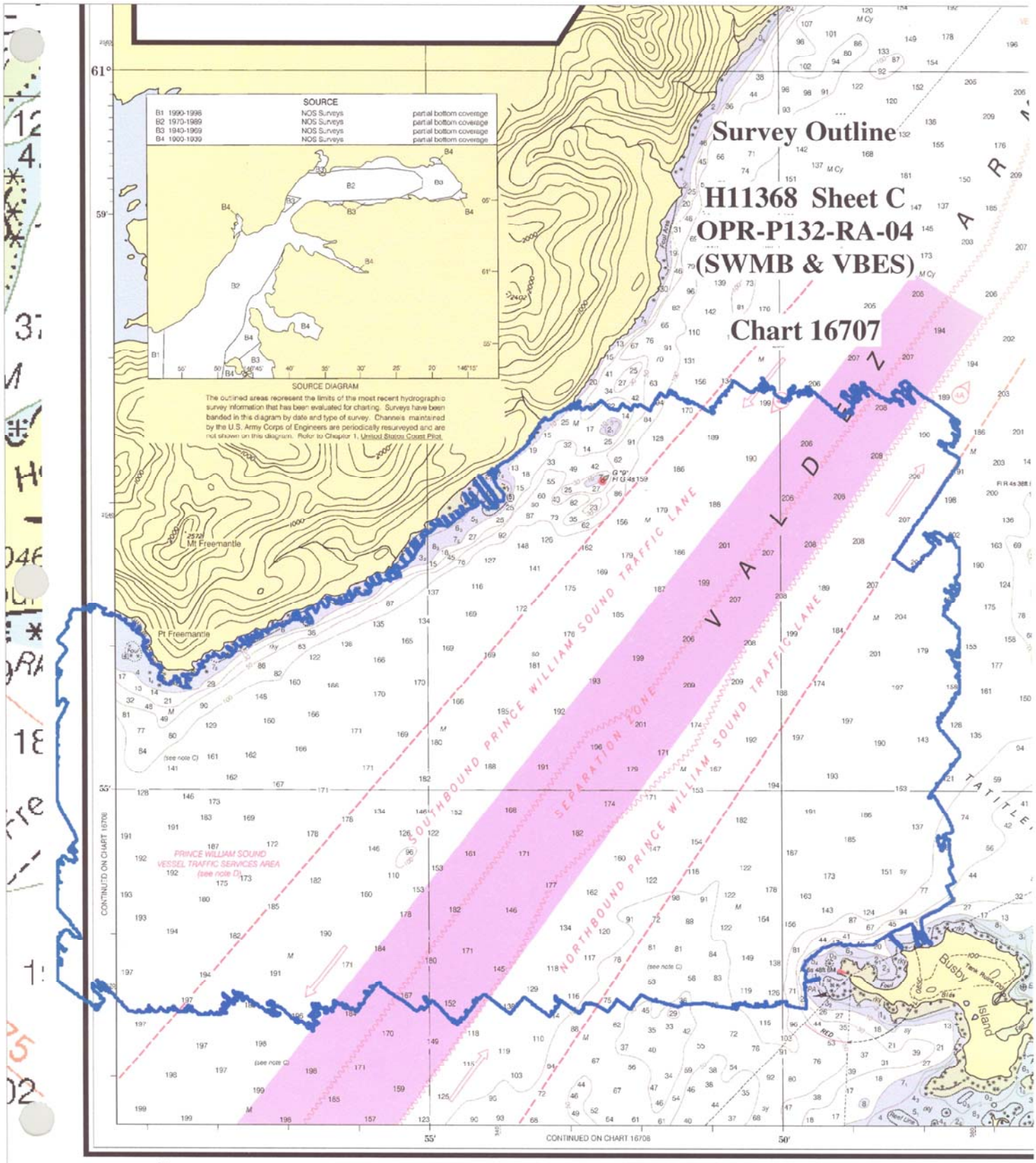
Format: Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction
Longitude in decimal degrees (negative value denotes Longitude West)
Latitude in decimal degrees

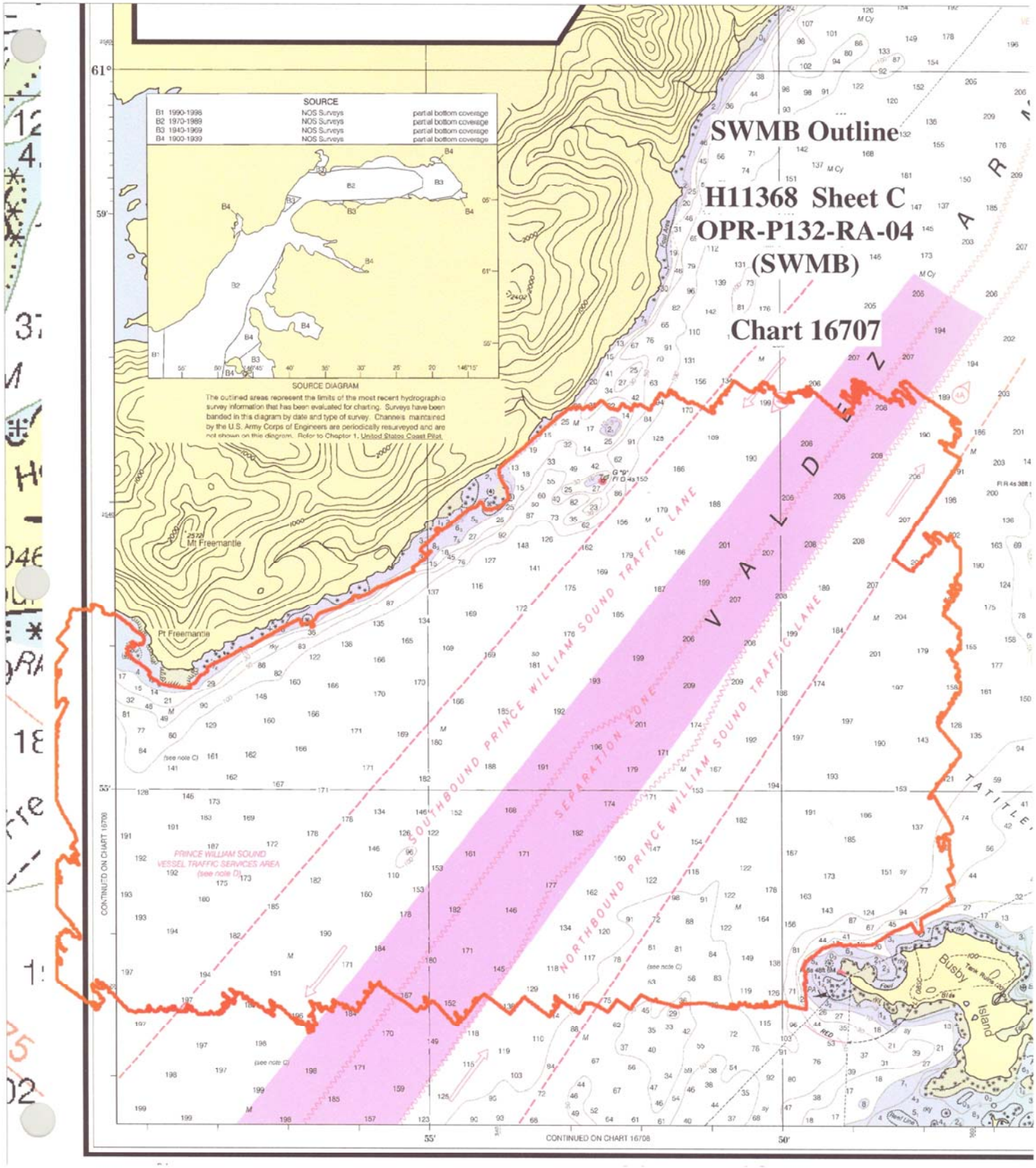
	Tide Station Order	AVG Time Correction	Range Correction
Zone PWS67	945-4374	0	1.00
-147.1433 60.855198			
-147.025646 60.885186			
-146.948102 60.925559			
-146.928717 60.942475			
-146.835761 61.066624			
-146.749176 61.076016			
-146.741526 61.049043			
-146.666789 61.03092			
-146.648105 61.018294			
-146.465267 60.987839			
-146.544989 60.924153			
-146.637467 60.902731			
-146.734514 60.910021			
-146.76628 60.881842			
-146.784771 60.8652			
-146.793773 60.859141			
-146.732848 60.815648			
-146.791093 60.808252			
-147.1433 60.855198			
Zone PWS72	945-4374	0	0.99
-147.373266 60.876709			
-147.320454 60.878014			
-147.248924 60.873126			
-147.226276 60.867232			
-147.1433 60.855198			
-147.025646 60.885186			
-146.948102 60.925559			
-146.928717 60.942475			
-146.976007 61.006478			
-147.038628 60.993147			
-147.117551 61.007309			
-147.29477 61.02981			
-147.373266 60.876709			



Project	Sheet_Letter	H_num	HQ_Est_SNM	CumlPercCompPrev	CumlPercCompCu	SNM_CompCurl	CumSNMcom
P132-04	C	H11368	16	20	100	13	16
P132-04	D	H11366	22	0	100	22	22
P132-04	E		9	0	0	0	0
P132-04	B	H11349	14	75	100	4	14
P132-04	A	H11348	7	85	100	1	7
P132-04	G	H11350	7	0	0	0	0
P132-04	F	H11351	10	65	100	4	10

Project	Month	LNM_Hydr	LNM_MB	SV_Casts	Bottom_Sam	AWOIS_Items	Tide_Guage_Inst	DAS	DTime_equip_H	DTime_Weather_	D_Time_other_H	Inport_H
OPR-P13	August	63.35	316.35	36.00	0.00	4.00	1.00	11.00	3.30	0.00	0.00	0.00
OPR-P13	September	25.96	343.43	27.00	0.00	5.00	0.00	14.00	3.50	0.00	1.25	72.00


Survey Outline
H11368 Sheet C
OPR-P132-RA-04
(SWMB & VBES)
Chart 16707
SOURCE
B1 1990-1996 NOS Surveys partial bottom coverage
B2 1970-1989 NOS Surveys partial bottom coverage
B3 1940-1969 NOS Surveys partial bottom coverage
B4 1900-1939 NOS Surveys partial bottom coverage
SOURCE DIAGRAM
The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, Unlisted Station Coast Pilot.
VALDEZ
SOUTHBOUND PRINCE WILLIAM SOUND TRAFFIC LANE
SEPARATION ZONE
NORTHBOUND PRINCE WILLIAM SOUND TRAFFIC LANE
PRINCE WILLIAM SOUND VESSEL TRAFFIC SERVICES AREA (see note D)
Mt Freemantle
Pt Freemantle
Busby Island
CONTINUED ON CHART 16708
CONTINUED ON CHART 16708
61°
59'
55'
50'


SWMB Outline
H11368 Sheet C
OPR-P132-RA-04
(SWMB)
Chart 16707
SOURCE
B1 1990-1998 NOS Surveys partial bottom coverage
B2 1970-1989 NOS Surveys partial bottom coverage
B3 1940-1969 NOS Surveys partial bottom coverage
B4 1900-1939 NOS Surveys partial bottom coverage
SOURCE DIAGRAM
The outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.
Mt Freemantle
Pt Freemantle
VALDEZ ARM
SOUTHBOUND PRINCE WILLIAM SOUND TRAFFIC LANE
SEPARATION ZONE
NORTHBOUND PRINCE WILLIAM SOUND TRAFFIC LANE
PRINCE WILLIAM SOUND VESSEL TRAFFIC SERVICES AREA (see note D)
Busby Island
CONTINUED ON CHART 16708
CONTINUED ON CHART 16708

APPROVAL SHEET
H11368

Initial Approvals:

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

Gary C. Nelson Date: 19 June 2008

Gary Nelson
Cartographer, Cartographic Team
Pacific Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Descriptive Report.

Date: 25 JUNE 2008

David O. Neander
CDR, NOAA
Chief, Pacific Hydrographic Branch

Erin Nagel
AWOIS & SURF Check Complete
2008.07.01 10:16:58 -04'00'