F00651

NOAA Form 76-35A

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Survey

DESCRIPTIVE REPORT

Type of Survey: Investigation

Registry Number: F00651

LOCALITY

State: California

General Locality: San Francisco Bay

Sub-locality: Anchorage 9 in San Francisco Bay

2014

CHIEF OF PARTY
Ian Colvert

LIBRARY & ARCHIVES

Date:

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET		**F00651**

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

State:	**California**
General Locality:	**San Francisco Bay**
Sub-Locality:	**Anchorage 9 in San Francisco Bay**
Scale:	**1: 10,000**
Dates of Survey:	**09/25/2014 to 10/09/2014**
Instructions Dated:	**09/23/2014**
Project Number:	**S-L934-NRT6-14**
Field Unit:	**Navigation Response Team 6**
Chief of Party:	**Ian Colvert**
Soundings by:	**Multibeam Echo Sounder**
Imagery by:	
Verification by:	**Pacific Hydrographic Branch**
Soundings Acquired in:	**meters at Mean Lower Low Water**
H-Cell Compilation Units:	***meters at Mean Lower Low Water***

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.

F00651 DESCRIPTIVE REPORT SUMMARY

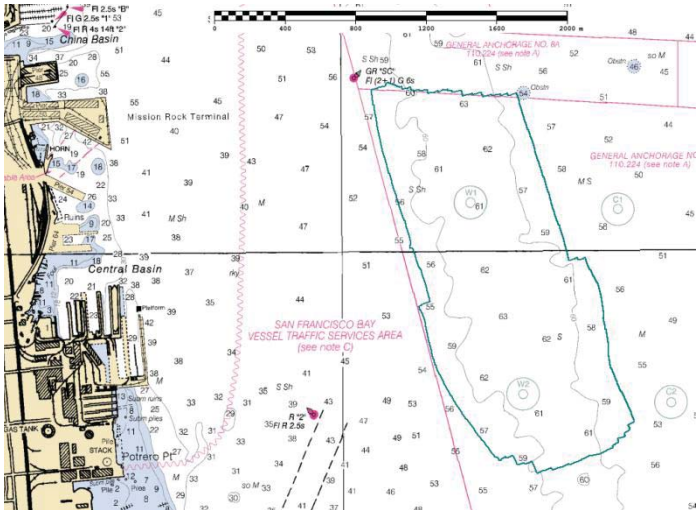
Project	S-L430-NRT6-14
Survey	F00651
State	California
Locality	San Francisco Bay
Sub Locality	Anchorage 9 in San Francisco Bay
Scale of Survey	1:10000
Sonars Used	Kongsberg EM3002
Horizontal Datum	North American Datum of 1983 (NAD83)
Vertical Datum	Mean Lower Low Water (MLLW)
Vertical Datum Correction	Verified, L934NRT62014.tc (DN268) Predicted (DN282)
Projection	Latitude-Longitude (NAD83) - UTM Zone 10
Field Unit	NRT6
Survey Dates	09/25/2014 – 10/09/2014
Chief of Party	Ian Colvert

A. Area Surveyed

This hydrographic survey was acquired in accordance with the requirements defined in the Project Instruction S-L934-NRT6-14.

Data was acquired within the following survey limits:

Northeast Limit	Southwest Limit
37-46-32.94N	37-45-17.45N
122-21-55.84W	122-20-48.88W



F00651 survey area (blue polygon).

B. Survey Purpose

The United States Coast Guard and Port of San Francisco requested NRT6 to conduct a bathymetric survey for the proposed anchorage site for the deep draft vessel SWAN. The depths in Anchorage 9 are not adequate to accommodate the SWAN's 60 foot draft. The proposed anchorage site has charted depths of 62' and 63' and NRT6 is assigned to investigate the depths in this area. The SWAN intends to anchor October 15.

C. Intended Use of Survey

Data collected 9/25/2014 (DN268) is adequate to supersede prior data and is intended for chart compilation. Soundings were reduced to Mean Lower Low Water (MLLW) using verified tides from tide station Alameda (9414750), applied via TCARI grid (L934NRT62014.tc).

Data collected 10/09/2014 is for informational purposes only and is not adequate to supersede prior data, and is not intended for chart compilation. Soundings were reduced to Mean Lower Low Water (MLLW) using predicted tides from tide station Alameda (9414750).

Office Notes: All data from F00651was found adequate for charting after Final Verified Water Levels were applied to data collected on 10/09/2014 during office processing.

This tide processing discrepancy is a result of a 'last-minute' request by the Port of San Francisco -- due to features with height above bottom discovered near anchorage bucket Whiskey 2 -- for additional sonar coverage of neighboring anchorage bucket Whiskey 1. Data was collected, processed, and products produced within 12 hours, giving constituents anchoring options for the SWAN's arrival October 15.

D. Data Acquisition and Processing

Please reference Data Acquisition and Processing Report DAPR_2014_FINAL.docx for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods.

E. Uncertainty

No data featured areas of Uncertainty greater than IHO Special Order.

F. Results and Recommendations

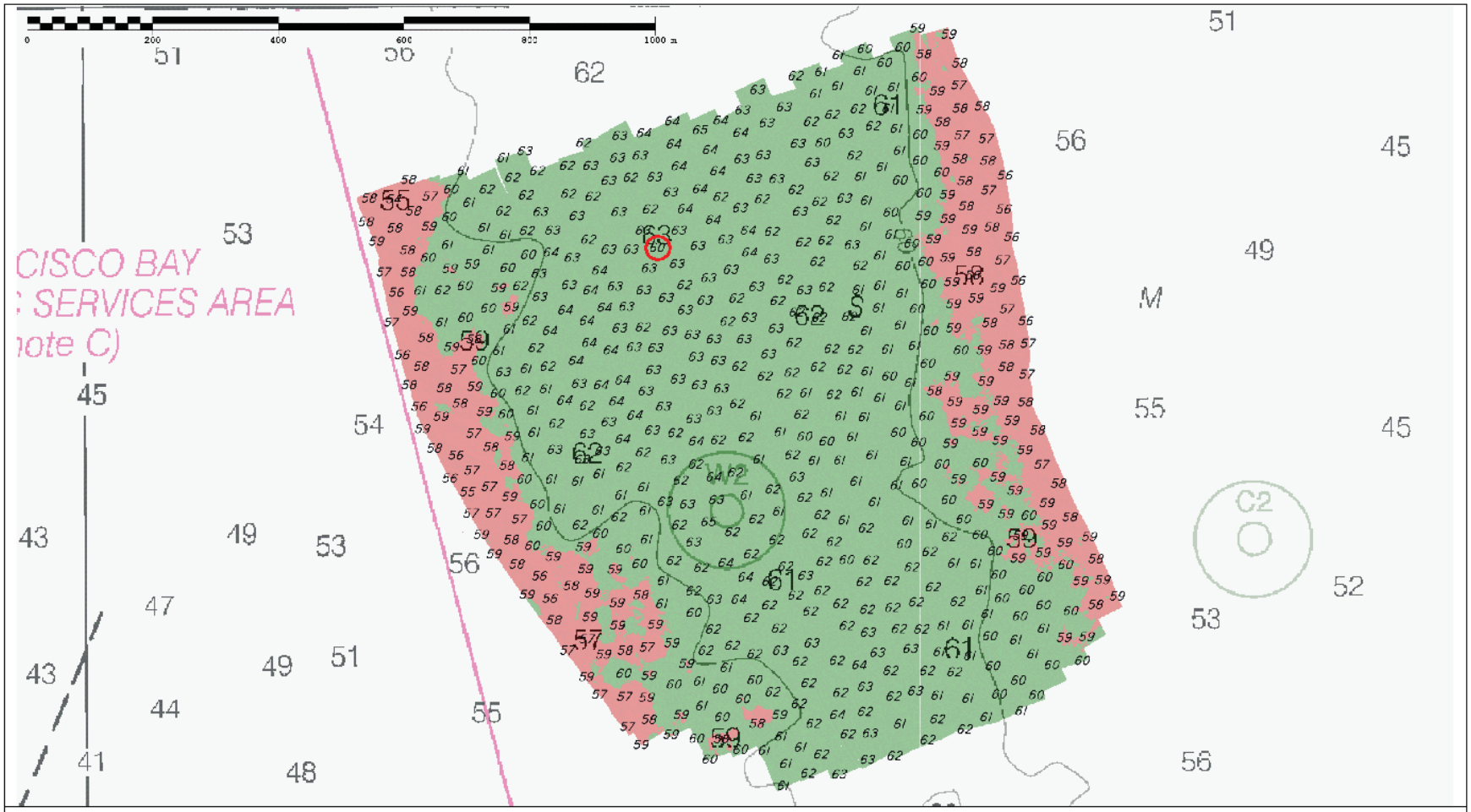
The following are the largest scale RNC and ENC, which cover the survey area:

Chart 18650	Scale 1:10000	Edition 57	Edition Date Dec./2013	LNM Date	NM Date 9/25/2014
ENC US3CA14M	Scale 1:207,840	Edition 17.5	Published 10/31/2014	Issue Date	Preliminary

Chart comparison, 18650

Soundings and contours exhibited general agreement. Of the many small, pocked features strewn near bucket Whiskey 2, Anchorage 9, six exhibit a height above bottom. Most notable of these features is a 60' shoalest sounding near a 63' charted depth.

Only a few small, pocked features exist near W1, and none exhibit a height above bottom or show sign of significant scour. There is a 61' sounding ~150 meters north from the center of W1.



Chartlet 1 of 8

ANCHORAGE 9 RESPONSE | SOUNDING PLOT | RED SHOALER THAN 60 FEET

Preliminary data subject to office review. Soundings corrected using TCARI verified tides.
Data reflects state of sea floor in existence on day and at time the survey was conducted.

This chartlet has been corrected through
Notice to Mariners dated 9/25/2014
NOT FOR NAVIGATION

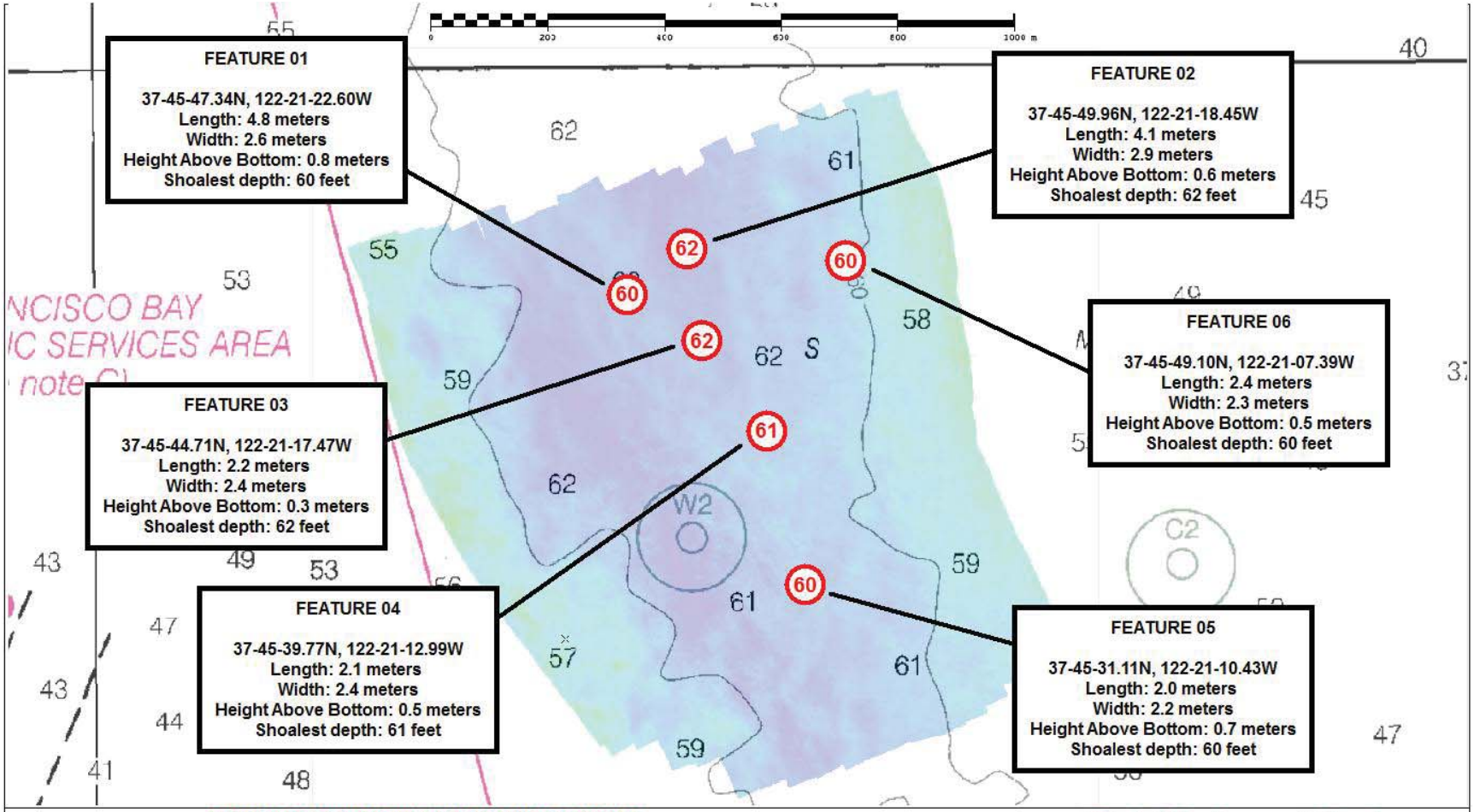
NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: S-L934-NRT6-14
Survey: Anchorage 9 Response
State: California
Locality: San Francisco Bay
Sub-locality: General Anchorage No. 9
Survey Scale: 1:10,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Chart Number: 18650
Chart Edition: 57, Dec./2013
NOS Ref:

NOAA NRT-6
Ian Colvert, Team Lead
Edmund Wernicke
Laura Pagano

Survey Date: Sep. 25, 2014



Chartlet 2 of 8

ANCHORAGE 9 RESPONSE | NOTEABLE FEATURES

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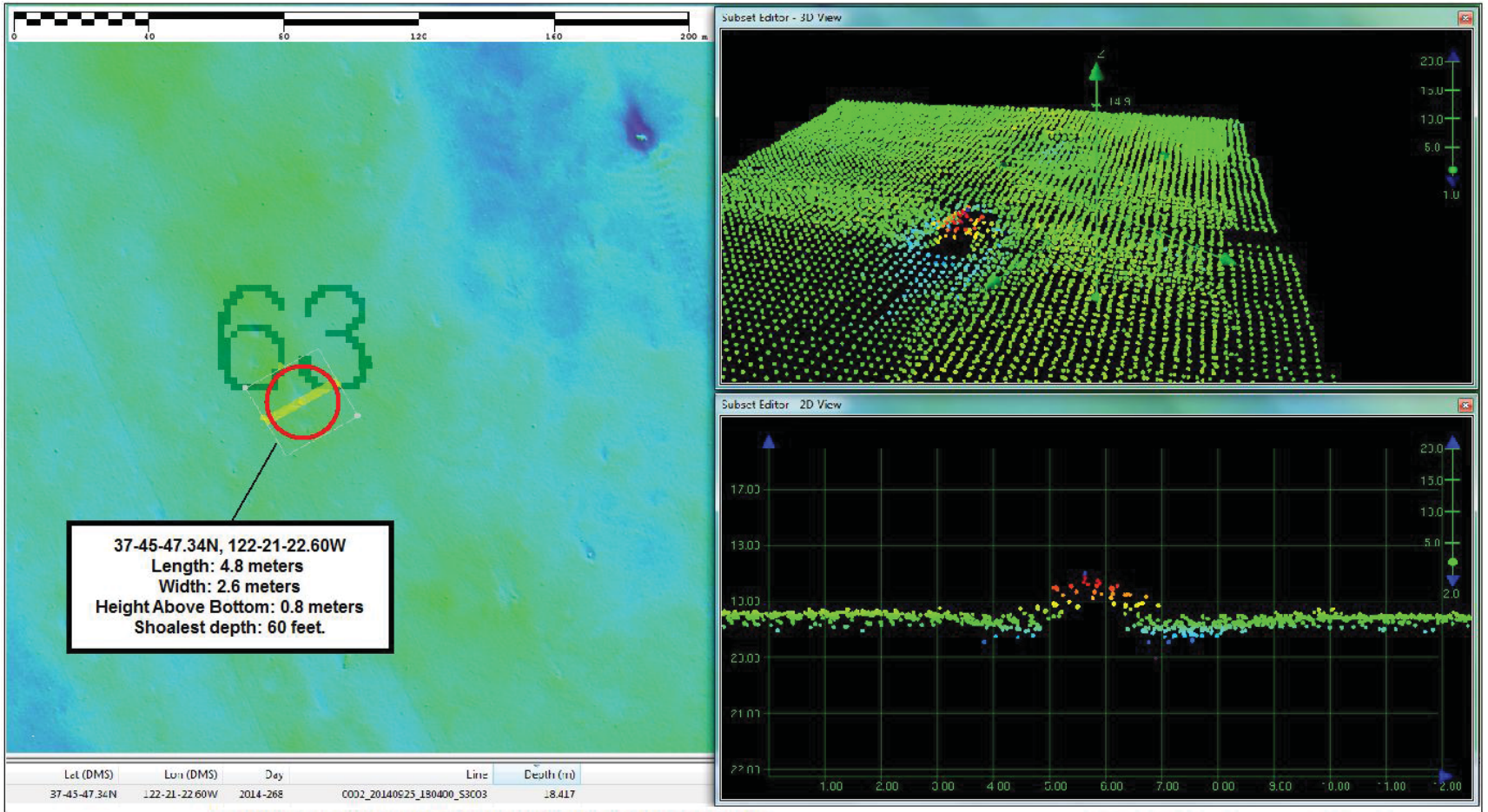
Edmund Wernicke
Laura Pagano

Survey Date: Sep. 25, 2014



Chartlet 3 of 8

FEATURE 01 | ANCHORAGE 9 RESPONSE | NOTEABLE FEATURES

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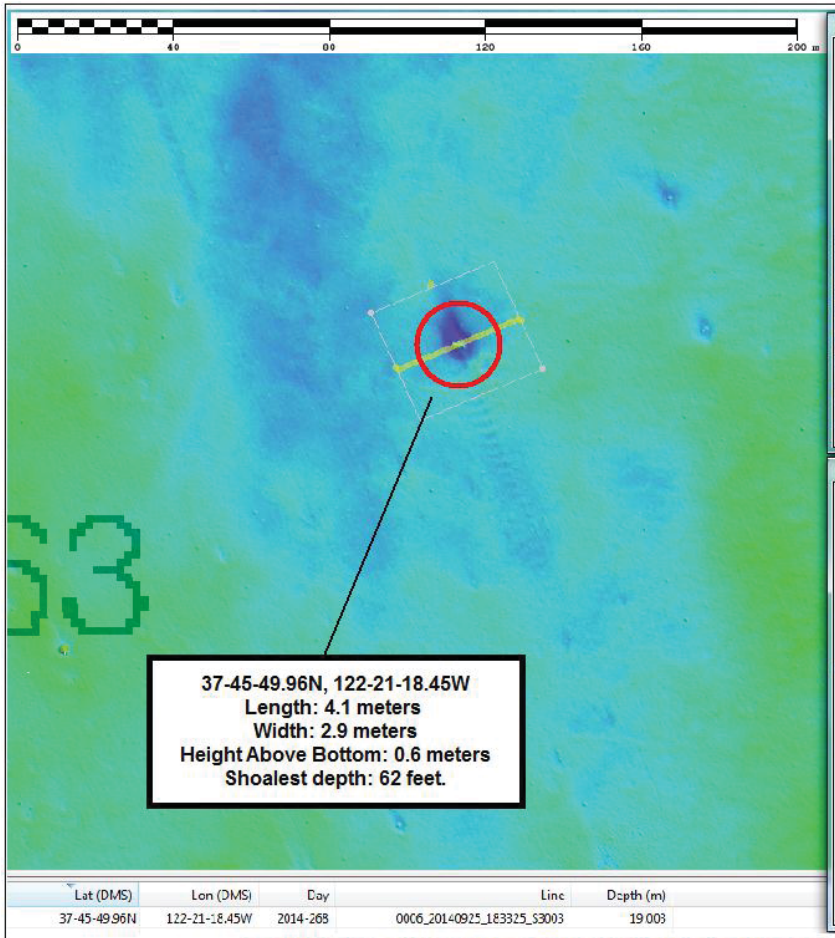
Ian Colvert, Team Lead
Edmund Wernicke
Laura Pagano

Survey Date: Sep. 25, 2014



Lat (DMS)	Lon (DMS)	Day	Line	Depth (m)
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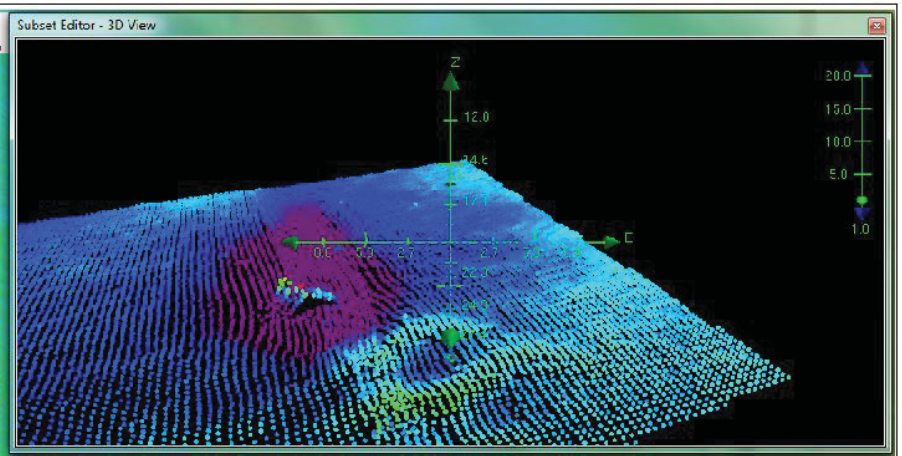

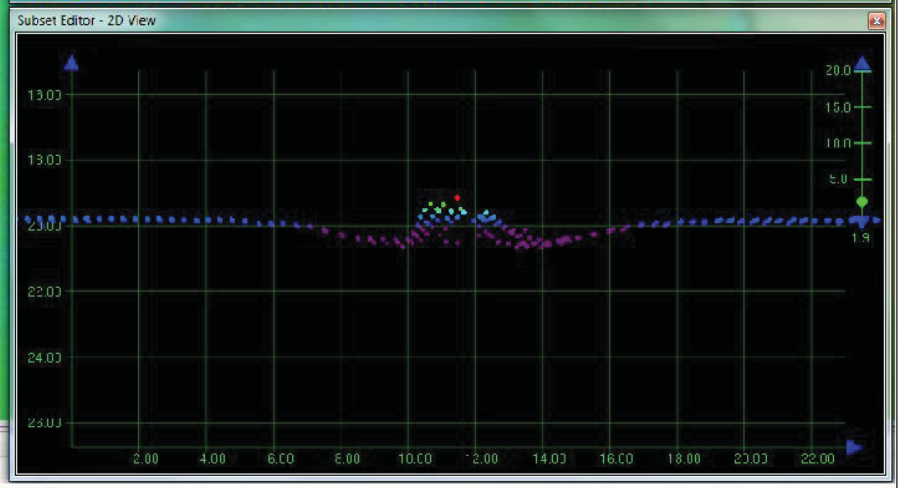

Chartlet 4 of 8

FEATURE 02 | ANCHORAGE 9 RESPONSE | NOTEABLE FEATURES

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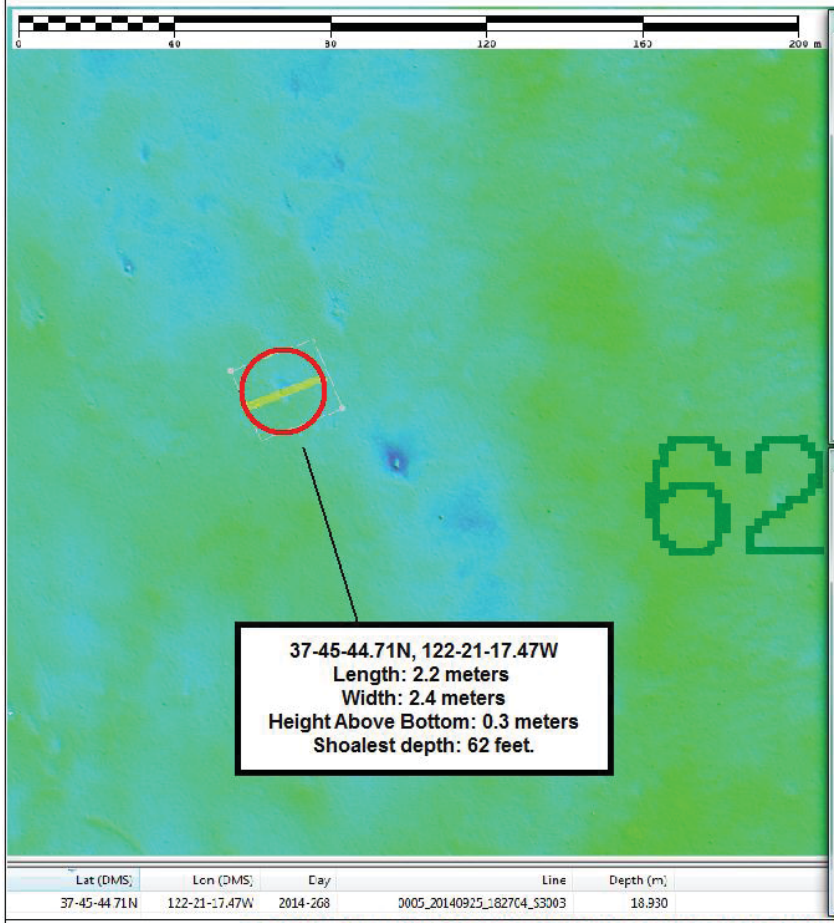
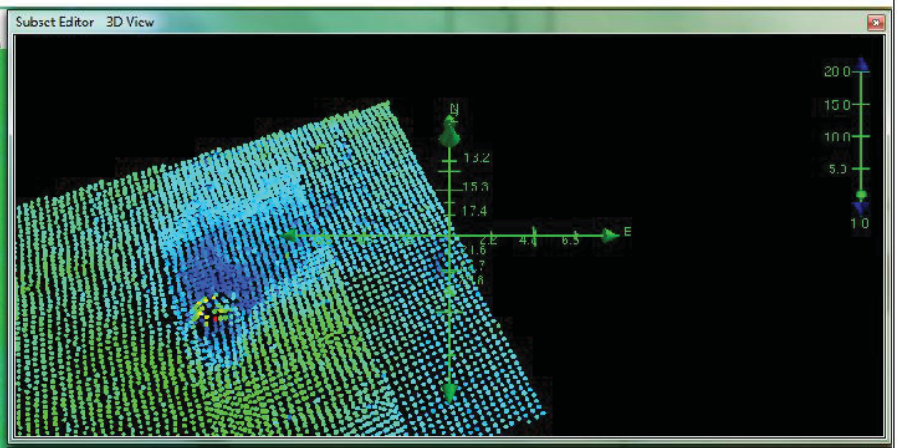
Survey: Anchorage 9 Response
State: California
Locality: San Francisco Bay
Sub-locality: General Anchorage No. 9
Survey Scale: 1:10,000

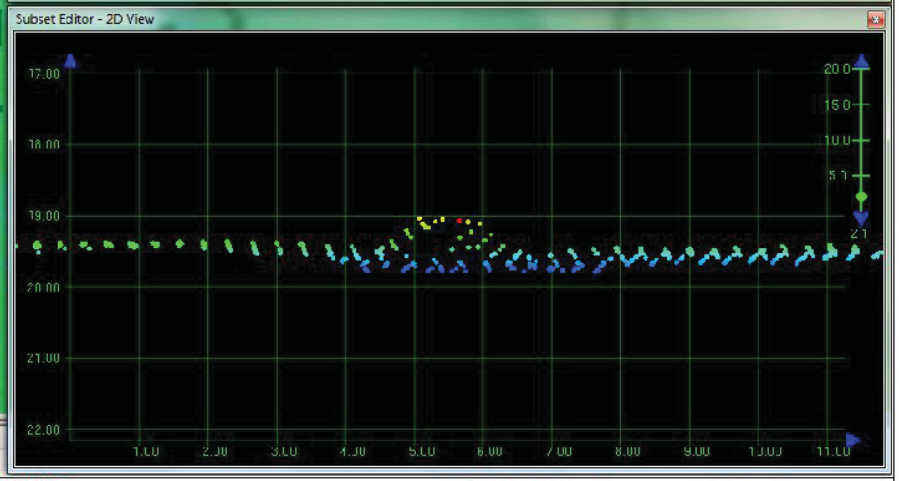
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Chart Number: 18650
Chart Edition: 57, Dec./2013
NOS Ref:

NOAA NRT-6
Ian Colvert, Team Lead
Edmund Wernicke
Laura Pagano

Survey Date: Sep. 25, 2014







Chartlet 5 of 8

FEATURE 03 | ANCHORAGE 9 RESPONSE | NOTEABLE FEATURES

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Locality: San Francisco Bay
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Survey Scale: 1:10,000

Sounding Units: Feet
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NOS Ref:

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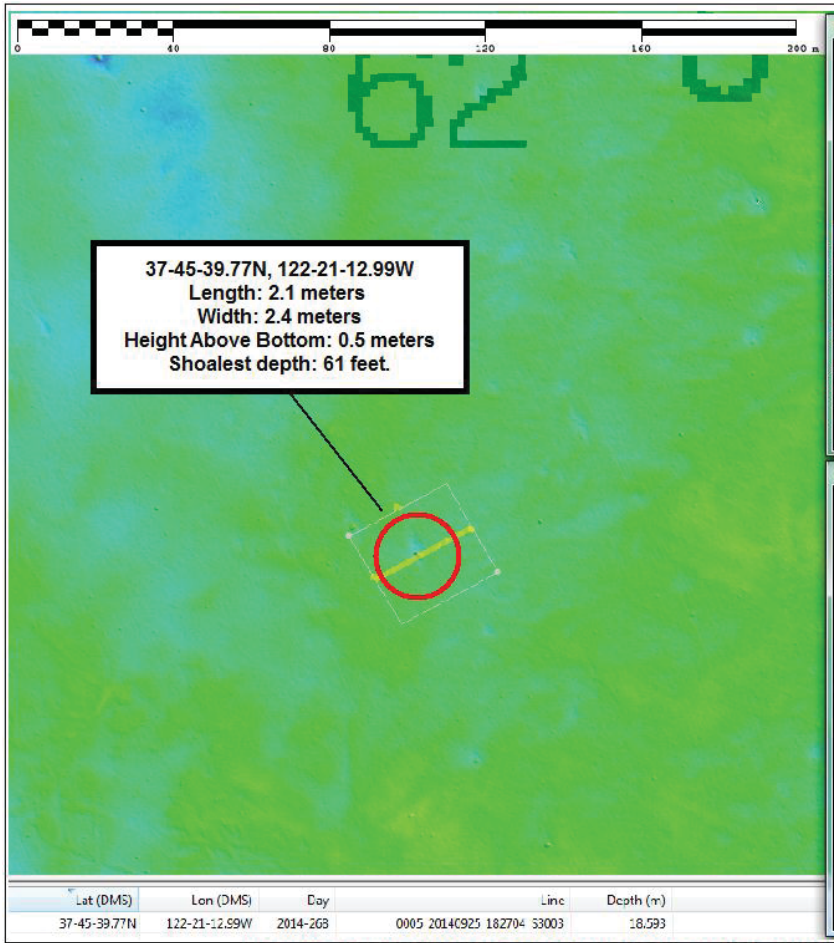
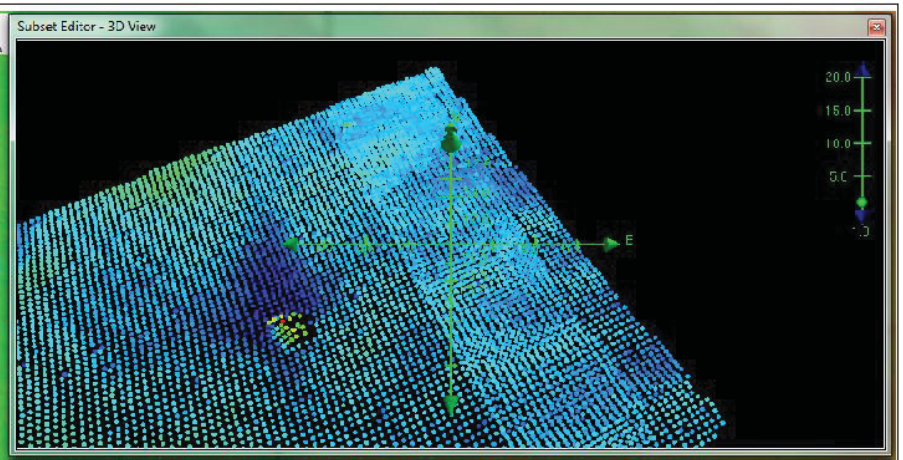
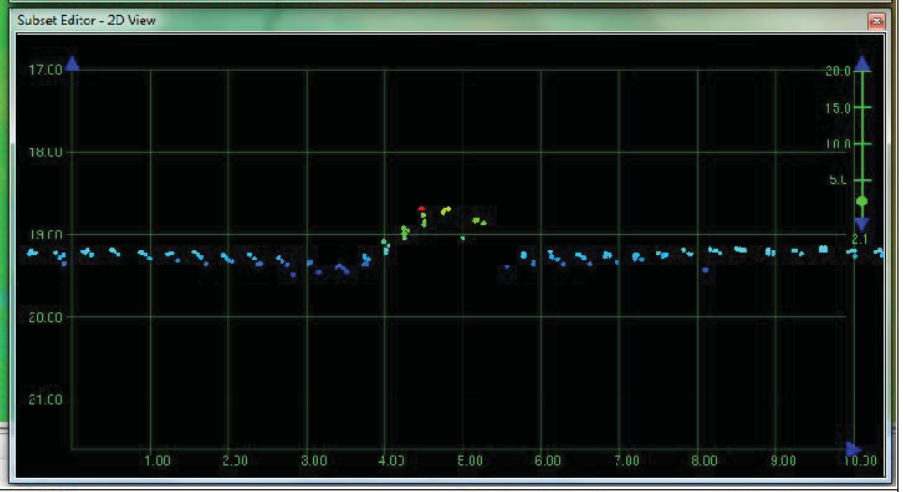
Edmund Wernicke
Laura Pagano

Survey Date: Sep. 25, 2014







Chartlet 6 of 8

FEATURE 04 | ANCHORAGE 9 RESPONSE | NOTEABLE FEATURES

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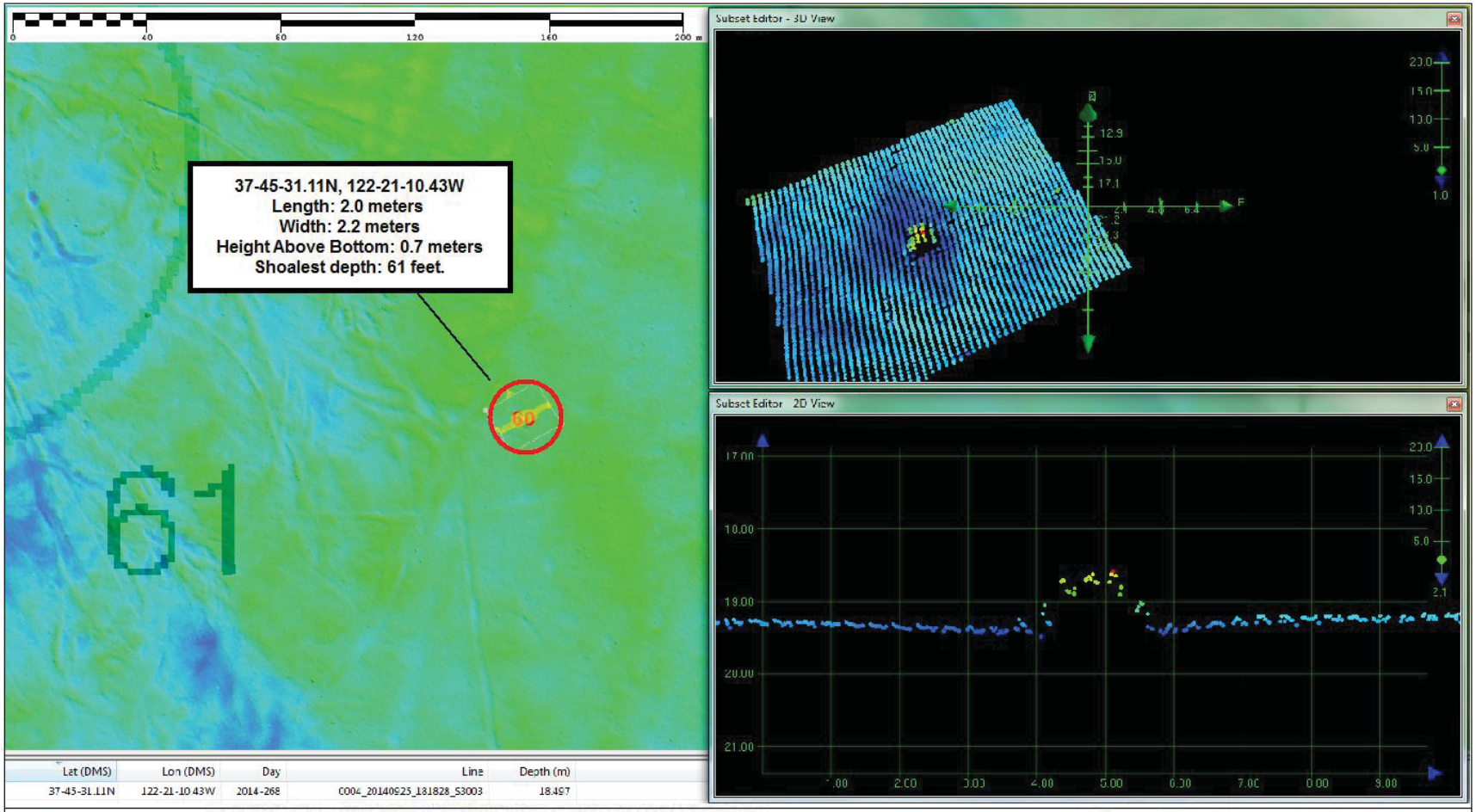
Survey Scale: 1:10,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Chart Number: 18650
Chart Edition: 57, Dec./2013
NOS Ref:

NOAA NRT-6
Ian Colvert, Team Lead
Edmund Wernicke
Laura Pagano

Survey Date: Sep. 25, 2014



Chartlet 7 of 8

FEATURE 05 | ANCHORAGE 9 RESPONSE | NOTEABLE FEATURES

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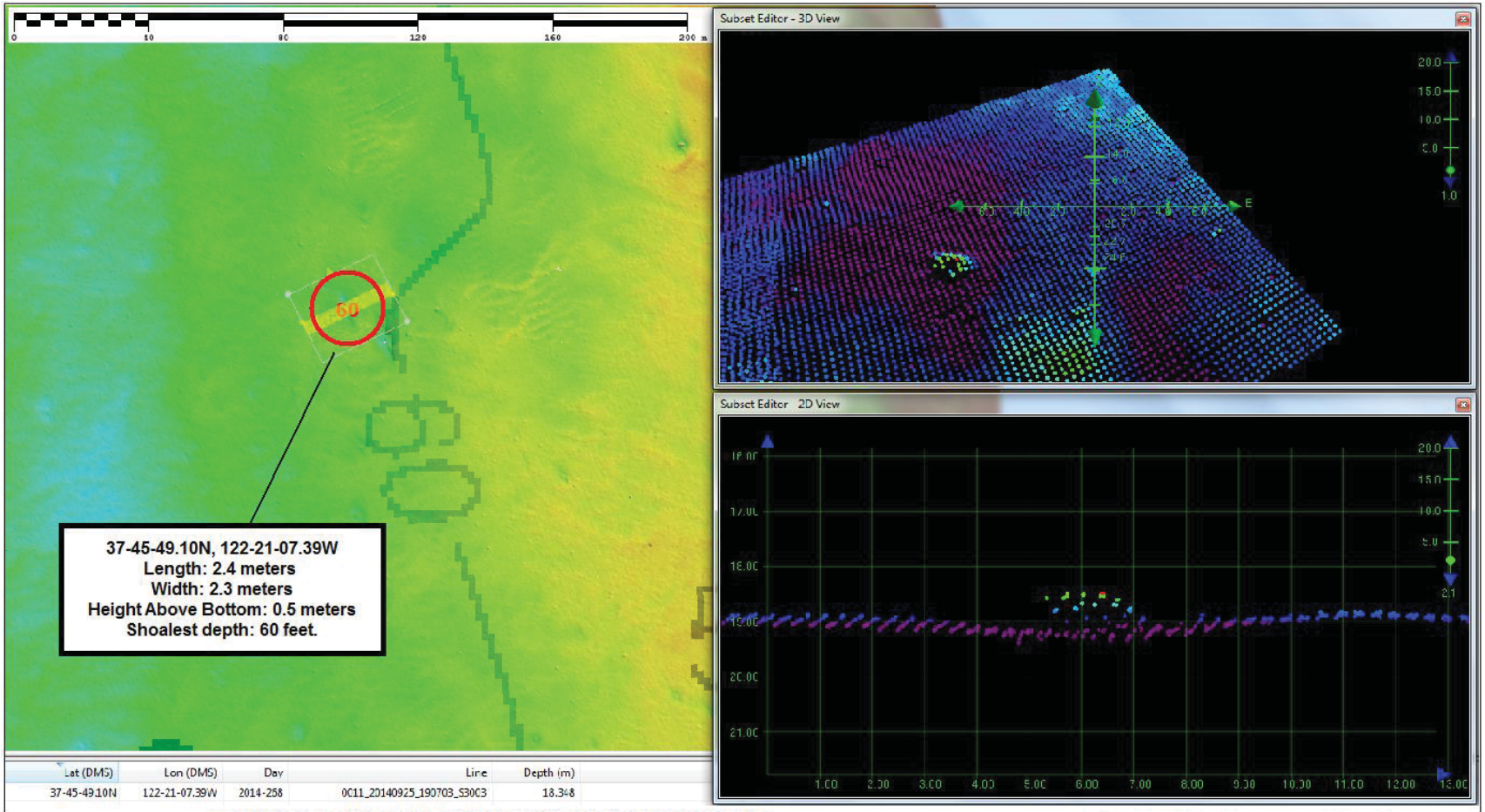

Chartlet 8 of 8

FEATURE 06 | ANCHORAGE 9 RESPONSE | NOTEABLE FEATURES

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Ian Colvert, Team Lead
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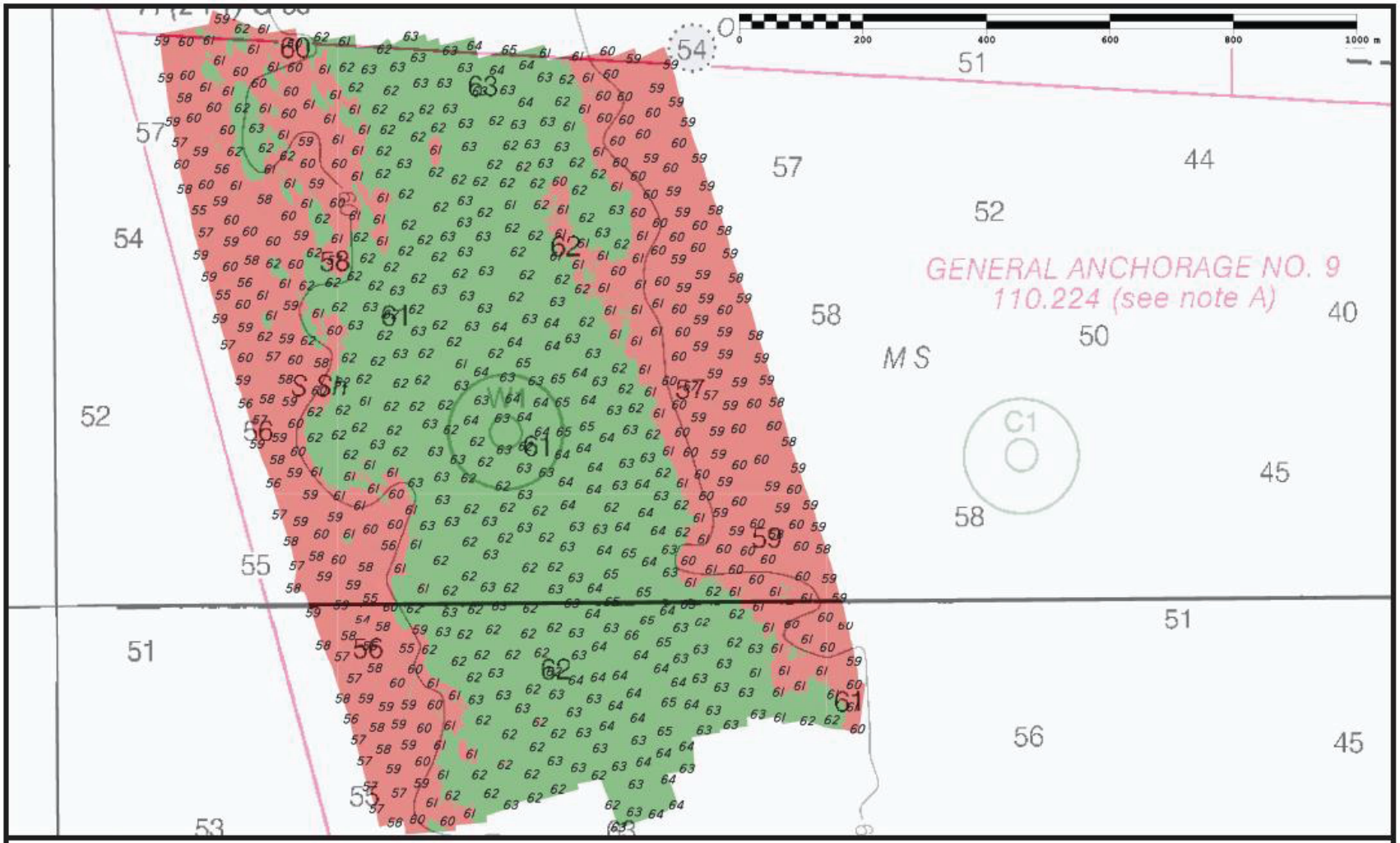
Laura Pagano

Survey Date: Sep. 25, 2014



Chartlet 1 of 1

ANCHORAGE 9 RESPONSE | BUCKET W-1 | SOUNDING PLOT | RED SHOALER THAN 62 FEET

Preliminary data subject to office review. Soundings corrcted using preliminary observed tides.
Data reflects state of sea floor in existence on day and at time the survey was conducted.

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: S-L934-NRT6-14
Survey: Anchorage 9 Response
State: California
Locality: San Francisco Bay
Sub-locality: General Anchorage No. 9
Survey Scale: 1:10,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
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Chart Edition: 57, Dec./2013
NOS Ref:

NOAA NRT-6
Ian Colvert, Team Lead
Edmund Wernicke
Laura Pagano

Survey Date: Oct. 9, 2014

ENC Comparison, US3CA14M

ENC US3A14M exhibited general agreement to survey data.

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
F00651_50_cm	CUBE	50 cm	16.62 – 20.69 m	CUBEParams_NOAA	0.5m
F00651_50_cm_Final	CUBE	50 cm	16.62 – 20.69 m	CUBEParams_NOAA	0.5m

All surfaces meet or exceed IHO Special Order requirements.

Office Notes: The sounding density per node requirement in the Project Instructions for object detection MBES (5 soundings/ node for 95% of nodes) was not met. Only 62% of nodes were populated with 5 or more soundings per node. The The data is adequate for charting despite the deficiency.

G. Vertical and Horizontal Control

For survey operations conducted 9/25/2014 (DN268), soundings were reduced to Mean Lower Low Water (MLLW) using verified tides from tide station Alameda (9414750), applied via TCARI grid (L934NRT62014.tc).

For survey operations conducted 10/09/2014 (DN282), soundings were reduced to Mean Lower Low Water (MLLW) using predicted tides from tide station Alameda (9414750).

The vertical datum for this project is Mean Lower Low Water. The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
Alameda	9414750

The horizontal datum for this project is North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. The following DGPS Stations were used for horizontal control:

DGPS Station
Pigeon Point

H. Additional Results

The are no additional results.

I. Approval

As Chief of Party, field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports. All field sheets, this Survey Summary Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

Survey data acquired 9/25/2014 (DN268) meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Survey Summary Report.

Approver Name	Approver Title	Approval Date	Signature
Ian Colvert	Team Lead, NRT6	12/09/2014	Digitally signed by Ian Colvert DN: cn=Ian Colvert, c=US, o=NOAA, ou=NRT, email=ian.colvert@noaa.gov Date: 2014.12.09 20:21:12 -08'00'

APPROVAL PAGE

F00651

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NGDC for archive

- F00651_DR_summary.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- F00651_GeoImage.pdf

The survey evaluation and verification has been conducted according current OCS Specifications.

Digitally signed by HOLMBERG.PETER.SCOTT.1365886101
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=HOLMBERG.PETER.SCOTT.1365886101
Date: 2015.05.05 09:18:49 -07'00'

Approved:_____

Pete Holmberg
Cartographic Team Lead, Pacific Hydrographic Branch

The survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Digitally signed by EVANS.BENJAMIN.K.1237217094
Reason: I am approving this document
Date: 2015.05.04 18:49:44 -07'00'

Approved:_____

CDR Benjamin K. Evans, NOAA
Chief, Pacific Hydrographic Branch