

H12719

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

DESCRIPTIVE REPORT

Type of Survey: Basic Hydrographic Survey

Registry Number: H12719

LOCALITY

State(s): Florida

General Locality: Approaches to Panama City

Sub-locality: 3nm SW of St Andrews Bay

2015

CHIEF OF PARTY
David Neff, ACSM C.H.

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

H12719

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(s): **Florida**

General Locality: **Approaches to Panama City**

Sub-Locality: **3nm SW of St Andrews Bay**

Scale: **12500**

Dates of Survey: **01/18/2015 to 02/24/2015**

Instructions Dated: **07/10/2014**

Project Number: **OPR-J357-KR-14**

Field Unit: **eTrac Inc.**

Chief of Party: **David Neff, ACSM C.H.**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Side Scan Sonar**

Verification by: **Atlantic Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

Remarks:

All times are UTC. The purpose of this survey is to update existing NOS nautical charts. H12719 will cover approximately 19 square nautical miles of critical area in the Approaches to Panama City as designated in NOAA Hydrographic Survey Priorities, 2012 edition. SUBCONSULTANT: Geodynamics LLC, 310A Greenfield Dr., Newport, NC 98570 SUBCONSULTANT: Theory Marine, 777 Viewcrest Dr., Ventura, CA 93003 Projection: NAD83 UTM Zone 16

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/>.

Table of Contents

A. Area Surveyed.....	1
A.1 Survey Limits.....	1
A.2 Survey Purpose.....	2
A.3 Survey Quality.....	2
A.4 Survey Coverage.....	3
A.5 Survey Statistics.....	3
B. Data Acquisition and Processing.....	5
B.1 Equipment and Vessels.....	5
B.1.1 Vessels.....	6
B.1.2 Equipment.....	8
B.2 Quality Control.....	8
B.2.1 Crosslines.....	8
B.2.2 Uncertainty.....	9
B.2.3 Junctions.....	10
B.2.4 Sonar QC Checks.....	13
B.2.5 Equipment Effectiveness.....	13
B.2.6 Factors Affecting Soundings.....	13
B.2.7 Sound Speed Methods.....	13
B.2.8 Coverage Equipment and Methods.....	15
B.2.9 Data Density Evaluation.....	15
B.3 Echo Sounding Corrections.....	17
B.3.1 Corrections to Echo Soundings.....	17
B.3.2 Calibrations.....	17
B.4 Backscatter.....	17
B.5 Data Processing.....	18
B.5.1 Software Updates.....	18
B.5.2 Surfaces.....	19
C. Vertical and Horizontal Control.....	20
C.1 Vertical Control.....	20
C.2 Horizontal Control.....	21
C.3 Additional Horizontal or Vertical Control Issues.....	22
3.3.1 Decommissioning of CORS station PNCY.....	22
D. Results and Recommendations.....	22
D.1 Chart Comparison.....	22
D.1.1 Raster Charts.....	23
D.1.2 Electronic Navigational Charts.....	26
D.1.3 AWOIS Items.....	27
D.1.4 Maritime Boundary Points.....	27
D.1.5 Charted Features.....	27
D.1.6 Uncharted Features.....	27
D.1.7 Dangers to Navigation.....	28
D.1.8 Shoal and Hazardous Features.....	28
D.1.9 Channels.....	28

D.1.10 Bottom Samples	28
D.2 Additional Results	28
D.2.1 Shoreline	28
D.2.2 Prior Surveys	29
D.2.3 Aids to Navigation	29
D.2.4 Overhead Features	29
D.2.5 Submarine Features	29
D.2.6 Ferry Routes and Terminals	29
D.2.7 Platforms	29
D.2.8 Significant Features	29
D.2.9 Construction and Dredging	29
D.2.10 New Survey Recommendation	30
D.2.11 Inset Recommendation	30
E. Approval Sheet	31

List of Tables

Table 1: Survey Limits	1
Table 2: Hydrographic Survey Statistics	4
Table 3: Dates of Hydrography	5
Table 4: Vessels Used	6
Table 5: Major Systems Used	8
Table 6: Survey Specific Tide TPU Values	9
Table 7: Survey Specific Sound Speed TPU Values	9
Table 8: Junctioning Surveys	10
Table 9: Software Updates	18
Table 10: Submitted Surfaces	19
Table 11: NWLON Tide Stations	21
Table 12: Water Level Files (.tid)	21
Table 13: Tide Correctors (.zdf or .tc)	21
Table 14: USCG DGPS Stations	22
Table 15: Largest Scale Raster Charts	23
Table 16: Largest Scale ENC's	26
Table 17: DTON Reports	28

List of Figures

Figure 1: Survey Limits (black dashed line)	2
Figure 2: Survey Limits (General)	3
Figure 3: M/V Jab	6
Figure 4: R/V Benthos	7
Figure 5: H12719 Crossline Comparison	9
Figure 6: Junction Comparison (H12719 to H12718)	11
Figure 7: Junction Comparison (H12719 to H12357) Overview	12

Figure 8: Junction Comparison (H12719 to H12357) Example Comparison Area.....	12
Figure 9: Example of Daily SVP Data Plot (DN 018).....	14
Figure 10: Example of Day to Day Velocity Comparison (DN018 and DN022).....	15
Figure 11: H12719 50CM Object Detection Density Distribution Statistics.....	16
Figure 12: H12719 2M Complete Coverage MBES Density Distribution Statistics.....	16
Figure 13: H12719 4M Set Line Spacing Density Distribution Statistics.....	17
Figure 14: Raw Backscatter From R/V Benthos (DN025).....	18
Figure 15: Delivered BASE Surface Coverage Graphic.....	20
Figure 16: H12719 Contour Comparison (Overview).....	24
Figure 17: H12719 Contour Comparison (60ft Contour).....	24
Figure 18: H12719 Contour Comparison (30ft, 18ft, 12ft Contours).....	25
Figure 19: H12719 Sounding Comparison (Example Area).....	25
Figure 20: H12719 Sounding Comparison (Scour Area).....	26
Figure 21: Dredge Areas Within H12719.....	30

Descriptive Report to Accompany Survey H12719

Project: OPR-J357-KR-14

Locality: Approaches to Panama City

Sublocality: 3nm SW of St Andrews Bay

Scale: 1:12500

January 2015 - February 2015

eTrac Inc.

Chief of Party: David Neff, ACSM C.H.

A. Area Surveyed

eTrac Inc. conducted hydrographic survey operations in the vicinity of the Approaches to Panama City, FL. H12719 covers approximately 19 square nautical miles of critical survey area. H12719 is irregular in geometry and includes the western and southwestern approaches of the entrance to St. Andrews Bay.

A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
30° 8' 12.37"	30° 2' 3.95"
85° 55' 53.44"	85° 43' 54.62"

Table 1: Survey Limits

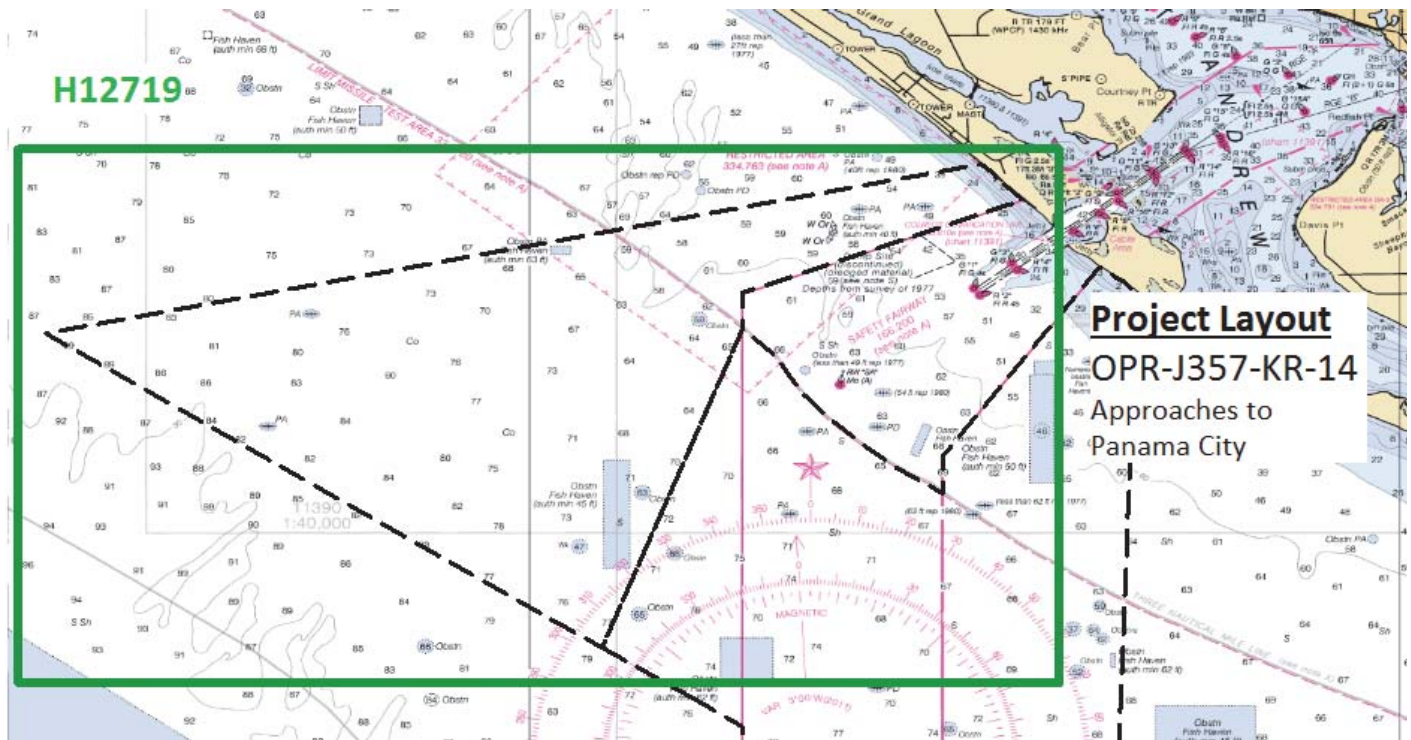


Figure 1: Survey Limits (black dashed line)

All data were acquired in accordance with the requirements in the Project Instructions and the HSSD.

A.2 Survey Purpose

The purpose of this survey is to update existing NOS nautical charts. H12719 will cover approximately 19 square nautical miles of critical survey area in the Approaches to Panama City as designated in NOAA Hydrographic Survey Priorities, 2012 edition.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

Survey H12719 is accurate to IHO Order 1a as required per the Hydrographic Survey Specifications and Deliverables 2014 edition (HSSD 2014).

A.4 Survey Coverage

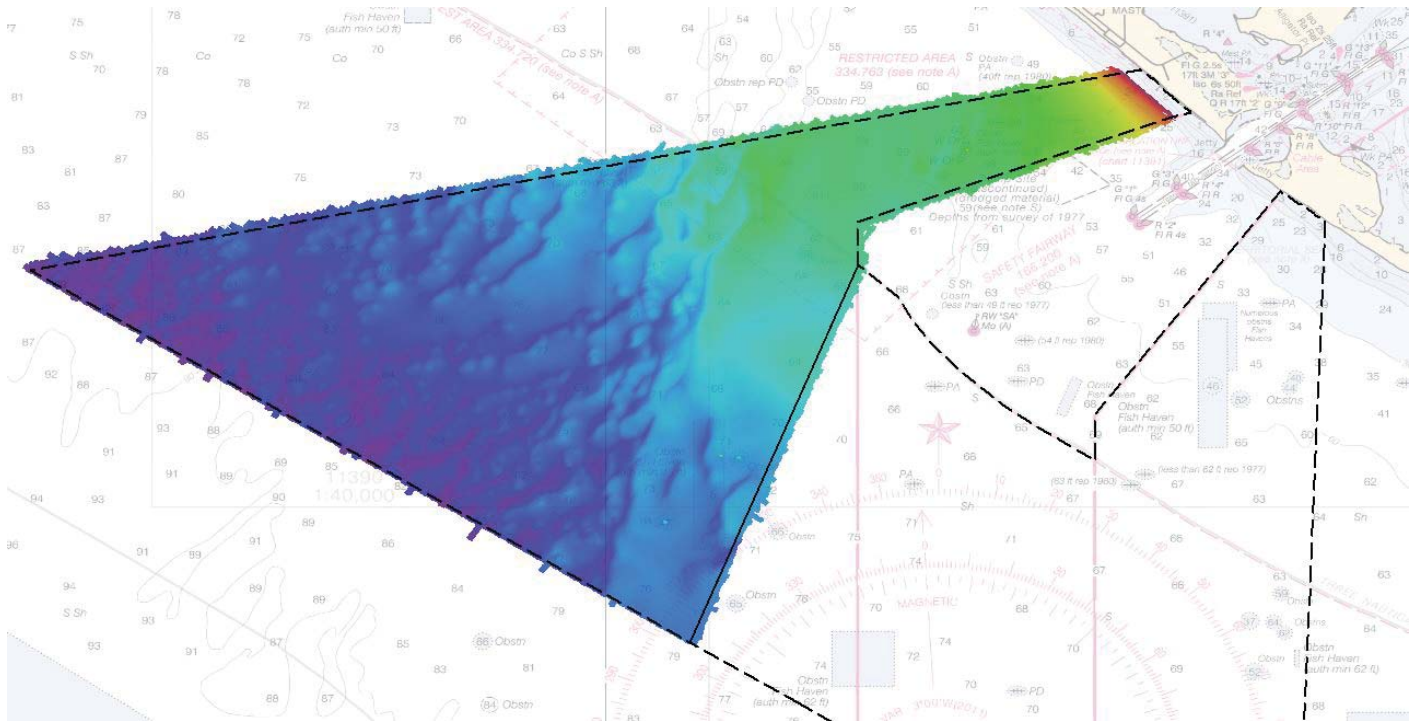


Figure 2: Survey Limits (General)

Survey Coverage was in accordance with the requirements in the Project Instructions and the HSSD.

H12719 was covered using three coverage methods in accordance with HSPI for efficiency of data acquisition.

Complete MBES with Backscatter standards were utilized in water depths greater than 20 meter. Object Detection MBES standards were utilized in an area approximately 18 meters to 20 meters depth. 200% SSS with concurrent Set Line Spacing MBES with Backscatter standards were utilized in water depths of approximately 18 meters to the NALL.

A.5 Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey:

	HULL ID	<i>M/V Jab</i>	<i>R/V Benthos</i>	<i>Total</i>
LNM	SBES Mainscheme	0	0	0
	MBES Mainscheme	0	614	614
	Lidar Mainscheme	0	0	0
	SSS Mainscheme	0	0	0
	SBES/SSS Mainscheme	0	0	0
	MBES/SSS Mainscheme	157	0	157
	SBES/MBES Crosslines	16	38	54
	Lidar Crosslines	0	0	0
Number of Bottom Samples				0
Number of AWOIS Items Investigated				0
Number Maritime Boundary Points Investigated				0
Number of DPs				0
Number of Items Investigated by Dive Ops				0
Total SNM				20

Table 2: Hydrographic Survey Statistics

The following table lists the specific dates of data acquisition for this survey:

Survey Dates	Day of the Year
01/18/2015	18
01/22/2015	22
01/25/2015	25
01/30/2015	30
02/01/2015	32
02/03/2015	34
02/04/2015	35
02/05/2015	36
02/06/2015	37
02/08/2015	39
02/09/2015	40
02/16/2015	47
02/17/2015	48
02/19/2015	50
02/20/2015	51
02/22/2015	53
02/23/2015	54
02/24/2015	55

Table 3: Dates of Hydrography

B. Data Acquisition and Processing

B.1 Equipment and Vessels

Refer to the Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are discussed in the following sections.

B.1.1 Vessels

The following vessels were used for data acquisition during this survey:

Hull ID	<i>M/V Jab</i>	<i>R/V Benthos</i>
LOA	13 meters	10 meters
Draft	0.75 meters	0.6 meters

Table 4: Vessels Used



Figure 3: M/V Jab



Figure 4: R/V Benthos

The M/V Jab is a 13 meter aluminum catamaran equipped with a multibeam moonpool and A-Frame for towed body operations.

The R/V Benthos is a 10 meter aluminum catamaran equipped with an over-the-side multibeam mount as well as an A-Frame for towed body operations.

B.1.2 Equipment

The following major systems were used for data acquisition during this survey:

Manufacturer	Model	Type
R2Sonic	2024	MBES
Applanix	POSMV 320 Ver. 5	Positioning and Attitude System
AML	BaseX	Sound Speed System
AML	MinosX	Sound Speed System
Trimble	SPS461	Positioning System
Edgetech	4200	SSS

Table 5: Major Systems Used

Note: The major systems listed above were used on both vessels. The AML MinosX was utilized on the M/V Jab and the AML BaseX was utilized on the R/V Benthos. The Edgetech 4200 Sidescan Sonar was utilized only on the M/V Jab.

B.2 Quality Control

B.2.1 Crosslines

Crosslines acquired for this survey totaled 7% of mainscheme acquisition.

A comparison of crossline mileage to main scheme mileage in areas covered by object detection multibeam or complete coverage multibeam specifications yields a crossline percentage of 6.2% and is noted to be above the required 4%. A comparison of crossline mileage to main scheme mileage in areas covered by set line spacing specifications yields a crossline percentage of 10.0% and is noted to be above the required 8%.

A beam-to-beam statistical analysis was performed using the Line QC reporting tool in Caris HIPS and SIPS 9.0 software. A 2 meter CUBE weighted BASE surface was created incorporating only the mainscheme lines and excluding any crosslines. Note this surface was created for QC only and is not submitted as a surface deliverable. The Line QC reporting tool was used to perform the beam-to-beam comparison of the crossline data to the mainscheme surface. Comparisons showed excellent agreement well above 95% of the allowable TVU. Note the statistical analysis excludes the outer 5 beams (beams 1-5 and beams 252-256), as these beams were excluded from both mainscheme and crossline data across the entire project.

The beam-to-beam crossline comparison report generated through the CARIS QC Reporting tool is included in Separate II.

Below is a graph of crossline comparison statistics showing IHO Special Order and Order 1a compliance percentage per beam.

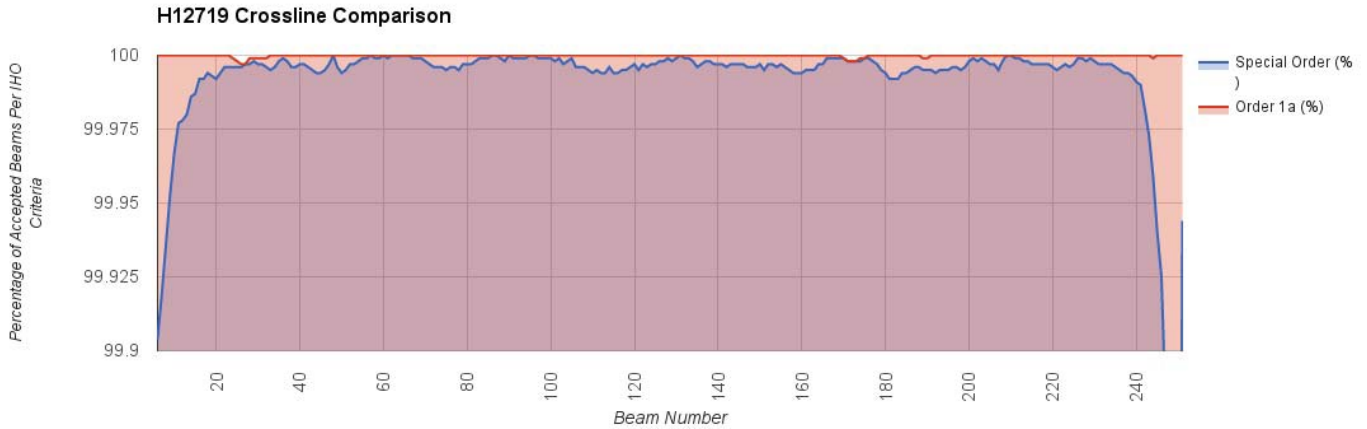


Figure 5: H12719 Crossline Comparison

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Measured	Zoning
0.11 meters	0 meters

Table 6: Survey Specific Tide TPU Values

Hull ID	Measured - CTD	Measured - MVP	Surface
M/V Jab	4 meters/second	0 meters/second	2 meters/second
R/V Benthos	4 meters/second	0 meters/second	2 meters/second

Table 7: Survey Specific Sound Speed TPU Values

Standard deviation and uncertainty BASE surfaces were utilized during data processing to search for features, water column noise, and systematic errors. Additionally, a custom layer is created within the BASE surface utilizing the Deep and Shoal layers in the following configuration:

$$\text{Custom Layer} = (\text{Deep} - \text{Shoal})^2$$

By viewing the custom layer, seafloor features, water column noise, and systematic errors are graphically exaggerated and can easily be identified for further examination.

Standard deviation and uncertainty was quantified using the QC Reporting tool within Caris Hips and Sips. The option "Greater of the two" was selected in the reporting tool in order to generate statistics quantifying the maximum error occurring within the data. IHO Order 1a uncertainty specifications were met by 100% of the nodes.

B.2.3 Junctions

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H12718	1:12500	2015	eTrac Inc.	E
H12357	1:10000	2014	Navigation Response Team 1	NE

Table 8: Junctioning Surveys

H12718

H12719 junctions with H12718 to the east. The junction comparison was performed using approximately 250m of overlapping data between H12719 and H12718. Depths were compared in Caris HIPS and SIPS 9.0 by creating a 2M difference surface between the junctioning datasets. Note the 2M difference surface was created for comparison efforts only and is not submitted as a surface deliverable. The comparison showed excellent agreement between H12718 and H12719. Depth differences generally were within 20cm or less with the majority of depth differences being less than 10cm.

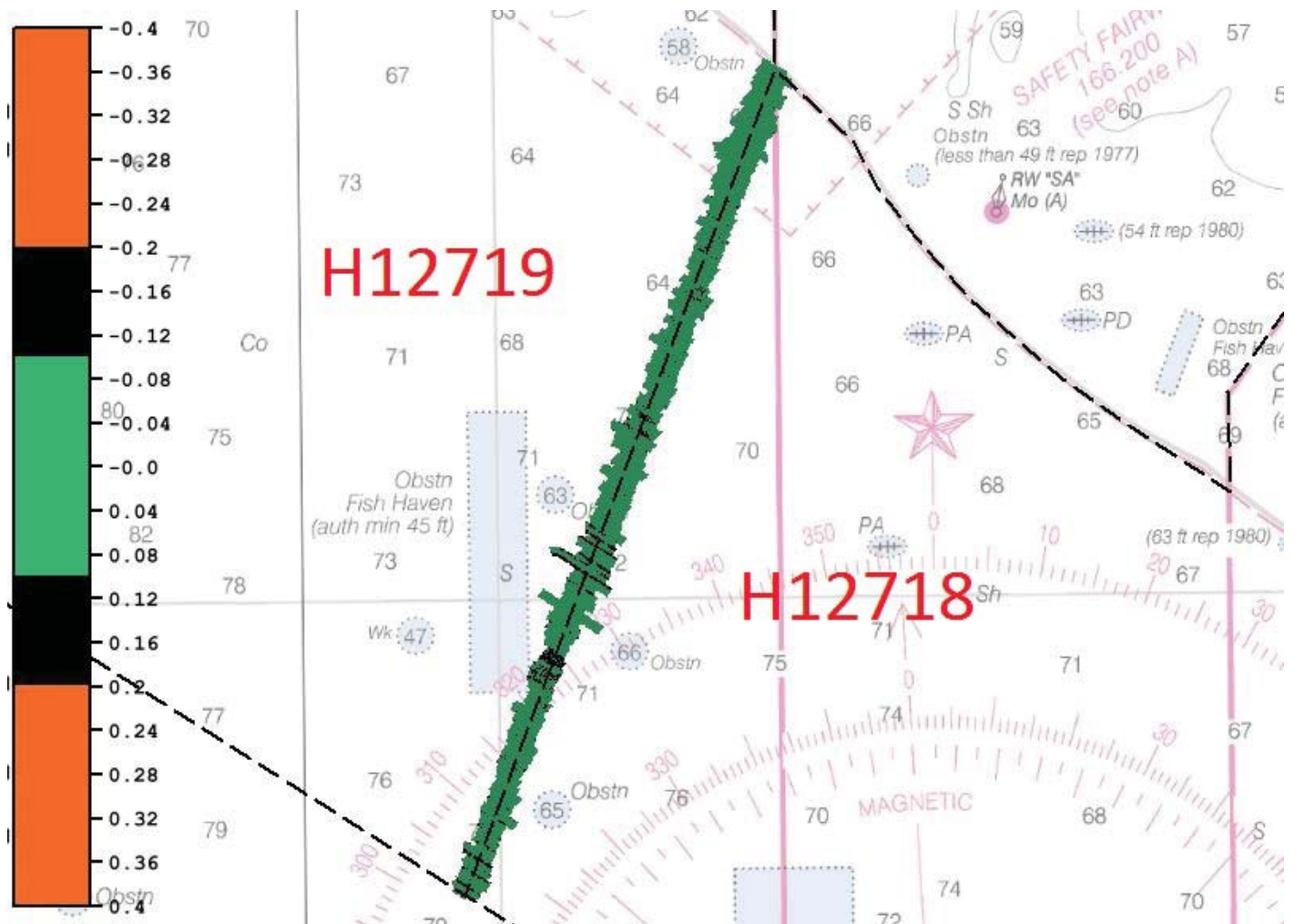


Figure 6: Junction Comparison (H12719 to H12718)

H12357

H12719 junctions with H12357 to the northeast. H12357 is an SBES survey. Depths were compared in Caris HIPS and SIPS 9.0 by creating a 2M difference surface between the junctioning datasets. Note the 2M difference surface was created for comparison efforts only and is not submitted as a surface deliverable. The comparison showed excellent agreement between H12719 and H12357. Depth differences generally were within 20cm or less with the majority of depth differences being less than 10cm.

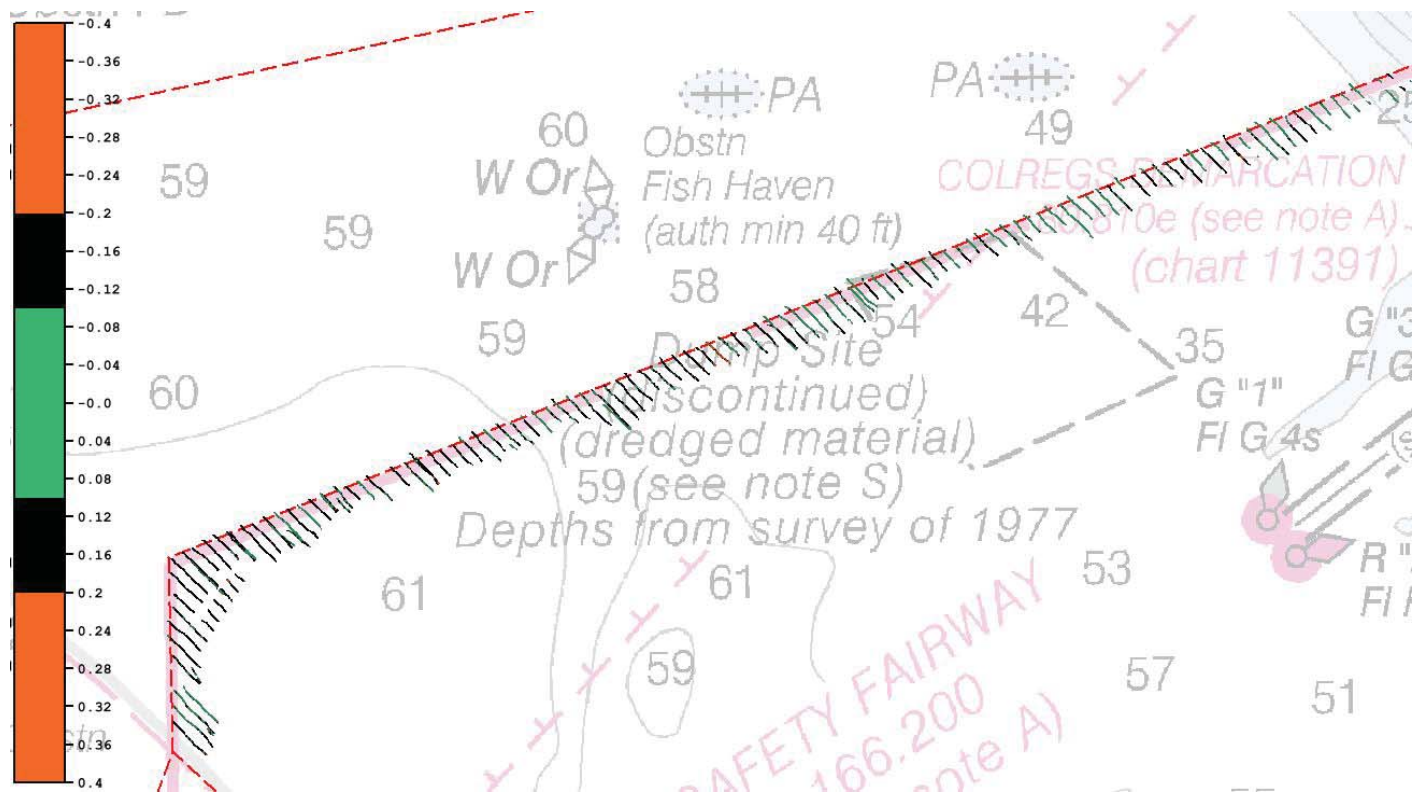


Figure 7: Junction Comparison (H12719 to H12357) Overview

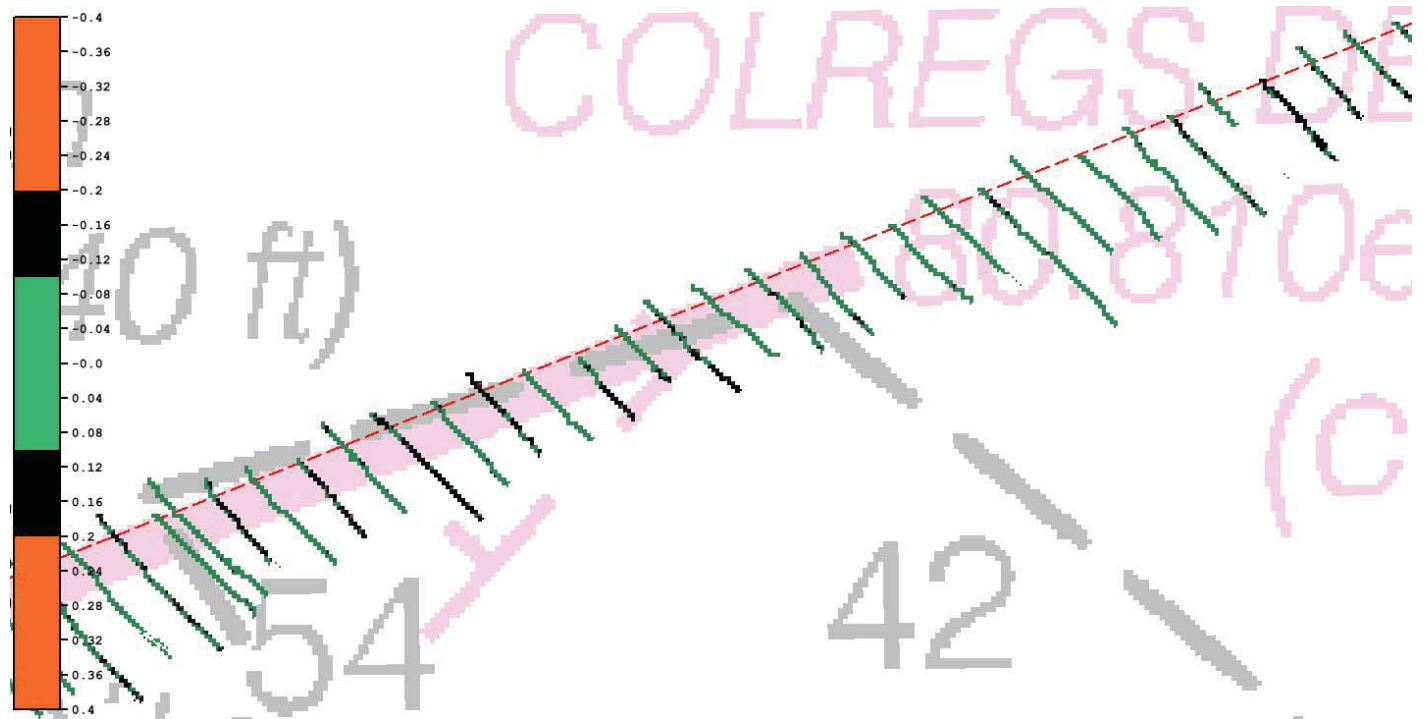


Figure 8: Junction Comparison (H12719 to H12357) Example Comparison Area

B.2.4 Sonar QC Checks

Sonar system quality control checks were conducted as detailed in the quality control section of the DAPR.

B.2.5 Equipment Effectiveness

B.2.6 Factors Affecting Soundings

There were no other factors that affected corrections to soundings.

B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: SVP casts were generally taken every 2 hours. Occasionally casts would exceed a 2 hour frequency, however would never exceed a 4 hour frequency. Casts were applied in QPS Qinsky acquisition software at the time of the cast. Surface SVP measured at 1Hz was compared to surface speed from the current profile in realtime. If the surface velocity comparison was in excess of 2m/s at any time during survey operations, a new cast was taken.

SVP surface velocities were compared in real-time and profile to profile for each cast on the vessel. Additionally, profiles were compared day-to-day in the field office using in-house software to better understand trends for efficient acquisition planning.

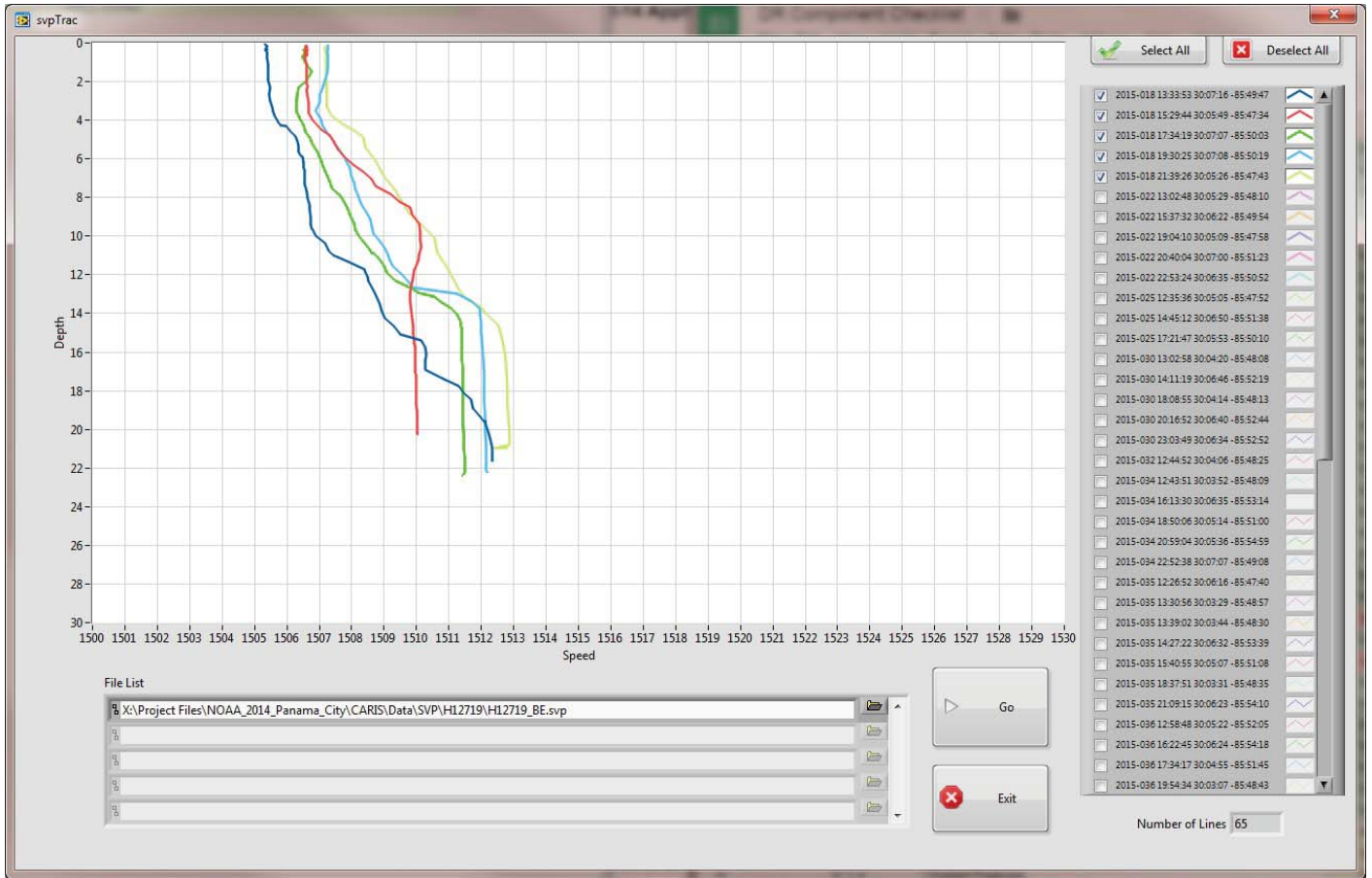


Figure 9: Example of Daily SVP Data Plot (DN 018)

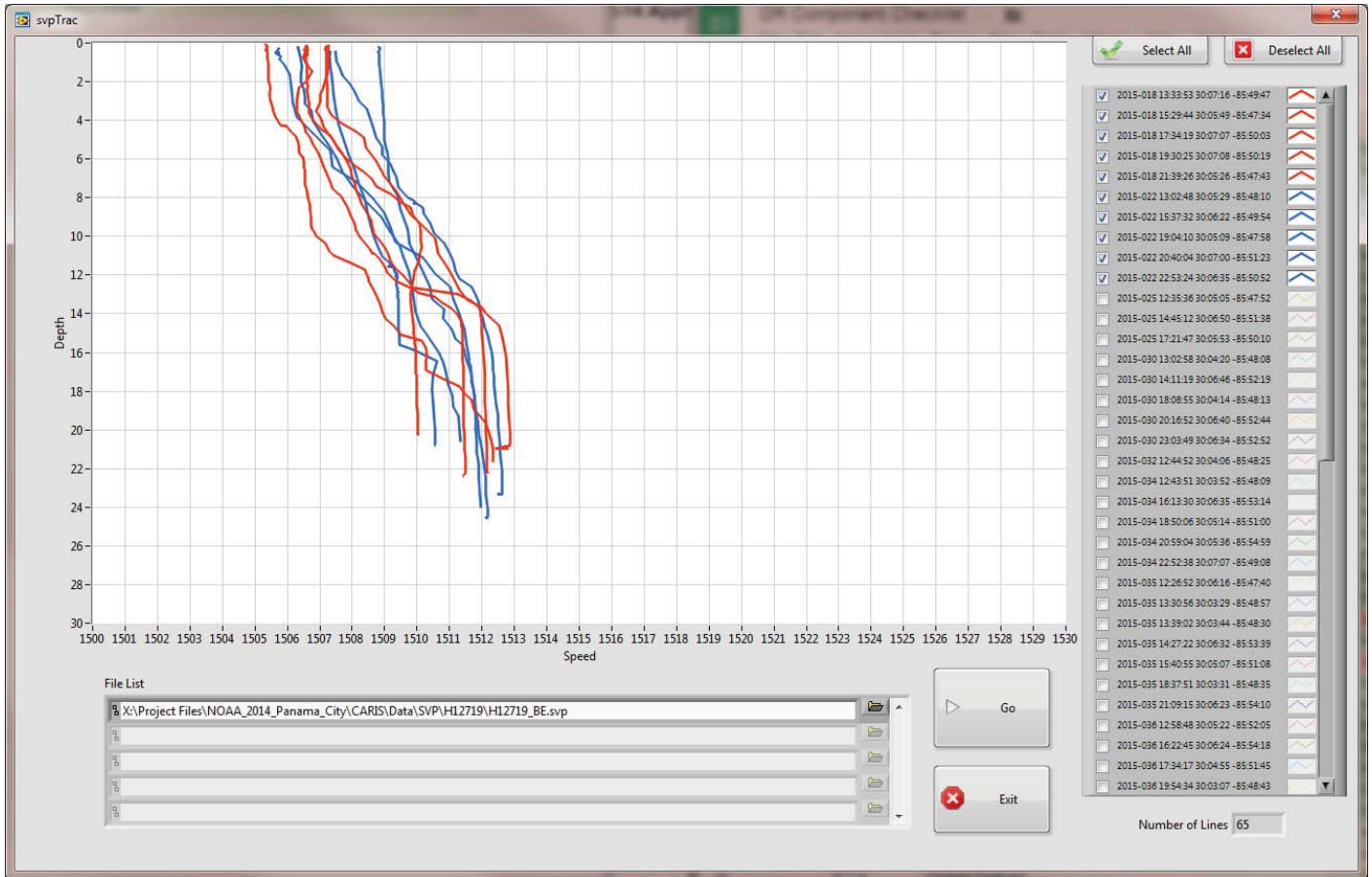


Figure 10: Example of Day to Day Velocity Comparison (DN018 and DN022)

B.2.8 Coverage Equipment and Methods

All equipment and survey methods were used as detailed in the DAPR.

B.2.9 Data Density Evaluation

In order to determine if the density of the data has met the specified 5 soundings per node, data density was evaluated using the DensityTrac program developed in-house by eTrac Inc. Each BASE surfaces nodes were exported to an ascii CSV file where the fields were (Easting, Northing, Density) for each node. The CSV file was then loaded into the DensityTrac program and density statistics are computed. For H12719 the following percentages represent the results of the density testing:

Object Detection MBES Areas (0.5 Meter Gridded Surface) = 98.10% of nodes are composed from at least 5 soundings.

Complete Coverage MBES Areas (2 Meter Gridded Surface) = 99.87% of all nodes are composed of at least 5 soundings.

Concurrent MBES/SSS (4 Meter Gridded Surface) = 99.98% of all nodes are composed of at least 3 soundings.

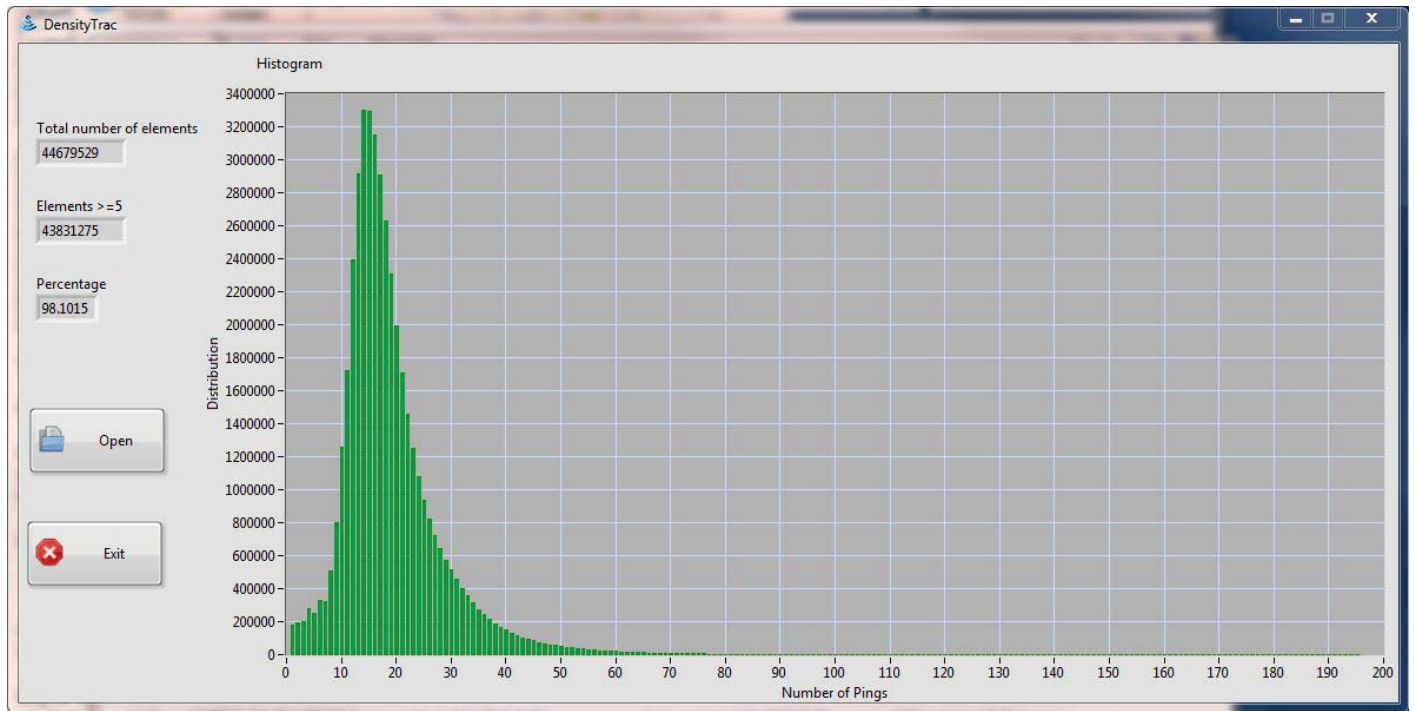


Figure 11: H12719 50CM Object Detection Density Distribution Statistics

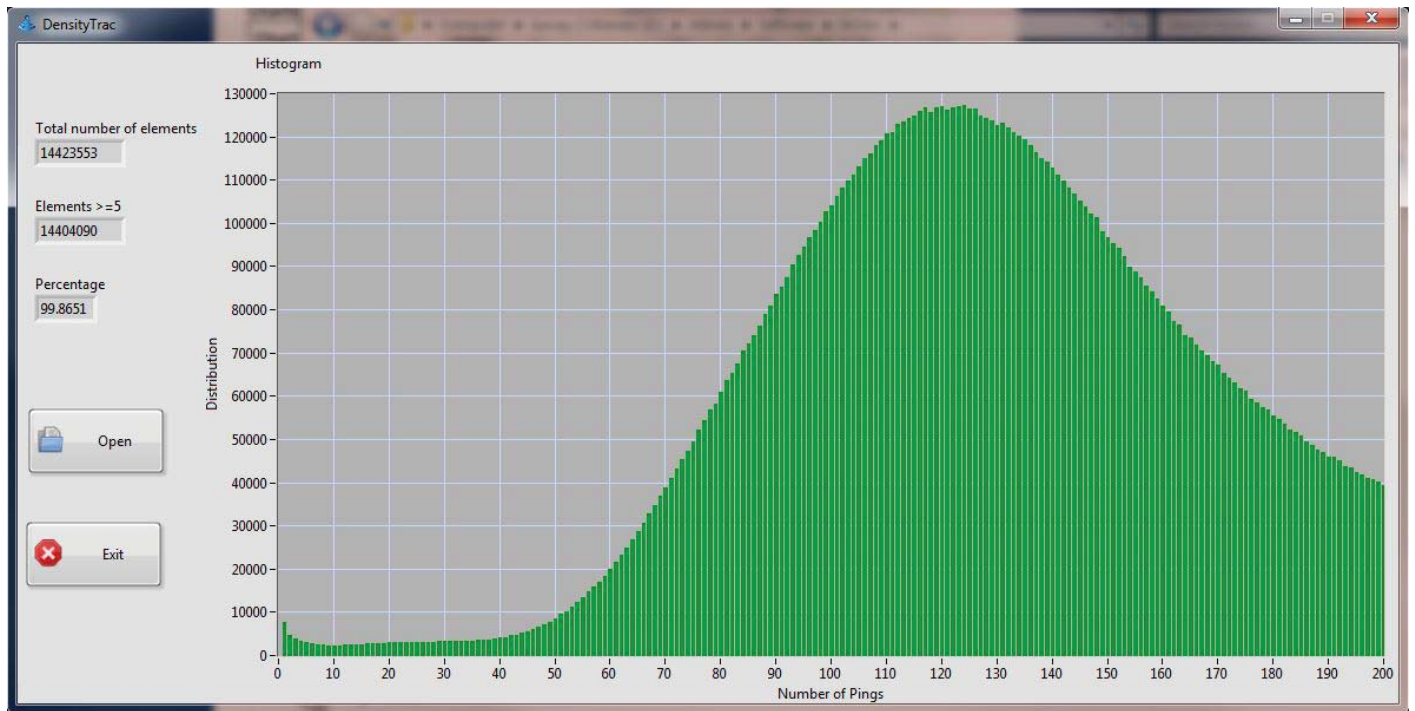


Figure 12: H12719 2M Complete Coverage MBES Density Distribution Statistics

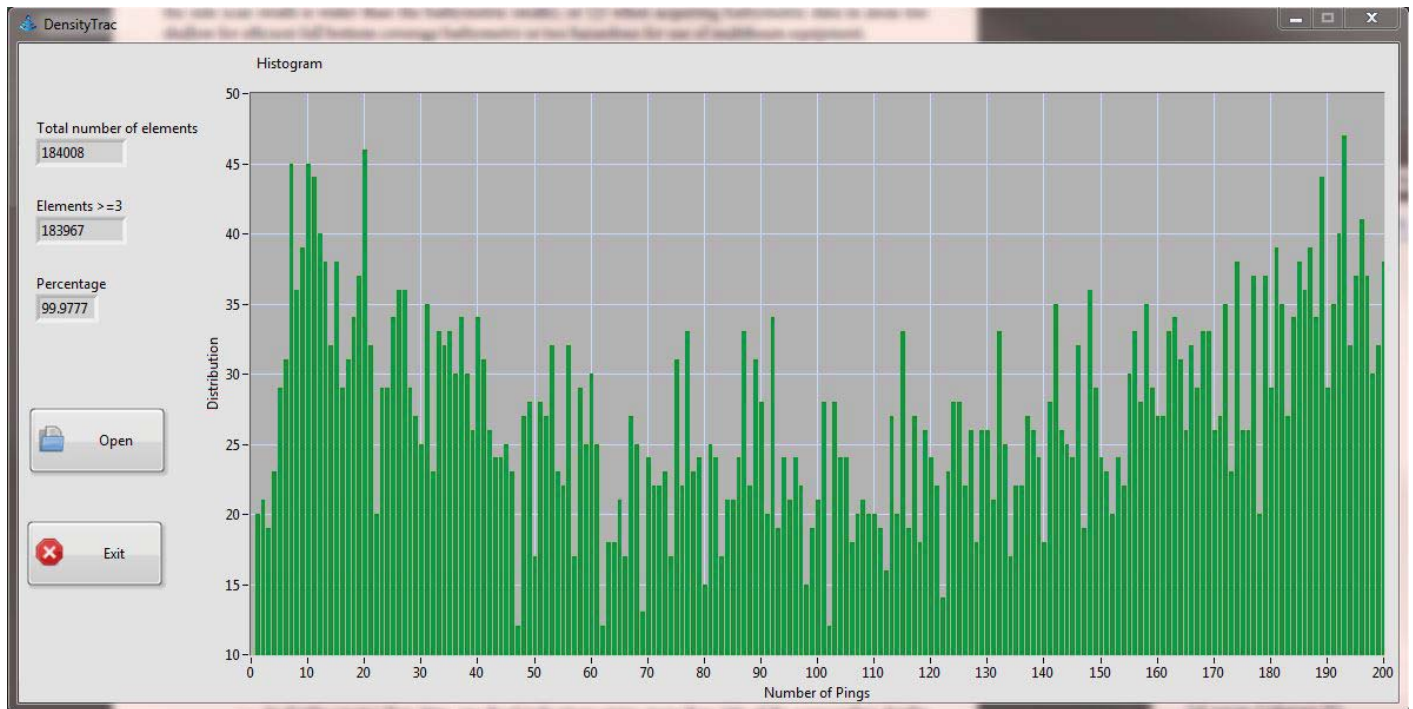


Figure 13: H12719 4M Set Line Spacing Density Distribution Statistics

B.3 Echo Sounding Corrections

B.3.1 Corrections to Echo Soundings

All data reduction procedures conform to those detailed in the DAPR.

B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR

B.4 Backscatter

Backscatter data were collected throughout the survey and are retained in the raw XTF files. Every effort was made in the field to collect quality backscatter data while maintaining the primary mandate of high quality bathymetric data. While no processing or analysis of backscatter data was required, eTrac engaged in a minimal effort to verify coverage and general quality of the backscatter data collected. Raw backscatter data were viewed in QPS Qinsy to ensure collection criteria had been met. Shown below is an example of the unprocessed backscatter mosaic from H12719 DN025.

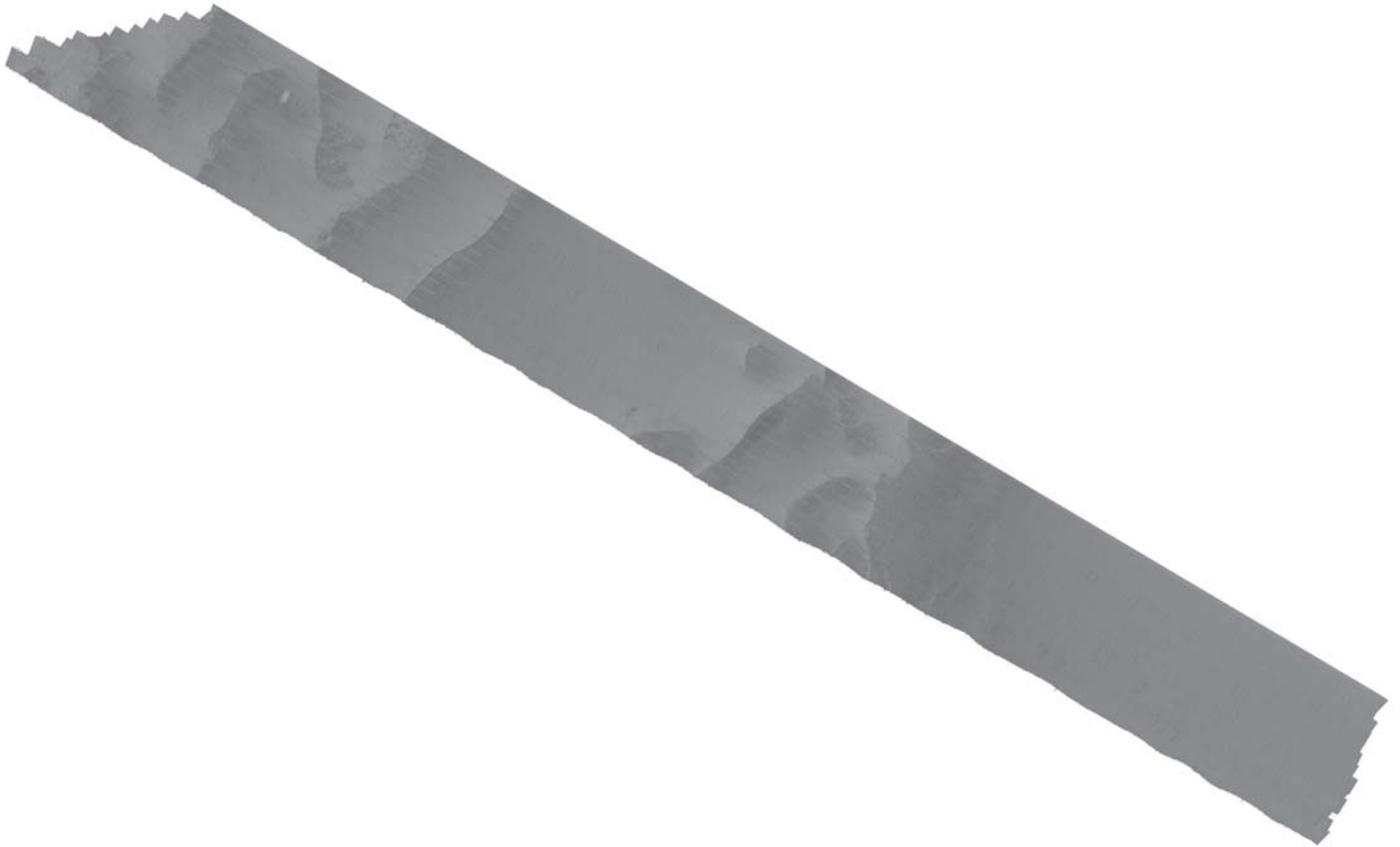


Figure 14: Raw Backscatter From R/V Benthos (DN025)

B.5 Data Processing

B.5.1 Software Updates

The following software updates occurred after the submission of the DAPR:

Manufacturer	Name	Version	Service Pack	Hotfix	Installation Date	Use
Caris	HIPS/SIPS	9.0.5	N/A	N/A	01/12/2015	Processing
Caris	HIPS/SIPS	9.0.6	N/A	N/A	01/23/2015	Processing
Caris	HIPS/SIPS	9.0.7	N/A	N/A	02/12/2015	Processing
Caris	HIPS/SIPS	9.0.8	N/A	N/A	02/17/2015	Processing
Caris	HIPS/SIPS	9.0.12	N/A	N/A	04/17/2015	Processing

Table 9: Software Updates

The following Feature Object Catalog was used: NOAA Profile V_5_2

B.5.2 Surfaces

The following surfaces and/or BAGs were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12719_MB_2M_MLLW.csar	CUBE	2 meters	13.8 meters - 29.43 meters	NOAA_2m	Complete MBES
H12719_MB_50CM_MLLW.csar	CUBE	0.5 meters	11.92 meters - 25.42 meters	NOAA_0.5m	Object Detection
H12719_MB_4M_MLLW.csar	CUBE	4 meters	3.13 meters - 19.74 meters	NOAA_4m	MBES TracklineSBES Set Line Spacing
H12719_SSS_1M_100Percent_Mosaic.tif	SSS Mosaic	1 meters	0 meters - 0 meters	N/A	100% SSS
H12719_SSS_1M_200Percent_Mosaic.tif	SSS Mosaic	1 meters	0 meters - 0 meters	N/A	200% SSS

Table 10: Submitted Surfaces

BASE surface deliverables for H12719 incorporate 3 surfaces of varying resolution with sufficient overlap such that H12719 is covered entirely under the specifications set forth in the HSSD 2014.

In areas shoaler than 20 meters, a 4 meter surface is provided within areas where Sidescan sonar data was concurrently collected with the multibeam bathymetry.

In areas shoaler than 20 meters, not including concurrent Sidescan sonar imagery, a 50 centimeter surface is provided meeting Object Detection Multibeam specifications.

In areas deeper than 20 meters, a 2 meter surface is provided meeting Complete Coverage MBES specifications.

Sidescan sonar mosaics are provided for each separate 100% SSS survey performed.

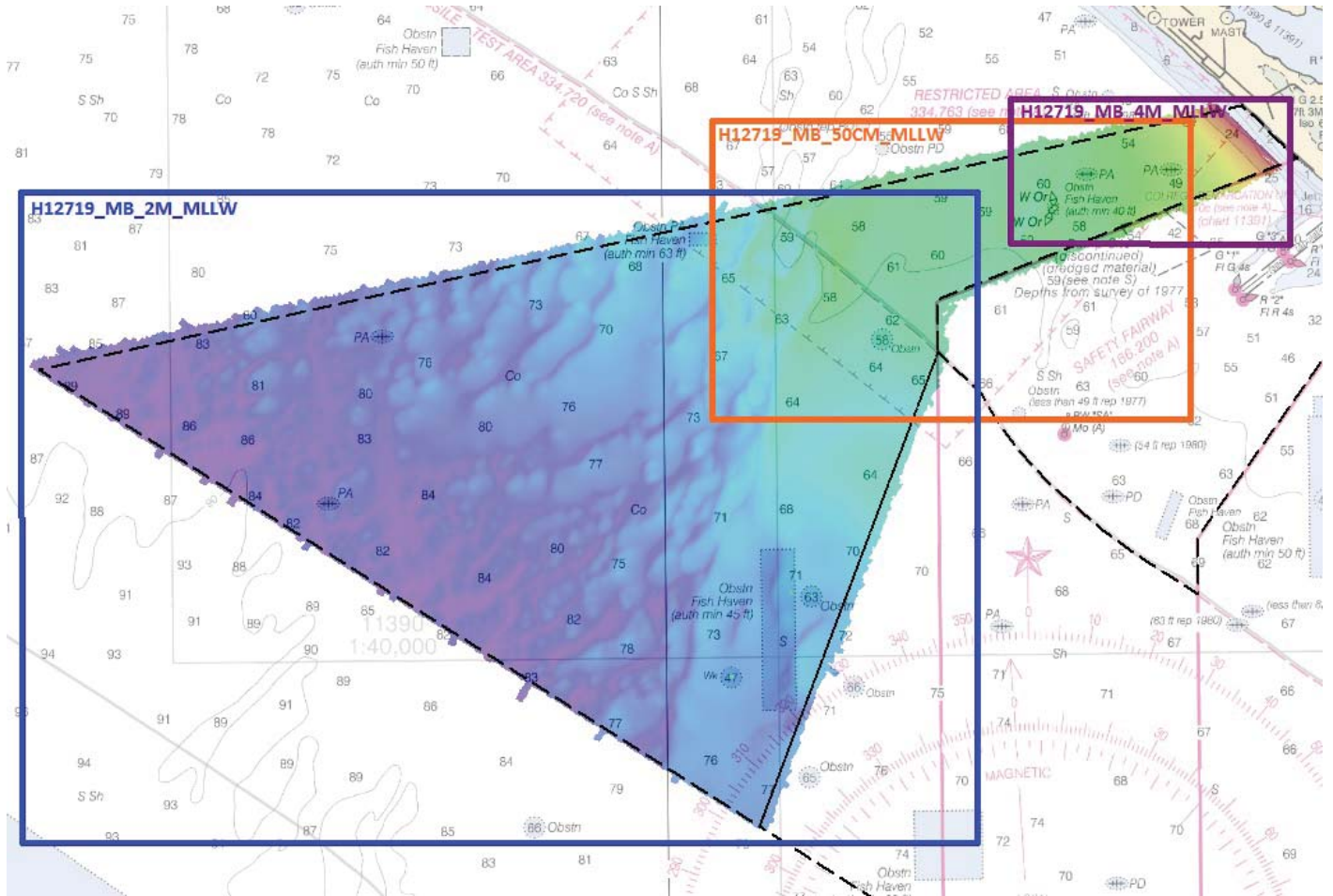


Figure 15: Delivered BASE Surface Coverage Graphic

C. Vertical and Horizontal Control

C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

Standard Vertical Control Methods Used:

Discrete Zoning

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
Panama City Beach, FL	8729210

Table 11: NWLON Tide Stations

File Name	Status
8729210.tid	Verified Observed

Table 12: Water Level Files (.tid)

File Name	Status
J357KR2014CORP.zdf	Final

Table 13: Tide Correctors (.zdf or .tc)

C.2 Horizontal Control

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

The projection used for this project is UTM Zone 16.

DGPS Corrections were monitored in realtime during data collection for dropouts. No dropouts were witnessed during data collection. In addition to the realtime monitoring of DGPS corrections, position data was analyzed in the office during postprocessing. The attitude editor withing Caris HIPS and SIPS 9.0 was utilized to identify any position data that may be insufficient for final delivery.

The following DGPS Stations were used for horizontal control:

DGPS Stations
Eglin, 985 kHz, ID: 812

Table 14: USCG DGPS Stations

C.3 Additional Horizontal or Vertical Control Issues

3.3.1 Decommissioning of CORS station PNCY

CORS station PNCY was included in the project instructions. Prior to project mobilization it was found that PNCY had been decommissioned in February 2010. PNCY was removed from project planning and DGPS was used as the primary correction source.

D. Results and Recommendations

D.1 Chart Comparison

A chart comparison was conducted for H12719 using Caris HIPS and SIPS Version 9.0. Contours as well as soundings were compared against the largest scale RNC Charts 11389, 11390, and 11391. The methods and results of the comparison are detailed below.

Contour Comparison Method:

A combined CUBE weighted BASE surface was generated from the separate BASE surfaces of varying resolution for the purposes of the contour comparison. Note that the combined BASE surface was generated for the chart comparison process only and is not included as a delivered surface. From the combined BASE surface, the 60ft, 30ft, 18ft, and 12ft contours were generated and displayed against their respective charted contours. Additionally, the combined base surface was viewed by a custom color band range based on the contour intervals (12ft, 18ft, 30ft, 60ft, and 90ft) The results of the comparison are described below.

Sounding Comparison Method:

Using the same combined BASE surface generated for the contour comparison, spot soundings were also generated in HIPS and SIPS 9 for H12719. Soundings were displayed against the charted soundings and a visual comparison was made. The results are described below.

D.1.1 Raster Charts

The following are the largest scale raster charts, which cover the survey area:

Chart	Scale	Edition	Edition Date	LNМ Date	NM Date
11391	1:25000	25	01/2013	03/18/2015	03/19/2015
11390	1:40000	25	10/2012	03/18/2015	03/19/2015
11389	1:80000	34	06/2011	03/18/2015	03/19/2015

Table 15: Largest Scale Raster Charts

11391

Contour Comparison Results:

A contour comparison was made against contours created from a combined gridded BASE surface against the charts listed in the above table. In general the 60-foot contour has receded shoreward from the charted contour. This trend can be seen throughout junction surveys H12357 and H12718 as well. In addition to the overall migration trend, a natural scour area was discovered during the chart comparison. The scour area is approximately 2800 meters wide and cuts through the entire survey area creating a significant discrepancy between the 60-foot survey data contour and the charted 60ft contour. The scour area is detailed in the imagery below.

The 12ft, 18ft, and 30ft contours were also compared using the same methodology as the 60ft comparison. The 12ft, 18ft, and 30ft contours are in agreement with the charted contours and show no significant discrepancies.

Sounding Comparison Results:

In addition to the contour comparison a sounding comparison was performed. With exception to the scour channel area identified through the contour comparison, in general, the soundings are in excellent agreement, with no major discrepancies. Soundings are for the most part within 1 foot (0.3m) of each other. Occasionally soundings will differ by 2 to 3 feet, however generally depth differences appear to be minimal. Depth differences are not biased in any particular direction to support a systematic error.

11390

The results of the chart comparison with 11390 match those of the chart comparison with 11391.

11389

The results of the chart comparison with 11389 match those of the chart comparison with 11391.

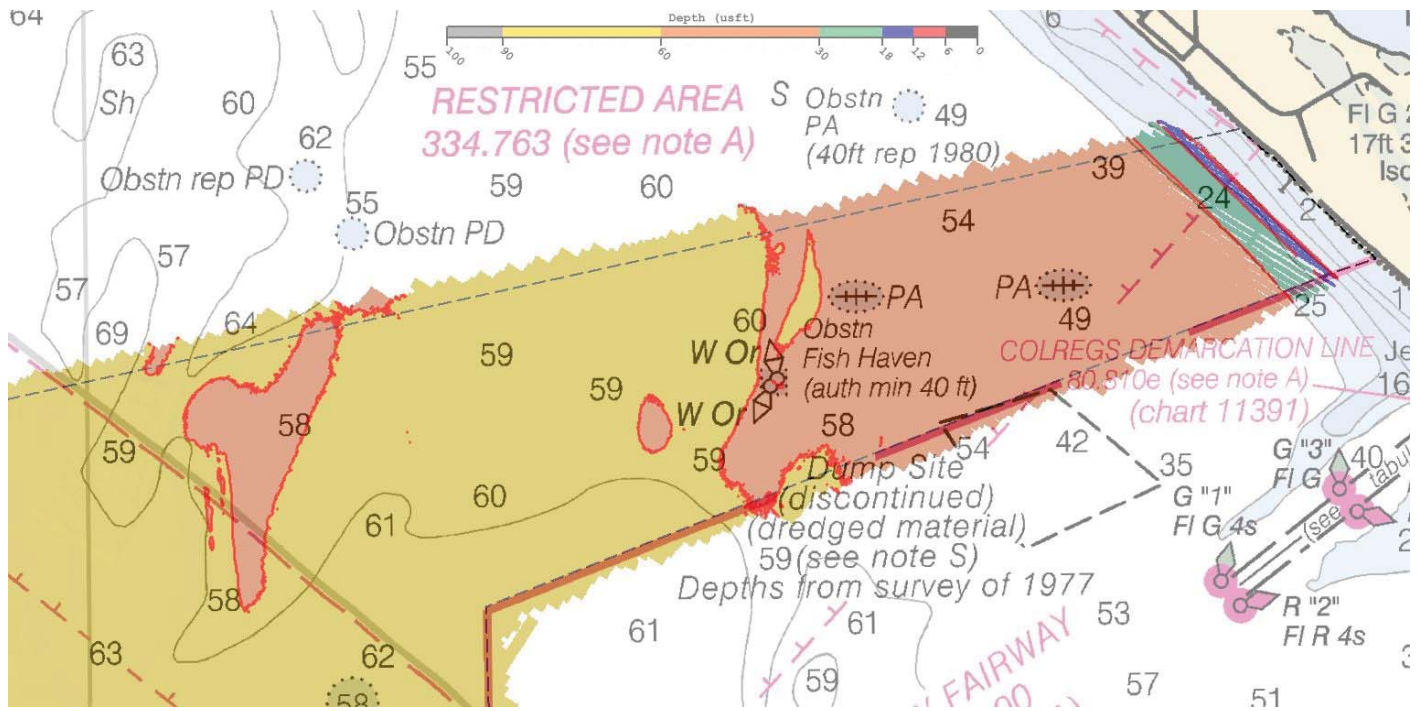


Figure 16: H12719 Contour Comparison (Overview)

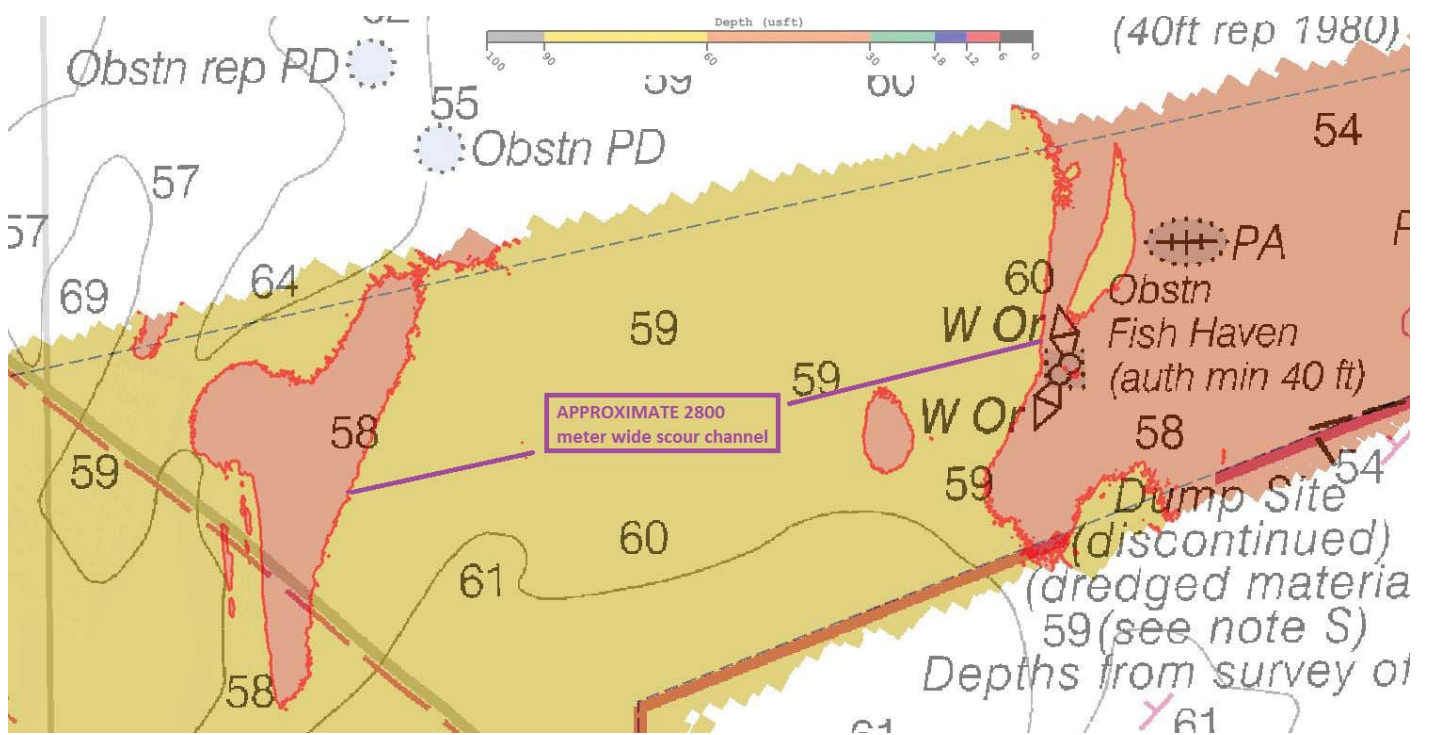


Figure 17: H12719 Contour Comparison (60ft Contour)

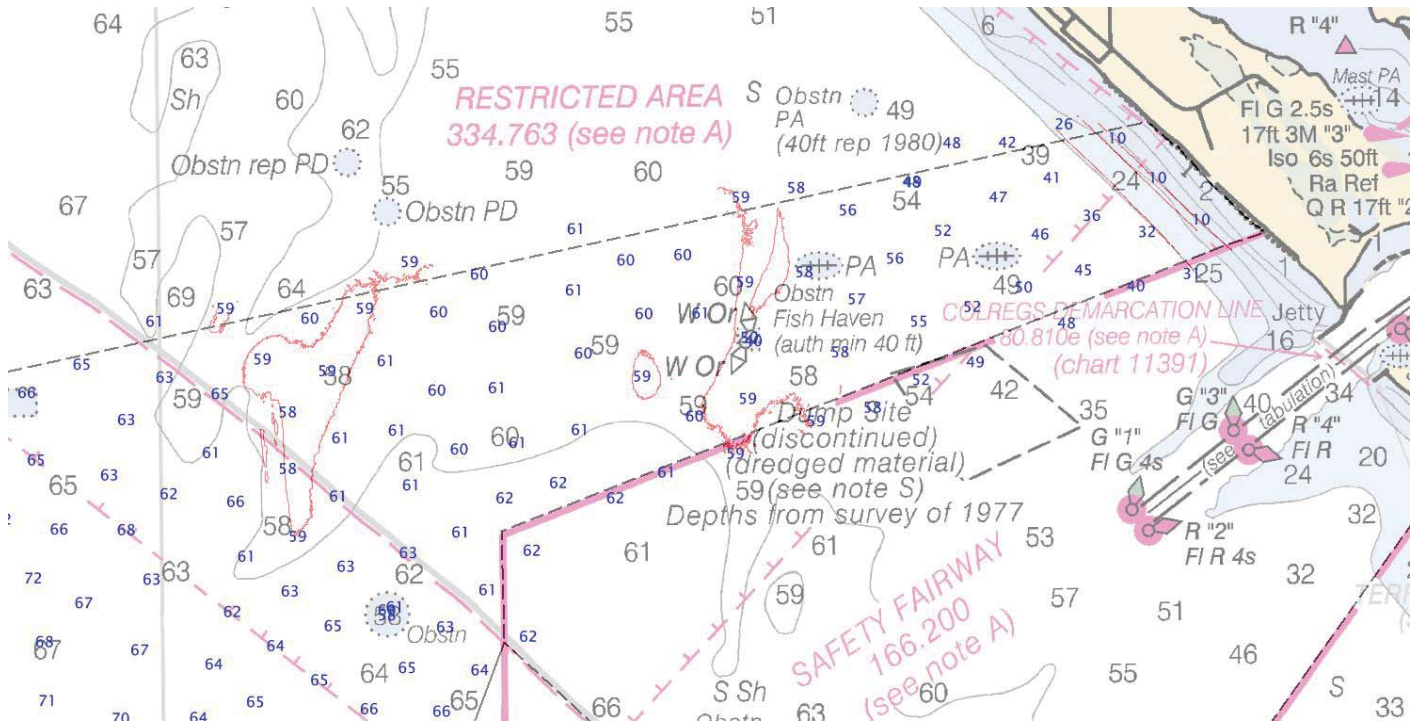


Figure 20: H12719 Sounding Comparison (Scour Area)

D.1.2 Electronic Navigational Charts

The following are the largest scale ENC's, which cover the survey area:

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US5FL61M	1:40000	5	12/17/2013	01/29/2015	NO
US5FL66M	1:25000	7	04/03/2013	04/06/2015	NO
US4FL60M	1:80000	11	10/02/2012	02/03/2015	NO
USFL74M	1:80000	6	08/06/2012	04/14/2014	NO

Table 16: Largest Scale ENC's

US5FL61M

The results of the chart comparison with US5FL61M match those of the RNC chart comparison.

US5FL66M

The results of the chart comparison with US5FL66M match those of the RNC chart comparison.

US4FL60M

The results of the chart comparison with US5FL60M match those of the RNC chart comparison.

USFL74M

USFL74M offers no usable information for a chart comparison with H12719.

D.1.3 AWOIS Items

No AWOIS Items were assigned for this survey.

D.1.4 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

D.1.5 Charted Features

There were 9 charted features assigned for H12719. Each assigned feature is retained in the Final Feature File (FFF). Each feature in the FFF has been given a unique identifier in the userid field (format H12719_XXX). Of the (9) assigned features, the following determinations and recommendations were made:

DELETE: A total of (7) assigned features were not found. These features include (3) Area features and (4) Point features. A DELETE action is recommended.

NEW/DELETE: (2) assigned area features were found to be improperly charted. Both area features are charted fish havens. Multiple obstructions were found both inside and outside of each respective fish haven. A NEW/DELETE action is recommended. For these area features, the assigned feature in the FFF is flagged as DELETE and a new area feature has been added to the FFF with proper position and attributes.

D.1.6 Uncharted Features

A total number of (10) new features were found on H12719 and are included in the Final Feature File (FFF). Each feature was given a unique identifier located in the "userid" field of the .000 S-57 file (Format H12719_XXX). Of the (10) features found and included in the FFF, (8) features are single obstruction point features and (2) features are area features containing multiple obstructions within the defined boundary. (3) of the single point features are also DTONs and are further detailed in the DTON section of this report.

D.1.7 Dangers to Navigation

The following DTON reports were submitted to the processing branch:

DTON Report Name	Date Submitted
H12719 DtoN 1.pdf	2015-01-20
H12719 DtoN 2.pdf	2015-02-04
H12719 DtoN 3.pdf	2015-02-05

Table 17: DTON Reports

3 DtoNs were identified for H12719 and are included in the Final Feature File (FFF). The least depth attributed in the FFF represents the final least depth of the feature after application of Verified Tides. The above listed DtoN reports can be found in Appendix II of this report.

D.1.8 Shoal and Hazardous Features

Features deemed hazardous have been reported and submitted in the DTONs section of this report. Investigation methods and least depths are included. No shoals were found.

D.1.9 Channels

The northern portion of H12719 is within a missile test area and is deemed restricted. The chart comparison shows minor scouring of the area as detailed in the chart comparison section of this report.

D.1.10 Bottom Samples

No bottom samples were required for this survey.

D.2 Additional Results

D.2.1 Shoreline

A limited shoreline verification was performed using the composite source file (CSF) provided with the project instructions. No assigned shoreline features exist for H12719. No new shoreline features were found for H12719.

D.2.2 Prior Surveys

No prior survey comparisons exist for this survey.

D.2.3 Aids to Navigation

No Aids to navigation (ATONs) exist for this survey.

D.2.4 Overhead Features

No overhead features exist for this survey.

D.2.5 Submarine Features

No submarine features exist for this survey.

D.2.6 Ferry Routes and Terminals

No ferry routes or terminals exist for this survey.

D.2.7 Platforms

No platforms exist for this survey.

D.2.8 Significant Features

No significant features exist for this survey.

D.2.9 Construction and Dredging

Two dredge areas were found within the survey limits of H12719. They appear to be borrow sites, possibly for beach renourishment, however per direction from COR (reference email correspondence Appendix II) , no further investigation was performed by eTrac as to the purpose of the dredge sites.

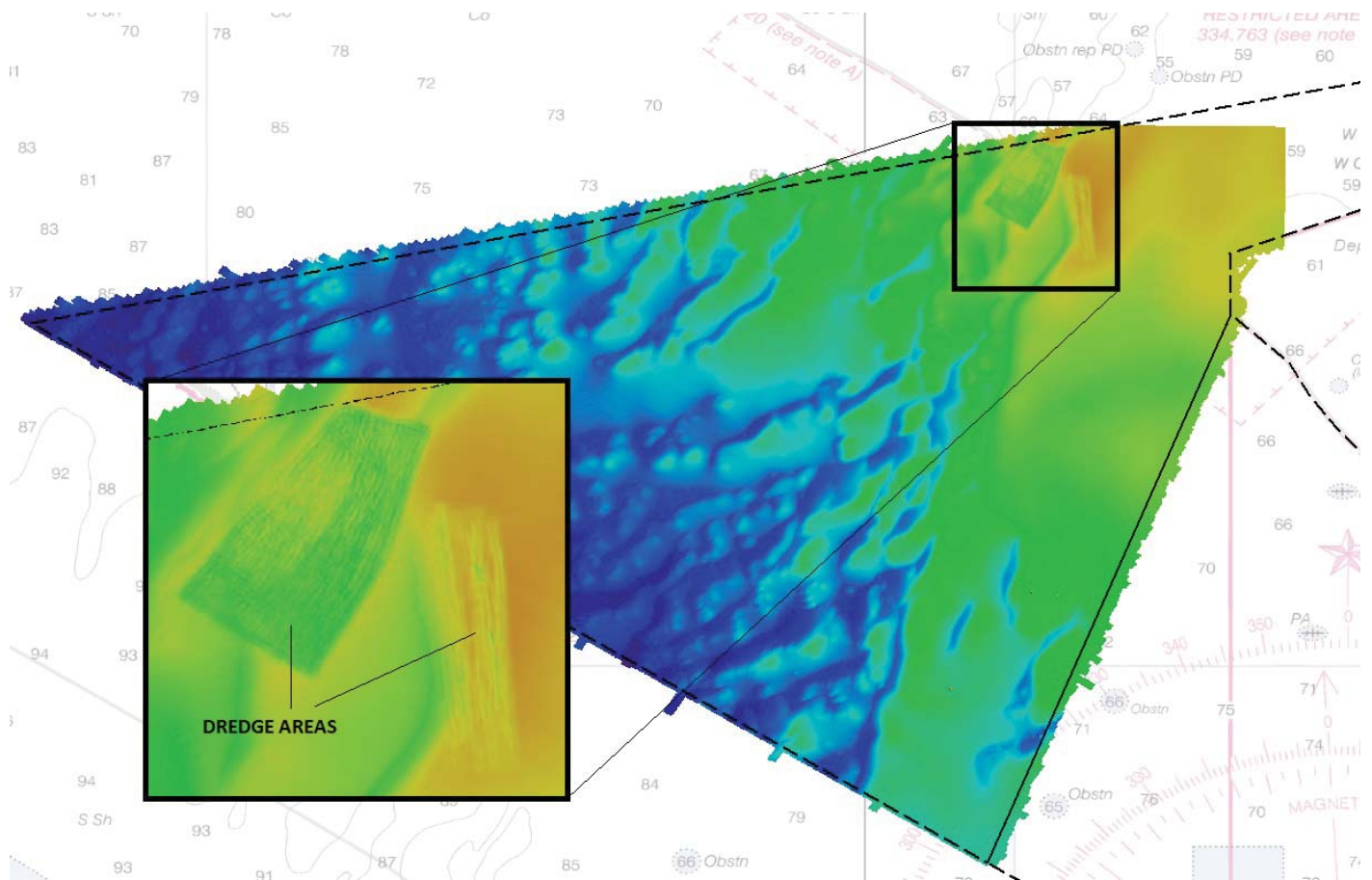


Figure 21: Dredge Areas Within H12719

D.2.10 New Survey Recommendation

No new surveys or further investigations are recommended for this area.

D.2.11 Inset Recommendation

No new insets are recommended for this area.

E. Approval Sheet

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.

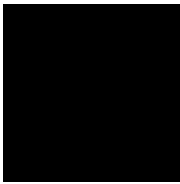
All CSAR Surfaces, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, 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 Descriptive Report.

Approver Name	Approver Title	Approval Date	Signature
David R. Neff, ACSM C.H.	VP of Survey, eTrac Inc.	06/13/2015	 

APPENDIX I

TIDE NOTE AND GRAPHICS



OPR-J357-KR-14 Approaches to Panama City

Abstract: Times of Hydrography

H12719

eTrac Inc.

637 Lindaro St., Suite 100

San Rafael, CA 94901

888-410-3890

Survey Date	Day of the Year	Start Time	End Time
1/18/2015	18	13:38	22:07
1/22/2015	22	13:14	22:42
1/25/2015	25	12:57	20:50
1/30/2015	30	13:22	22:59
2/1/2015	32	12:53	14:33
2/3/2015	34	12:50	23:30
2/4/2015	35	12:39	22:40
2/5/2015	36	13:00	23:30
2/6/2015	37	12:41	22:41
2/8/2015	39	12:44	22:34
2/9/2015	40	12:42	18:59
2/16/2015	47	15:10	23:25
2/17/2015	48	14:17	22:32
2/19/2015	50	15:10	20:50
2/20/2015	51	13:16	17:05
2/22/2015	53	15:18	23:16
2/23/2015	54	13:14	23:17
2/24/2015	55	13:36	15:02



David Neff <david@etracinc.com>

eTrac Inc. commencing OPR-J357-KR-14 Survey Operations

Hua Yang - NOAA Affiliate <hua.yang@noaa.gov>

Mon, Mar 2, 2015 at 6:24 PM

To: David Neff <david@etracinc.com>

Cc: Megan Greenaway - NOAA Federal <megan.greenaway@noaa.gov>, Paul Turner <paul.turner@noaa.gov>, "_NOS.CO-OPS.HPT" <nos.coops.hpt@noaa.gov>, "_NOS CO-OPS OET Team" <nos.coops.oetteam@noaa.gov>

Hi David,

The station 8729210 Panama City, FL was just deleted from the Hydro Hot List for OPR-J357-KR-14 upon your request. Thank you very much for your timely notice.

Best regards,

Hua Yang

Hydrographic Planning Team
NOAA/National Ocean Service
Center for Operational Oceanographic Products and Services
Station 7128
1305 East West Highway, SSMC4
Silver Spring, MD 20910
Office: 301-713-2890 x210
Email: Hua.Yang@noaa.gov
Web: <http://tidesandcurrents.noaa.gov/>

Hydro Hot List: <http://tidesandcurrents.noaa.gov/hydro.shtml>

On Mon, Mar 2, 2015 at 1:08 PM, David Neff <david@etracinc.com> wrote:

Ref OPR-J357-KR-14

eTrac has demobilized all field equipment from the project site in Panama City, FL. I have verified that "verified tides" are available for the entire span of our data collection period.

The Panama City Beach, FL gauge (8729210) can be removed from the hotlist.

Thank you.

Dave Neff

On Wed, Jan 14, 2015 at 9:48 AM, Hua Yang - NOAA Affiliate <hua.yang@noaa.gov> wrote:

Hi Dave,

The station Panama City Beach, FL (8729210) was just added to the Hydro Hot List.

Thanks,

Hua Yang

Hydrographic Planning Team
NOAA/National Ocean Service

Center for Operational Oceanographic Products and Services
Station 7128
1305 East West Highway, SSMC4
Silver Spring, MD 20910
Office: 301-713-2890 x210
Email: Hua.Yang@noaa.gov
Web: <http://tidesandcurrents.noaa.gov/>

Hydro Hot List: <http://tidesandcurrents.noaa.gov/hydro.shtml>

On Wed, Jan 14, 2015 at 12:25 PM, David Neff <david@etracinc.com> wrote:

Hello,

I had sent the following email last week to add the Panama City, FL gauge to the Hydro Hot List. I realize the email address was mistyped and likely never reached you. Many apologies. Can we get the gauge added to the hotlist today? We will likely begin survey operations on Friday, but it is possible we may be able to start tomorrow. See below for original email.

Thanks and sorry for the mistype.

Dave Neff

----- Forwarded message -----

From: **David Neff** <david@etracinc.com>

Date: Fri, Jan 9, 2015 at 6:46 PM

Subject: eTrac Inc. commencing OPR-J357-KR-14 Survey Operations

To: nos.ccops.hpt@noaa.gov, nos.coops.oetteam@noaa.gov

Hello All,

eTrac Inc. will be commencing survey operations on OPR-J357-KR-14 in the vicinity of Panama City Beach, Florida. Survey operations are scheduled as follows:

Survey Operations Begin: 01/14/15

Survey Operations End: 03/15/15

Should the survey end date change, I will notify the same email addresses with the updated schedule. Please add Panama City Beach, FL (STA: 8729210) to the Hydro Hot List.

Thank you.

--

David Neff, C.H.

Mobile: (415)-517-0020

www.etracinc.com

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David Neff, C.H.

Mobile: (415)-517-0020

www.etracinc.com

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David Neff, C.H.

Mobile: (415)-517-0020

www.etracinc.com

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS
AND CORRESPONDENCE



Vanessa Miller - NOAA Federal <vanessa.miller@noaa.gov>

SAR H12719

2 messages

Vanessa Miller - NOAA Federal <vanessa.miller@noaa.gov>

Mon, Aug 10, 2015 at 8:48 AM

To: david@etracinc.com

Cc: Paul Turner - NOAA Federal <paul.turner@noaa.gov>, Tiffany Squyres - NOAA Federal <tiffany.squyres@noaa.gov>

Dear David,

This correspondence is to inform you that I have began the survey acceptance review process for survey H12719. If you have any questions regarding this process or the status of the SAR please feel free to contact me. Please note, I am only the technical reviewer and any questions with respect to the contract should be directed to the official COTR or COR.

Very respectfully,

*Vanessa Self Miller
Hydrographer/Physical Scientist
Atlantic Hydrographic Branch
439 West York St.
Norfolk, VA 23510
[757-441-6746](tel:757-441-6746) x102*

David Neff <david@etracinc.com>

Mon, Aug 10, 2015 at 11:46 AM

To: Vanessa Miller - NOAA Federal <vanessa.miller@noaa.gov>

Cc: Paul Turner - NOAA Federal <paul.turner@noaa.gov>, Tiffany Squyres - NOAA Federal <tiffany.squyres@noaa.gov>

Received, thank you Vanessa

Dave

[Quoted text hidden]

—

David Neff, C.H.

Mobile: [\(415\)-517-0020](tel:415-517-0020)

www.etracinc.com

APPROVAL PAGE

H12719

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

- H12719_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12717_H12718_H12719_GeoImage.pdf

The survey evaluation and verification has been conducted according to current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved: _____

Lieutenant Commander Matthew Jaskoski, NOAA
Chief, Atlantic Hydrographic Branch