

W00182

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey: (NF-07-06-USVI-HAB)
Multibeam
Registry Number: W00182

LOCALITY

State / Commonwealth: Puerto Rico
General Locality: Offshore Western Puerto Rico
Sub-locality: Southern Approach of Isla De Mona

2007

CHIEF OF PARTY

Timothy A. Battista (NOAA)

LIBRARY & ARCHIVES

DATE

AHB PRE-COMPILATION PROCESS

REGISTRY No.	W00182
PROJECT No.	NF-07-06-USVI HAB
FIELD UNIT	NOAA ship Nancy Foster
PRE-COMPILER	Bridget Williams
LARGEST SCALE CHART	25671, edition 18, 20030322
CHART SCALE	1: 100,000
SURVEY SCALE	1: 10,000
DATE OF SURVEY	20070415-20070424
CONTENT REVIEW DATE	June 11, 2008

Components	File Names
<i>Product Surface</i>	PS_W00182_10k_100mrad_8mres.hns
<i>Shifted Surface</i>	PS_W00182_10k_200mrad_48mres_Shifted_feet.hns PS_W00182_10k_200mrad_48mres_Shifted_fathoms.hns
<i>Contour Layer</i>	PS_W00182_10k_200mrad_48mres_Contours.hob
<i>Survey Scale Soundings</i>	W00182_SS_Soundings.hob
<i>Chart Scale Soundings</i>	W00182_CS_Soundings.hob
<i>ENC Retain Soundings</i>	N/A
<i>Feature Layer</i>	W00182_Features.hob
<i>Meta-Objects Layer</i>	W00182_MetaObjects.hob
<i>Blue Notes</i>	W00182_BlueNotes.hob

SPECIFICATIONS:

- I. COMBINED SURFACE:
 - a. File name: W00182_AHB_8m_Combined.hns
 - b. Resolution: 8 m
 - c. Fieldsheet Location: T:\SAR\W00182_USVI-NF\AHB_W00182\E-SAR
Final Products\GRIDS
- II. PRODUCT SURFACE (SOUNDINGS):
 - a. Scale: 1:10000
 - b. Radius: 100 m
 - c. Resolution: 8 m
 - d. Depth
 - i. Minimum: 9.214 m
 - ii. Maximum: 668.636m
- PRODUCT SURFACE (CONTOURS):
 - a. Scale: 1:1000
 - b. Radius: 200 m
 - c. Resolution: 48 m
- III. SHIFTED SURFACE:

Single Shift Value: -0.229, -1.372 [-0.229m (feet), (≤ 10 fathoms)]
[-1.372 m (> 10 fathoms)]
- IV. CONTOUR LAYER:

- a. Use a Depth List: W00182_NOAA_depth_curves_list.txt

Depth List:

3.658
5.486
9.144
18.288
36.576
182.880

- b. Output Options:

- i. Create contour lines:

1. Line Object: DEPCNT
2. Value Attribute: VALDCO

V. SOUNDING SELECTION:

- a. Selection Criteria:

- i. Radius
- ii. Shoal biased
- iii. Use Single-Defined Radius: 62.50 distance on ground (m)
- iv. Filter: Generalized !=1

VI. FEATURES:

- a. Brought in from Survey

Total No. 0

- b. Brought in from ENC

ENC: US4PR60M

Total No. 3

VII. META-OBJECTS:

- a. M_COVR attributes

Acronym	Value
INFORM	W00182
SORDAT	20070424
CATCOV	1
SORIND	US,US,survey,W00182

- b. M_QUAL attributes

Acronym	Value
CATZOC	A2
INFORM	W00182, NF-07-06-USVI HAB, NOAA ship Nancy Foster
POSACC	10
SORDAT	20070424
SORIND	US,US,survey,W00182
SUREND	20070424
SURSTA	20070415
TECSOU	3 Multibeam

- c. DEPARE attributes

Acronym	Value
DRVALV 1	9.100
DRVALV2	667.300
SORDAT	20070424
SORIND	US,US,nsurf,W00182
INFORM	W00182

VIII. NOTES:

Sounding attribution:

QUASOU: 1: Depth Known TECSOU: 3: found by multibeam SORDAT: 20070424 SORIND: US,US,nsurf,W00184

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Survey W00182 (1:10,000)**

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

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with the Cruise Plan for Project **NF-07-06-USVI-HAB**, Benthic Habitat and Hydrographic Project. The cruise plan was dated March 30, 2007. HSD Operations Branch project instructions were not provided.

Project NF-07-06-USVI-HAB was conducted in support of the National Center for Coastal Ocean Science (NCCOS) to provide shallow water bathymetric data of critical benthic habitats in select areas off the west coast of Puerto Rico. Bathymetric data from this project collected with a multibeam echo sounder is intended to be further utilized by the Office of Coast Survey (OCS) to update the nautical charts in this area. Field processing and reports were provided by the contract Lead Hydrographer Mike L. Stetcher of Solmar Hydro Inc...

Refer to the DAPR "*NF-07-06_DAPR_Rev1.pdf*" accompanying this survey for significantly detailed documentation of system calibrations, data acquisition, and data processing. Project NF-07-06-USVI-HAB is comprised of three multibeam hydrographic surveys W00182 (Isla De Mona), W00183 (Abrir La Sierra Bank), and W00184 (Bajo De Cico). All of which are located in three distinct areas offshore of western Puerto Rico.

B. DATA ACQUISITION AND PROCESSING

Also refer to the DAPR "*NF-07-06_DAPR_Rev1.pdf*" accompanying this survey.

B.1 DATA PROCESSING

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

CARIS HIPS/SIPS version 6.1 SP1
CARIS Bathy Manager version 2.1
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM version 3.3
CARIS S57 Composer version 1.0

B.2. QUALITY CONTROL

W00182 is a 100 percent multibeam only survey. The survey and reports were determined to be of good quality and adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

B.2.1. H-Cell

AHB personnel produced the source depth grids for the survey's nautical chart update product by creating and finalizing depth thresholded grids at 2, 4, and 8 meter resolutions and, combined at an 8 meter resolution. The combined grid was then used to create a product surface grid with a resolution of 8m. The survey scale selected soundings were extracted from the 8 meter resolution product surface at a scale of 1:10,000. The selected sounding set is 10 to 20 times the number of charted depths generated at a scale of 1:100,000. The chart scale selected soundings are a subset of the survey scale selected soundings. The surface model was referenced when selecting the chart scale soundings, to ensure that the selected soundings portrayed the bathymetry within the common area.

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

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

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

The W00182 CARIS H-Cell final deliverables include the following products:

US400182_CS.000	1:100,000 Scale	W00182 H-Cell with Chart Scale Selected Soundings
US400182_SS.000	1:10,000 Scale	W00182 Selected Soundings (Survey Scale)
US400182_Bluenotes.000	1:100,000 Scale	W00182 Cartographic Notes

B.2.2. Junctions

No contemporary surveys exist for junctioning..

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by Solmar Hydro Inc. personnel with no additional correction required by Atlantic Hydrographic Branch. The contract personnel applied verified water levels in conjunction with the preliminary tidal zoning which was accepted and approved by N/OPSI CO-OPS as the final zoning for W00182. Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW) The Vertical Datum for this survey was Mean Lower-Low Water (MLLW). The National Water Level Observation Network (NWLON) primary tide stations at, Magueyes Island PR (945-9110), Mona Island PR (975-9938) and Aguadilla PR (975-9412) served as the primary sources for vertical datum control.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 19. Office ENC processing of this survey required translating the datum to meet S-57 ENC requirements.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

25671 (18th Edition, Mar/03)

Corrected through NM 02/26/2008

Corrected through LNM 03/01/2008

Scale 1:100,000

ENC Comparison

US4PR60M.000

West Coast of Puerto Rico

Edition 6

Update Application Date 2007-10-22

Issue Date 2007-10-22

References: Chart 25671

D.1.1 Hydrography

D.2. ADDITIONAL RESULTS

Bottom samples were not collected during this survey. All bottom characteristics (SBDARE) are recommended as retain as charted.

D.2.1. Aids to Navigation

ATON's were not addressed and/or positioned for this survey. AHB recommends deferring the charting disposition of any navigational aids to Marine Chart Division, Nautical Data Branch.

D.3. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey:

D.4. ADEQUACY OF SURVEY

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

APPROVAL SHEET
W00182

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Bridget Williams
Hydrographic Intern
Atlantic Hydrographic Branch

Edward A. Owens
Physical Scientist
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: _____

Shepard Smith
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch