H11495

**NOAA** FORM 76-35A

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

# DESCRIPTIVE REPORT

*Type of Survey* MULTIBEAM

*Field No.* K

*Registry No.* H11495

## LOCALITY

*State* NEW JERSEY

*General Locality* ATLANTIC OCEAN

*Locality* BARNEGAT INLET TO
CHADWICK BEACH

2005 - 2006

CHIEF OF PARTY

GARY R. DAVIS SAIC

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REGISTRY NO.

# H11495

## HYDROGRAPHIC TITLE SHEET

**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.

**K**

State New Jersey

General locality Atlantic Ocean

Locality Barnegat Inlet to Chadwick Beach

Scale 1:20,000 Date of survey October 27, 2005 – May 24, 2006

Instructions Dated 20 July 2005 Project No. OPR-C303-KR-05

Vessel *M/V Atlantic Surveyor* ***D582365***

Chief of Party *GARY R. DAVIS*

Surveyed by: *Kendra Arbesman, Paul Donaldson, Matt Farley, Karen Hart, Sean Halpin, Chuck Holloway, Jason Infantino, Mike Kelly, John Kiernan, Matt Meyer, Rick Nadeau, Evan Robertson, Jeremy Shambaugh, Meme Lobecker, and Deb Smith.*

Soundings taken by (**echo sounder**), hand lead, pole MULTIBEAM RESON SEABAT 8101

Graphic record scaled by

Graphic record checked by

Protracted by Automated plot by HP1055CM

Verification by ***Atlantic Hydrographic Branch***

Soundings in fathoms, (**feet,**) meters at MLW, (**MLLW**)

***Bold, Italic, red notes in the Descriptive Report were made during office processing.***

REMARKS: **Contract** DG133C-03-CQ-0014
**Contractor**: Science Applications International Corp., 221 Third Street; Newport, RI 02840 USA
**Times**: All times are recorded in UTC
**Purpose**: To provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of the assigned area: Sheet K (H11495) in Mid–Atlantic Corridor, Coast of New Jersey.

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Science Applications International Corporation (SAIC) warrants only that the survey data acquired by SAIC and delivered to NOAA under Contract DG133C-03-CQ-0014 reflects the state of the sea floor in existence on the day and at the time the survey was conducted.

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***Data filed with original field records.***

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**Descriptive Report to Accompany**
**Hydrographic Survey H11495**
**Scale 1:20,000, Surveyed 2005 - 2006**
***M/V Atlantic Surveyor***
**Science Applications International Corporation (SAIC)**
**Gary R. Davis, Hydrographer**

**PROJECT**
**Project Number:** OPR-C303-KR-05 **Original:** OPR-C303-KR-05
**Dates of Instructions:** 10 March 2005 **Task Order#:** T0005 Modification #1

**Dates of Supplemental Instructions:** 20 July 2005
**Sheet Letter:** K
**Registry Number:** H11495
**Purpose:** To provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of the assigned area.

## A. AREA SURVEYED

The area surveyed was a section of the Atlantic Ocean, Barnegat Inlet, New Jersey to Chadwick Beach, New Jersey (Figure A-1). The Statement of Work area vertices delivered to SAIC from NOAA for H11495 (Sheet K) are presented in the right most columns of Table A-1. The two left most columns show the modified statement of work area vertices defining the survey on H11495 (Sheet K). The area was surveyed with multibeam sonar and towed side-scan sonar from 27 October 2005 to 24 May 2006 (Table A-2). The depth range encountered in this area was from 14.50 to 84.25 feet.

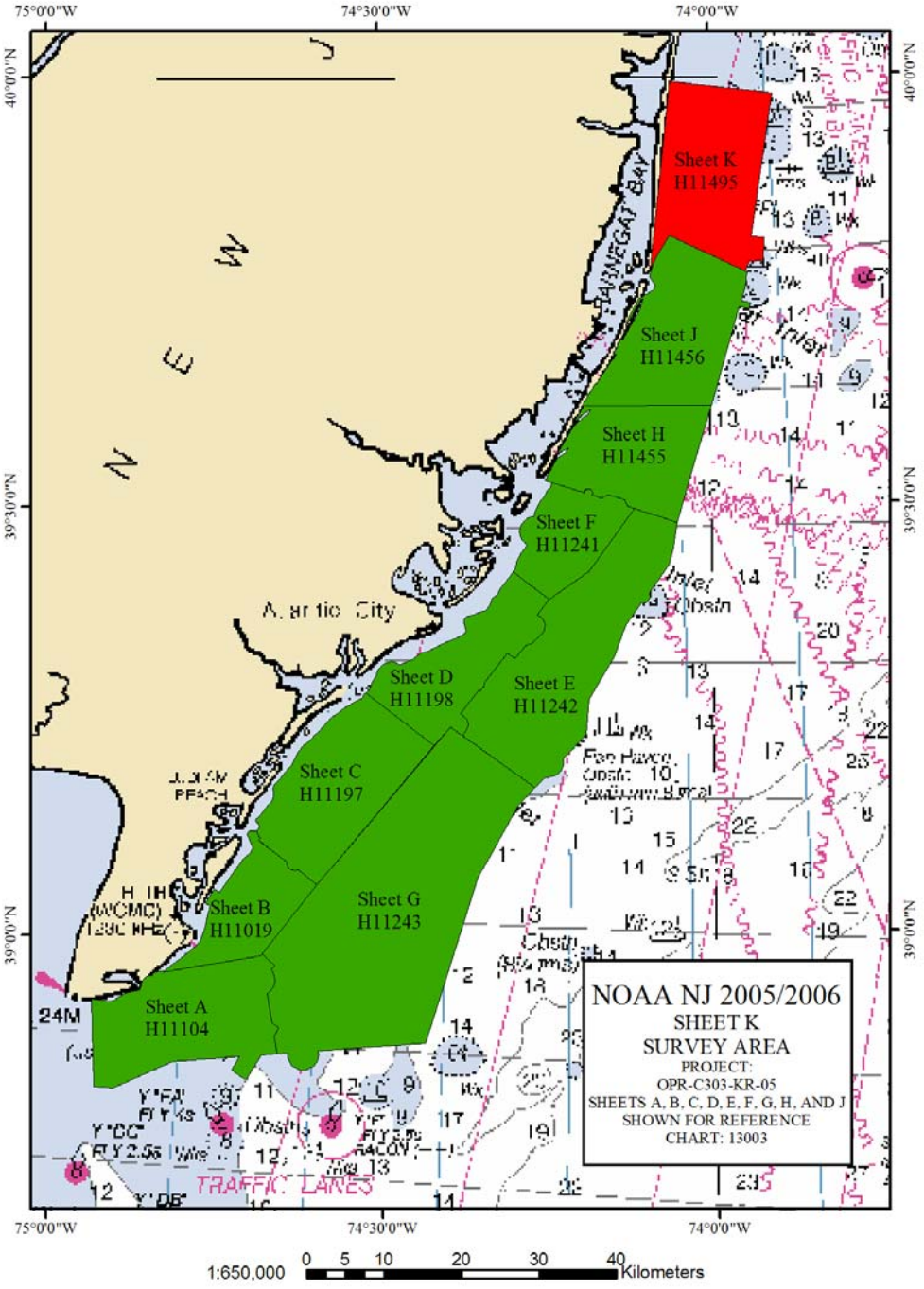


**Figure A-1. H11495 Survey Bounds**

**Table A-1. Vertices defining the H11495 Survey Area and the Statement of Work Survey Area**

| **H11495 Sheet K Survey Area (NAD83)** | | **H11495 Sheet K Statement of Work Area (NAD83)** | |
|---|---|---|---|
| Latitude (N) | Longitude (W) | Latitude (N) | Longitude (W) |
| 39° 59’ 34.02” | 074° 03’ 24.71” | 39° 59' 33.36" | 074° 03' 23.83" |
| 39° 58’ 36.89” | 073° 54’ 13.12” | 39° 58' 36.55" | 073° 54' 14.15" |
| 39° 48’ 39.54” | 073° 56’ 06.66” | 39° 48' 35.89" | 073° 56' 10.36" |
| 39° 48’ 38.30” | 073° 55’ 04.34” | 39° 48' 35.53" | 073° 55' 07.97" |
| 39° 46’ 52.43” | 073° 55’ 08.72” | 39° 46' 55.81" | 073° 55' 11.10" |
| 39° 46’ 51.95” | 073° 56’ 23.22” | 39° 46' 55.09" | 073° 56' 27.42" |
| 39° 46’ 08.41” | 073° 56’ 38.25” | 39° 46' 13.80" | 073° 56' 44.45" |
| 39° 48’ 43.94” | 074° 03’ 35.15” | 39° 48' 47.16" | 074° 03' 35.39" |
| 39° 46’ 45.68” | 074° 05’ 04.20” | 39° 46' 27.55" | 074° 05' 12.98" |
| 39° 46’ 24.55” | 074° 05’ 12.15” | | |
| 39° 46’ 24.72” | 074° 05’ 17.22” | | |
| 39° 47’ 44.01” | 074° 05’ 14.79” | | |
| 39° 50’ 00.72” | 074° 04’ 59.72” | | |
| 39° 52’ 48.78” | 074° 04’ 35.45” | | |
| 39° 53’ 11.46” | 074° 04’ 35.55” | | |
| 39° 54’ 51.81” | 074° 04’ 20.51” | | |
| 39° 57’ 28.05” | 074° 03’ 47.27” | | |
| 39° 57’ 58.53” | 074° 03’ 46.53” | | |

**Table A-2 Dates of Multibeam Data Acquisition in Calendar and Julian Days**

| Calendar Date | Julian Day |
|---|---|
| October 27, 2005 | 300 |
| October, 28, 2005 | 301 |
| October 29, 2005 | 302 |
| October 30, 2005 | 303 |
| October 31, 2005 | 304 |
| November 1, 2005 | 305 |
| November 2, 2005 | 306 |
| November 3, 2005 | 307 |
| November 4, 2005 | 308 |
| November 5, 2005 | 309 |
| November 6, 2005 | 310 |
| November 7, 2005 | 311 |
| November 8, 2005 | 312 |
| November 9, 2005 | 313 |
| November 11, 2005 | 315 |
| November 12, 2005 | 316 |
| November 13, 2005 | 317 |
| November 14, 2005 | 318 |
| November 15, 2005 | 319 |
| November 18, 2005 | 322 |
| November 19, 2005 | 323 |
| November 20, 2005 | 324 |
| November 21, 2005 | 325 |
| April 15, 2006 | 105 |
| April 16, 2006 | 106 |
| April 17, 2006 | 107 |
| April 18, 2006 | 108 |
| April 19, 2006 | 109 |
| April 20, 2006 | 110 |
| April 21, 2006 | 111 |
| April 24, 2006 | 114 |
| April 25, 2006 | 115 |
| April 26, 2006 | 116 |
| April 27, 2006 | 117 |
| April 28, 2006 | 118 |
| May 24, 2006 | 144 |

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

### B.1 EQUIPMENT

A detailed description of the systems used to acquire and process these data has been included in the separate Data Acquisition and Processing Report for OPR-C303-KR-05 delivered with Sheet H11455 on 31 March 2006 (SAIC document number 05-TR-014). There were no variations from the equipment configuration described therein with the exception of the MVP-30. The MVP-30 was upgraded in the winter of 2005/2006 and reinstalled on board the *M/V Atlantic Surveyor* prior to SAT in 2006. The information in Table B-1 below summarizes the information in the report.

**Table B-1. Major Systems by Manufacturer and Model Number**

| | Manufacturer / Model Number | Subsystem |
|---|---|---|
| **Multibeam Sonar** | RESON SeaBat 8101 | Transducer<br>8101 Processor |
| **Side Scan Sonar** | Klein 3000 Towfish | K-1 K-Wing Depressor,<br>Transceiver/Processing Unit |
| **Vessel Attitude System** | TSS POS/MV Inertial Navigation System | |
| **Positioning Systems** | TSS POS/MV | |
| | Trimble 7400 GPS Receiver | |
| | Trimble Probeacon Differential Beacon Receiver | |
| | Leica MX41R Differential Beacon Receiver | |
| **Sound Velocity System** | Brooke Ocean Technology Ltd.,<br>Moving Vessel Profiler-30 | Applied Microsystems Ltd.<br>Smart SV and Pressure Sensor |
| | Sea-Bird Electronics, Inc.<br>CTD Profiler | |

#### *Survey Vessel*

The *M/V Atlantic Surveyor* was the platform for multibeam sonar, side-scan sonar and sound velocity data collection. Three 20-foot ISO containers were secured on the aft deck. One was used as the real-time, survey data collection office and the other the data processing office and the third for maintenance and repairs as well as spares storage. All data were shipped to the Data Processing Center in the SAIC Newport, RI office for final data processing. The Position Orientation System/Marine Vessels (POS/MV) Inertial Measurement Unit (IMU) was mounted below the main deck of the vessel, 0.39 meters port of centerline and 0.34 meters forward and 1.64 meters above the RESON 8101 transducer. The multibeam sounder transducer was mounted on the hull 0.46 meters port of the keel. A Brook Ocean Technologies Moving Vessel Profiler 30 (MVP-30) was mounted to the starboard stern quarter. Table B-2 is a list of vessel characteristics for the *M/V Atlantic Surveyor*.

**Table B-2. Survey Vessel Characteristics**

| Vessel Name | LOA | Beam | Draft | Max Speed | Gross Tonnage | Power (Hp) | Registration Number |
|---|---|---|---|---|---|---|---|
| *M/V Atlantic Surveyor* | 110’ | 26’ | 9’ | 14 knots | Displacement 68 net tons Deck load 65 long tons | 900 | **D582365** |

## *Major Systems*

From 27 October 2005 to 21 November 2005, field operations were conducted using SAIC’s Integrated Survey System (**ISS-2000**) software on a windows 2000 platform to acquire these survey data. Survey planning and data analysis was conducted using SAIC’s **SABER** software on Linux platforms. Klein 3000 side-scan data were collected in Klein’s Sonar Data Format (*.SDF files) on a Windows 2000 platform using Klein’s **SonarPro** software. All side-scan data were converted to Trinton’s eXtended Triton Format (*.XTF) files and reviewed using Triton **Isis** software, while coverage mosaics were produced using **SABER** on a Linux platform. A description of the software and versions used to acquire and process these data has been included in the separate Data Acquisition and Processing Report for OPR-C303-KR-05 delivered with Sheet H11455 on 31 March 2006 (SAIC document number 05-TR-014).

During 5-9 April 2006, the *M/V Atlantic Surveyor* was re-mobilized for the start of 2006 field operations. Following re-mobilization of the *M/V Atlantic Surveyor*, upgrades were made to the SAIC software programs which were not covered in the Data Acquisition and Processing Report for OPR-C303-KR-05 delivered on 31 March 2006. During the 10-14 April 2006 Sea Acceptance Test (SAT) survey, **SABER** was upgraded to version 3.3.9 and **ISS-2000** was upgraded to version 3.10 on the survey vessel. The information in Table B-3 summarizes the differences between the **ISS-2000** version 3.10 and version 3.9.1 reported in the Data Acquisition and Processing Report. Table B-4 provides the programs for **SABER** version 3.3.9. On 14 April 2006 the survey vessel and data processing center upgraded to **SABER** version 3.3.10. The information in Table B-5 summarizes the differences between the **SABER** 3.3.9 and 3.3.10 versions. On 12 July 2006 the data processing center upgraded to **SABER** version 3.3.15. The information in Table B-6 summarizes the differences between the **SABER** 3.3.10 and 3.3.15 versions. On 16 August 2006 the data processing center upgraded to **SABER** version 3.4.5. The information in Table B-7 summarizes the differences between the **SABER** 3.3.15 and 3.4.5 versions.

From 15 April to 24 May 2006, field operations were conducted using SAIC’s Integrated Survey System (**ISS-2000**) software on a Windows XP platform to acquire these survey data. Survey planning and data analysis were conducted using SAIC’s **SABER** software on Red Hat Enterprise 4 Linux platforms. Klein 3000 side-scan data were collected on a Windows 2000 platform using Klein’s **SonarPro version 9.6** software. The Klein 3000 side scan sonar data were collected in eXtended Triton Format (XTF) during 15 – 24 May 2006, and maintained full resolution, with no conversion or down sampling

techniques applied. All side-scan data were reviewed using Triton **Isis** software, while coverage mosaics were produced using **SABER** on a Linux platform.

**Table B-3. ISS-2000 for Windows Product Version: -v ISS-2000_3.10**

| | |
|---|---|
| checkkey.dll Built at Version -vLIBCHKKEY_1.14 | mbimagery.exe Built at Version -vMBIMAGERY_2.1.3 |
| utility.dll Built at Version -vUTILITY_2.11.3 | mbmgr.exe Built at Version -vMBMGR_2.6 |
| bancomm.dll Built at Version -vBANCOMM_2.2.1 | msgmgr.exe Built at Version -vMSGMGR_2.8.1 |
| proj.dll Built at Version -vPROJ_2.5 | navisounddtc.exe Built at Version -vNAVISOUNDDTC_1.5 |
| nad.dll Built at Version -vPROJ_2.5 | payout.exe Built at Version -vPAYOUT_2.4 |
| dbms.dll Built at Version -vDBMS_2.12 | pmv_3.exe Built at Version -vPMV3_2.12 |
| snpgprim.dll Built at Version -vSNPGPRIM_2.9 | resondtc.exe Built at Version -vRESONDTC_2.7.2 |
| gsf.dll Built at Version -vGSF_2.03.5 | rttide.exe Built at Version -vRTTIDE_2.11 |
| hmps.dll Built at Version -vHMPS_LIB_2.12 | svpmon.exe Built at Version -vSVPMON_2.11 |
| Sensors.dll Built at Version -vSENSORS_2.14 | swathplt.exe Built at Version -vSWATHPLT_2.6.1 |
| grid_io.dll Built at Version -vGRID_IO_3.12 | syscon.exe Built at Version -vSYSCON_2.11 |
| snpdraw.dll Built at Version -vSNPDRAW_2.19 | taim.exe Built at Version -vTAIM_2.3.1 |
| smemcom.dll Built at Version -vSMEMCOM_2.8.1 | waterfal.exe Built at Version -vWATERFAL_2.5.1 |
| htmlwid.dll Built at Version -vHTMLWID_2.4.1 | xnavmgr.exe Built at Version -vXNAVMGR_2.12 |
| sputil.dll Built at Version -vSPUTIL_2.15 | z12.exe Built at Version -vZ12_2.7 |
| mb_corr.dll Built at Version -vMB_CORR_1.8 | datasumm.exe Built at Version -vDATASUMM_2.12 |
| mberr.dll Built at Version –vMBERR_2.3 | imprtdxf.exe Built at Version -vIMPRTDXF_2.11 |
| dbx.dll Built at Version -vDBX_2.2 | tkproj.exe Built at Version -vTKPROJ_2.9 |
| sim_util.dll Built at Version -vSIM_UTIL_2.0 | echo_raw.exe Built at Version -vECHO_RAW_1.0 |
| spmgr.exe Built at Version -vSPMGR_2.14.1 | iem3000.exe Built at Version -vIEM3000_2.5.1 |
| sysadmin.exe Built at Version -vSYSADMIN_2.2.1 | inavisound.exe Built at Version -vINAVISOUND_1.0 |
| autoarch.exe Built at Version -vAUTO_ARCHIVE_2.8 | inmeaapb.exe Built at Version -vINMEA_APB_2.0 |
| cov_mon.exe Built at Version -vCOV_MON_2.11 | inmeagps.exe Built at Version -vINMEAGPS_2.1 |
| echodtc.exe Built at Version -vECHO_DTC_2.4 | irpm.exe Built at Version -vIRPM_2.0 |
| envmgr.exe Built at Version -vENVMGR_2.9.1 | iss2000_sim_scripts.exe Built at Version -vISS2000_SIM_SCRIPTS_2.0 |
| em_out.exe Built at Version -vEM_OUT_2.4.1 | navsim.exe Built at Version -vNAVSIM_2.1 |
| em_rcv.exe Built at Version -vEM_RCV_2.7.1 | pmv_3sim.exe Built at Version -vPMV3SIM_2.6 |
| exammb.exe Built at Version -vEXAMMB_2.11.1 | replay_svy.exe Built at Version -vREPLAY_SVY_1.0 |
| fishbath.exe Built at Version –vFISH_BATHY_2.6 | replay_xtf.exe Built at Version -vREPLAY_XTF_1.0 |
| focus.exe Built at Version –vFOCUS_2.2 | resonsim.exe Built at Version -vRESONSIM_1.0 |
| helmmgr.exe Built at Version -vHELMMGR_1.1 | supfiles.exe Built at Version -vISS2000_SUPPORT_2.14 |
| kflogshp.exe Built at Version -vKFLOGSHP_2.7.1 | |

**Table B-4. SABER for Linux Product version: -vSABER_3.3.9**

| | | |
|---|---|---|
| ABE_BYTESWAP_LIB_1.0 | GETKPS_1.2 | PROFEDIT_1.6 |
| ABE_CHARTS_LIB_1.0 | GETLLPROF_1.2 | PROFLBLS_1.1 |
| ABE_MERGE_LIB_1.2 | GETPROF_1.9 | RANGEFLT_1.2 |
| ABE_MISP_LIB_1.1 | GET_FEATURES_1.5 | RAWREAD_1.2 |

| | | |
|---|---|---|
| ABE_MOSAIC_LIB_1.0 | GRIDGSF_1.15 | RECON_1.8 |
| ABE_PFM_LIB_4.70 | GRID_IO_3.14 | REDOCAT_1.1 |
| ABE_PROFEDIT_LIB_1.1 | GSF2TXT_1.4 | REFRMTRK_1.2 |
| ABE_SHOALS_LIB_1.3 | GSF2XYZ_1.4 | REGCHKGSF_1.2 |
| ABE_SHOALS_WAVE_VIEW_1.0 | GSFBEAMEX_1.2 | REMOTE_2.1 |
| ABE_TARGET_LIB_1.7 | GSFCAT_1.0 | RESETFLG_1.3 |
| ABE_UNISIPS_LIB_1.0 | GSFEDIT_1.1 | RESONFLT_1.2 |
| ABE_UTILITY_LIB_1.5 | GSFNAVFIX_1.1 | REVERSIT_1.1 |
| ACCUTEST_1.6 | GSFSPLIT_1.1 | RUNKEYMEM_1.6 |
| ANX_CROSSINGS_1.3 | GSFUPDATE_1.7 | SABER_APPLY_TIDES_1.4 |
| APPCORS_2.5 | GSF_2.04 | SABER_BUILD_TARGET_1.3 |
| APPLYSQT_1.2 | GSF_FIND_SQUAT_1.0 | SABER_EXCLUDE_1.0 |
| AUTO_ARCHIVE_2.8 | GSF_FIX_HEAVE_1.0 | SABER_GRIDVIEW_1.2 |
| BAG2COVGRD_1.1 | GSF_STRIP_IMAGERY_1.0 | SABER_GSF_CLASS_1.0 |
| BAGTASKS_1.1 | GXY2PFL_1.1 | SABER_MILES_1.0 |
| BATHYPROF_1.1 | HMPS_LIB_2.14 | SABER_PFM2COV_1.0 |
| BEAMHIST_1.1 | HMSCORRS_1.4 | SABER_PFM2RDP_1.1 |
| CABLERUN_1.2 | HMSREPORT_1.5 | SABER_PFM2VRML_1.0 |
| CALC_SLOPE_ASPECT_1.0 | HPGRAPH_2.4 | SABER_PFM_BEAMSTATS_1.1 |
| CELL_TO_PCX_1.15 | HTMLUTIL_1.2 | SABER_PFM_DECONFLICT_1.0 |
| CHECKSQT_1.2 | HTMLWID_2.4.1 | SABER_PFM_EXTRACT_1.1 |
| CHECK_DISK_DIALOG_1.1 | INGSIMRAD_2.9 | SABER_PFM_LOADER_1.11 |
| CHECK_FEATURES_1.4 | ING_CMAP_1.1 | SABER_PFM_MISP_1.0 |
| CHKKFP_1.1 | ING_SEABM_1.2 | SABER_PFM_MODSCALE_1.0 |
| CHNLVOL_1.1 | ISIS2CTV_2.3 | SABER_PFM_RECOMPUTE_1.2 |
| CLASS1_LAYER_1.1 | ISISSUBPROF_1.4 | SABER_PFM_RESIDUAL_1.0 |
| COMBINE_LAYERS_1.3 | I_ELAC_1.5 | SABER_PFM_UNLOAD_1.2 |
| CONTACT_DXF_1.3 | I_SB2112_1.1 | SABER_SAT_1.5 |
| CONTOUR_LAYER_1.8 | KEY_DIALOG_1.1 | SEL2HIST_1.1 |
| CONV_DXF_1.2 | LIBBAG_1.1 | SELSLOPE_1.3 |
| COUNT_SOUNDINGS_1.0 | LIBCHKKEY_1.16 | SEL_SOUND_1.20 |
| COV2GRASS_1.0 | MAGYPROF_1.1 | SEND_TELEGRAM_1.0 |
| CPWINDPRJ_1.1 | MAKEEXTENTS_1.2 | SENSORS_2.16 |
| CRS2MTIF_1.1 | MAKEINDX_2.5 | SETSOUND_1.6 |
| CTABLE_2.3 | MAKEKPS_1.2 | SHADED_RELIEF_1.0 |
| DATAMRGE_2.3 | MAKELLPROF_1.3 | SLOPEVOL_1.1 |
| DATASUMM_2.15 | MAKEMINMAXZ_1.3 | SMEMCOM_2.8.1 |
| DBEXTRACT_1.2 | MAKETRK_1.5 | SMOOTHPFL_1.1 |
| DBMS_2.12 | MBERR_2.7 | SMOOTH_LAYER_1.0 |
| DECITRK_1.4 | MBFILT_1.8 | SNIPIT_1.2 |
| DESIGNGRD_1.3 | MBHAT_2.36 | SNPCHART_1.2 |
| DIFF_LAYER_1.4 | MBHAT_LIB_1.1 | SNPDRAW_2.20.1 |
| DSPGRAPH_2.6 | MBIMAGERY_2.1.4 | SNPGEO_2.3 |
| DUMP_GSF_1.1 | MB_CORR_1.8 | SPMGR_2.14.1 |
| DXF2MASK_1.1 | MERGE_DIG_1.0 | SPUTIL_2.16 |
| EDITGRID_1.4 | MKGMTPROF_1.1 | SRV_RPT_1.4 |
| EDIT_PFM_1.0 | MOUNDGRD_1.1 | SSCODES_1.1 |
| ERRORS_1.3 | MSGREAD_1.10 | SUMMDATA_1.7 |
| EXAMGYRO_1.2 | MVE_4.13 | SVPMON_2.13 |

| | | |
|---|---|---|
| EXAMMB_2.14 | NAVUP_1.10 | SVPUTIL_2.14 |
| EXPRTGRD_1.10 | NAV_EDIT_1.6 | TARGET_DXF_1.3 |
| EXPRTSND_1.7 | NMEAMSGS_1.7 | |
| EXRTPROF_1.5 | NUTIL_2.1 | |
| EXRTPROF_MAG_1.1 | PCSS2TARG_1.2 | |
| EXTRACT_HEAVE_1.0 | PFM2BAG_1.1 | |
| FEATUREGSF_1.4 | PFM2COVGRD_1.4 | |
| FEATURE_CORRELATOR_1.9 | PFM_TASKS_1.6 | |
| FILLDBS_1.2 | PIPE2DXF_1.1 | |
| FILTERS_2.4 | PLATF2TRK_1.1 | |
| FIND_CROSSINGS_1.3 | PLIBEXTENTS_1.1 | |
| GEOTIFFLIB_1.0 | PLOTWID_2.4 | |
| GETDIFFS_1.1 | POSGAPCHK_1.2 | |
| GETEXTENTS_1.3 | POSRPLCNT_1.3 | |
| GETJUNC_1.7 | POSTEST_1.1 | |

**Table B-5. SABER for Linux Product version: -vSABER_3.3.10**

| |
|---|
| DSPGRAPH_2.7.1 |
| ERRDISP_2.5 |
| GSF2TXT_1.5 |
| MBHAT_2.37 |
| MVE_4.14 |
| PFM_TASKS_1.7 |
| SVPMON_2.14 |
| TID2HMPS_1.14 |
| UTILITY_2.11.4 |
| XTF_IO_1.21 |

**Table B-6. SABER for Linux Product version: -vSABER_3.3.15**

| |
|---|
| APPCORS_2.6 |
| DATAMRGE_2.5 |
| EXAMMB_2.15 |
| GSF_2.04.2 |
| HMPS_LIB_2.15 |
| INGSIMRAD_2.10 |
| KEY_PROBE_1.0 |
| LIBBAG_1.2 |
| LIBCHKKEY_1.18 |
| MASCD_1.1 |
| MBERR_2.8 |
| MBIMAGERY_2.1.5 |
| RUNKEYMEM_1.7 |
| SABER_PFM_LOADER_1.12 |
| SABER_PFM_RECOMPUTE_1.3 |
| SABER_SAT_1.6 |
| TEST_BEAM_FLAGS_1.0 |
| TID2HMPS_1.15 |

**Table B-7. SABER for Linux Product version: -vSABER_3.4.5**

| |
|---|
| ABE_PFM_LIB_4.70.2 |
| FEATURE_CORRELATOR_1.10 |
| ISIS2CTV_2.4 |
| MBHAT_2.37.1 |
| PFM_TASKS_1.8.1 |
| SABER_PFM_LOADER_1.12.1 |
| SNPDRAW_2.20.2 |

On 31 August 2006 the data processing center upgraded **SABER** version 3.4.5 with featcorr version -vFEATURE_CORRELATOR_1.10.

## B.2 QUALITY CONTROL

There were approximately 196 linear nautical miles of cross lines surveyed and approximately 4077 linear nautical miles of main scheme lines surveyed. This resulted in approximately 5 percent of linear nautical miles of cross lines compared to main scheme survey lines. The cross lines were oriented at 98°/278° and were spaced approximately 800 meters apart, while the main scheme lines line were oriented at 6°/186° and were spaced 40 meters apart. The range scale was set to 50 meters for the side-scan acquisition, while the swath width for the multibeam varied with depth. The following histograms represent the distribution of selected soundings by beam number. Figure B-1 illustrates the number of selected soundings versus beam number and Figure B-2 illustrates the percentage of selected soundings versus beam number.

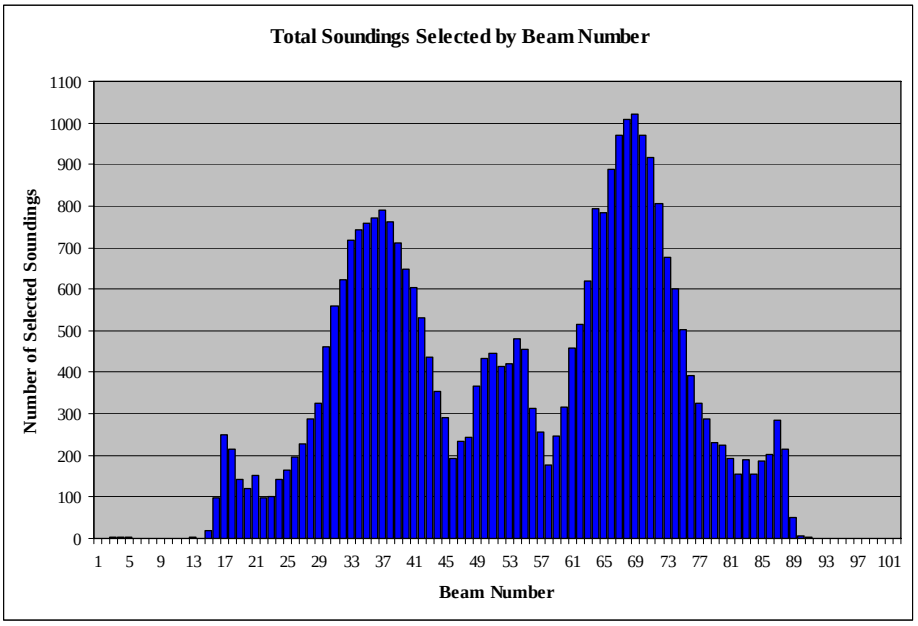


**Figure B-1. Histogram of Selected Soundings by Beam Number – H11495**

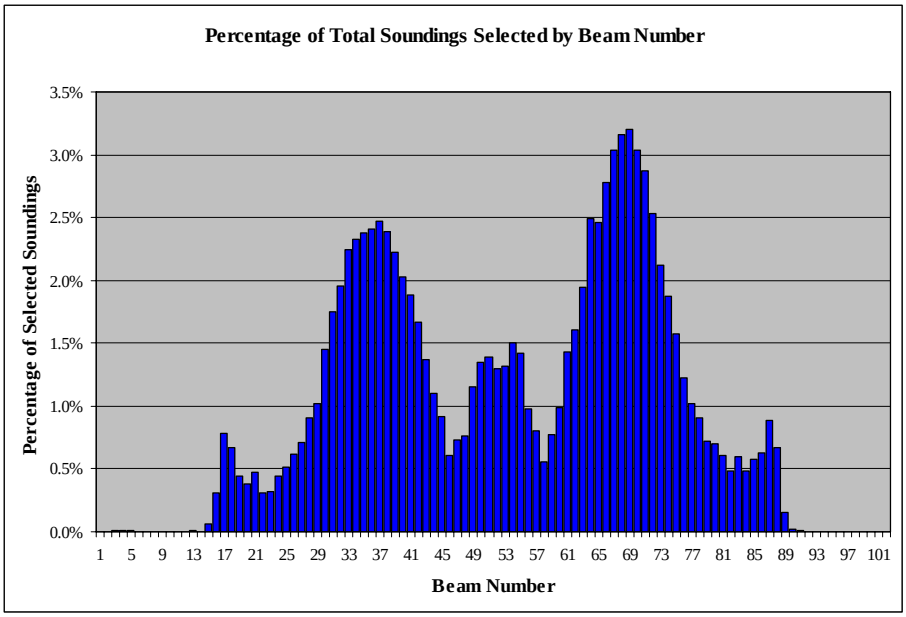


**Figure B-2. Histogram of Percentage of Selected Soundings by Beam Number - H11495**

Comparisons of all crossing data in H11495 show that 98.81% of comparisons are within 25 centimeters and 99.99% of comparisons are within 40 centimeters. All comparisons greater than 70 cm are a result of small DGPS position scatter over the submerge sewer outfalls and obstructions. The single difference greater than 100 cm is associated with small DGPS position scatter over feature number 67. The additional comparisons in the 50-60cm range are due to the same DPGS positional scatter in areas of sloping bottom. Table B-7 shows the comparisons using all crossings in H11495.

**Table B-8. Junction Analysis All Main Scheme vs. Cross Lines Near Nadir, H11495**

| Depth Difference Range | All | | Positive | | Negative | | Zero | |
|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| 0cm to 5cm | 38214 | 34.31 | 17538 | 31.1 | 16282 | 32.18 | 4394 | 11.50 |
| 5cm to 10cm | 34928 | 65.67 | 19070 | 64.92 | 15858 | 63.52 | | |
| 10cm to 15cm | 25210 | 88.3 | 13870 | 89.52 | 11340 | 85.93 | | |
| 15cm to 20cm | 7805 | 95.31 | 3920 | 96.47 | 3885 | 93.6 | | |
| 20cm to 25cm | 3897 | 98.81 | 1670 | 99.43 | 2227 | 98 | | |
| 25cm to 30cm | 1117 | 99.81 | 288 | 99.95 | 829 | 99.64 | | |
| 30cm to 35cm | 155 | 99.95 | 20 | 99.98 | 135 | 99.91 | | |
| 35cm to 40cm | 41 | 99.99 | 8 | 99.99 | 33 | 99.97 | | |
| 40cm to 45cm | 6 | 99.99 | 1 | 100 | 5 | 99.98 | | |
| 45cm to 50cm | 1 | 99.99 | 0 | 100 | 1 | 99.99 | | |
| 50cm to 60cm | 2 | 99.99 | 1 | 100 | 1 | 99.99 | | |
| 60cm to 70cm | 1 | 99.99 | 1 | 100 | 0 | 99.99 | | |
| 70cm to 80cm | 1 | 100 | 0 | 100 | 1 | 99.99 | | |
| 80cm to 90cm | 2 | 100 | 0 | 100 | 2 | 99.99 | | |
| 90cm to 100cm | 1 | 100 | 0 | 100 | 1 | 100 | | |

| Depth Difference Range | All | | Positive | | Negative | | Zero | |
|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| >100cm | 1 | 100 | 0 | 100 | 1 | 100 | | |
| **Totals** | 111382 | 100 | 56387 | 50.62 | 50601 | 45.43 | 4394 | 3.94 |

Details of 80 selected nadir or near-nadir crossings in different areas of H11495 are listed in the Separates to this report.* The detailed comparisons, comprising more than 1% of the crossings in the survey, were randomly selected for spatial and temporal distribution over the entire survey area.

Table B-9 depicts the junction analysis using all comparisons in the common area between H11495 and H11456 (surveyed 2005-2006). These comparisons show 97.21% were within 25 centimeters and 99.98% were within 50 centimeters. The comparisons larger than 45 centimeters are all centered around 39° 48.4'N 074° 03.9'W (NAD83) and are likely a result of sediment transport during the passage of Hurricane Wilma in 2005. Hurricane Wilma had passed just offshore of the survey area from 24-27 October 2005. Peak winds and seas occurred on 25 October 2005. This area on H11495 was surveyed on 27 October 2005, immediately after hurricane Wilma. This area on H11456 was surveyed on 28 September 2005, a month prior to the hurricane.

***Data filed with original field records.***

**Table B-9. Junction Analysis, H11495 vs. H11456 (all comparisons)**

| Depth Difference Range | All | | Positive | | Negative | | Zero | |
|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| 0cm to 5cm | 16949 | 31.48 | 8092 | 24.73 | 6898 | 36.01 | 1959 | 11.56 |
| 5cm to 10cm | 15749 | 60.73 | 9595 | 54.04 | 6154 | 68.14 | | |
| 10cm to 15cm | 12416 | 83.79 | 8507 | 80.04 | 3909 | 88.55 | | |
| 15cm to 20cm | 4456 | 92.07 | 3235 | 89.92 | 1221 | 94.93 | | |
| 20cm to 25cm | 2769 | 97.21 | 2078 | 96.27 | 691 | 98.53 | | |
| 25cm to 30cm | 1156 | 99.36 | 922 | 99.09 | 234 | 99.75 | | |
| 30cm to 35cm | 249 | 99.82 | 215 | 99.75 | 34 | 99.93 | | |
| 35cm to 40cm | 54 | 99.92 | 46 | 99.89 | 8 | 99.97 | | |
| 40cm to 45cm | 25 | 99.97 | 20 | 99.95 | 5 | 100 | | |
| 45cm to 50cm | 8 | 99.98 | 8 | 99.97 | 0 | 100 | | |
| >50cm | 9 | 100 | 9 | 100 | 0 | 100 | | |
| **Totals** | 53840 | 100 | 32727 | 60.78 | 19154 | 35.58 | 1959 | 3.64 |

## B.3 CORRECTIONS TO ECHO SOUNDINGS

Please refer to the Data Acquisition and Processing Report OPR-C303-KR-05 (delivered 31 March 2006) for a description of all corrections applied to echo soundings for data collected during 2005. On 6 April 2006 the multibeam transducer was re-installed on the *M/V Atlantic Surveyor* after returning from an inspection and calibration from the manufacturer. Upon remounting of the multibeam sounder and prior to the start of survey, a Sea Acceptance Test (SAT) was conducted. As part of the SAT a patch test

was executed to determine the roll, pitch, and gyro biases. The patch test was run on 11 April (JD 101) and 12 April (JD 102) over a charted 47-foot wreck in the fish haven approximately 6 kilometers southeast of Manasquan Inlet. The wreck is charted in 40° 03.3925'N 073° 59.5541'W (NAD83) and was used in 2004/2005 for aligning the transducer. The pitch, roll and gyro biases were determined and confirmed. Final Biases are presented in Table B-8. Procedures for conducting the patch test were the same as outlined in the Data Acquisition and Processing Report OPR-C303-KR-05.

**Table B-10. Multibeam Files used for 11-12 April 2006. Alignment Bias Calculated using the Swath Alignment Tool**

| Component | Multibeam Files (pairs) | | Result |
|---|---|---|---|
| **Pitch** | asmba06102.d02 | asmba06102.d03 | +2.0° |
| **Roll** | asmba06102.d02 | asmba06102.d03 | +0.72° |
| **Gyro** | asmba06101.d68 | asmba06102.d01 | +2.0° |

In addition to the patch test, there were also tests conducted to determine vessel settlement and squat correction values, timing values, and side-scan sonar catenary positioning parameters. The settlement and squat correction test was conducted on 12 April (JD 102). A multibeam soundings reference was established by bringing the vessel to "all stop" and drifting. Two transects were created, one crossed the reference swath at a selected spot and the other was aligned along the center line of the drift line. Each line was run twice for each of the shaft RPM settings. Lines were run parallel to the drift line as well as perpendicular to the drift line with the settlement and squat values determined during the 2004 SAT entered into **ISS-2000**. This procedure is valid because the IMU and the multibeam transducer are mounted almost directly in line vertically. A PFM (Figure B-3) of the data was made and the differences in the nadir beam depths at various RPM settings were examined in **SABER**'s **Multi View Editor** (**MVE**). The reference file and the two files for the desired shaft RPM were displayed simultaneously, and depth differences were measured at several places. Difference grids of the 5 degree nadir beams were also made to compare to the PFM. Data from these lines show that the settlement and squat calculation made in 2004 were still valid.

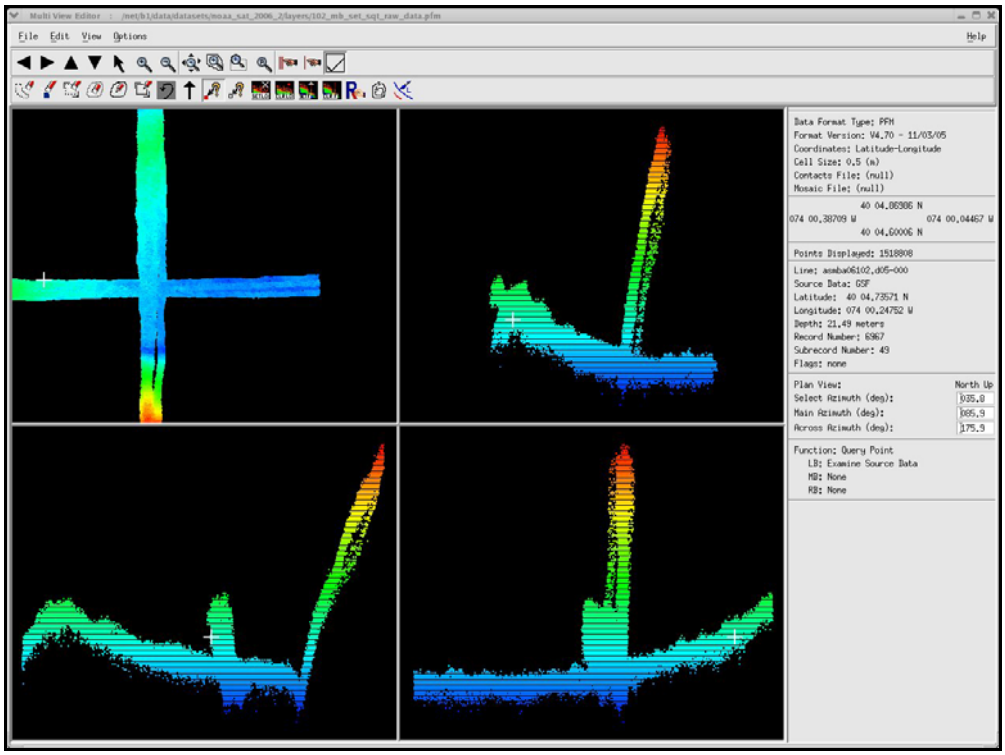


**Figure B-3. PFM Grid of GSF Data Used to Determine Settlement and Squat (2006)**

Table B-11 summarizes the shaft RPM, approximate speed, depth corrector and SAT multibeam files used. A shaft RPM counter provides automatic input to the Settlement and Squat look up table in the **ISS-2000** system. Approximate speeds in Table B-11 are for reference only.

**Table B-11. *R/V Atlantic Surveyor* Settlement and Squat Determination (2006)**

| Shaft RPM | Depth Corrector | Approx. Speed (Kts) | Files | |
|---|---|---|---|---|
| 0 | 0.00 | 0 | asmba06102.d79 | |
| | | | Parallel | Perpendicular |
| 140 | 0.00 | 4 | asmba06102.d80 | asmba06102.d93 |
| 180 | -0.01 | 5 | asmba06102.d99 | asmba06102.d92 |
| 220 | 0.00 | 6 | asmba06102.d98 | asmba06102.d05 |
| 255 | 0.00 | 7 | asmba06102.d97 | asmba06102.d06 |
| 300 | 0.04 | 8 | asmba06102.d96 | asmba06102.d07 |
| 340 | 0.10 | 9 | asmba06102.d95 | asmba06102.d08 |
| 370 | 0.13 | 10 | asmba06102.d94 | asmba06102.d09 |

The ping timing test was conducted on 10 April 2006 (JD 100) to verify that no timing errors exist within the survey system. The fundamental measurement tool is the event

marking capability of the Symmetricom BC635PCI IRIG-B card. An event is characterized by a positive-going TTL pulse occurring on the event line of the IRIG-B connector on the back of the ISSC. The pulses of interest are the transmit trigger of the RESON 81-P and the 1PPS timing pulses from the POS/MV. This test demonstrated that all GSF ping times matched the corresponding IRIG-B event times to within 2.7 milliseconds or less (Figure B-4).

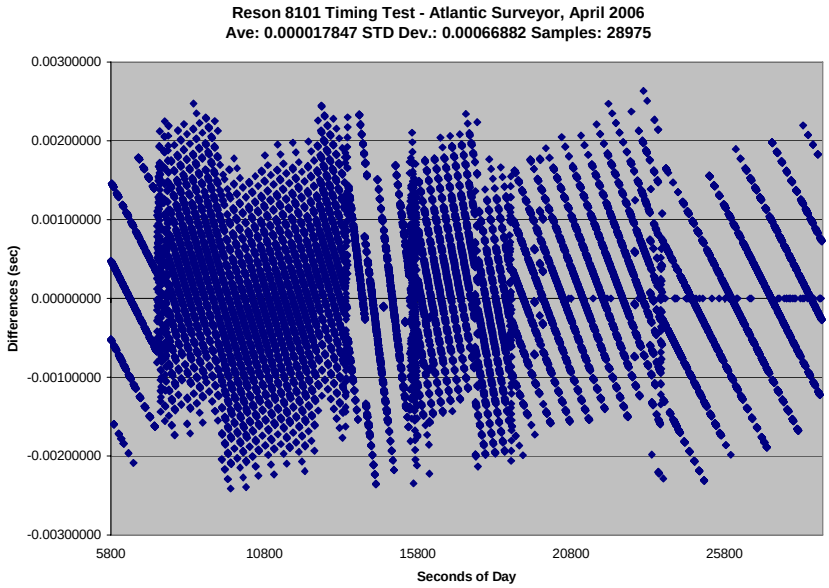


**Figure B-4. Timing Test Results (time differences of ping trigger event vs. ping time tag from GSF)**

On 12 April (JD 102) the Klein 3000 side scan system was tested with and without a K-wing. Multiple lines were run at azimuths of 157°, 337°, 67°, and 246° on either side of the wreck to verify the positioning of the side scan tow fish. The side scan was set to 50 meter range scale and the catenary parameters of the **ISS-2000** was set to compute tow fish position based on cable out and tow fish depth. The side scan data were processed using normal processing procedures. Contacts on the wreck were made from all files and are presented below in Figure B-5 in the form of a feature file. All contacts were within 15 meters of the least depth of the wreck as determined from the multibeam data (Figure B-5). This verified the side scan positioning using cable out and tow fish depth for the Klein 3000 both with and without the K-wing.

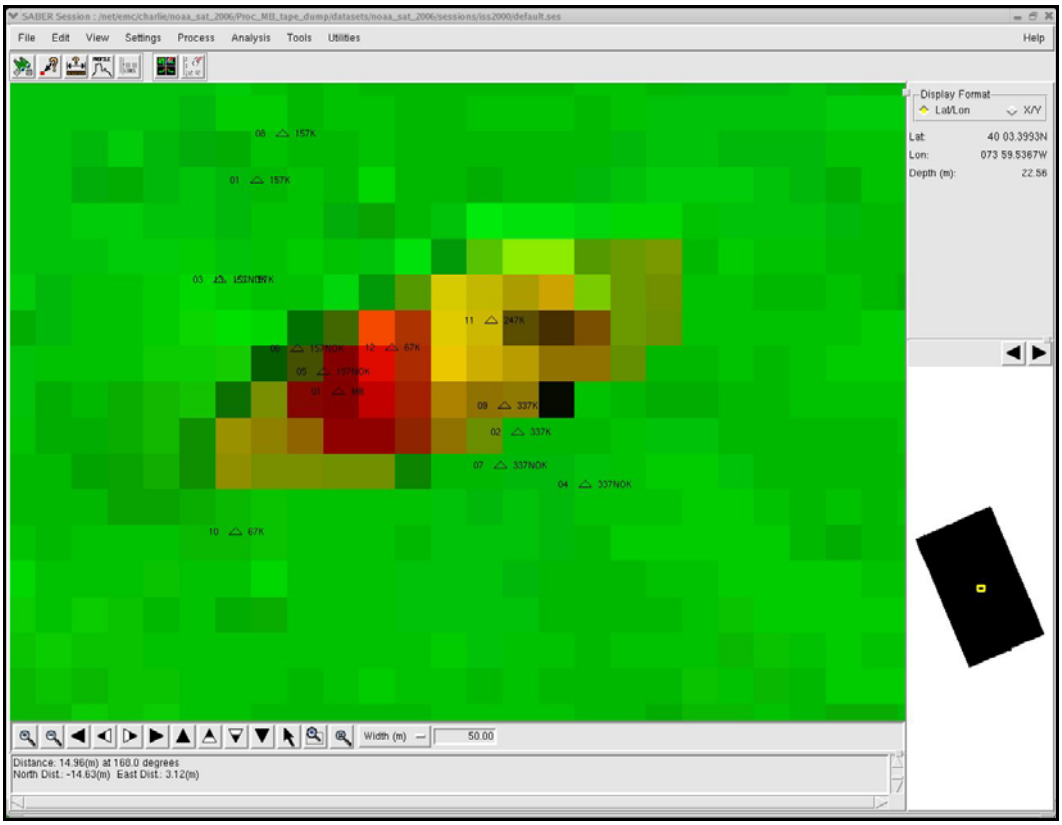


**Figure B-5. SAT Side Scan Contacts (2006)**

## C. VERTICAL AND HORIZONTAL CONTROL

NOAA tide station 8534720 Atlantic City, NJ was the source of verified water level heights for determining correctors to soundings. The primary means for analyzing the adequacy of zoning was observing zone boundary crossings in the navigated swath editor, SAIC's **Multi View Editor (MVE)**. In addition the sun illuminated coverage plots were examined on screen for adequacy of zoning. Cross line comparisons were used to analyze zoning for the influence of wind and weather. SAIC compared the H11495 multibeam data to both the NOAA provided tide zoning for Sandy Hook, NJ (8531680) and Atlantic City, NJ (8534720) tide stations. Results indicated that the Atlantic City, NJ tide zoning applied more representative tidal corrections to the multibeam soundings as described in the Data Acquisition and Processing Report OPR-C303-KR-05 (delivered 31 March 2006) and in the Final Tide Note in Appendix IV. The zoning parameters applied on sheet H11495 are presented in Table C-1. ***Approved tides were applied during field processing.***

**Table C-1. Water Level Zoning Parameters Applied on Sheet H11495**

| Zone | Time Corrector (minutes) | Range Ratio | Reference Station |
|---|---|---|---|
| SA13 | -12 | 1.02 | 8534720 |
| SA14 | -6 | 1.07 | 8534720 |
| SA15 | 0 | 1.06 | 8534720 |
| SA16 | 0 | 1.02 | 8534720 |

The survey data for sheet H11495 were collected in horizontal datum NAD-83, using the UTM Zone 18 projection. ***See also Evaluation Report.*** The following equipment was used for positioning on the *M/V Atlantic Surveyor*:

- TSS POS/MV, Serial Number 314
- Trimble 7400 DSi GPS Receiver, Serial Number 3815A22469

Differential correctors used for online data were from the U.S. Coast Guard Stations at Moriches, NY, Reedy Point, DE and Sandy Hook, NJ. Daily position confidence checks were established using a Trimble DGPS. A real-time monitor raised an alarm when the two DGPS positions differed by more than 10 meters horizontally. Positioning confidence checks were well within an inverse distance of 5 meters.

Please refer to the Vertical and Horizontal Control Report OPR-C303-KR-05 (SAIC document number 05-TR-013) submitted with this Descriptive Report for detailed descriptions of the procedures and systems used to attain hydrographic positioning. There were no variations from the procedures described therein.

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

### D.1 CHART COMPARISON

H11495 was compared to:

- Chart 12300, 45th Edition, March 2005, at scale 1:400,000. Corrected through 26 August 2006 from Notice to Mariners and the NOAA Critical Corrections.
- Chart 12323, 23rd Edition, 11 March 2000, at scale 1:80,000. Corrected through 26 August 2006 from Notice to Mariners and the NOAA Critical Corrections.
- Chart 12324, 32nd Edition, 1 March 2006, at scale 1:40,000. Corrected through 26 August 2006 from Notice to Mariners and the NOAA Critical Corrections.
- Chart 13003, 48th Edition, 1 October 2004, at scale 1:1,200,000. Corrected through 26 August 2006 from Notice to Mariners and the NOAA Critical Corrections.
- Chart 13006, 33rd Edition, 1 April 2006, at scale 1:675,000. Corrected through 26 August 2006 from Notice to Mariners and the NOAA Critical Corrections.

The data which comprise the preliminary smooth sheet, the survey boundary, relevant raster nautical chart, and AWOIS areas were brought into an AutoCAD drawing file. All data were displayed as an overlay on the relevant chart for comparisons between the charted information and the survey data. Differences observed between the charted information and the survey data were verified by additional review of the chart and survey data within SAIC's **SABER**. Differences and recommendations resulting from the comparisons with the above listed charts are described below.

Recommend reconstruction of the common areas of all charts using data from this survey.

***Chart 12300 (See Chartlet 1 in Separates)***

The 10-fathom depth curve charted in 39° 53' 36"N 074° 01' 45"W (NAD83) and 39° 47' 31"N 074° 59' 37"W (NAD83) has moved southwest. Recommend charting the 10-fathom depth curve based upon the data collected during this survey. ***Concur***

Depths within the 10-fathom depth curve charted in 39° 57' 31"N 073° 58' 17"W (NAD83) were deeper than 10 fathoms. Recommend removing the 10-fathom depth curve in this area. ***Concur***

The charted dangerous wreck labeled PA in 39° 58' 53"N 074° 01 54"W (NAD83) was not found during this survey. See AWOIS 1466. ***Concur***

The charted dangerous wreck labeled PA in 39° 58' 01"N 074° 01' 08"W (NAD83) was not found in its charted position. A submerged wreck (Feature 6) was found in 39° 57'

52”N 074° 01’ 20”W (NAD83) with a least depth of 10¾ fathoms (65 feet). See AWOIS 12872 in AWOIS descriptions below. Recommend removal of wreck symbol, danger circle, blue tint, and label PA and charting a 10¾ fathom sounding, danger circle, and label Wk in 39° 57’ 52”N 074° 01’ 20”W (NAD83). ***Concur***

No obstructions were found within the charted Fish Haven in 39° 58’ 15”N 073° 59’ 24”W (NAD83). All depths within the Fish Haven Boundary were found to be greater than the authorized minimum depth of 8¼ fathoms. See AWOIS 12873 in AWOIS descriptions below. ***Concur.***

The charted dangerous wreck cleared to 10½ fathoms in 39° 57’ 05”N 073° 55’ 12”W (NAD83) was not found in its charted position. A submerged wreck (Feature 48) was found in 39° 56’ 56”N 073° 55’ 09”W (NAD83) with a least depth of 10¾ fathoms (64 feet). See AWOIS 1463 in AWOIS descriptions below. Recommend removing the sounding cleared to 10½ fathoms, danger circle, blue tint and label Wk and charting a 10¾ fathom sounding, danger circle, blue tint, and label Wk in 39° 56’ 56”N 073° 55’ 09”W (NAD83). ***Concur***

The charted sewer outfall off Seaside Heights terminating in 39° 57’ 27”N 074° 03’ 13”W (NAD83) was found in its charted position (Features 17, 19, 20, and 46). See AWOIS 12899 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck cleared to 7¾ fathoms in 39° 53’ 15”N 073° 58’ 51”W (NAD83) was not found in its charted position. A submerged wreck (Feature 31) was found in 39° 53’ 17”N 073° 58’ 39”W (NAD83) with a least depth of 8¾ fathoms (53 feet). See AWOIS 691 in AWOIS descriptions below. A second submerged wreck (Feature 28) was found in 39° 53’ 33”N 073° 58’ 44”W (NAD83) with a least depth of 9½ fathoms (58 feet). Recommend removing sounding cleared to 7¾ fathoms, danger circle, blue tint and label Wk and charting a 8¾ fathom sounding, danger circle, blue tint, and label Wks in 39° 53’ 17”N 073° 58’ 39”W (NAD83). ***Concur***

The charted sewer out fall off Seaside Park terminating in 39° 54’ 28”N 074° 03’ 14”W (NAD83) was not found in its charted its charted position (Features 1, 7, 8, 10, 11, 12, 13, 14, 33, 34, 35, 36, 37, 38, 39, 40, 77, 78, 79, 80, and 81). See AWOIS 12867 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck cleared to 9½ fathoms in 39° 48’ 28”N 073° 55’ 44”W (NAD83) was not found in its charted position. A submerged wreck (Feature 68) was found in 39° 48’ 19”N 073° 55’ 43”W (NAD83) with a least depth of 12½ fathoms (76 feet). See AWOIS 1436 in AWOIS descriptions below. Recommend removing the sounding cleared to 9½ fathoms, danger circle, blue tint, and charting a 12½ fathom sounding, danger circle, and label Wks in 39° 48’ 19”N 073° 55’ 43”W (NAD83). ***Concur***

The charted dangerous wreck cleared to 9 fathoms in 39° 47’ 15”N 073° 55’ 37”W (NAD83) was found near its charted position (Feature 70) with a least depth of 10 fathoms (60 feet). A second submerged wreck (Feature 71) was found in 39° 47’ 25”N 073° 55’ 33”W (NAD83) with a least depth of 12 fathoms (71 feet). See AWOIS 1433 in AWOIS descriptions below. Recommend removing sounding cleared to 9 fathoms, and charting a 10 fathom sounding, danger circle and label Wks in 39° 47’ 17”N 073° 55’ 32”W (NAD83). ***Concur***

The charted dangerous wreck PA in 39° 48’ ~~17~~***05***”N 074° 04 06”W (NAD83) was not found during this survey or during the H11456 survey. See AWOIS 12901 in AWOIS descriptions below. Recommend removing wreck symbol, danger circle and label PA. ***Concur***

Two submerged wrecks (Features 51 and 52) were found in 39° 47’ 44”N 073° 59’ 28”W (NAD83) with a least depth of 10 fathoms (60 feet) and 39° 47’ 09”N 073° 59’ 03”W (NAD83) with a least depth of 10½ fathoms (63 feet), respectively. Recommend removing the 9½ fathom sounding in 39° 47’ 11”N 073° 59’ 02”W (NAD83), and charting a 10½ fathom sounding in 39° 47’ 09”N 073° 59’ 04”W (NAD83) with a danger circle and blue tint and a 10 fathom sounding, danger circle, blue tint and label Wks in 39° 47’ 44”N 073° 59’ 28”W (NAD83). ***Concur***

A submerged wreck (Feature 57) was found in 39° 58’ 11”N 073° 56’ 11”W (NAD83) with a least depth of 11 fathoms (66 feet). Recommend charting an 11 fathom sounding, danger circle, blue tint and label Wk in 39° 58’ 11”N 073° 56’ 11”W (NAD83). ***Concur***

Two submerged wrecks (Feature 75 and 54) were found in 39° 50’ 33”N 073° 59’ 05”W (NAD83) with a least depth of 10 fathoms (59 feet) and 39° 50’ 40”N 073° 58’ 24”W (NAD83) with a least depth of 11 fathoms (65 feet), respectively. Recommend charting a 10 fathom sounding, danger circle, and blue tint in 39° 50’ 33”N 073° 59’ 05”W (NAD83), and an 11 fathom sounding, danger circle, blue tint, and label Wks in 39° 50’ 40”N 073° 58’ 24”W (NAD83). ***Concur***

### ***Chart 12323 (See Chartlet 2 in Separates)***

Recommend charting the 30 and 60-foot curves based upon the results of this survey. ***Concur***

The 30-foot curve in 39° 49’ 37”N 074° 04’ 44”W (NAD83) has shifted south southwest approximately 500 meters. ***Concur***

The 30-foot curve in 39° 48’ 29”N 074° 05’ 02”W (NAD83) has shifted east approximately 1000 meters. ***Concur***

Inside the closed 60-foot curves charted in 39° 58’ 33”N 073° 59 39”W (NAD83), 39° 57’ 56”N 073° 59’ 13”W (NAD83), 39° 57’ 29”N 073° 58 17”W (NAD83), 39° 56’ 46”N 073° 59’ 03”W (NAD83, 39° 56’ 00”N 073° 59 11”W (NAD83), 39° 47’ 38”N 073° 58 59”W (NAD83), and 39° 47’ 01”N 073° 58 51”W (NAD83) were depths greater than 60 feet. Recommend removing the 60-foot curve at these locations. ***Concur with clarification. Update the 60-foot curve based on present survey data.***

The charted dangerous wreck PA in 39° 58’ 50”N 074° 02 00”W (NAD83) was not found. See AWOIS 1466 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck PA in 39° 58’ 00”N 074° 01 06”W (NAD83) was not located in its charted position. A submerged wreck (Feature 6) was found in 39° 57’ 52”N 074° 01 20”W (NAD83) with a least depth of 65 feet. See AWOIS 12872 in AWOIS descriptions below. ***Concur***

The charted sewer out fall terminating in 39° 57’ 25”N 074° 03’ 15”W (NAD83) was found in its charted position (Features 17, 19, 20, and 46). See AWOIS 12899 in AWOIS descriptions below. ***Concur***

The charted sewer out fall terminating in 39° 57’ 07”N 074° 03’ 33”W (NAD83) was found north of its charted position (Features 41, 42, 43, 44, and 45) terminating in 39° 57’08”N 074° 03’ 30”W (NAD83). See AWOIS 12900 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck cleared to 63 feet in 39° 56’ 52”N 073° 55’ 09”W (NAD83) was not found in its charted position. A submerged wreck (Feature 48) was found in 39° 56’ 56”N 073° 55’ 09”W (NAD83) with a least depth of 64 feet. See AWOIS 1463 in AWOIS descriptions below. ***Concur***

The charted sewer out fall terminating in 39° 54’ 26”N 074° 03’ 17”W (NAD83) was found southeast of its charted position (Features 1, 7, 8, 10, 11, 12, 13, 14, 33, 34, 35, 36, 37, 38, 39, 40, 77, 78, 79, 80, and 81) terminating in 39° 54’ 26”N 074° 03’ 19”W (NAD83). See AWOIS 12867 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck cleared to 47 feet in 39° 53’ 15”N 073° 58’ 42”W (NAD83) was not found in its charted position. A submerged wreck (Feature 31) was located in 39° 53’ 17”N 073° 58’ 39”W (NAD83) with a least depth of 53 feet. See AWOIS 691 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck with a least depth of 30 feet in 39° 51’ 09”N 074° 03’ 55”W (NAD83) was found (Feature 64) in its charted position and has a least depth of 29 feet. The 30 foot depth was originally reported based on preliminary tides in Danger to

Navigation Report #1. During post-processing verified tides were applied to the sounding data resulting in a least depth of 29 feet. Recommend replacing the charted 30 foot sounding with the 29 foot sounding. ***Concur Delete 30 Wk and danger curve. Add 29 Wk and danger curve.***

The charted dangerous wreck cleared to 57 feet in 39° 48' 19"N 073° 55' 43"W (NAD83) was found in its charted position with a least depth of 76 feet (Feature 68). See AWOIS 1436 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck cleared to 55 feet in 39° 47' 15"N 073° 55' 35"W (NAD83) was not found in its charted position. A submerged wreck (Feature 70) was found in 39° 47' 17"N 073° 55' 32"W (NAD83) with a least depth of 60 feet. See AWOIS 1433 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck PA in 39° 48' 05"N 074° 04 06"W (NAD83) was not found in this survey or in the H11456 survey. See AWOIS 12901 in AWOIS descriptions below. ***Concur***

The charted 89 foot sounding in 39° 51' 48"N 073° 57' 38"W (NAD83) is in depths of 70 feet. ***Concur***

The charted 16 foot sounding in 39° 46' 57"N 074° 05' 17"W (NAD83) is in depths of 25 feet. ***Concur***

The charted 24 foot sounding in 39° 47' 07"N 074° 04' 50"W (NAD83) is in depths of 32 feet. ***Concur***

See Table D-2 for additional wrecks and obstructions recommended for charting.

### *Chart 12324_5 (See Chartlet 3 in Separates)*

The 18-foot curve in 39° 52' 13"N 074° 04' 44"W (NAD83) was found to have shifted east by approximately 100 meters. Depths greater than 18 feet were found shoreward of the 18-foot curve from 39° 49'38"N 074° 05' 21"W to 39° 46' 48"N 074° 05' 14"W. Recommend charting the 18-foot curve using the results of this survey. ***Concur***

The 30-foot depth curves have generally moved south and east. Recommend charting the 30-foot curve based upon the results of this survey. ***Concur***

There is no 60-foot curve on this chart. Recommend charting the 60-foot curve based upon the results of this survey. ***Concur***

The charted dangerous wreck PA in 39° 58' 50"N 074° 02 00"W (NAD83) was not found. See AWOIS 1466 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck PA in 39° 58’ 00”N 074° 01 05”W (NAD83) was not located in its charted position. A submerged wreck (Feature 6) was found in 39° 57’ 52”N 074° 01 20”W (NAD83) with a least depth of 65 feet. See AWOIS 12872 in AWOIS descriptions below. ***Concur***.

The charted sewer out fall terminating in 39° 57’ 25”N 074° 03’ 15”W (NAD83) was found in its charted position (Features 17, 19, 20, and 46). See AWOIS 12899 in AWOIS descriptions below. ***Concur***

The charted sewer out fall terminating in 39° 57’ 07”N 074° 03’ 33”W (NAD83) was found north of its charted position (Features 41, 42, 43, 44, and 45) terminating in 39° 57’ 08”N 074° 03’ 30”W (NAD83). See AWOIS 12900 in AWOIS descriptions below. ***Concur***

The charted sewer out fall terminating in 39° 54’ 26”N 074° 03’ 15”W (NAD83) was found southeast of its charted position (Features 1, 7, 8, 10, 11, 12, 13, 14, 33, 34, 35, 36, 37, 38, 39, 40, 77, 78, 79, 80, and 81) terminating in 39° 54’ 26”N 074° 03’ 19”W (NAD83). See AWOIS 12867 in AWOIS descriptions below. ***Concur***

The charted dangerous wreck with a least depth of 30 feet in 39° 51’ 09”N 074° 03’ 55”W (NAD83) was found (Feature 64) in its charted position and has a least depth of 29 feet. The 30 foot depth was originally reported based on preliminary tides in Danger to Navigation Report #1. During post-processing verified tides were applied to the sounding data resulting in a least depth of 29 feet. Recommend replacing the charted 30 foot sounding with the 29 foot sounding. ***Concur*** ***Delete 30 Wk and danger curve. Add 29 Wk and danger curve.***

The charted dangerous wreck PA located in 39° 48’ 05”N 074° 04 06”W (NAD83) was not found in this survey or in the H11456 survey. See AWOIS 12901 in AWOIS descriptions below. ***Concur***

The charted 16 foot sounding in 39° 46’ 57”N 074° 05’ ~~17~~ ***08***”W (NAD83) is in depths of 30 feet. ***Concur***

The charted 35 foot sounding in 39° 52’ 45”N 074° 04’ 07”W (NAD83) is in depths of 44 feet. ***Concur***

The charted 25 foot sounding in 39° 52’ 09”N 074° 04’ 30”W (NAD83) is in depths of 35 feet. ***Concur***

The charted 29 foot sounding in 39° 51’ 51”N 074° 04’ 29”W (NAD83) is in depths of 38 feet. ***Concur***

The charted 30 foot sounding in 39° 49’ 46”N 074° 04’ 24”W (NAD83) is in depths of 35 feet. ***Concur***

The charted 28 foot sounding in 39° 49’ 35”N 074° 04’ 32”W (NAD83) is in depths of 31 feet. ***Concur***

The charted 18 foot sounding in 39° 48’ 55”N 074° 05’ 03”W (NAD83) is in depths of 26 feet. ***Concur***

The charted 19 foot sounding in 39° 48’ 35”N 074° 05’ 00”W (NAD83) is in depths of 24 feet. ***Concur***

The charted 28 foot sounding in 39° 47’ 55”N 074° 04’ 39”W (NAD83) is in depths of 32 feet. ***Concur***

The charted 24 foot sounding in 39° 47’ 07”N 074° 04’ 47”W (NAD83) is in depths of 32 feet. ***Concur***

The charted 17 foot sounding in 39° 47’ 11”N 074° 05’ 11”W (NAD83) is in depths of 21 feet. ***Concur***

Two submerged obstructions (Features 2 and 3) were found in 39° 57’ 37***.31***”N 074° 01’ ~~53~~***52.95***”W (NAD83) with a least depth of 58 feet and 39° 57’ 39”N 074° 01’ 47”W (NAD83) with a least depth of 64 feet, respectively. Recommend charting a 58 foot sounding, danger circle, blue tint, and label Obstns in 39° 57’ 37”N 074° 01’ 53”W (NAD83). ***Concur*** ***Add 58 Obstns and danger curve in 39°57’ 37.31”N 074°01’ 52.95”W.***

See Table D-2 for additional wrecks and obstructions (features 9, 15, 30, and 63) recommended for charting.

***Chart 13003 (See Chartlet 4 in Separates)***

The 10-fathom depth curve was found to have shifted to the west of the charted position. Recommend charting the 10 fathom depth curve based upon the results of this survey. ***Concur***

The charted dangerous wreck cleared to 9¼ fathoms in 39° 47’ 22”N 073° 55’ 38”W (NAD83) was found in its charted position (Feature 70) with a least depth of 10 fathoms (60 feet). See AWOIS 1433 in AWOIS descriptions below. A second submerged wreck (Feature 71) was found in 39° 47’ 25”N 073° 55’ 33”W (NAD83) with a least depth of 12 fathoms (71 feet). Recommend removing sounding cleared to 9¼ fathoms, and charting a 10 fathom sounding, danger circle and label Wk in 39° 47’ 17”N 073° 55’ 32”W (NAD83). ***Concur***

The charted dangerous wreck cleared to 10½ fathoms in 39° 57’ 10”N 073° 54’ 31”W (NAD83) was not found in its charted position. A submerged wreck (Feature 48) was found in 39° 56’ 56”N 073° 55’ 09”W (NAD83) with a least depth of 10¾ fathoms (64

feet). See AWOIS 1463 in AWOIS descriptions below. Recommend removing the sounding cleared to 10½ fathoms, danger circle, blue tint and label Wk and charting a 10¾ fathom sounding, danger circle, blue tint, and label Wk in 39° 56' 56"N 073° 55' 09"W (NAD83). ***Concur***

### *Chart 13006 (See Chartlet 5 in Separates)*

The 10-fathom depth curve was found to have shifted to the west of the charted position. Recommend charting the 10 fathom depth curve based upon the results of this survey.

The charted dangerous wreck cleared to 10½ fathoms in 39° 57' 01"N 073° 55' 10"W (NAD83) was not found in its charted position. A submerged wreck (Feature 48) was found in 39° 56' 56"N 073° 55' 09"W (NAD83) with a least depth of 10¾ fathoms (64 feet). See AWOIS 1463 in AWOIS descriptions below. Recommend removing the sounding cleared to 10½ fathoms, danger circle, blue tint and label Wk and charting a 10¾ fathom sounding, danger circle, blue tint, and label Wk in 39° 56' 56"N 073° 55' 09"W (NAD83). ***Concur***

The charted dangerous wreck cleared to 9½ fathoms in 39° 48' 52"N 073° 55' 52"W (NAD83) was not found in its charted position. A submerged wreck (Feature 68) was found in 39° 48' 19"N 073° 55' 43"W (NAD83) with a least depth of 12½ fathoms (76 feet). See AWOIS 1436 in AWOIS descriptions below. Recommend removing the sounding cleared to 9½ fathoms, danger circle, blue tint, and charting a 12½ fathom sounding, danger circle, and label Wks in 39° 48' 19"N 073° 55' 43"W (NAD83). ***Concur***

The charted dangerous wreck cleared to 9 fathoms in 39° 47' 35"N 073° 55' 44"W (NAD83) was not found in its charted position. A submerged wreck (Feature 70) was found in 39° 47' 17"N 073° 55' 32"W with a least depth of 10 fathoms (60 feet). See AWOIS 1433 in AWOIS descriptions below. A second submerged wreck (Feature 71) was found in 39° 47' 25"N 073° 55' 33"W (NAD83) with a least depth of 12 fathoms (71 feet). Recommend removing sounding cleared to 9 fathoms, and charting a 10 fathom sounding, danger circle and label Wk in 39° 47' 17"N 073° 55' 32"W (NAD83). ***Concur***

### *Navigational Aids*

There were no navigational aids within the survey area for H11495. This agreed with The USCG Light List, Volume II, Atlantic Coast, Shrewsbury River, New Jersey to Little River, South Carolina.

### *AWOIS Items, Wrecks and Obstructions*

A listing of all Full and Informational Only AWOIS investigations within the H11495 sheet boundary is provided in

Table D-1. Discussions of all Full Investigation AWOIS and of select Informational AWOIS are provided below.

**Table D-1. Complete AWOIS Listing Received from NOAA for H11495**

| Full AWOIS Investigation | Informational AWOIS Only |
|---|---|
| AWOIS 691 | AWOIS 620 |
| AWOIS 1433 | AWOIS 771 |
| AWOIS 1436 | AWOIS 772, 2937 (all same circle) |
| AWOIS 1463 | AWOIS 1430, 1431, 1432 (all same circle) |
| AWOIS 1466 | AWOIS 1452 |
| AWOIS 12867 | AWOIS 1458 |
| AWOIS 12872 | AWOIS 1459, 1460, 1461 (all same circle) |
| AWOIS 12873 | AWOIS 1465 |
| AWOIS 12901* | AWOIS 1467 |
| | AWOIS 12899 |
| | AWOIS 12900 |

*AWOIS 12901 was listed for H11456 and was partially surveyed as part of that sheet in 2005 and 2006. The remainder of the radius was covered during the H11495 survey.

Full Investigation

**AWOIS 691**

A full search of the 300-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. A wreck (Feature 31) was found during this survey approximately 50 meters northeast of the AWOIS reported position. Recommend removing the label Wreck, danger circle, blue tint, and sounding cleared to 47 feet and charting a 53 foot sounding, danger circle, blue tint and label Wk in 39° 53’ 17”N 073° 58’ 39”W (NAD83). ***Concur Delete dangerous sunken wreck with wire drag clearance depth of 47 ft. Add 53 Wk and danger curve.***

**AWOIS 1433**

A full search of the 300-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. A wreck (Feature 70) was found during this survey in its charted position; approximately 100 meters east-northeast of the AWOIS reported position. Recommend removing the label Wreck, danger circle, blue tint, and sounding cleared to 55 feet and charting a 60 foot sounding, danger circle, blue tint and label Wk in 39° 47’ 17”N 073° 55’ 32”W (NAD83). ***Concur Delete dangerous sunken wreck with wire drag clearance depth of 55 ft. Add 60 Wk and danger curve.***

**AWOIS 1436**

A full search of the 300-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. A wreck (Feature 68) was found during this survey approximately 60 meters northwest of the AWOIS reported position. Recommend

removing the label Wreck, danger circle, blue tint, and sounding cleared to 57 feet and charting a 76 foot sounding, danger circle and label Wk in 39° 48' 19"N 073° 55' 43"W (NAD83). ***Concur with clarification Delete dangerous sunken wreck with wire drag clearance depth of 57 ft. Add 76 Wk***

**AWOIS 1463**

A full search of the 300-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. A wreck (Feature 48) was found during this survey approximately 120 meters north of the AWOIS reported position. Recommend removing the label Wreck, danger circle, blue tint, and sounding cleared to 63 feet and charting a 64 foot sounding, danger circle, blue tint, and label Wk in 39° 56' 56"N 073° 55' 09"W (NAD83). ***Concur Delete dangerous sunken wreck with wire drag clearance depth of 63 ft. Add 64 Wk and danger curve.***

**AWOIS 1466**

A partial search of the 2000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. The remainder of the radius was covered during the survey of H11536 (Sheet L) conducted in 2006. Two wrecks were found during this survey inside the search radius, or very near. A wreck, Feature 6, was found approximately 2000 meters southeast of the AWOIS position and is closer to the position of AWOIS 12872. A wreck, Feature 15, was found approximately 1535 meters west of the AWOIS position and is closer to AWOIS 1465. During the H11536 survey only one obstruction was located approximately 1440 meters north of the AWOIS position. Recommend removing the dangerous wreck symbol, blue tint and label PA ***in 39° 58' 50"N 074° 02 00"W (NAD83). Concur Delete dangerous sunken wreck, PA***

**AWOIS 12867**

A full search of the submerged sewer outfall with 200% side scan and resulting multibeam sonar coverage was completed. The sewer outfall consists of a main pipeline running offshore and is exposed from 39° 54' 20"N 074° 04' 24"W (NAD83) (Feature 34) to 39° 54' 16"N 074° 03' 36"W (NAD83) (Feature 77). At this location the pipe splits into a north leg that ends at 39° 54' 26"N 074° 03' 19"W (NAD83) (Feature 1) and a south leg that ends at 39° 54' 09"N 074° 03' 30"W (NAD83) (Feature 11). Danger to Navigation #2 was submitted detailing the position of the sewer and its associated depths. Recommend charting the sewer on all charts from the estimated shore position in 39° 54' 22"N 074° 04' 40"W (NAD 83) to the junction (Feature 77) in 39° 54' 16"N 074° 03' 36"W (NAD83), from the junction to the end of the north leg (Feature 1) in 39° 54' 26"N 074° 03' 19"W (NAD 83), and from the junction to the end of the south leg (Feature 11) in 39° 54' 09"N 074° 03' 30"W (NAD 83). On chart 12323, remove the 37 foot sounding in 39° 54' 23"N 074° 04' 10"W (NAD 83) and the bottom characteristics S Sh

in 39° 54’ 15”N 074° 04’ 01”W (NAD 83). ***Concur*** On chart 12324 remove the 37 foot sounding in 39° 54’ 22”N 074° 04’ 06”W (NAD 83), the 58 foot sounding in 39° 54’ 24”N 074° 03’ 17”W (NAD 83), the bottom characteristics S Sh in 39° 54’ 16”N 074° 03’ 58”W (NAD 83) and label PA. ***Concur*** Chart the following soundings on the sewer on both chart 12323 and 12324:

- 24 (Feature 34) in 39° 54’ 20”N 074° 04’ 24”W (NAD 83)
- 33 (Feature 39) in 39° 54’ 19”N 074° 04’ 13”W (NAD 83)
- 39 (Feature 36) in 39° 54’ 18”N 074° 04’ 02”W (NAD 83)
- 43 (Feature 80) in 39° 54’ 17”N 074° 03’ 51”W (NAD 83)
- 49 (Feature 77) in 39° 54’ 16”N 074° 03’ 36”W (NAD 83)
- 52 (Feature 12) in 39° 54’ 10”N 074° 03’ 31”W (NAD 83)
- 56 (Feature 1) in 39° 54’ 26”N 074° 03’ 19”W (NAD 83)

***Concur with clarification Remove the charted sewer amd sewer PA label. Use the positions above as guidance for charting the present survey location of the sewer. Do not chart the depths associated with this feature. Chart the new position of the sewer and label sewer.***

**AWOIS 12872**

A full search of the 2000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. A wreck (Feature 6) was found during this survey approximately 370 meters southwest of the AWOIS reported position. Recommend removing the wreck symbol, danger circle, blue tint, and label PA and charting a 65 foot sounding, danger circle, and label Wk in 39° 57’ 52”N, 074° 01’ 20”W (NAD83). ***Concur Delete dangerous sunken wreck, PA Chart 65 Wk with danger curve***

**AWOIS 12873**

A full search of the fish haven with 200% side scan and resulting multibeam sonar coverage was completed. No wrecks or obstructions were found within the charted boundary. ***Concur Retain as charted.***

**AWOIS 12901**

A partial search of the 200-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. The remainder of the radius was covered during the survey of H11456 conducted in 2005 and 2006. The wreck was not located during either of the surveys. Recommend removing the dangerous wreck symbol, blue tint and label PA ***in 39°48’05”N, 074°04'06”. Concur Delete the dangerous sunken wreck, PA.***

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Informational Only

**AWOIS 620**

A full search of a 300-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. No feature was found during the survey. ***Concur No change in charting.***

**AWOIS 771**

A partial search of a 1000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. Coverage was obtained to the 8 meter depth curve,

approximately 340 meters from the shoreline. No feature was found during the survey. ***Concur No change in charting.***

**AWOIS 772 and 2937**

A partial search of a 1000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. Coverage was obtained to the 8 meter depth curve, approximately 325 meters from the shoreline. No features were found during the survey. ***Concur No change in charting.***

**AWOIS 1430, 1431, and 1432)**

A partial search of a 300-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. No features were found during the survey. ***Concur No change in charting.***

**AWOIS 1452**

A full search of a 1000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. No feature was found during the survey. ***Concur No change in charting.***

**AWOIS 1458**

A full search of a 1000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. No feature was found during the survey. ***Concur No change in charting.***

**AWOIS 1459, 1460, and 1461**

A partial search of a 1000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. Coverage was obtained to the 8 meter depth curve. No features were found during the survey. ***Concur No change in charting.***

**AWOIS 1465**

A full search of a 1000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. A wreck (Feature 15) with a minimum depth of 48 feet was found approximately 630 meters southeast of the AWOIS reported position in 39° 58' 50"N 074° 03' 04"W (NAD83). Recommend charting a 48 foot sounding, danger circle, and label Wk in 39° 58' 50***.12***"N 074° 03' 04***.07***"W (NAD83). ***Concur Add 48 Wk and danger curve.***

**AWOIS 1467**

A partial search of a 1000-meter radius with 200% side scan and resulting multibeam sonar coverage was completed. No wreck was found during the survey. A non-significant obstruction with a least depth of 40 feet was found (Feature 21) approximately 770 meters southeast of the AWOIS reported position. ***Concur No change in charting.***

**AWOIS 12899**

A full search of the submerged sewer outfall with 200% side scan and resulting multibeam sonar coverage was completed. The sewer outfall is exposed from 39° 57' 27"N 074° 03' 29"W (NAD83) (Feature 17) to 39° 57' 25"N 074° 03' 15"W (NAD83) (Feature 46). Danger to Navigation #2 was submitted detailing the position of the sewer and its associated depths. Recommend charting the sewer on all charts from the estimated shore position in 39° 57' 30"N 074° 04' 04"W (NAD 83) to the offshore end (Feature 46) in 39° 57' 25"N 074° 03' 15"W (NAD83). On chart 12323, remove the 24 foot sounding in 39° 57' 32"N 074° 03' 44"W (NAD 83) and the 47 foot sounding in 39° 57' 33"N 074° 03' 12"W (NAD 83). ***Concur*** On chart 12324, remove the 24 foot sounding in 39° 57' 32"N 074° 03' 43"W (NAD 83) and the 47 foot sounding in 39° 57' 331"N 074° 03' 10"W (NAD 83). Chart the following soundings on the sewer on both chart 12323 and 12324:

- 39 (Feature 17) in 39° 57' 27"N 074° 03' 29"W (NAD 83)
- 41 (Feature 20) in 39° 57' 27"N 074° 03' 25"W (NAD 83)
- 43 (Feature 19) in 39° 57' 27"N 074° 03' 21"W (NAD 83)
- 45 (Feature 46) in 39° 57' 25"N 074° 03' 15"W (NAD 83)

***Concur with clarification Retain the outfall as charted. Do not chart the depths associated with this feature.***

**AWOIS 12900**

A full search of the submerged sewer outfall with 200% side scan and resulting multibeam sonar coverage was completed. The sewer outfall is exposed from 39° 57' 10"N 074° 03' 51"W (NAD83) (Feature 41) to 39° 57' 08"N 074° 03' 30"W (NAD83) (Feature 45). Danger to Navigation #2 was submitted detailing the position of the sewer and its associated depths. Recommend charting the sewer on all charts from the estimated shore position in 39° 57' 10"N 074° 04' 03"W (NAD 83) to the offshore end (Feature 45) in 39° 57' 08"N 074° 03' 30"W (NAD83). On chart 12323, remove the 32 foot sounding in 39° 57' 11"N 074° 03' 36"W (NAD 83). On chart, 12324 remove the 23 foot sounding in 39° 57' 13"N 074° 03' 42"W (NAD 83) and the 32 foot sounding in 39° 57' 10"N 074° 03' 33"W (NAD 83). Chart the following soundings on the sewer on both chart 12323 and 12324:

- 24 (Feature 41) in 39° 57' 10"N 074° 03' 51"W (NAD 83)
- 29 (Feature 42) in 39° 57' 09"N 074° 03' 46"W (NAD 83)
- 33 (Feature 43) in 39° 57' 09"N 074° 03' 40"W (NAD 83)
- 39 (Feature 45) in 39° 57' 08"N 074° 03' 30"W (NAD 83)

***Concur. Delete the charted submerged sewer, and chart a submerged sewer in the present survey location. Do not chart the depths associated with this feature.***

***.***

## *Uncharted Wrecks and Obstructions*

Table D-2 lists uncharted wrecks and obstructions found in H11495 and recommendations for charting.

**Table D-2. Uncharted Wrecks and Obstructions Recommended for Charting**

| Feature Number | Feature Position (NAD83) | | Least Depth (Feet) | Charting Recommendations |
|---|---|---|---|---|
| | Latitude (N) | Longitude (W) | | |
| 2 | 39° 57’ 37.31” | 074° 01’ 52.95’ | 58 | OBSTR, chart sounding and label “Obstns” * |
| 9 | 39° 49’ 46.54” | 074° 02’ 24.17” | 49 | OBSTR, chart sounding and label “Obstn” * |
| 15 | 39° 58’ 50.12” | 074° 03’ 04.07” | 48 | WRECK, chart sounding and label “Wk” * |
| 18 | 39° 57’ 29.18” | 074° 03’ 28.23” | 38 | OBSTR, chart sounding and label “Obstn” * |
| 23 | 39° 52’ 25.16” | 074° 00’ 25.17” | 58 | WRECK, chart sounding and label “Wk” * |
| 25 | 39° 52’ 23.39” | 073° 59’ 43.12” | 55 | WRECK, chart sounding and label “Wk” * |
| 28 | 39° 53’ 33.01” | 073° 58’ 44.17” | 58 | WRECK, chart sounding and label “Wk” * |
| 29 | 39° 53’ 06.68” | 073° 58’ 40.15” | 55 | OBSTR, chart sounding and label “Obstn” * |
| 30 | 39° 46’ 51.52” | 074° 05’ 13.28” | 23 | WRECK, chart sounding and label “Wk” * |
| 47 | 39° 57’ 26.89” | 074° 03’ 16.41” | 45 | OBSTR, chart sounding and label “Obstn” * |
| 50 | 39° 47’ 33.61” | 073° 59’ 28.63” | 59 | OBSTR, chart sounding and label “Obstn” * |
| 51 | 39° 47’ 43.81” | 073° 59’ 27.94” | 60 | WRECK, chart sounding and label “Wk” * |
| 52 | 39° 47’ 08.76” | 073° 59’ 02.74” | 63 | WRECK, chart sounding and label “Wk” * |
| 54 | 39° 50’ 39.93” | 073° 58’ 23.81” | 65 | WRECK, chart sounding and label “Wk” * |
| 55 | 39° 57’ 21.36” | 073° 56’ 28.12” | 69 | OBSTR, chart sounding and label “Obstns” ** |
| 57 | 39° 58’ 11.43” | 073° 56’ 10.63” | 66 | WRECK, chart sounding and label “Wk” * |
| 58 | 39° 57’ 20.38” | 073° 56’ 12.67” | 67 | OBSTR, chart sounding and label “Obstns” ** |
| 60 | 39° 53’ 05.45” | 073° 56’ 12.71” | 68 | OBSTRS, chart sounding and label “Obstns” ** |
| 61 | 39° 53’ 24.42” | 073° 55’ 57.20” | 69 | OBSTR, chart sounding and label “Obstns” ** |
| 63 | 39° 51’ 52.11” | 074° 04’ 21.39” | 36 | OBSTRS, chart sounding and label “Obstns” * |
| 66 | 39° 57’ 43.03” | 073° 55’ 03.44” | 68 | OBSTRS, chart sounding and label “Obstns” ** |
| 67 | 39° 57’ 21.20” | 073° 55’ 05.18” | 62 | OBSTRS, chart sounding and label “Obstns” * |
| 71 | 39° 47’ 25.48” | 073° 55’ 33.10” | 71 | WRECK, chart sounding and label “Wk” ** |
| 75 | 39° 50’ 33.07” | 073° 59’ 05.47” | 59 | WRECK, chart sounding and label “Wk” * |

**** Concur. Chart these items as described, with a danger curve, where chart scale permits.***

**** *Concur. Chart these items as described where chart scale permits.***

### Bottom Composition

There were 41 bottom samples taken to verify the bottom types charted for H11495. Table D-3 compares information for each sample collected to the charted bottom type. Charts 13003 and 13006 had no charted bottom types that fell within the survey area.

**Table D-3. H11495 Bottom Sample Characteristics**

| Bottom Sample Position (NAD83) | | Sample Number | Depth of Bottom Sample (ft) | Observed Bottom Type | Charted Bottom Type | Chart | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Latitude (N) | Longitude (W) | | | | | 12300 | 12323 | 12324_5 | 13003 | 13006 |
| 39° 59’ 26.1” | 074° 02’ 56.2” | BS-1 | 48.92 | S Sh | sy | | x | x | | |
| 39° 58’ 28.6” | 074° 03’ 07.5” | BS-2 | 50.30 | S Sh | sy | | x | x | | |
| 39° 57’ 22.3” | 074° 01’ 22.7” | BS-3 | 66.80 | S Sh | S | | x | x | | |
| 39° 56’ 37.1” | 074° 00’ 50.3” | BS-4 | 63.85 | S Sh | G | | x | x | | |
| 39° 56’ 37.9” | 074° 03’ 38.3” | BS-5 | 34.74 | S G | S | | x | x | | |
| 39° 55’ 53.2” | 074° 03’ 12.5” | BS-6 | 54.86 | S Sh | h | | x | x | | |
| 39° 55’ 36.1” | 074° 01’ 52.9” | BS-7 | 63.65 | S G Sh | S | | x | x | | |
| 39° 54’ 33.4” | 074° 02’ 23.3” | BS-8 | 61.65 | S G Sh | S | | x | x | | |
| 39° 54’ 56.0” | 074° 03’ 44.6” | BS-9 | 47.01 | S Sh | sy | | x | x | | |
| 39° 54’ 10.5” | 074° 04’ 03.3” | BS-10 | 41.40 | S Sh | S Sh | | x | x | | |
| 39° 53’ 25.9” | 074° 03’ 37.8” | BS-11 | 52.43 | S Sh | S G | | x | x | | |
| 39° 52’ 48.1” | 074° 02’ 14.6” | BS-12 | 60.63 | S G Sh | G | x | x | x | | |
| 39° 52’ 14.4” | 074° 01’ 22.3” | BS-13 | 56.63 | G S | G | | x | x | | |
| 39° 51’ 20.5” | 074° 02’ 46.9” | BS-14 | 57.45 | P G | G | | x | x | | |
| 39° 52’ 06.2” | 074° 04’ 08.2” | BS-15 | 45.57 | S | M | | x | x | | |
| 39° 51’ 31.2” | 074° 04’ 31.9” | BS-16 | 30.81 | S Sh | S | | x | x | | |
| 39° 50’ 34.6” | 074° 03’ 31.7” | BS-17 | 52.39 | med S | S | | x | x | | |
| 39° 50’ 15.0” | 074° 01’ 54.4” | BS-18 | 61.25 | S G | S | x | x | x | | |
| 39° 49’ 11.5” | 074° 04’ 52.7” | BS-19 | 28.18 | S | S | | x | x | | |
| 39° 48’ 28.0” | 074° 03’ 55.8” | BS-20 | 37.53 | fne S | S | | x | x | | |
| 39° 47’ 48.5” | 074° 05’ 09.1” | BS-21 | 27.82 | fne S | sy | | | x | | |
| 39° 47’ 47.0” | 074° 04’ 40.8” | BS-22 | 33.99 | S Sh | S | | | x | | |
| 39° 47’ 05.9” | 074° 05’ 07.5” | BS-23 | 24.44 | med S | S | | x | | | |
| 39° 47’ 02.7” | 074° 04’ 50.6” | BS-24 | 30.68 | P S | S | | | x | | |
| 39° 47’ 49.2” | 074° 00’ 39.0” | BS-25 | 64.53 | med S | h | x | x | | | |
| 39° 47’ 35.3” | 073° 59’ 31.5” | BS-26 | 63.02 | S G P | G Sh | | x | | | |
| 39° 48’ 08.1” | 073° 59’ 31.4” | BS-27 | 64.63 | fne S | S | | x | | | |
| 39° 48’ 40.5” | 073° 59’ 21.5” | BS-28 | 64.11 | S G Sh | S | | x | | | |
| 39° 46’ 53.0” | 073° 56’ 25.1” | BS-29 | 76.97 | hrd | h | | x | | | |
| 39° 49’ 17.2” | 073° 57’ 05.0” | BS-30 | 73.49 | med S | h | | x | | | |
| 39° 50’ 50.8” | 073° 58’ 30.0” | BS-31 | 65.09 | S P Sh | S Sh | x | x | | | |
| 39° 50’ 38.9” | 073° 59’ 59.1” | BS-32 | 60.66 | S G Sh | S G | | x | | | |
| 39° 51’ 40.9” | 073° 57’ 30.1” | BS-33 | 69.49 | S G | S | | x | | | |
| 39° 51’ 29.8” | 073° 55’ 45.4” | BS-34 | 75.10 | S G | S | | x | | | |
| 39° 52’ 24.0” | 073° 56’ 31.2” | BS-35 | 69.19 | G Sh | S G | | x | | | |
| 39° 52’ 30.3” | 073° 59’ 37.6” | BS-36 | 57.45 | P | S | | x | | | |
| 39° 54’ 40.7” | 073° 59’ 29.9” | BS-37 | 65.03 | P | S G | | x | | | |
| 39° 54’ 52.6” | 073° 58’ 26.0” | BS-38 | 65.45 | S G | S Sh | | x | | | |
| 39° 54’ 38.9” | 073° 57’ 08.7” | BS-39 | 68.21 | P | G | | x | | | |
| 39° 55’ 20.6” | 073° 55’ 46.3” | BS-40 | 71.95 | S P | S | | x | | | |
| 39° 56’ 38.3” | 073° 57’ 54.2” | BS-41 | 67.88 | S G | S | | x | | | |

It is recommended that the bottom type charted be updated where necessary based on the information collected during the latest survey. ***Concur***

## D.2 ADDITIONAL RESULTS

Shoreline verification was not required for this survey. Comparison with prior surveys was not required under this task order. See Section D.1 for comparisons to the nautical charts. ***Concur.***

### *Navigational Aids*

There were no navigational aids within the survey area for H11495. This agreed with The USCG Light List, Volume II, Atlantic Coast, Shrewsbury River, New Jersey to Little River, South Carolina. ***Concur.***

## E. APPROVAL SHEET

20 October 2006

**LETTER OF APPROVAL**

REGISTRY NUMBER H11495

This report and the accompanying smooth sheet and digital data are respectfully submitted.

Field operations contributing to the accomplishment of survey H11495 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and smooth sheet have been closely reviewed and are considered complete and adequate as per the Statement of Work.

Reports previously submitted to NOAA for this project include:

| Report | Submission Date |
|---|---|
| Data Acquisition and Processing Report | 03/31/2006 |
| Descriptive Report for Sheet H, H11455 | 03/31/2006 |
| Descriptive Report for Sheet J, H11456 | 09/13/2006 |

Reports concurrently submitted to NOAA for this project include:

| Report | Submission Date |
|---|---|
| Vertical and Horizontal Control Report | 10/20/06 |

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Gary R. Davis
Hydrographer
Science Applications International Corporation
20 October 2006

**APPENDIX I. DANGER TO NAVIGATION REPORTS**

# Danger to Navigation Report 1

Hydrographic Survey Registry Number: H11495

State: New Jersey

Locality: Atlantic Ocean

Sublocality: Barnegat Inlet to Chadwick Beach

Project Number: OPR_C303-KR-05

Survey Date: October 27, 2005 and on going

Depths are reduced to Mean Lower Low Water using ***predicted*** tides based on preliminary zoning. Positions are based on NAD-83. Positions were obtained using DGPS from a US Coast Guard Station.

Charts affected:

- 12323_1 23rd Edition July 2000 1:80,000 scale; Corrected through NM September 24, 2005
- 12324_5 31st Edition January 2004 1;40,000 scale; Corrected through NM September 24, 2005

The following item was found during hydrographic survey operations:

| FEATURE | DEPTH (FT) | LATITUDE (N) | LONGITUDE (W) |
|---|---|---|---|
| Wreck | ~~30~~ ***29*** | 39° 51’ 08.842” | 074° 03’ 55.052” |

***Concur. See Descriptive report for final charting recommendation for this feature.***

RECOMMENDATIONS:
Chart 12324-1:
Remove charted 51 foot sounding in 39° 51’ 07” 074° 03’ 54” ***Concur. See Descriptive report for final recommendation.***

Chart 12323:
Remove charted 51 foot sounding in 39° 51’ 07” 074° 03’ 54” ***Concur See Descriptive report for final recommendation.***

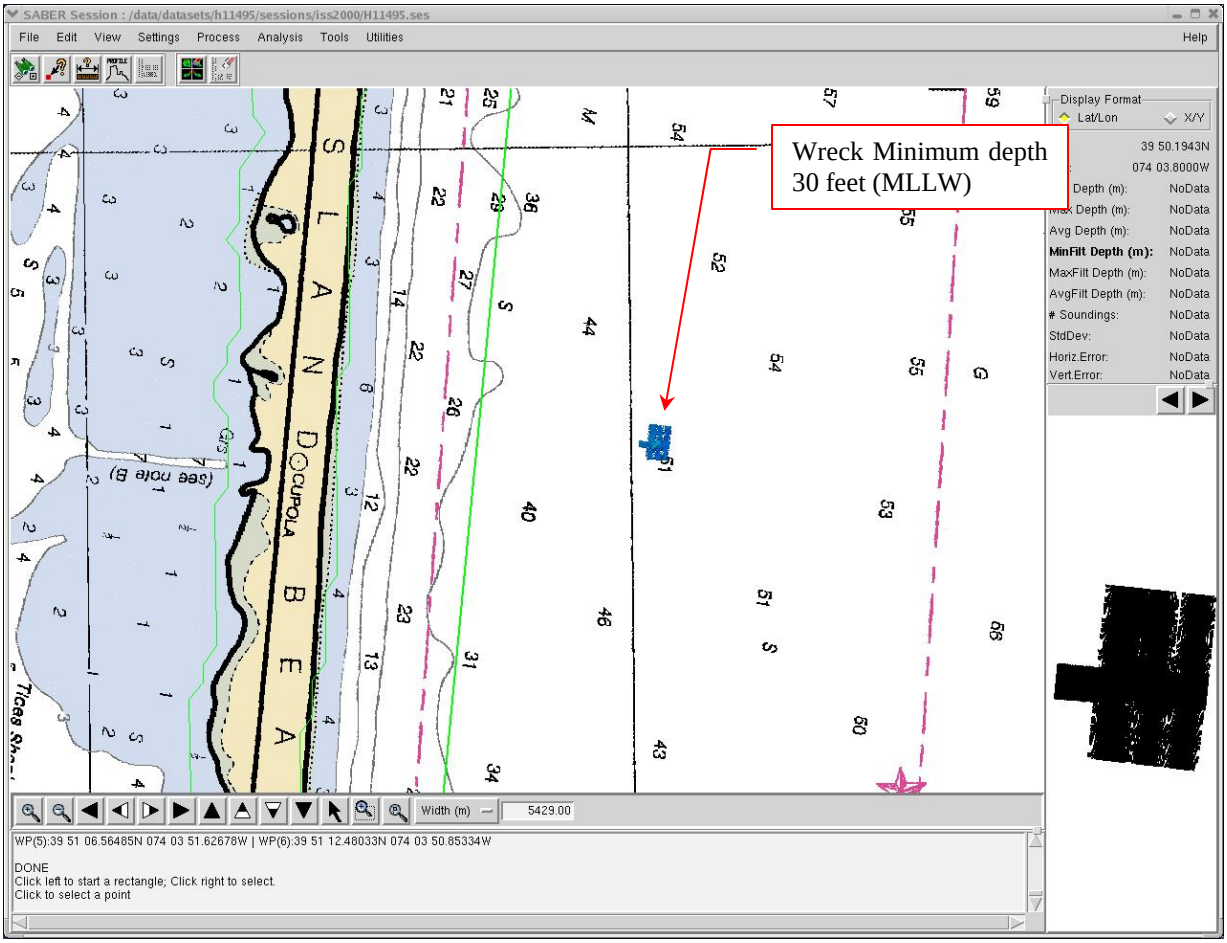


**Figure 1. Chart 12324_1 Showing Area Covered by This Report with Location of 30ft Wreck within H11495.**

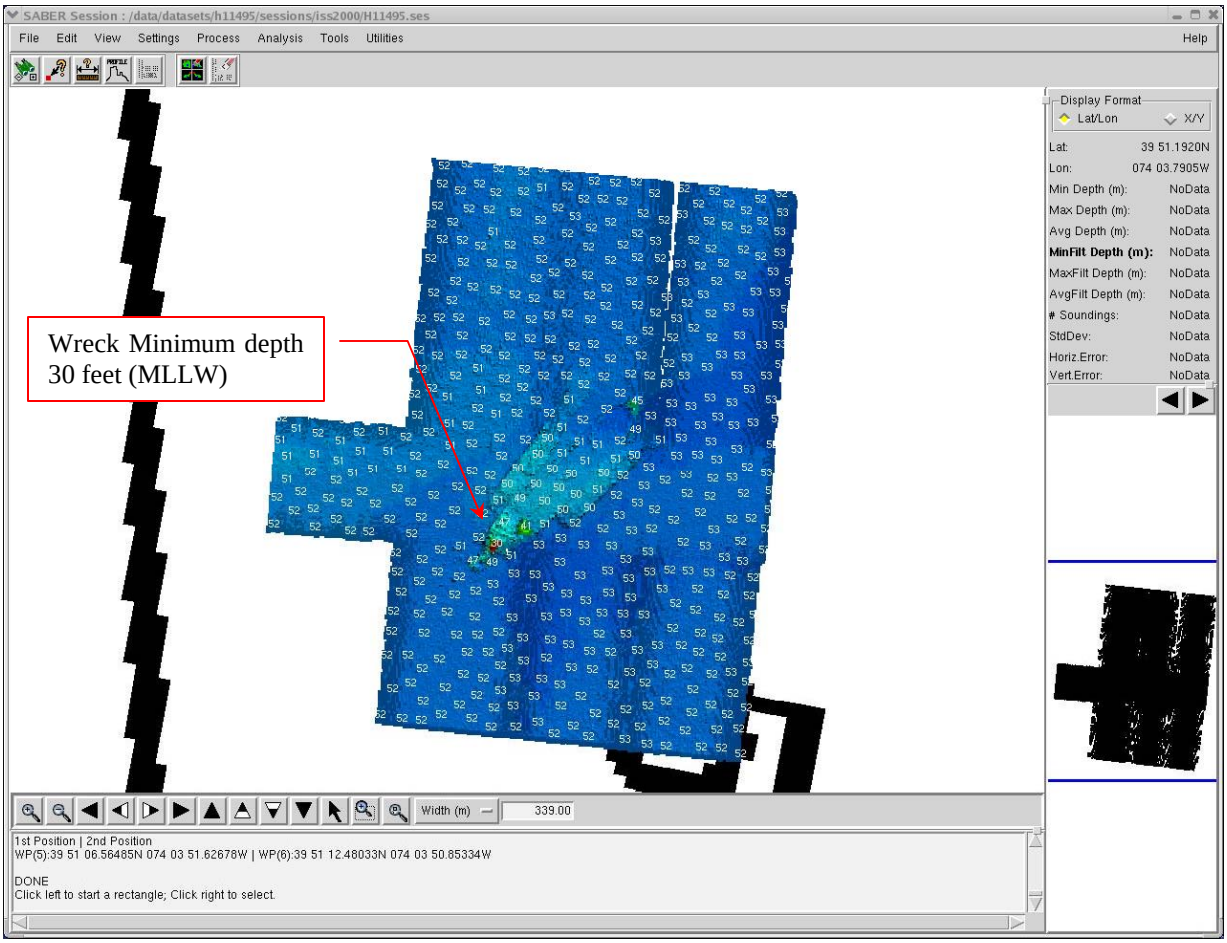


**Figure 2. Color Coded Depth Grid and Selected Soundings Showing 30ft Wreck within H11495.**

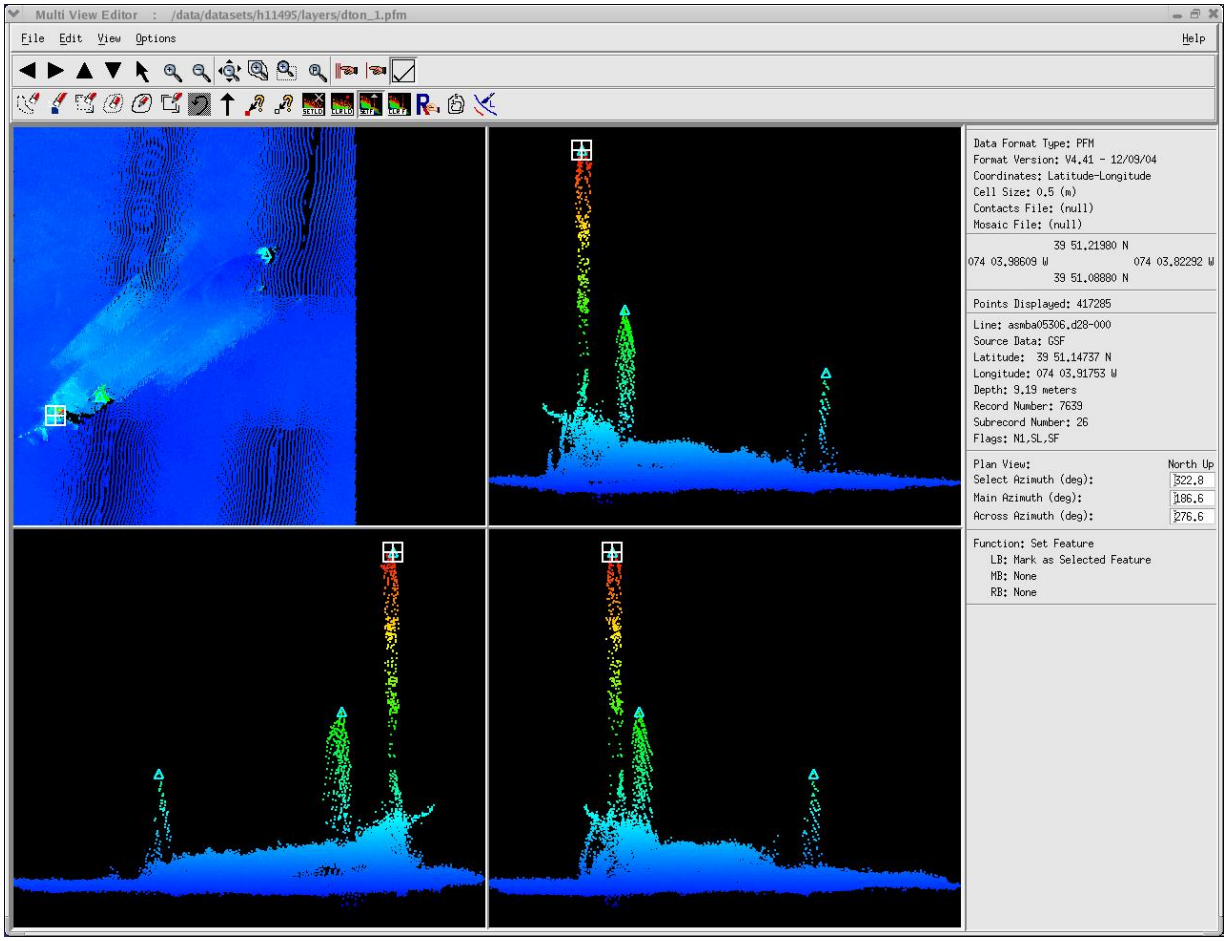


**Figure 3. Multibeam Files Showing 30-foot Wreck Located within H11495.**

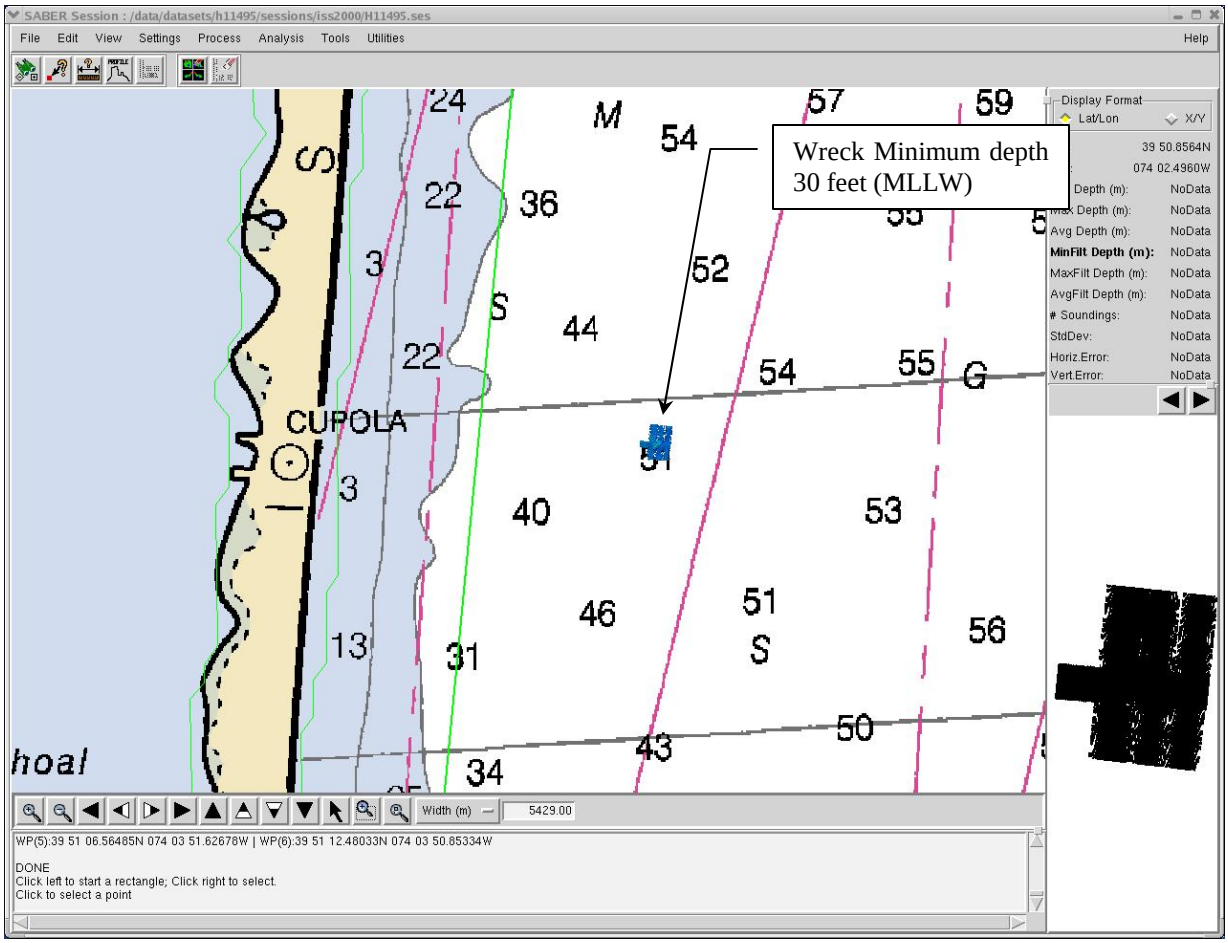


**Figure 4. Chart 12323 Showing Area Covered by This Report with Location of 30-foot Wreck within H11495.**

# Danger to Navigation Report 2

Hydrographic Survey Registry Number: H11495

State: New Jersey

Locality: Atlantic Ocean

Sublocality: Barnegat Inlet to Chadwick Beach

Project Number: OPR_C303-KR-05

Survey Date: October 27, 2005 and on going

Depths are reduced to Mean Lower Low Water using ***predicted*** tides based on preliminary zoning. Positions are based on NAD-83. Positions were obtained using DGPS from a US Coast Guard Station.

Charts affected:

- 12323 23rd Edition July 2000 1:80,000 scale; Corrected through LNM July 30, 2005
- 12324 31st Edition January 2004 1:40,000 scale, Corrected through LNM July 30, 2005

The following item was found during hydrographic survey operations:

| FEATURE | DEPTH (FT) | CHART #1 | LATITUDE (N) | LONGITUDE (W) |
|---|---|---|---|---|
| Sewer | shore, estimated | L41.1 | 39° 57’ 30.40” | 074° 04’ 01.28” |
| To | 45 (end) | | 39° 57’ 25.13” | 074° 03’ 14.79” |
| Sewer | shore, estimated | L41.1 | 39° 57’ 10.88” | 074° 04’ 03.03” |
| To | 37 (end) | | 39° 57’ 07.87” | 074° 03’ 30.58” |
| Sewer | shore, estimated | L41.1 | 39° 54’ 21.73” | 074° 04’ 39.58” |
| To | 49 (wye) | | 39° 54’ 15.70” | 074° 03’ 36.13” |
| Wye to | 56 (north end) | | 39° 54’ 26.01” | 074° 03’ 18.90” |
| Wye to | 54 (south end) | | 39° 54’ 09.00” | 074° 03’ 29.58” |

RECOMMENDATIONS:
Chart 12324:
Delete presently charted sewers and sewer PA, Chart 1 L41.1, near above listed FEATURE positions
Chart 12323:

| | | |
|---|---|---|
| Delete presently charted 37 foot sounding in | 39º 54’ 23.05" | 074º 04´ 10.13" |
| Delete presently charted 26 foot sounding in | 39º 57’ 29.66" | 074º 03´ 43.96" |

Delete presently charted sewers, Chart 1 L41.1, near above listed FEATURE positions. ***Concur. See Descriptive report for final charting recommendation for these items.***

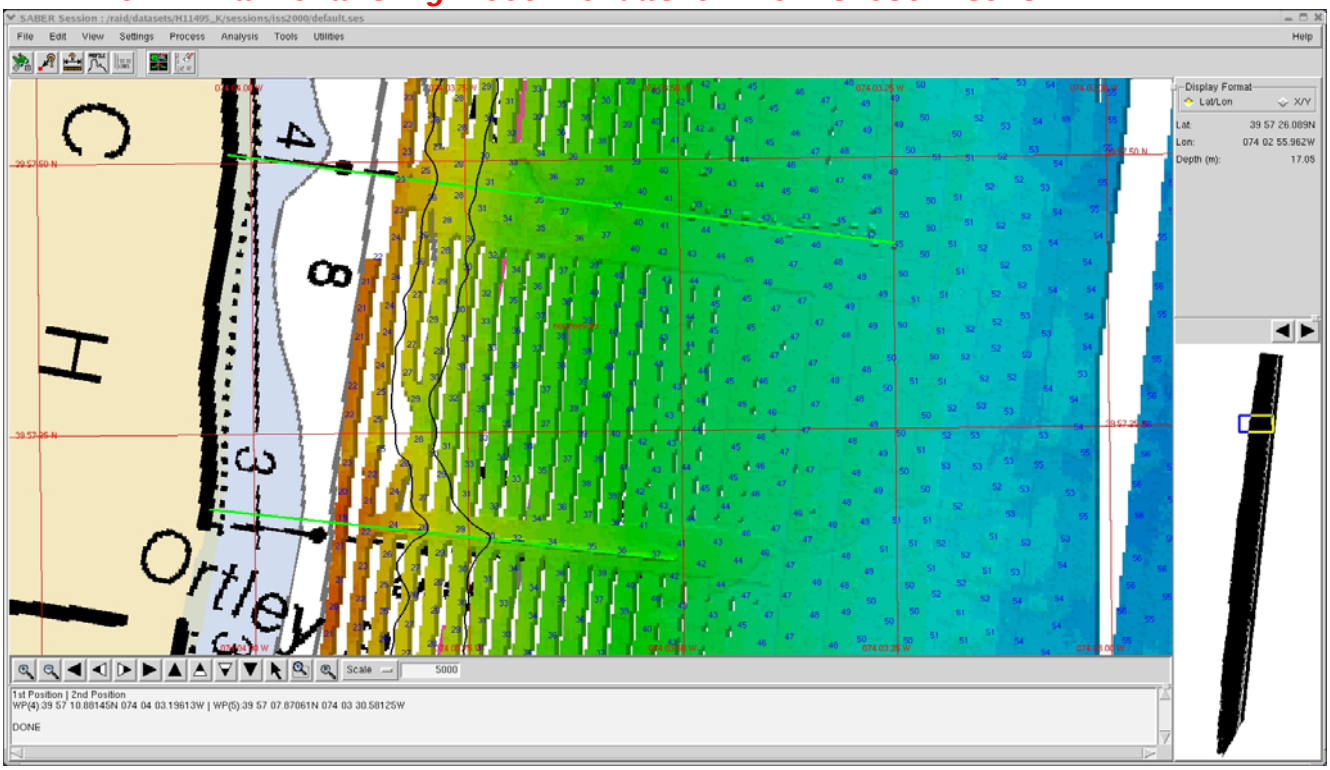


Figure 1. Chart 12324, Depth Grid, Selected Soundings, Sewer Alignment in green

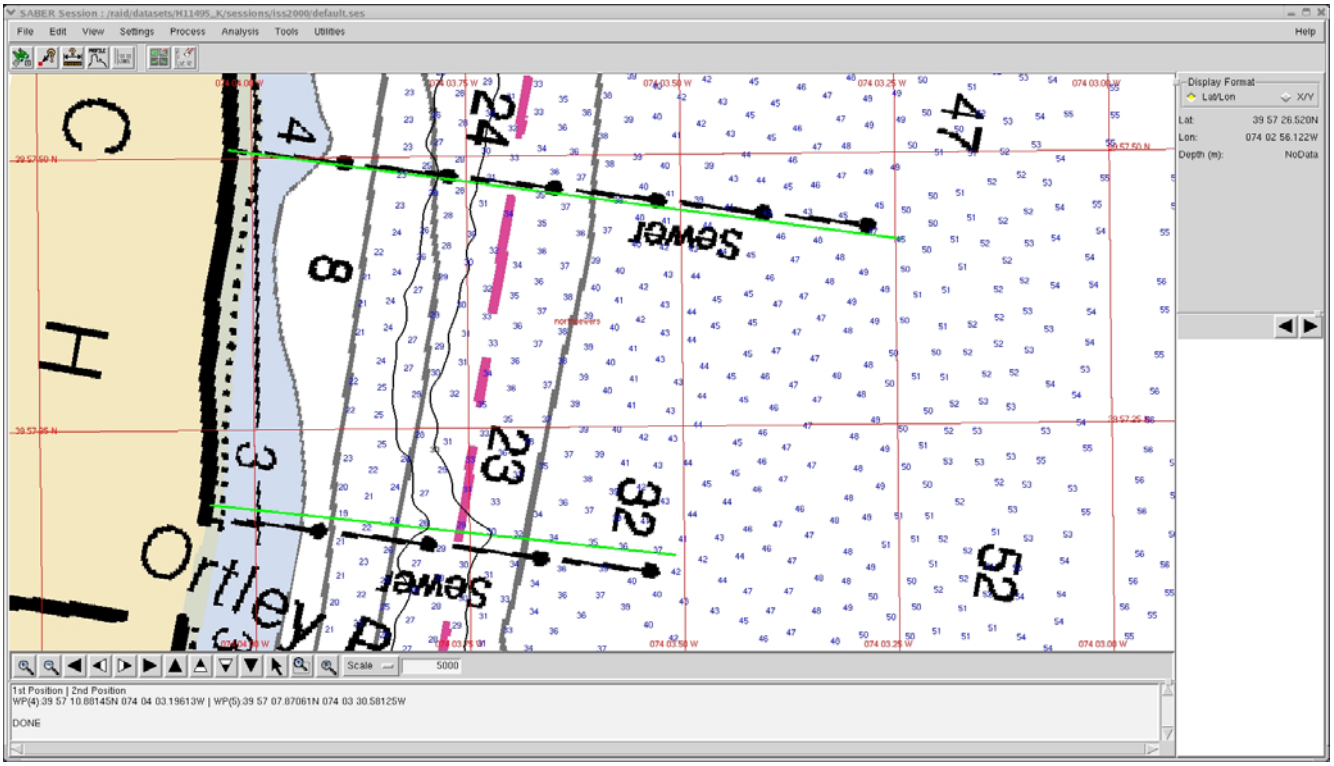


**Figure 2. Chart 12324, Selected Soundings, Sewer Alignment in green**

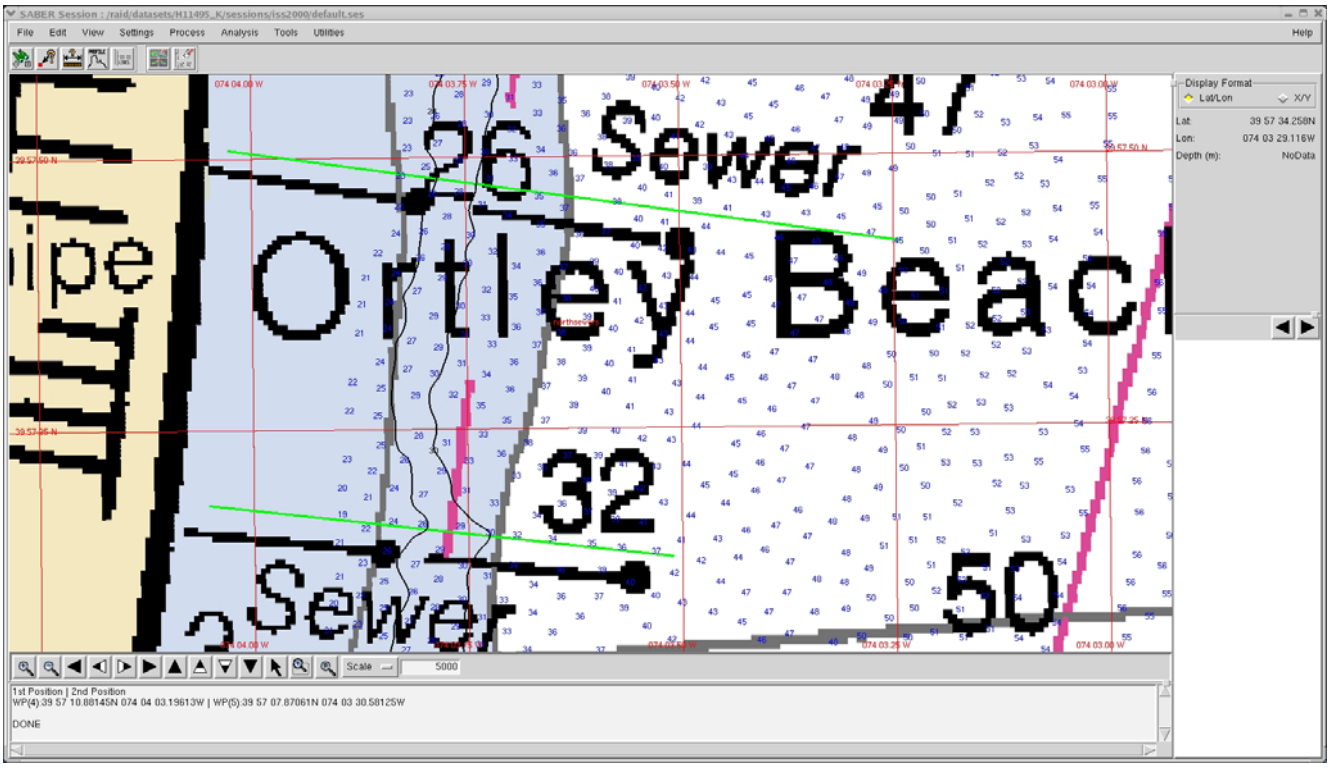


**Figure 3. Chart 12323, Selected Soundings, Sewer Alignment in green**

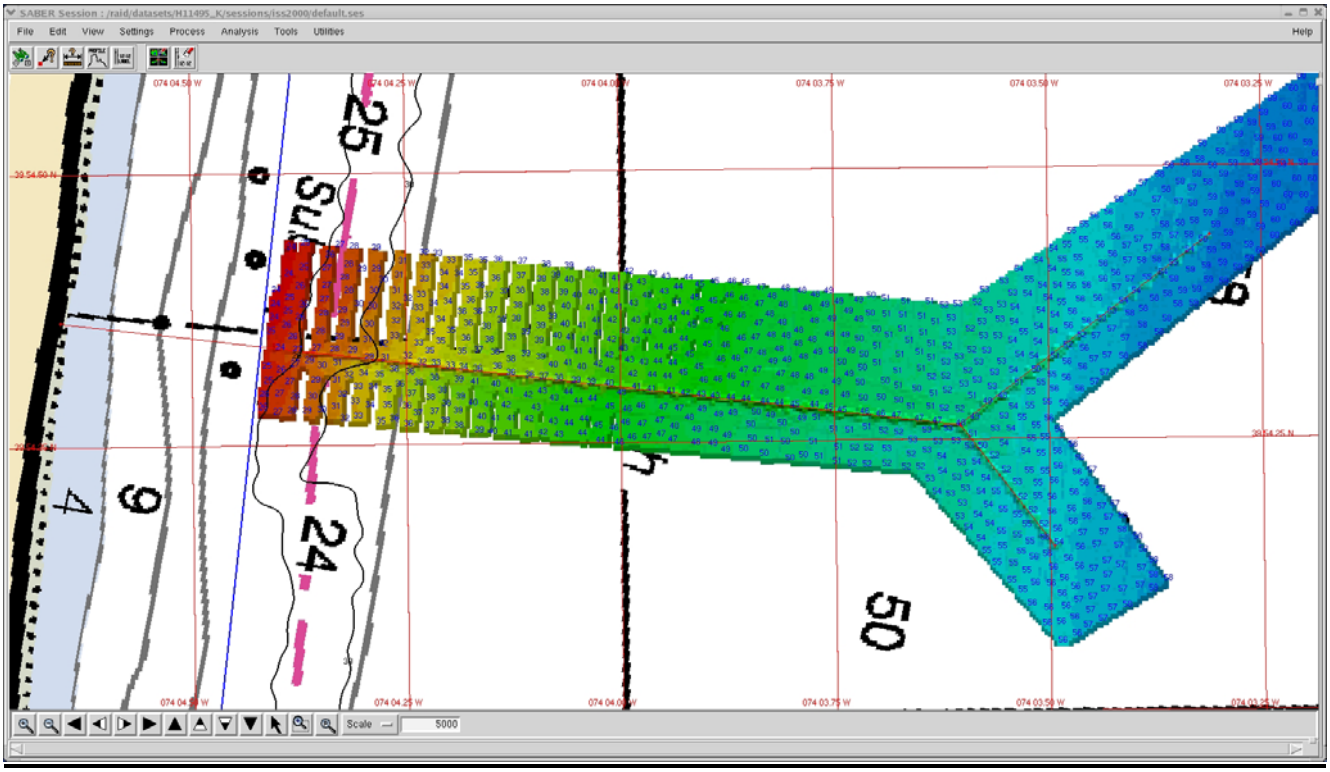


**Figure4. Chart 12324, Depth Grid, Selected Soundings, Sewer Alignment in red**

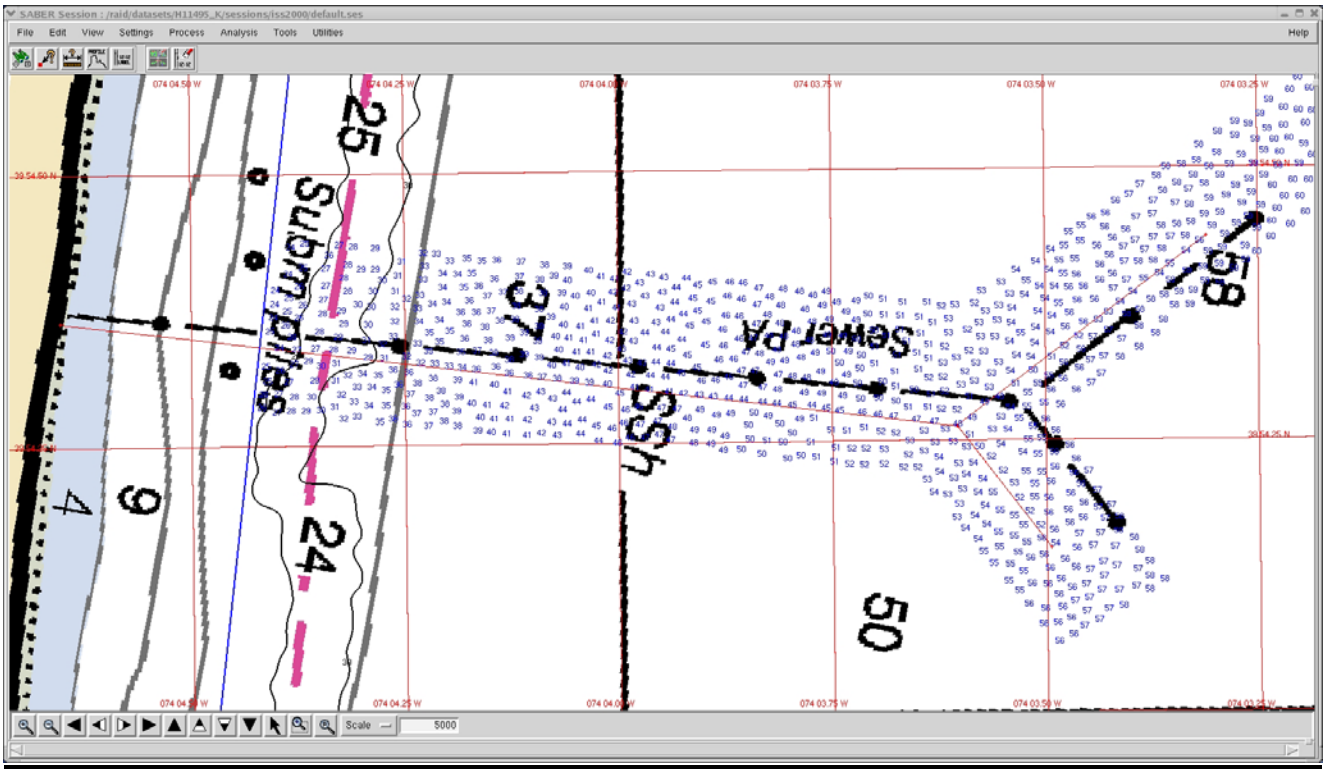


**Figure 5. Chart 12324, Selected Soundings, Sewer Alignment in red**

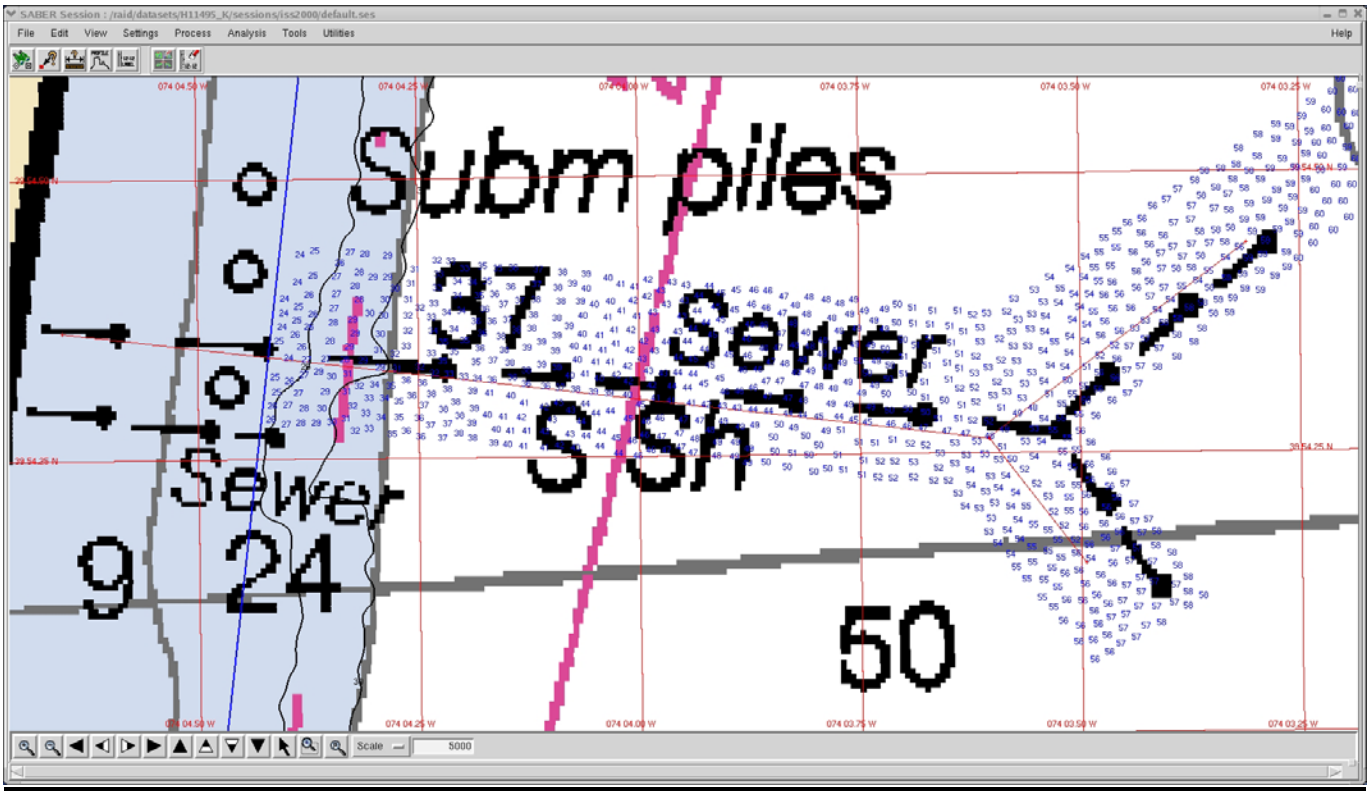


**Figure 6. Chart 12323, Selected Soundings, Sewer Alignment in red**

## APPENDIX IV. TIDES AND WATER LEVELS

The on-line times for acquisition of valid hydrographic data are presented in Table App. IV-1 Abstract Times of Hydrography, H11495.

**Project**: OPR-C303-KR-05.
**Registry No**.: H11495
**Contractor Name**: Science Applications International Corporation
**Date:** 24 May 2006
**Sheet Letter**: K
**Inclusive Dates**: 27 October 2005 – 24 May 2006

**Table App. IV-1. Abstract Times of Hydrography, H11495**

| Year | Julian Day | Begin Time | Julian Day | End Time |
|---|---|---|---|---|
| 2005 | 300 | 07:13:28 | 300 | 08:49:12 |
| 2005 | 300 | 23:02:49 | 301 | 17:52:14 |
| 2005 | 301 | 22:26:02 | 302 | 10:12:40 |
| 2005 | 302 | 20:28:04 | 303 | 19:40:05 |
| 2005 | 304 | 00:31:30 | 305 | 10:57:53 |
| 2005 | 305 | 15:33:46 | 306 | 11:03:45 |
| 2005 | 306 | 14:39:45 | 308 | 10:54:35 |
| 2005 | 309 | 02:47:36 | 312 | 11:40:32 |
| 2005 | 312 | 21:18:32 | 313 | 16:41:07 |
| 2005 | 315 | 22:28:53 | 317 | 19:37:07 |
| 2005 | 318 | 09:40:30 | 319 | 09:49:11 |
| 2005 | 322 | 17:13:34 | 325 | 10:34:52 |
| 2006 | 105 | 13:49:05 | 108 | 23:12:02 |
| 2006 | 109 | 22:20:36 | 111 | 10:45:26 |
| 2006 | 114 | 10:01:21 | 116 | 08:22:47 |
| 2006 | 116 | 23:01:40 | 117 | 09:47:03 |
| 2006 | 117 | 13:36:07 | 118 | 13:00:02 |
| 2006 | 144 | 10:38:42 | 144 | 18:42:44 |

### Field Tide Note

Predicted tides were applied in real-time in accordance with OPR-303-KR-05 Statement of Work Section 1.4.1 during the survey of H11495 in 2005. Predictions were downloaded from the http://co-ops.nos.noss.gov web site for the station at Sandy Hook (8531680). During the survey of H11495 in 2006 predicted tides were applied in real-time in accordance with OPR-303-KR-06 Statement of Work Section 1.4.1. The differences are displayed in Table App. IV-2. Predictions were downloaded from the http://co-ops.nos.noss.gov web site for the station at Atlantic City (8534720). Predicted tide correctors were prepared for each zone using the SABER/Tools/Create Water Level

Files software. The ISS2000 system used these files to apply predicted tides to the multibeam data according to the zone containing the nadir beam of each ping.

**Table App. IV-2. Preliminary Tide Zone Parameters from Statement of Work for OPR-C303-KR-05 for Sandy Hook (8531680) and Statement of Work for OPR-C303-KR-06 for Atlantic City (8534720)**

| Zone | Statement of Work | Time Corrector (minutes) | Range Ratio | Reference Station |
|---|---|---|---|---|
| SA13 | OPR-C303-KR-05 | -36 | 0.87 | 8531680 |
| | OPR-C303-KR-06 | -12 | 1.02 | 8534720 |
| SA14 | OPR-C303-KR-05 | -36 | 0.91 | 8531680 |
| | OPR-C303-KR-06 | -6 | 1.07 | 8534720 |
| SA15 | OPR-C303-KR-05 | -36 | 0.91 | 8531680 |
| | OPR-C303-KR-06 | 0 | 1.06 | 8534720 |
| SA16 | OPR-C303-KR-05 | -30 | 0.88 | 8531680 |
| | OPR-C303-KR-06 | 0 | 1.02 | 8534720 |

## Final Tide Note

Following analysis of data for H11456 the correctors for zones SA13, SA14, SA15, and SA16 were changed to conform to the NOAA zoning for OPR-303-KR-06 as shown in Table App. IV-3.

**Table App. IV-3. Preliminary Tide Zones for H11495**

| Zone | Corrector (Minutes) | Ratio | Reference Station |
|---|---|---|---|
| SA13 | -12 | 1.02 | 8534720 |
| SA14 | --6 | 1.07 | 8534720 |
| SA15 | 0 | 1.06 | 8534720 |
| SA16 | 0 | 1.02 | 8534720 |

Observed verified water levels were downloaded from the http://co-ops.nos.noss.gov web site for Atlantic City, NJ (8534720). Water Level correctors were prepared for each zone using the SABER/Tools/Create Water Level Files software. SABER/Apply Correctors/Tides software applied these files to the multibeam data according to the zone containing the nadir beam of each ping.

Analysis of the H11495 multibeam data in the SABER Multi-View Editor and in depth grids revealed minimal depth jumps across the junction of zones based on Atlantic City, NJ (8534720). A spreadsheet analysis also confirmed the adequacy of zoning correctors based on Atlantic City, NJ (8534720). The water level zoning correctors based entirely on Atlantic City, NJ (8534720) were applied to all multibeam data for H11495.

**ATLANTIC HYDROGRAPHIC BRANCH**
**EVALUATION REPORT FOR H11495 (2005-2006)**

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

## B. DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System
MicroStation J, version 7.1
I/RAS B, version 5.01
MapInfo, version 6.5
CARIS HIPS/SIPS 2000
PYDRO, version 2.8.2

The smooth sheet was plotted using a Hewlett Packard DesignJet 2500CP plotter.

### JUNCTIONS

Survey H11495 (2005-2006) junctions with survey H11456 (2005-2006) to the south. Present survey soundings compare well with the junctional survey. Present survey depths are in harmony with the charted hydrography to the north, east and west.

## C. Horizontal Control

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM Zone 18. Office processing of this survey is based on these values.

## D. COMPARISON WITH CHART

12300 (45th Edition, Mar. 2005)
12323 (23rd Edition, Mar. 2000)
12324 (32nd Edition, Mar. 2006)
13003 (48th Edition, Oct. 2004)

### Hydrography

The charted hydrography originates with the prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in Section D. of the Descriptive Report. The following items were found during the present survey but were not discussed in the Descriptive Report.

1. An uncharted ***69 foot depth labeled obstruction on the smooth sheet*** was found during present survey operations in Latitude 39°50′17.54″N, Longitude 73°58′12.19″W and was not mentioned in the Descriptive Report. This item is insignificant for charting due to surrounding depths and features. It is therefore recommended that the obstruction not be charted and that the area be updated with the shoaler depths from the present survey.

2. An uncharted ***57 foot depth labeled obstruction on the smooth sheet*** was found during present survey operations in Latitude 39°50′51.47″N, Longitude 73°59′16.71″W and was not mentioned in the Descriptive Report. This item is insignificant for charting due to surrounding depths and features. It is therefore recommended that the obstruction not be charted and that the area be updated with the shoaler depths from the present survey.

3. An uncharted ***49 foot depth labeled obstruction on the smooth sheet*** was found during present survey operations in Latitude 39°51′04.06″N, Longitude 74°03′58.28″W and was not mentioned in the Descriptive Report. This item is insignificant for charting due to surrounding depths and features. It is therefore recommended that the obstruction not be charted and that the area be updated with the shoaler depths from the present survey.

4. An uncharted ***60 foot depth labeled obstruction on the smooth sheet*** was found during present survey operations in Latitude 39°54′09.39″N, Longitude 73°59′07.98″W and was not mentioned in the Descriptive Report. This item is insignificant for charting due to surrounding depths and features. It is therefore recommended that the obstruction not be charted and that the area be updated with the shoaler depths from the present survey.

5. A ***sewer*** charted in Latitude 39°54′16.18″N, Longitude 74°04′24.94″W on chart #12323, 24th Edition, Feb./07, was neither verified nor disproved by the present survey and was not mentioned in the Descriptive Report. It is therefore recommended that the **sewer** be retained as charted.

The present survey is adequate to supersede the charted hydrography within the common area.

## Dangers to Navigation

Two Dangers to Navigation reports were submitted to the Marine Chart Division, N/CS3x1, Silver Spring, Maryland. Copies of these reports are appended to the Descriptive Report.

## 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.

The following NOS charts were used for compilation of the present survey:

**12324 (32nd Edition) Mar/06 1: 40,000 Scale**
**12323 (24th Edition) Feb/07 1: 80,000 Scale**

## ADEQUACY OF SURVEY

This is an adequate hydrographic/side scan sonar/multibeam survey. No additional field work is recommended.

Deborah A. Bland
I attest to the accuracy and
integrity of this document
2007.12.20 08:50:23 -05'00'

**Deborah A. Bland**
Cartographer
Verification of Field Data
Evaluation and Analysis

Norris Wike
2007.12.20 14:12:39
-05'00'

**Reginald L. Keene**
Cartographer
Verification of Field Data

**APPROVAL SHEET**
**H11495**

**Initial Approvals:**

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Norris Wike
2007.12.20 14:11:48
-05'00'

Date:

**Norris A. Wike**
Cartographer
Atlantic 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 Evaluation Report.

Approved:

Shepard Smith
I am approving this document
2007.12.20 13:00:03 -05'00'

Date:

**Shep Smith**
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Mark Lathrop

Digitally signed by Mark Lathrop
DN: cn=Mark Lathrop, c=US, o=NOAA, ou=HSD, email=mark.t.lathrop@noaa.gov
Reason: AWOIS/Surf Check
Date: 2007.12.21 14:22:07 -05'00'