

D00134

NOAA FORM 76-35A

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

**DESCRIPTIVE REPORT**

*Type of Survey*      **Reconnaissance**

*Field No.*              **None**

*Registry No.*         **D00134**

**LOCALITY**

*State/Territory*      Michigan

*General Locality*    St. Clair River

*Sub-locality*         Southern Entrances

**2000**

CHIEF OF PARTY  
David B. Elliott -Team Leader

LIBRARY & ARCHIVES

DATE

**HYDROGRAPHIC TITLE SHEET**

D00134

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.

HPS Plotter Sheet 12

State Michigan

General locality St. Clair River

Locality Southern Approaches

Scale 1:20,000

Date of survey June 6, 2000 - July 14, 2000

Instructions dated 5-15-0

Project No. OPR-W408-NRB

Vessel NOAA Launch 1211

Chief of party Brian A. Link

Surveyed by Navigation Response Team 1

Soundings taken by echo sounder, hand lead, pole Echosounder - Innerspace Model 448

Graphic record scaled by MJM, JBG\*

Graphic record checked by MJM, JBG\*

Protracted by \_\_\_\_\_ Automated plot by HP Design Jet 2500

Verification by Atlantic Hydrographic Branch

Soundings in fathoms \_\_\_\_\_ feet \_\_\_\_\_ at MLW \_\_\_\_\_ MLLW IGLD 1985\*\*

REMARKS: \* MJM - Mark J. McMann, JBG - John B. Gaskin

\*\* Soundings plotted and referenced in reports in feet but acquired in meters.

\*\*\* Notes in red were made during office processing



**Descriptive Report to Accompany  
Hydrographic Survey D00134  
OPR-W408-NRB  
Scale: 1:10,000  
Navigation Response Team 1 – Launch 1211  
Brian A. Link - Team Leader**

This survey was conducted according to Port Instructions OPR-W408-NRB, Detroit and St. Clair Rivers, Michigan, dated May 15, 2000. This survey covers the southern entrances to the St. Clair River northward to Roberts Landing, including the North Channel, the Chenal A Bout Rond, the Middle Channel, the South Channel, the St. Clair Cutoff Channel, the Bassett Channel, Chenal Ecarte, and the Johnston Channel.

The purpose of this reconnaissance survey is to provide single-beam echo sounder hydrography at 100-meter line spacing throughout the survey area. This data was requested by the State of Michigan, Department of Environmental Quality, Source Water Assessment Program and the City of Detroit Water and Sewerage Department. The bathymetry will be used to enhance an existing preliminary flow model of the river to identify likely sources of water to public supply intakes and to provide a basis for coordinating real-time responses to contaminant spills. The hydrography will also be used to update the nautical charts.

#### **A. AREA SURVEYED**

The sheet letter for this survey is C.

The approximate survey area limits are:

North - 42°40'08"N  
South - 42°27'21"N  
East - 082°21'55"W  
West - 082°44'22"W

This survey was conducted from June 6, 2000 (DN 158) to July 14, 2000 (DN 196).

#### **B. DATA ACQUISITION AND PROCESSING**

##### **B1. Equipment**

An Innerspace model 448 depth sounder, S/Ns 186 was used to acquire all echo soundings on this survey. A standard lead line calibrated in meters, S/N 1211, was used during this survey for comparison with the echo sounder. No problems were encountered with any of the sounding equipment.



A Starlink DGPS Beacon Receiver (S/N 855) was used as the remote station on launch 1211.

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 192276-287.

NOAA launch 1211, a 27-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel on this survey, however launch 1211 was totally destroyed by fire on August 19, 2000.

## **B2. Quality Control**

The integrity of the survey data for D00134 is insured by adherence to the Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, June 2000.

Cross lines run on this survey represented 15.6% of the total main scheme mileage. The cross line soundings were within 2 feet of the main scheme hydrography throughout the survey area.

The lead line for launch 1211 was calibrated using a steel tape on April 17, 2000. No corrections were necessary. A static draft of 0.5 meters was applied to the sounding plots by the HPS REAPPLY program. The draft was measured by subtracting the difference from a punch mark on the side of launch 1211, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 1211 were taken on the previous survey, however the exact date could not be readily determined. The source data was not available because of the shut down of the field party which conducted this survey, causing the temporary abandonment of the trailer housing this information. These measurements were conducted in Tampa Bay, FL using the level method. Settlement and squat correctors were applied to the sounding plots using the HPS REAPPLY program.

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. DGPS performance checks were conducted in accordance with FPM 3.4.4 by comparing the DGPS position of the vessel to a calibration point determined using the Trimble Pro XRS portable GPS system. The point was set at the launch mooring location, which for this survey was at the Knight Marina, on the Belle River, in Marine City, Michigan. All records of the calibrations were destroyed in the fire which consumed launch 1211 on August 19, 2000. None of the calibration values exceeded tolerances.

## **B3. Corrections to Echo Soundings**

There are no deviations to be discussed in this section. Refer to Section **C. Correction to Echo Soundings** of the Data Acquisition and Processing Report (copy appended).



## C. VERTICAL AND HORIZONTAL CONTROL

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors. Corrections were applied to the sounding plot using the HPS REAPPLY program.

Field water level reduction of soundings is based on unverified actual water levels from the NOAA/CO-OPS website. The Center for Operational Oceanographic Products and Services provided zoning correctors for the project area. The zoning equations provided were more complex than the HDAPS processing software program was configured for. Therefore, in the interest of timely field data processing, field zoning based on interpolating the area between the gages, then applying correctors direct from the closest gage, was used for field processing. All soundings on this survey are corrected to IGLD 1985.

The horizontal control datum for this project is the North American Datum (NAD) of 1983. The control reference station used for this survey was the USCG DGPS beacon Detroit, MI (Station ID #838), located at 42°17.8' N; 083°5.7' W.

## D. RESULTS AND RECOMMENDATIONS

### D1. Chart Comparison

Hydrography acquired on this survey was compared with chart 14852, 43rd edition, November 8, 1997.

Soundings from this survey generally agree with charted soundings to within one foot throughout the survey area with the following exceptions:

- Chenal A Bout Rond is generally 10 feet deeper than charted north of 42°36'42.4"N, 082°36'00.5"W. *Concur*
- The following sounding discrepancies were noted:

<u>Latitude (N)</u>	<u>Longitude (W)</u>	<u>Charted Depth</u>	<u>Surveyed Depth</u>
42/37/02.0	082/31/44.8	61 feet	35 feet
42/36/50.0	082/31/54.9	58 feet	42 feet
42/36/30.0	082/32/13.0	42 feet	36 feet
42/37/22.7	082/36/16.2	43 feet	47 feet
42/37/44.6	082/38/53.3	42 feet	50 feet
42/37/56.3	082/39/13.0	35 feet	<i>51</i> -52 feet
42/36/30.0	082/36/00.0	35 feet	<del>40</del> feet <i>44</i>



The above exceptions were the only areas of note, when considering that no sounding developments were done because of time limitations.

No AWOIS items were assigned for this project because of the perceived [during project planning] time constraints to complete the higher priority bathymetry.

There were no Danger to Navigation reports submitted for this survey.

## **D2. Additional Results**

Because of the length of Chenal Ecarte, the Johnston Channel and the Bassett Channel and the time constraints for completion of this survey, these channels were surveyed with a zig-zag pattern and a centerline. This was done in lieu of the conventional method of 100m spaced crossings of the channels.

There were no Prior Survey comparisons conducted by the hydrographer for this survey.

No aids to navigation were located during this survey due to time constraints.

There are numerous bridges, cables, pipelines, and crossing signs throughout the survey area. These regions were visually identified and compared to the raster and vector charts. No changes are recommended. Ferry routes are accurately charted and require no changes or additions to the charts.

Mileage Statistics for c:\hps\projects\W408\Sheet12  
3/30/01

Total Nautical Miles: 265.42

Side Scan Sonar: 0 NM

- SSS 100%: 0
- SSS 200%: 0
- SSS 300%: 0
- SSS 400%: 0

HSHR SS Sonar: 0 NM

- HSHRSS 100%: 0
- HSHRSS 200%: 0
- HSHRSS 300%: 0
- HSHRSS 400%: 0

Hydro: 237.61

Splits: 0

Cross Lines: 27.81

Bottom Samples: 0

Dives: 0

Detached Positions: 0

Development: 0

Holiday: 0

Shoreline: 0

No Classification: 0

Miscellaneous: 0

Rejected: 152 Positions 108 Selected

Total Non-rejected: 81290 Positions 13240 Selected



## Abstract of Hydrography

3/30/01

Project and Sheet: c:\hps\projects\W408\Sheet12

<u>FIX RANGE</u>	<u>DN</u>	<u>VESNO</u>	<u>METHOD</u>	<u>REMARKS</u>
14510 - 14958	158	1211	HYDRO	
14959 - 14960	158	1211	HYDRO	Rejected
14961 - 15036	158	1211	HYDRO	
15037 - 15038	158	1211	HYDRO	Rejected
15039 - 15058	158	1211	HYDRO	
15059 - 15077	159	1211	HYDRO	
15078 - 15078	159	1211	HYDRO	Rejected
15079 - 15124	159	1211	HYDRO	
15125 - 15125	159	1211	HYDRO	Rejected
15126 - 15134	159	1211	HYDRO	
15135 - 15136	159	1211	HYDRO	Rejected
15137 - 15179	159	1211	HYDRO	
15180 - 15180	159	1211	HYDRO	Rejected
15181 - 15189	159	1211	HYDRO	
15190 - 15191	159	1211	HYDRO	Rejected
15194 - 15432	159	1211	HYDRO	
15433 - 15433	159	1211	HYDRO	Rejected
15434 - 15774	159	1211	HYDRO	
15775 - 15783	160	1211	HYDRO	
15784 - 15784	160	1211	HYDRO	Rejected
15785 - 15939	160	1211	HYDRO	
15940 - 15941	160	1211	HYDRO	Rejected
15942 - 16001	160	1211	HYDRO	
16002 - 16003	160	1211	HYDRO	Rejected
16004 - 16051	160	1211	HYDRO	
16052 - 16053	160	1211	HYDRO	Rejected
16056 - 16096	160	1211	HYDRO	
16097 - 16098	160	1211	HYDRO	Rejected
16099 - 16106	160	1211	HYDRO	
16107 - 16108	160	1211	HYDRO	Rejected
16109 - 16229	160	1211	HYDRO	
16230 - 16231	160	1211	HYDRO	Rejected
16232 - 16337	160	1211	HYDRO	
16338 - 16339	160	1211	HYDRO	Rejected
16340 - 16446	160	1211	HYDRO	
16447 - 16542	164	1211	HYDRO	
16543 - 16544	164	1211	HYDRO	Rejected
16545 - 16669	164	1211	HYDRO	
16670 - 16671	164	1211	HYDRO	Rejected
16672 - 16707	164	1211	HYDRO	
16708 - 16709	164	1211	HYDRO	Rejected
16710 - 16734	164	1211	HYDRO	



16735 - 16736	164	1211	HYDRO	Rejected
16739 - 16746	164	1211	HYDRO	
16747 - 16748	164	1211	HYDRO	Rejected
16751 - 16795	164	1211	HYDRO	
16796 - 16797	164	1211	HYDRO	Rejected
16800 - 16805	164	1211	HYDRO	
16806 - 16807	164	1211	HYDRO	Rejected
16810 - 16884	164	1211	HYDRO	
16885 - 16889	164	1211	HYDRO	Rejected
16892 - 16923	164	1211	HYDRO	
16924 - 16925	164	1211	HYDRO	Rejected
16926 - 16979	164	1211	HYDRO	
16980 - 16981	164	1211	HYDRO	Rejected
16984 - 17194	164	1211	HYDRO	
17195 - 17200	164	1211	HYDRO	Rejected
17201 - 17276	164	1211	HYDRO	
17277 - 17307	165	1211	HYDRO	
17308 - 17309	165	1211	HYDRO	Rejected
17314 - 17362	165	1211	HYDRO	
17363 - 17364	165	1211	HYDRO	Rejected
17369 - 17375	165	1211	HYDRO	
17376 - 17377	165	1211	HYDRO	Rejected
17380 - 17411	165	1211	HYDRO	
17412 - 17413	165	1211	HYDRO	Rejected
17416 - 17429	165	1211	HYDRO	
17430 - 17431	165	1211	HYDRO	Rejected
17434 - 17461	165	1211	HYDRO	
17462 - 17463	165	1211	HYDRO	Rejected
17466 - 17510	165	1211	HYDRO	
17511 - 17512	165	1211	HYDRO	Rejected
17517 - 17551	165	1211	HYDRO	
17552 - 17553	165	1211	HYDRO	Rejected
17556 - 17869	165	1211	HYDRO	
17870 - 17871	165	1211	HYDRO	Rejected
17872 - 18064	165	1211	HYDRO	
18065 - 18545	166	1211	HYDRO	
18546 - 18547	166	1211	HYDRO	Rejected
18548 - 18686	166	1211	HYDRO	
18687 - 18688	166	1211	HYDRO	Rejected
18691 - 18766	166	1211	HYDRO	
18767 - 18768	166	1211	HYDRO	Rejected
18769 - 18842	166	1211	HYDRO	
18843 - 18844	166	1211	HYDRO	Rejected
18845 - 18867	166	1211	HYDRO	
18868 - 18869	166	1211	HYDRO	Rejected

18872 - 18947	166	1211	HYDRO	
18948 - 18949	167	1211	HYDRO	Rejected
18950 - 18972	167	1211	HYDRO	
18973 - 18974	167	1211	HYDRO	Rejected
18975 - 19045	167	1211	HYDRO	
19046 - 19047	167	1211	HYDRO	Rejected
19050 - 19266	167	1211	HYDRO	
19267 - 19268	167	1211	HYDRO	Rejected
19269 - 19894	167	1211	HYDRO	
19895 - 19896	167	1211	HYDRO	Rejected
19897 - 19962	167	1211	HYDRO	
19963 - 20164	171	1211	HYDRO	
20165 - 20166	171	1211	HYDRO	Rejected
20167 - 20169	171	1211	HYDRO	
20170 - 20171	171	1211	HYDRO	Rejected
20172 - 20198	171	1211	HYDRO	
20199 - 20200	171	1211	HYDRO	Rejected
20207 - 20209	171	1211	HYDRO	
20210 - 20211	171	1211	HYDRO	Rejected
20216 - 20227	171	1211	HYDRO	
20228 - 20229	171	1211	HYDRO	Rejected
20232 - 20893	171	1211	HYDRO	
20894 - 21275	172	1211	XL	
21276 - 21539	172	1211	HYDRO	
21540 - 21541	172	1211	HYDRO	Rejected
21542 - 21553	172	1211	HYDRO	
21554 - 21748	172	1211	XL	
21749 - 22197	172	1211	HYDRO	
22198 - 22361	172	1211	XL	
22362 - 22363	173	1211	XL	Rejected
22366 - 22630	173	1211	XL	
22631 - 23347	173	1211	HYDRO	
33139 - 34159	193	1211	HYDRO	
35420 - 37754	195	1211	HYDRO	
37755 - 38238	196	1211	HYDRO	



# **Data Acquisition and Processing Report**

## **OPR-W408-NRB**

### **Detroit and St. Clair River Bathymetry Surveys**

#### **A. Equipment**

HYPACK version 7.1A was used for on-line data acquisition. HPS version 9.8 program, HP Tools version 10.3.1 were used for data processing, and MapInfo Professional Ver. 5.0 was used to support processing and plotting. The NOS program Velocity Ver. 5.05, and Microsoft Word 2000 were also used during this survey.

NOAA launch 1211, a 27-foot SeaArk with a draft of 0.5 meter, was used to collect all but the last two days of survey data. There were no unusual vessel configurations or problems encountered with the vessel during survey operations. The launch was totally consumed by fire on August 19, 2000, while in a boatyard for engine repair. The remainder of this project, two days of hydrography on the northern end of sheet D, was conducted by launch 517, a 21-foot MonArk

An Innerspace model 448 depth sounder, S/N 186 was used to collect all echo soundings on this survey with launch 1211. Innerspace S/N 241 was used on launch 517. A standard lead line calibrated in meters, S/N 1211, was used during this survey for comparison with the echo sounder. No problems were encountered with any of the sounding equipment.

#### **B. Quality Control**

Survey data for single beam hydrography was transferred to a floppy disk on the launch for entering into the post processing system in the Office trailer. Data is check scanned and edited through NOS-HPS software. The data upon completion of editing is then plotted or transferred via MapInfo.

The high accuracy DGPS positions for ENC (Electronic Navigational Chart) are transferred to Trimble Pathfinder Office software on the post processing system in the office trailer. The data points are then plotted via MapInfo and processed into shape files for MCD. The data upon completion is posted on the FTP site for Navigation Response Branch.

Hydrography was conducted at 100 meter line spacing throughout the required areas. All areas surveyed were track line plotted to insure complete coverage.



### C. Corrections to Echo Soundings

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N S/N 192276-287. The manufacturer calibrated this unit within six months of the start of this project, however the exact date could not be readily determined. The source data was not available because of the shut down of the field party which conducted this survey, causing the temporary abandonment of the trailer housing this information. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors. Corrections were applied to the sounding plot using the HPS REAPPLY program.

The lead line for launch 1211 was calibrated using a steel tape on April 17, 2000 (DN: 108). No corrections were necessary. A static draft of 0.5 meters was applied to the sounding plots by the HPS REAPPLY program. The draft was measured by subtracting the difference from a punch mark on the side of launch 1211, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 1211 were taken on the previous survey, however the exact date could not be readily determined. The source data was not available because of the shut down of the field party which conducted this survey, causing the temporary abandonment of the trailer housing this information. These measurements were conducted in Tampa Bay, FL using the level method.

Field water level reduction of soundings is based on unverified actual water levels from the NOAA/CO-OPS website. The Center for Operational Oceanographic Products and Services provided zoning correctors for the project area. The zoning equations provided were more complex than the HDAPS processing software program was configured for. Therefore, in the interest of timely field data processing, field zoning based on interpolating the area between the gages, then applying correctors direct from the closest gage, was used for field processing. All soundings on this survey are corrected to IGLD 1985.



### III. Sound Velocity Profile Data

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 192276-287.

Correctors for the velocity of sound through water were determined from the casts listed below:

<u>Cast No.</u>	<u>Table No.</u>	<u>Deepest * Depth(m)</u>	<u>Applicable DN(s)</u>	<u>Cast Position</u>		<u>Day Taken</u>
1	1	12.9	108 - 115	42°15'00"N	083°07'00"W	113
2	2	12.4	116 - 119	42°15'00"N	083°07'00"W	116
3	3	11.1	122 - 123	42°15'00"N	083°07'00"W	120
4	4	12.8	124 - 125	42°15'00"N	083°07'00"W	124
5	5	11.6	129 - 130	42°15'00"N	083°07'00"W	126
6	6	42.6	131 - 132	42°15'00"N	083°07'00"W	131
7	7	12.7	136 - 138	42°15'00"N	083°07'00"W	133
8	8	13.0	140 - 144	42°15'00"N	083°07'00"W	139
9	9	16.6	145 - 152	42°00'00"N	083°00'00"W	145
10	10	13.2	154 - 159	42°15'00"N	083°07'00"W	153
11	11	12.0	160 - 165	42°15'00"N	083°07'00"W	160
12	12	13.1	166 - 171	42°40'30"N	082°29'30"W	166
13	13	14.2	172 - 173	42°40'30"N	082°29'30"W	172
14	14	12.8	174 - 178	42°40'30"N	082°29'30"W	174
15	16	16.5	179	42°55'00"N	082°27'30"W	179
16	17	11.6	180 - 194	42°55'00"N	082°27'30"W	180
17	18	13.4	195 - 196	42°40'00"N	082°30'30"W	195
18	19	14.3	200 - 202	42°15'00"N	083°07'00"W	200
19	20	12.8	206 - 207	42°15'00"N	083°07'00"W	206
20	21	14.4	208 - 216	42°15'00"N	083°07'00"W	208
21	22	19.2	241 - 242	43°00'30"N	082°25'00"W	242

\* extended depth

The manufacturer calibrated this unit in January, 2000. Data quality assurance tests were performed after each cast. Program VELOCITY was used for computing the correctors. Corrections were applied to the sounding plot using the HPS REAPPLY program.

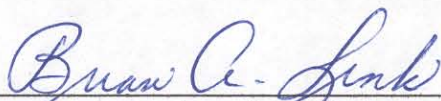
The velocity profiler calibration reports were not available due to the unexpected shutdown of the NRT and the temporary abandonment of the office trailer and the records inside.

Printouts of individual sound velocity profiles are not required.

**APPROVAL SHEET**  
**Reconnaissance Survey**  
**OPR-W408-NRB**  
**D00134**  
**June - July 2000**

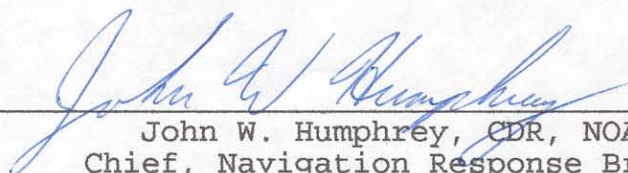
This reconnaissance survey was conducted in accordance with the Project Instructions for OPR-W408-NRB, the Hydrographic Manual, the Hydrographic Survey Guidelines, the Field Procedures Manual and the Hydrographic Specifications and Deliverables Manual. All reports, records, and survey plots were reviewed by the team leader. The team leader directly supervised this survey.

This survey is a complete reconnaissance survey for the areas described in Section A of this report.



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Brian A. Link  
Team Leader, Navigation Response Team 1



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John W. Humphrey, CDR, NOAA  
Chief, Navigation Response Branch



N/CS33-33-04

**LETTER TRANSMITTING DATA**DATA AS LISTED BELOW WERE FORWARDED TO YOU  
BY (Check)☐

ORDINARY MAIL

☐

AIR MAIL

☐

REGISTERED MAIL

☒

EXPRESS

☐

GBL (Give number)

DATE FORWARDED

12/20/2004

NUMBER OF PACKAGES

1

**TO:**

CHIEF, DATA CONTROL GROUP, N/CS3x1  
NOAA / NATIONAL OCEAN SERVICE  
STATION 6815, SSMC3  
1315 EAST-WEST HIGHWAY  
SILVER SPRING, MARYLAND 20910-3282

**NOTE:** A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

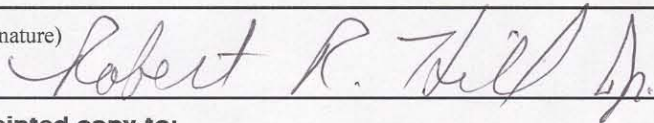
D00134

MICHIGAN, ST. CLAIR RIVER, SOUTHERN ENTRANCES

**ONE TUBE CONTAINING THE FOLLOWING:**

1 SMOOTH SHEET ON MYLAR FOR SURVEY D00134  
1 H-DRAWING ON MYLAR FOR CHART 14850 KAPP# 1257  
1 H-DRAWING ON MYLAR FOR CHART 14852 KAPP# 1260  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1290  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1291  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1292  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1293  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1294  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1295  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1297  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1298  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1299  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1300  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1301  
1 H-DRAWING ON MYLAR FOR CHART 14853 KAPP# 1302  
1 DESCRIPTIVE REPORT FOR D00134

FROM: (Signature)

**RECEIVED THE ABOVE**

(Name, Division, Date)

**Return receipted copy to:**

NOAA \ NATIONAL OCEAN SERVICE  
ATLANTIC HYDROGRAPHIC BRANCH N/CS33  
439 WEST YORK STREET  
NORFOLK, VA. 23510-1114





UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
Silver Spring, Maryland 20910

**WATER LEVEL NOTE FOR HYDROGRAPHIC SURVEY**

**DATE:** December 5, 2001

**HYDROGRAPHIC BRANCH:** Atlantic  
**HYDROGRAPHIC PROJECT:** OPR-W408-NRT1-2000  
**HYDROGRAPHIC SHEET:** D00135 (additional times)

**LOCALITY:** Northern St Clair River, MI  
**TIME PERIOD:** June 27 - June 28 & July 12, 2000

**WATER LEVEL STATION:** 901-4070 Algonac, MI  
Lat. 42° 37.2'N Lon. 82° 31.6'W  
**PLANE OF REFERENCE (IGLD 85):** 174.56 meters

**WATER LEVEL STATION:** 901-4080 St Clair State Police, MI  
Lat. 42° 48.8'N Lon. 82° 29.3'W  
**PLANE OF REFERENCE (IGLD 85):** 175.07 meters

**WATER LEVEL STATION:** 901-4084 Marysville, MI  
Lat. 42° 54.4'N Lon. 82° 28.0'W  
**PLANE OF REFERENCE (IGLD 85):** 175.34 meters

**WATER LEVEL STATION:** 901-4087 Dry Dock, MI  
Lat. 42° 56.7'N Lon. 82° 26.6'W  
**PLANE OF REFERENCE (IGLD 85):** 175.49 meters

**WATER LEVEL STATION:** 901-4090 Mouth of the Black River, MI  
Lat. 42° 58.4'N Lon. 82° 25.2'W  
**PLANE OF REFERENCE (IGLD 85):** 175.61 meters

**WATER LEVEL STATION:** 901-4096 Dunn Papar, MI  
Lat. 43° 0.2'N Lon. 82° 25.3'W  
**PLANE OF REFERENCE (IGLD 85):** 175.76 meters

**WATER LEVEL STATION:** 901-4098 Fort Gratiot, MI  
Lat. 43° 0.4'N Lon. 82° 25.4'W  
**PLANE OF REFERENCE (IGLD 85):** 175.91 meters





**WATER LEVEL NOTE FOR HYDROGRAPHIC SURVEY SHEET D00135 cont.**

**WATER LEVEL STATION:** 907-5002 Lakeport, MI

Lat. 43° 8.5'N Lon. 82° 29.6'W

**PLANE OF REFERENCE (IGLD 85):** 176.00 meters

**REMARKS: RECOMMENDED ZONING**

**WATER SURFACE COMPUTATIONS**

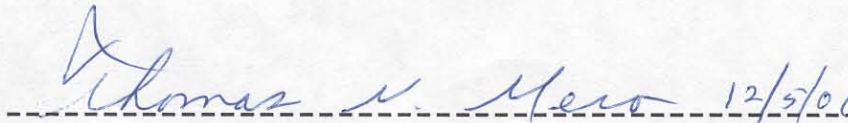
<u>Zone</u>	<u>Equation</u>	<u>Station # Station Name</u>
SR006	G	G=901-4070 Algonac
SR007	H-1/17 (H-G)	H=901-4080 St Clair State Police
SR008	H-2/17 (H-G)	J= Gauge not installed
SR009	H-3/17 (H-G)	K=901-4087 Dry Dock
SR010	H-4/17 (H-G)	L=901-4090 Mouth of the Black River
SR011	H-5/17 (H-G)	M=901-4096 Dunn Paper
SR012	H-6/17 (H-G)	N=901-4098 Fort Gratiot
SR013	H-7/17 (H-G)	P=907-5002 Lakeport
SR014	H-8/17 (H-G)	
SR015	H-9/17 (H-G)	
SR016	H-10/17 (H-G)	
SR017	H-11/17 (H-G)	
SR018	H-12/17 (H-G)	
SR019	H-13/17 (H-G)	
SR020	H-14/17 (H-G)	
SR021	H-15/17 (H-G)	
SR022	H-16/17 (H-G)	
SR023	H	
SR024	K-1/14 (K-H)	
SR025	K-1/7 (K-H)	
SR026	K-3/14 (K-H)	
SR027	K-2/7 (K-H)	
SR028	K-5/14 (K-H)	
SR029	K-3/7 (K-H)	
SR030	K-1/2 (K-H)	
SR031	K-8/14 (K-H)	
SR032	K-9/14 (K-H)	
SR033	K-5/7 (K-H)	
SR034	K-11/14 (K-H)	
SR035	K-6/7 (K-H)	
SR036	K-13/14 (K-H)	
SR037	K	

# **WATER SURFACE COMPUTATIONS - continued**

<u>Zone</u>	<u>Equation</u>	<u>Station #</u> <u>Station Name</u>
SR038	L-1/4 (L-K)	L=901-4090 Mouth of the Black River
SR039	L-1/2 (L-K)	M=901-4096 Dunn Paper
SR040	L-3/4 (L-K)	N=901-4098 Fort Gratiot
SR041	L	P=907-5002 Lakeport
SR042	M-1/5 (M-L)	
SR043	M-2/5 (M-L)	
SR044	M-3/5 (M-L)	
SR045	M-4/5 (M-L)	
SR046	M	
SR047	N-1/5 (N-M)	
SR048	N-2/5 (N-M)	
SR049	N-3/5 (N-M)	
SR050	N-4/5 (N-M)	
SR051	N	
SR052	P-1/3 (P-N)	
SR053	P-2/3 (P-N)	
LH001	P	

**Note 1:** Provided time series data are tabulated in metric units (meters), relative to International Great Lakes Datum of 1985 (IGLD 85) and on Greenwich Mean Time.

**Note 2:** Water level corrections for Zones SR024 through SR036 have been adjusted to allow for zoning during times of hydrographic surveying before the water level gauge (J) at Marysville (901-4084) was installed for this project. Please be sure to use previously provided zoning for hydrographic surveying run in the above zones during the time of Marysville (901-4084) water level operation.

  
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CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



ATLANTIC HYDROGRAPHIC BRANCH  
EVALUATION REPORT FOR D00134 (2000)

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. AUTOMATED DATA ACQUISITION AND PROCESSING**

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

Hydrographic Processing System (HPS)  
NADCON, version 2.10  
SITEWORKS 02.01  
MicroStation 95, version 5.05  
I/RAS B, version 5.01

The smooth sheet was plotted using a HEWLETT-PACKARD 2500CP plotter.

**C. VERTICAL AND HORIZONTAL CONTROL**

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values.

Vertical control used for this survey during data acquisition is based upon the International Great Lakes Datum of 1985. Office processing of this survey is based on these values.

- D1. COMPARISON WITH CHART 14852 (45<sup>th</sup> Edition, FEB /2003)**  
Corrected through NM FEB 08/03  
Corrected through LNM DEC 17/02  
**14853 (14<sup>th</sup> Edition, MAR /2003)**  
Corrected through NM FEB 22/03  
Corrected through LNM DEC 17/02  
**14850 (51<sup>st</sup> Edition, OCT /2003)**  
Corrected through NM OCT 11/03  
Corrected through LNM SEP 30/03

**Hydrography**

The charted hydrography originates with prior surveys and miscellaneous sources. The hydrographer makes adequate chart comparisons in Section D1. of the Descriptive Report. The



following should be noted:

1. The charted note, "18 feet rep 1998", in the vicinity of Latitude 42°32'52.2"N, Longitude 82°35'02.7"W, on Chart 14853 Sheet #40 originates with an unknown source. Due to changes in the bottom configuration in this area, it is recommended that this note be removed from the chart. It is further recommended that present survey data be used to update the chart in this area.

2. The charted note, "14 feet rep 1998", in the vicinity of Latitude 42°32'39.6"N, Longitude 82°35'02.54"W, on Chart 14853 Sheet #40 originates with an unknown source and is not considered disproved by the present survey. It is recommended that this note be retained as charted.

3. There is a sewer charted in the vicinity of Latitude 42°36'40.92"N, Longitude 82°33'01.84"W on chart 14853 - Sheet 33 and to the north of that in the vicinity of Latitude 42°36'41.34"N, Longitude 82°33'02.16"W on chart 14853 - Sheet 41. This item originates with an unknown source. It is recommended that the actual position of this sewer be determined and corrected on both sheets.

4. The charted note, "1 ft rep 1998", in the vicinity of Latitude 42°38'16.6"N, Longitude 82°30'09.2"W, on Chart 14853 Sheet #42 originates with an unknown source and is considered disproved by the present survey. It is recommended that this note be deleted from the chart and the area updated to reflect present survey findings.

5. The following charted features originate with unknown sources. They were neither investigated nor addressed by the hydrographer:

Chart 14853 Sheet #31 (KAPP #1291)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Pile	42°37'38.0"N	82°38'33.4"W
Dangerous sunken Wk PA	42°37'40.8"N	82°38'20.5"W
Obstns	42°37'41.4"N	82°37'29.3"W
Subm dols (4)	42°37'32.4"N	82°37'36.1"W
Subm piles (3)	42°37'31.0"N	82°37'34.2"W



Chart 14853 Sheet #32 (KAPP #1292)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Dangerous sunken Wks	42°37'11.4"N	82°39'00.2"W

Chart 14853 Sheet #33 (KAPP #1293)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Obstns	42°37'41.4"N	82°37'29.3"W
Subm dols (3)	42°37'18.0"N	82°35'58.5"W
Ruins	42°37'15.7"N	82°35'45.6"W
Pile & Ruins	42°37'05.4"N	82°33'45.2"W
Sewer	42°36'41.1"N	82°33'01.4"W
Dolphins (2)	42°36'52.35"N	82°33'44.06"W
Dolphins (3)	42°36'50.7"N	82°33'38.06"W
Dolphins (3)	42°36'44.98"N	82°33'25.55"W
Dolphin	42°36'41.44"N	82°33'18.63"W

Chart 14853 Sheet #34 (KAPP #1294)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Subm pile	42°33'51.0"N	82°43'46.8"W
Visible Wk	42°34'28.6"N	82°40'04.8"W

Chart 14853 Sheet #35 (KAPP #1295)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Visible Wk	42°34'28.6"N	82°40'04.8"W
Pile	42°34'26.7"N	82°39'47.6"W
Row of piles	42°34'35.1"N	82°39'29.5"W
Row of piles	42°34'47.6"N	82°39'09.4"W
Pile	42°34'57.1"N	82°38'56.8"W
Dangerous Wk cov 1ft	42°35'05.8"N	82°38'48.4"W
Piles(2)	42°35'29.5"N	82°38'32.5"W
Pile	42°35'32.57"N	82°37'54.5"W
Row of piles	42°35'32.7"N	82°37'52.6"W
Pile	42°35'33.9"N	82°37'24.2"W
Ruins & Row of piles	42°35'36.3"N	82°37'07.2"W

Chart 14853 Sheet #38 (KAPP #1297)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Depth over spar 3ft	42°31'44.3"N	82°42'40.3"W
Dang unknown Obstn PA	42°31'07.1"N	82°41'13.4"W
Dang sunken Wk PA	42°31'12.6"N	82°41'04.9"W
Dols (Ltd)	42°31'42.4"N	82°40'44.8"W



Subm piles (2)	42°32'03.5"N	82°40'03.5"W
Row of piles	42°32'14.6"N	82°40'08.0"W
Piles	42°31'18.4"N	82°40'31.3"W
Piles	42°31'25.2"N	82°40'13.1"W
Subm piles	42°31'28.7"N	82°39'30.2"W
Subm Piles	42°31'35.1"N	82°39'12.4"W
Subm ruins	42°31'50.4"N	82°38'59.5"W
Subm piles	42°31'41.5"N	82°38'54.4"W
5' depth	42°32'04.7"N	82°40'04.7"W

Chart 14853 Sheet #39 (KAPP #1298)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Subm piles	42°31'54.2"N	82°38'19.0"W
Dol	42°32'07.8"N	82°38'08.7"W
Subm pile	42°32'01.5"N	82°38'01.4"W
Subm piles	42°32'07.1"N	82°37'42.9"W
Subm piles	42°32'27.0"N	82°36'49.0"W
Subm piles	42°32'33.4"N	82°36'30.9"W
Dangerous Sunken Wk PA	42°32'54.6"N	82°35'41.3"W
Subm ruins & pile	42°33'30.6"N	82°37'48.3"W
Piles (2)	42°33'30.6"N	82°37'44.6"W
Piles (2)	42°33'29.8"N	82°37'32.8"W
Piles (2)	42°33'13.7"N	82°36'45.6"W
Row of piles	42°33'00.6"N	82°35'54.2"W
5' depth	42°32'04.7"N	82°40'04.7"W

Chart 14853 Sheet #40 (KAPP #1299)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Obstn (11ft rep 1990)	42°33'05.9"N	82°35'26.9"W
Dangerous sunken Wk PA	42°33'02.4"N	82°35'04.0"W
Dangerous sunken Wk ED	42°33'12.3"N	82°35'11.2"W
Pile	42°33'16.4"N	82°35'16.5"W
Piles(2)	42°33'29.0"N	82°35'07.4"W
Pile	42°33'45.3"N	82°35'00.6"W
Piles(2)	42°33'50.7"N	82°34'58.8"W
Piles(4)	42°33'54.2"N	82°34'57.0"W
Pile	42°34'04.4"N	82°34'50.4"W
Piles(2)	42°34'20.2"N	82°34'33.1"W
Piles(2)	42°34'28.2"N	82°34'20.4"W
Pile	42°34'28.3"N	82°34'18.7"W
Piles(6)	42°34'30.1"N	82°34'17.7"W
Pile	42°34'32.2"N	82°34'14.9"W
Subm ruins	42°34'42.0"N	82°33'56.5"W
Piles (2)	42°34'42.9"N	82°33'56.1"W



Row of piles	42°34'44.9"N	82°33'52.1"W
Pile	42°34'47.3"N	82°33'50.4"W
Pile (3)	42°34'48.5"N	82°33'47.2"W
Pile	42°34'50.7"N	82°33'43.1"W
Piles (2)	42°35'01.4"N	82°33'30.0"W
Piles (3)	42°35'02.4"N	82°33'28.6"W
Dangerous Sunken Wk PA	42°32'54.6"N	82°35'41.3"W
5' depth	42°33'11.96"N	82°35'20.56"W
2' depth	42°33'25.31"N	82°35'09.74"W
2' depth	42°33'27.52"N	82°35'08.92"W

Chart 14853 Sheet #41 (KAPP #1300)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Piles (2)	42°36'52.5"N	82°33'43.7"W
Doles (3)	42°36'51.2"N	82°33'37.4"W
Piles (3)	42°36'45.2"N	82°33'25.2"W
Pile	42°36'41.6"N	82°33'18.2"W
Sewer	42°36'41.5"N	82°33'01.7"W
Sewer	42°36'37.8"N	82°32'56.8"W
Visible Wk	42°36'23.4"N	82°32'53.9"W
Piles (2)	42°36'29.9"N	82°32'02.4"W
Piles (3)	42°36'54.2"N	82°31'41.3"W
PWI (Depth over Crib 32ft)	42°37'14.3"N	82°31'33.0"W
Dangerous sunken Wk	42°37'02.0"N	82°31'15.4"W
Pile	42°35'11.9"N	82°33'17.5"W
Pile	42°36'17.8"N	82°31'48.6"W
Pile	42°36'18.7"N	82°31'47.1"W
Pile	42°35'11.9"N	82°33'17.6"W
Piles (2)	42°37'29.4"N	82°31'14.6"W
Subm ruins	42°34'42.0"N	82°33'56.5"W
Piles (2)	42°34'42.9"N	82°33'56.1"W
Row of piles	42°34'44.9"N	82°33'52.1"W
Pile	42°34'47.3"N	82°33'50.4"W
Pile (3)	42°34'48.5"N	82°33'47.2"W
Pile	42°34'50.7"N	82°33'43.1"W
Piles (2)	42°35'01.4"N	82°33'30.0"W
Piles (3)	42°35'02.4"N	82°33'28.6"W
Piles (2)	42°37'29.2"N	82°31'15.05"W
1' depth	42°37'02.8"N	82°31'15.8"W

Chart 14853 Sheet #42 (KAPP #1301)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Piles (5)	42°37'29.7"N	82°31'14.0"W

Pile	42°37'32.3"N	82°31'08.3"W
Row of piles	42°37'46.2"N	82°30'59.7"W
Two rows of piles	42°37'50.8"N	82°30'58.4"W
Pile	42°38'09.5"N	82°30'52.5"W
Piles (3)	42°38'18.7"N	82°30'49.5"W
Pile	42°38'29.1"N	82°30'47.7"W
Piles (2)	42°39'06.2"N	82°30'49.2"W
Piles (2)	42°39'19.3"N	82°30'49.8"W
Pile	42°39'25.1"N	82°30'51.0"W
Pile	42°39'27.4"N	82°30'50.6"W
Piles (3)	42°38'51.2"N	82°30'20.8"W
Piles (8)	42°38'42.3"N	82°30'20.7"W
Pile	42°39'16.96"N	82°30'23.73"W
Piles (2)	42°39'28.88"N	82°30'25.62"W
Piles (2)	42°36'29.67"N	82°32'02.69"W
Dangerous sunken Wk	42°37'01.8"N	82°31'15.9"W

Chart 14853 Sheet #43 (KAPP #1302)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Pile	42°39'38.1"N	82°30'25.8"W
Piles (2)	42°39'29.0"N	82°30'25.2"W
Pile	42°39'17.1"N	82°30'23.4"W
Piles (2)	42°39'19.3"N	82°30'49.8"W
Pile	42°39'25.1"N	82°30'51.0"W
Pile	42°39'27.4"N	82°30'50.6"W

Chart 14852 (KAPP #1260)

<u>Features</u>	<u>Latitude</u>	<u>Longitude</u>
Depth over spar 3ft	42°31'44.3"N	82°42'40.3"W
Dang sunken Wk PA	42°31'12.6"N	82°41'04.9"W
Dang unknown Obstn PA	42°31'07.1"N	82°41'13.4"W
Subm piles	42°31'28.7"N	82°39'30.2"W
Subm Piles	42°31'35.1"N	82°39'12.4"W
Subm piles	42°31'41.5"N	82°38'54.4"W
Subm piles	42°31'53.97"N	82°38'19.73"W
5' depth	42°32'04.7"N	82°40'04.7"W
Subm Piles	42°32'34.1"N	82°36'29.0"W
Subm Piles	42°32'26.6"N	82°36'49.6"W
Row of piles	42°32'14.6"N	82°40'08.0"W
Subm piles (2)	42°32'03.5"N	82°40'03.5"W
Subm piles	42°32'07.1"N	82°37'42.9"W
Dangerous Sunken Wk PA	42°32'54.6"N	82°35'41.3"W
14 ft (rep 1998) note	42°32'39.23"N	82°35'02.98"W
Row of piles	42°33'00.6"N	82°35'54.2"W



Obstn (11ft rep 1990)	42°33'05.9"N	82°35'26.9"W
Dangerous sunken Wk PA	42°33'02.4"N	82°35'04.0"W
Dangerous sunken Wk ED	42°33'12.3"N	82°35'11.2"W
Crib	42°33'04.3"N	82°35'13.3"W
Subm pile	42°33'51.0"N	82°43'46.8"W
Piles (2)	42°34'15.7"N	82°25'13.4"W
Visible Wk	42°34'28.6"N	82°40'04.8"W
Pile	42°34'04.4"N	82°34'50.4"W
Piles (3)	42°34'27.9"N	82°34'19.2"W
Pile	42°34'31.8"N	82°34'15.4"W
Piles (2)	42°34'44.9"N	82°33'52.9"W
Piles (3)	42°34'48.0"N	82°33'48.4"W
Pile	42°35'01.0"N	82°33'30.0"W
Pile	42°35'02.1"N	82°33'29.0"W
Piles (2)	42°35'04.2"N	82°27'57.6"W
Dangerous Wk cov 1ft	42°35'05.8"N	82°38'48.4"W
Piles	42°36'47.8"N	82°28'38.5"W
Pile	42°36'36.6"N	82°28'34.2"W
Mkr	42°36'14.4"N	82°28'40.7"W
Dolphin	42°36'52.35"N	82°33'44.06"W
Dolphin	42°36'50.96"N	82°33'38.0"W
Dolphin	42°36'44.8"N	82°33'25.5"W
Dolphin	42°36'41.5"N	82°33'18.6"W
Sewer	42°36'41.9"N	82°33'02.4"W
Sewer	42°36'38.7"N	82°32'56.05"W
Visible wreck	42°36'23.15"N	82°32'54.55"W
Piles (3)	42°36'29.67"N	82°32'03.01"W
Piles	42°37'50.8"N	82°30'58.4"W
Piles	42°37'45.8"N	82°30'59.9"W
Pile	42°37'32.3"N	82°31'08.3"W
Pile	42°37'29.7"N	82°31'14.0"W
Dangerous sunken Wk	42°37'01.8"N	82°31'15.9"W
Pile	42°37'12.4"N	82°28'48.9"W
Pile	42°37'47.4"N	82°42'46.2"W
Dangerous Sunken Wk	42°37'12.3"N	82°39'00.1"W
Pile	42°37'37.8"N	82°38'33.9"W
Dangerous Sunken Wk PA	42°37'40.4"N	82°38'23.2"W
Subm Dols (7)	42°37'31.4"N	82°37'35.5"W
Obstns	42°37'40.8"N	82°37'29.6"W
Piles (3)	42°37'17.3"N	82°35'58.8"W
Piles (3)	42°37'17.3"N	82°35'58.8"W
Pile & Ruins	42°37'05.4"N	82°33'45.2"W
PWI (Depth over Crib 32ft)	42°37'14.3"N	82°31'33.0"W
Piles (2)	42°38'51.2"N	82°30'20.8"W
Piles (8)	42°38'42.3"N	82°30'20.7"W



Pile	42°38'29.1"N	82°30'47.7"W
Pile	42°38'09.5"N	82°30'52.5"W
Pile	42°39'28.88"N	82°30'25.62"W
Pile	42°39'25.1"N	82°30'51.0"W
Pile	42°39'27.4"N	82°30'50.6"W
Pile	42°39'16.9"N	82°30'23.7"W
Pile	42°39'38.1"N	82°30'25.8"W
Pile	42°39'37.8"N	82°30'26.6"W

It is recommended that the above noted features be retained as charted.

Except as mentioned above, the present survey is adequate to supercede the charted hydrography within the common area.

## **D2. ADDITIONAL RESULTS**

1. Brown shoreline shown on the Smooth Sheet, originates with National Ocean Service (NOS) chart 14853 (12<sup>th</sup> Edition, February 6, 1999) and is for orientation purposes only.

2. A comparison with prior surveys was not performed. This is in accordance with section 4. Of the memorandum titled, Changes to Hydrographic Survey Processing, dated May 24, 1995.

## **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:

14852 (45<sup>th</sup> Edition, FEB/2003)  
Corrected through NM FEB 08/03  
Corrected through LNM DEC 17/02

14853 (14<sup>th</sup> Edition, MAR/03)  
Corrected through NM FEB 22/03  
Corrected through LNM DEC 17/02

14850 (51<sup>nd</sup> Edition, OCT /2003)  
Corrected through NM OCT 11/03  
Corrected through LNM SEP 30/03



It was determined during office processing that the charted shoreline in Johnston Channel and Chenal Ecarte' in the area to the southeast of Latitude 42°38'00"N, Longitude 82°29'43.6"W on NOS charts 14852 and 14850 should be revised to reflect changes based on the present survey's hydrography. Compilation in these areas will include a dashed red approximate high water line.

#### ADEQUACY OF SURVEY

This is an adequate reconnaissance survey. Additional work is recommended for the following:

1. Charted shoreline in the vicinity of Johnston Channel and Chenal Ecarte', as mentioned above, should be recompiled.
2. The disposition of all charted features within the survey area should be ascertained.

Douglas V. Mason for

Douglas V. Mason  
Cartographic Technician  
Verification of Field Data  
Evaluation and Analysis



APPROVAL SHEET  
D00134

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 disapproval 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.

Robert R. Hill, Jr.

Robert R. Hill, Jr  
Cartographer,  
Atlantic Hydrographic Branch

Date: 11-22-04

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: P. Tod Schattgen

P. Tod Schattgen  
Lieutenant Commander, NOAA  
Chief, Atlantic Hydrographic Branch

Date: 12/10/04

AWOL/SRF Check JD 3/2/05



FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. D00134

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

[illegible]