NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey *Sidescan Sonar, Singlebeam Sonar and Interferometric Sonar*

Field No. *D*

Registry No. *H11615*

LOCALITY

State *Louisiana*

General Locality *Lake Borgne*

Sublocality *West*

2007

CHIEF OF PARTY

Gary R. Davis

Science Applications International Corporation

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DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NO. **H11615**

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. **D**

State Louisiana

General Locality Lake Borgne

Sublocality *West*

Scale 1:20,000 Date of survey 11 February 2007 – 01 June 2007

Instructions Dated October 18, 2006 Project No. S-J977-KR-SAIC

Vessel *M/V Thomas R. Dowell* AL1534 AH and *F/V Lacey Marie* LA6708FC

Chief of Party *GARY R. DAVIS*

Surveyed by: *Brian Biggert, Louie Cust, Gary Davis, Kevin Davis, Rick Davis, Travis Daniel, Paul Donaldson,, Sean Halpin, Karen Hart, Chuck Holloway, Jason Infantino, Fred Jordon, John Kiernan, Meme Lobecker, Rick Nadeau, Chris Pinero, Gary Parker, Evan Robertson, Jeremy Shambaugh, Deb Smith, Mike Tappia, Justin West.*

Soundings taken by **echo sounder**, hand lead, pole Odom Echotrac CV, GeoAcoustics GeoSwath Plus

Graphic record scaled by

Graphic record checked by

Protracted by Automated Plot

Verification by ***AHB comments in bold red italic font***

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

REMARKS: **Contract** DG133C-05-CQ-1088
Contractor: Science Applications International Corp., 221 Third Street; Newport, RI 02840 USA
Subcontractors: Williamson & Associates, 1124 NW 53rd Street, Seattle WA 98107; Rotator Staffing Services, PO Box 366, 557 Cranbury Rd., E. Brunswick, NJ 08116; Lowe Engineers 2000 RiverEdge Parkway, Suite 400, Atlanta, GA 30328; John Oswald & Associates, LLC. 2000 E. Dowling Rd, Suite 10, Anchorage, AK 99507
Times: All times are recorded in UTC
UTM Zone: Zone 16
Purpose: To provide NOAA with accurate hydrographic survey data suitable for item detection and debris mapping in the assigned area: Sheet D (H11615) in Lake Borgne, Louisiana.

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537. ☆ U.S. GOVERNMENT PRINTING OFFICE: 1976—665-661/1222 REGION NO. 6

Science Applications International Corporation (SAIC) warrants only that the survey data acquired by SAIC and delivered to NOAA under Contract DG133C-05-CQ-1088 reflects the state of the sea floor in existence on the day and at the time the survey was conducted.

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Descriptive Report to Accompany
Hydrographic Survey H11615
Scale 1:20,000, Surveyed 2007
M/V Thomas R. Dowell* and *F/V Lacey Marie
Science Applications International Corporation (SAIC)
Gary R. Davis, Lead Hydrographer

PROJECT
Project Number: S-J977-KR-SAIC
Dates of Instructions: October 18, 2006 **Task Order#:** T0002

Dates of Supplemental Instructions: 25 October 2006, 16 November 2006, 09 January 2007, 30 May 2007, and 03 October 2007
Sheet Letter: D
Registry Number: H11615
Purpose: To provide NOAA with accurate hydrographic survey data suitable for item detection and debris mapping in the assigned area: Sheet D (H11615) in Lake Borgne, Louisiana.

A. AREA SURVEYED

The area surveyed was the western section of Lake Borgne Louisiana, which covered 75.65 square nautical miles (Figure A-1). The line nautical miles, bottom samples, and other survey parameters are located in Table A-1. The area was surveyed at 40m line spacing with interferometric, singlebeam, and sidescan sonar from 11 February 2007 to 01 June 2007 (Table A-2). The overall range of depths encountered in H11615 was 0.72 to 14.01 meters (2 to 46 feet). The depth range for singlebeam sonar data was 0.72 to 14.01 meters (2 to 46 feet) based on a minimum grid. The depth range for interferometric sonar data was 1.01 to 4.18 meters (3 to 13 feet) based on the CUBE depth. ***Concur.***

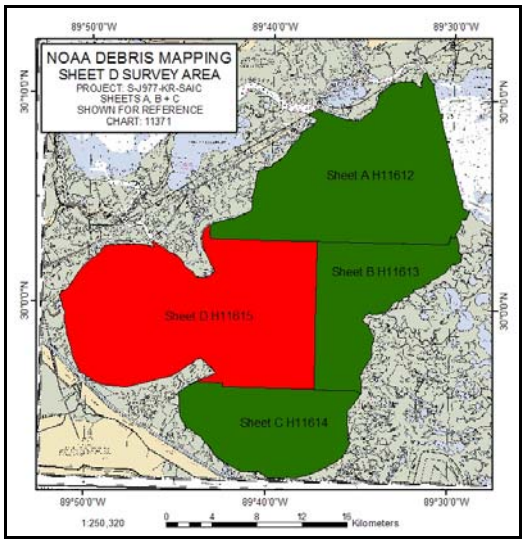


Figure A-1. NOAA Debris Mapping Survey Bounds

Table A-1. Hydrographic Survey Statistics

***M/V Thomas R. Dowell* and *F/V Lacey Marie*, Sheet D H11615**	
LNM Sidescan	3963
LNM Interferometric, Bathymetry	3087
LNM Singlebeam Bathymetry	876
LNM of Interferometric and Singlebeam Bathymetry	3963
LNM Shoreline / Nearshore Investigations	N/A
Number of Bottom Samples	88
Number of items investigated that required additional time/effort in the field beyond the above survey operations	0
Total number of square nautical miles	75.65

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

Calendar Date	Julian Day
11-February-2007	042
12-February-2007	043
13-February-2007	044
15-February-2007	046
17-February-2007	048
18-February-2007	049
19-February-2007	050
20-February-2007	051
21-February-2007	052
22-February-2007	053
23-February-2007	054
24-February-2007	055
25-February-2007	056
26-February-2007	057
28-February-2007	059
01-March-2007	060
02-March-2007	061
03-March-2007	062
05-March-2007	064
06-March-2007	065
07-March-2007	066
08-March-2007	067
09-March-2007	068
10-March-2007	069
11-March-2007	070

Calendar Date	Julian Day
12-March-2007	071
13-March-2007	072
14-March-2007	073
15-March-2007	074
16-March-2007	075
18-March-2007	077
19-March-2007	078
20-March-2007	079
21-March-2007	080
22-March-2007	081
23-March-2007	082
24-March-2007	083
25-March-2007	084
26-March-2007	085
27-March-2007	086
28-March-2007	087
29-March-2007	088
30-March-2007	089
31-March-2007	090
01-April-2007	091
02-April-2007	092
03-April-2007	093
04-April-2007	094
08-April-2007	098
09-April-2007	099

Calendar Date	Julian Day
10-April-2007	100
11-April-2007	101
12-April-2007	102
13-April-2007	103
16-April-2007	106
17-April-2007	107
18-April-2007	108
19-April-2007	109
20-April-2007	110
24-April-2007	114
26-April-2007	116
27-April-2007	117
30-April-2007	120
9- May-2007	129
10-May-2007	130
11-May-2007	131
13-May-2007	133
14-May-2007	134
15-May-2007	135
16-May-2007	136
19-May-2007	139
28-May-2007	148
31-May-2007	151
01-June-2007	152

B. DATA ACQUISITION AND PROCESSING

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 (DAPR)* for S-J977-KR-SAIC delivered on 18 January 2008 (SAIC document number 07-TR-005). There were no variations from the equipment configuration described in the 18 January 2008 DAPR. Table B-1 and Table B-2 provide a summary of the major systems used. ***DAPR filed with original field reports, and also submitted to Hydrographic Survey Division (HSD) with survey deliverables.***

Table B-1. Major Systems (*M/V Thomas R. Dowell*)

System	Manufacturer / Model Number
Singlebeam Sonar	Odom CV
Sidescan Sonar	Klein 3000 Towfish
Vessel Attitude	Applanix POS/MV 320 Inertial Navigation System
Positioning	POS/MV 320 version 4
Sound Speed	Sea-Bird Electronics, Inc. SBE 19-01 CTD Profiler

Table B-2. Major Systems (*F/V Lacey Marie*)

System	Manufacturer / Model Number
Interferometric Sonar	GeoAcoustics GeoSwath Plus 250 kHz
Vessel Attitude	Applanix POS/MV 320 Inertial Navigation System
Positioning	POS/MV 320 version 4
Sound Speed	Sea-Bird Electronics, Inc. SBE 19-01 CTD Profiler

B.1.1 Survey Vessels

The *M/V Thomas R. Dowell* and *F/V Lacey Marie* were the vessels used for all survey operations during the Lake Borgne survey project. Table B-3 lists vessel characteristics for the *M/V Thomas R. Dowell* and *F/V Lacey Marie*. Preliminary data processing took place on site at Shell Beach, LA and then data products were shipped to the Data Processing Center in the SAIC Newport, RI office for final processing.

Table B-3. Survey Vessel Characteristics

Vessel Name	LOA	Beam	Draft	Max Transit Speed	Max Survey Speed

Vessel Name	LOA	Beam	Draft	Max Transit Speed	Max Survey Speed
M/V Thomas R. Dowell	32’	7’	2.5’	30 kts	8 kts
F/V Lacey Marie	41’	12’	2.5’	14 kts	7 kts

The *M/V Thomas R. Dowell* was the platform for the Odom CV singlebeam sonar, Klein 3000 sidescan sonar, and SBE 19-01 CTD data collection. The sensor configuration and offsets used for the survey are tabulated and depicted in the Data Acquisition and Processing Report (SAIC Doc 07-TR-005 dated 18 January 2008)*. The reference point for the entire system is located at the top centerline of the POS/MV IMU. The Odom transducer was hull-mounted and the Klein 3000 towfish was bow mounted. The POS/MV IMU was mounted 0.905 meters above, 2.080 meters forward, and 0.290 meters starboard of the transducer. ***Concur.***

The *F/V Lacey Marie* was the platform for the GeoAcoustics GeoSwath Plus 250 kHz interferometric sonar and SBE 19-01 CTD data collection. The sensor configuration and offsets used for the survey are tabulated and depicted in the Data Acquisition and Processing Report (SAIC Doc 07-TR-005 dated 18 January 2008)*. The reference point for the entire system is located at the top centerline of the POS/MV IMU. The GeoSwath transducer was pole-mounted off the bow on the vessel centerline and 3.31 meters below the mounting plate. The POS/MV IMU was mounted 0.330 meters directly above the transducer. ***Concur.***

DAPR filed with original field reports, and also submitted to Hydrographic Survey Division (HSD) with survey deliverables.

B.1.2 Major Systems

SAIC used their Integrated Survey System (**ISS-2000**) software on a Windows XP platform to acquire navigation and ancillary survey data on both vessels. Survey planning and data analysis were conducted using SAIC’s **SABER** software on Red Hat Enterprise 4 Linux platforms.

On the *M/V Thomas R. Dowell*, Klein 3000 sidescan data were collected on a Windows XP platform using Klein’s **SonarPro version 9.6** software. The Klein 3000 sidescan sonar data were collected in eXtended Triton Format (XTF) maintaining full resolution, with no conversion or down sampling techniques applied. All sidescan data were reviewed using Triton **Isis** software, while coverage mosaics were produced using **SABER**. Odom singlebeam sonar data were collected in Generic Sensor Format (GSF) using SAIC’s **ISS-2000** software. The data were processed using SAIC’s **SABER** software (edited and correctors applied).

On the *F/V Lacey Marie*, interferometric data were collected on a Windows XP platform using GeoAcoustics **GeoSwath Plus** (**GS+**) software. The GeoSwath system collected

data in a proprietary Raw Data File (RDF) format, which stores all needed information for processing in one given file. The bathymetry data were then extracted from the RDF files within the **GS+** software into another proprietary intermediate file format CUBE File (CBF). The CBF files were then converted to Generic Sensor Format (GSF) using SAIC's **SABER** software. The data were then processed using SAIC's **SABER** software (edited and correctors applied). The sidescan imagery data were extracted from the RDF file into an intermediate **GS+** proprietary file as Swath Amplitude Files; pronounced swamp (SWP). The SWP files were then exported into eXtended Triton Format (XTF) files using the GeoAcoustics **GS+** software where it was down sampled to 1,024 samples per channel. Once the GeoSwath imagery data were in XTF format, those data and the Klein 3000 data were treated the same for further data processing. All sidescan data were reviewed using Triton **Isis** software, while coverage mosaics were produced using **SABER**.

B.2 Quality Control

There were approximately 264 linear nautical miles of crosslines surveyed and approximately 3,694 linear nautical miles of main scheme lines surveyed. This resulted in approximately 7 percent of linear nautical miles of crosslines compared to main scheme survey lines. Throughout the main body of the lake, the main scheme lines were oriented at 92°/272° and were spaced 40 meters apart while the crosslines were oriented at 2°/182° and were spaced 500 meters apart. In the near shore areas the main scheme line orientations varied to roughly parallel the shoreline and were spaced 40 meters apart. Crosslines were run normal to shore in the near shore areas. The range scale was set to 25 meters for the sidescan acquisition yielding a 50 meter swath. ***Concur.***

A Seabird Electronics SBE-19 CTD was used on both the *F/V Lacey Marie* and on the *M/V Thomas R. Dowell* to collect sound speed profile (SSP) data. SSP data were obtained at intervals frequent enough to reduce sound speed errors. The frequency of casts was based on observed sound speed changes from previously collected profiles and time elapsed since the last cast. Multiple casts were taken along a survey line to identify the rate and location of sound speed changes. Subsequent casts were made based on the observed trend of sound speed changes. As the sound speed profiles changed, cast frequency and location were modified accordingly. A surface sound velocimeter was used in conjunction with the sound speed profiles for collection of interferometric data. A Velport surface sound velocimeter was co-located with the transducers. Surface sound speed data were recorded and applied in real time by the GeoAcoustics **GS+** software to compute the return angle of the pulse. On Julian Day 124 (04 May 2007) at 15:25:05 the 25 mm stand off Velport SSV sensor was damaged and was replaced with a 50 mm Velport sensor on the evening of JD 132 (12 May 2007). From JD 124 (04 May 2007) through the evening of JD 132 (12 May 2007) the surface sound speed from the sound speed profile data collected with the Seabird SBE-19 CTD were applied to the data by using the **GS+** software during data collection. The *F/V Lacey Marie* did not collect data on H11615 during the period that no surface sound speed sensor was in use. Confidence checks of the sound speed profile casts were conducted weekly by comparing two consecutive casts taken with different Seabird SBE-19 CTD units. ***Concur. See Appendix II.***

Static draft measurements for the *F/V Lacey Marie* were taken from the bow, where the transducers were mounted, both before departure and after arrival at the dock. Dynamic draft was determined from a look up table using shaft RPM counters for the input. The dynamic draft table was constructed from measurements taken during the pre-survey Sea Acceptance Trials (SAT).

Static draft measurements for the *M/V Thomas R. Dowell* were taken from amid ship, where the transducer was mounted, both before departure and after arrival at the dock each day. Dynamic draft was determined from a look up table using manual entry of the RPM as read from the RPM gauge. The RPM value was updated with any change in RPM. The dynamic draft table was constructed from measurements taken during the pre-survey Sea Acceptance Trials. Dynamic draft corrections were performed in post-processing using SABER.

Horizontal positioning of the bathymetry transducers by the POS/MV was verified by daily confidence checks against an independent Trimble DGPS system. In addition, this comparison was running full time with an alarm to alert the survey watch stander should the position differences exceed the maximum allowable distance.

Confidence checks of the interferometric depths were made using a bar that was lowered to a known depth directly below the transducer. A sound speed profile was taken and the tide corrector was set to zero. The bar was lowered below the transducers to a depth of 2 meters. Data were recorded to a discrete raw data file. Depths displayed by the GeoSwath interferometric sonar were read and entered into a bar check log. Bar checks were taken approximately once per week during the survey. ***Concur.***

Confidence checks of the singlebeam depths were made using a bar that was lowered to a known depth directly below the transducer. A sound speed profile was taken; RPM value and the tide corrector were set to zero. The bar was lowered below the transducer to various depths in 1-meter increments. The GSF file for the Odom echo sounder, the Odom DTC, Odom video 32-display and Odom controller were examined for the reported values once the bar was in place. The depth for each source was recorded within the *M/V Thomas R. Dowell* bar check log. ***Concur.***

All individual soundings that were applied to the Bathymetric Attributed Grid (BAG) meet the Horizontal Position Accuracy and Vertical Accuracy specified in the NOS Specifications and Deliverables. There are, however, areas where the BAG node uncertainty exceeds the IHO Order 1 allowable value specified in the NOS Specifications and Deliverables. The largest number of nodes which exceed the maximum allowable uncertainty occur along the edges of a swath where there is no additional overlapping coverage from adjoining lines or where there is a variation in adjoining swaths due to sound speed differences or in a few cases tidal differences. In few cases elsewhere within the grid, uncertainty is exceeded where the node has a low number of soundings contributing to a node depth or areas around features where the standard deviation was high. Various tests were conducted to determine if there was an optimal swath cutoff

angle to significantly reduce or eliminate nodes which exceed the specified uncertainty values. These tests showed that reducing the swath angle did reduce the number of high uncertainty nodes; however, it also resulted in flagging an excessive amount of low uncertainty data as invalid in the process. Therefore, it was decided to retain the full swath data for production of the Bathymetric Attributed Grids. A SABER process called "Check PFM Uncertainty" flags nodes which exceed specified uncertainty limits. A text file which lists node position, depth and uncertainty value for nodes which failed the specified uncertainty limit is included in Appendix V, Supplemental Survey Records and Correspondence. ***Concur.***

Comparisons of interferometric and singlebeam main scheme data to crossline data were done daily in the field to ensure there were no systematic errors introduced and to identify potential problems with the acquisition system configurations. Comparisons of final crossing data in H11615 were conducted in several different iterations on averaged 5m gridded data. Singlebeam main scheme data were compared to singlebeam crossline data, which showed that 98.39% of comparisons are within 10 centimeters and 99.72% of comparisons are within 15 centimeters (Table B-4). The singlebeam main scheme data were then compared to the interferometric crossline data, which showed that 97.87% of comparisons are within 50 centimeters and 99.79% of comparisons are within 60 centimeters (Table B-5). The main scheme interferometric data were compared to the interferometric crossline data, which showed that 95.16% of comparisons are within 25 centimeters and 99.59% of comparisons are within 40 centimeters (Table B-6). The interferometric main scheme data were compared to the singlebeam crossline data, which showed that 97.72% of comparisons are within 50 centimeters and 99.67% of comparisons are within 60 centimeters (Table B-7). Table B-8 presents the results of the comparison between all data on H11615 compared to all data on H11612 and shows that 96.06% of comparisons are within 20 centimeters and 99.74% of comparisons are within 35 centimeters. Table B-9 presents the results of the comparison between all data on H11615 compared to all data on H11613 and shows that 95.01% of comparisons are within 30 centimeters and 99.48% of comparisons are within 45 centimeters. Table B-10 presents the results of the comparison between all data on H11615 compared to all data on H11614 and shows that 95.17% of comparisons are within 35 centimeters and 99.25% of comparisons are within 50 centimeters. Comparisons between the interferometric data and the singlebeam data shows that there was a slight difference between the soundings obtained with the singlebeam data versus the interferometric data. The depths reported by the singlebeam system were generally deeper than then depths reported by the interferometric system. ***Concur. See ER for charting ramifications of discrepancy between single beam sonar and interferometric sonar.***

Table B-4. Junction Analysis Singlebeam Main Scheme vs. Singlebeam Crosslines, H11615

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0-5	1989	80.07	783	82.86	946	73.96	260	10.47

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
5-10	455	98.39	151	98.84	304	97.73		
10-15	33	99.72	8	99.68	25	99.69		
15-20	5	99.92	2	99.89	3	99.92		
20-25	1	99.96	0	99.89	1	100.00		
25-30	1	100.00	1	100.00	0	100.00		
Total	2484	100%	945	38.04%	1279	51.49%	260	10.47%

Table B-5. Junction Analysis Singlebeam Main Scheme vs. Interferometric Crosslines, H11615

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0-5	27	0.82	18	0.55	7	70	2	0.06
5-10	49	2.31	47	1.98	2	90		
10-15	132	6.33	131	5.98	1	100.00		
15-20	209	12.69	209	12.37	0	100.00		
20-25	463	26.77	463	26.50	0	100.00		
25-30	908	54.40	908	54.23	0	100.00		
30-35	714	76.12	714	76.03	0	100.00		
35-40	361	87.10	361	87.05	0	100.00		
40-45	242	94.46	242	94.44	0	100.00		
45-50	112	97.87	112	97.86	0	100.00		
50-60	63	99.79	63	99.79	0	100.00		
60-70	4	99.91	4	99.91	0	100.00		
70-110	3	100.00	3	100.00	0	100.00		
Total	3287	100%	3275	99.64%	10	0.30	2	0.06%

Table B-6. Junction Analysis Interferometric Main Scheme vs. Interferometric Crosslines, H11615

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0-5	269851	32.60	119345	30.06	119438	29.88	31068	3.75
5-10	237646	61.31	118424	59.89	119222	59.71		
10-15	173033	82.21	86996	81.80	86037	81.24		

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
15-20	63281	89.86	31650	89.77	31631	89.15		
20-25	43910	95.16	21739	95.25	22171	94.70		
25-30	24482	98.12	11746	98.21	12736	97.89		
30-35	8882	99.19	4121	99.24	4761	99.08		
35-40	3294	99.59	1532	99.63	1762	99.52		
40-45	1943	99.83	859	99.85	1084	99.79		
45-50	875	99.93	399	99.95	476	99.91		
50-60	465	99.99	181	99.99	284	99.98		
60-70	84	99.99	28	99.99	56	99.99		
70-80	16	99.99	1	100.00	15	99.99		
80-1.10	8	100.00	0	100.00	8	100.00		
Total	827770	100.00%	397022	47.96%	399680	48.28%	31068	3.75%

Table B-7. Junction Analysis Interferometric Main Scheme vs. Singlebeam Crosslines Nadir, H11615

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0-5	16	0.40	10	0.25	3	23.08	3	0.08
5-10	42	1.47	37	1.19	5	61.54		
10-15	79	3.46	75	3.10	4	92.31		
15-20	115	6.37	114	5.99	1	100.00		
20-25	487	18.69	487	18.35	0	100.00		
25-30	1100	46.50	1100	46.28	0	100.00		
30-35	950	70.52	950	70.40	0	100.00		
35-40	538	84.12	538	84.06	0	100.00		
40-45	394	94.08	394	94.06	0	100.00		
45-50	144	97.72	144	97.72	0	100.00		
50-60	77	99.67	77	99.67	0	100.00		
60-70	11	99.95	11	99.95	0	100.00		
70-80	2	100.00	2	100.00	0	100.00		
Total	3955	100.00%	3939	99.60%	13	0.33%	3	0.08%

Table B-8. Junction Analysis H11615 vs. H11612 (all data)

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0-5	3822	37.13	1113	56.93	2292	28.93	417	4.05
5-10	3579	71.90	538	84.45	3041	67.32		
10-15	1993	91.26	184	93.86	1809	90.15		
15-20	494	96.06	48	96.32	446	95.78		
20-25	245	98.44	28	97.75	217	98.52		
25-30	106	99.47	24	98.98	82	99.56		
30-35	28	99.74	9	99.44	19	99.80		
35-40	13	99.86	2	99.54	11	99.94		
40-45	6	99.92	4	99.74	2	99.96		
45-50	5	99.97	2	99.85	3	100.00		
>60-70	3	100.00	3	100.00	0	100.00		
Total	10294	100.00%	1955	18.99%	7922	76.96%	417	4.05%

Table B-9. Junction Analysis H11615 vs. H11613 (all data)

Depth Difference Range (cm)	All		Positive		Negative		Zero	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0-5	5191	22.41	2433	17.79	2154	24.25	604	2.61
5-10	5219	44.94	3007	39.77	2212	49.15		
10-15	5327	67.94	3243	63.49	2084	72.61		
15-20	2563	79.00	1640	75.48	923	83.00		
20-25	2191	88.46	1525	86.63	666	90.50		
25-30	1517	95.01	1073	94.47	444	95.50		
30-35	623	97.70	439	97.68	184	97.57		
35-40	259	98.82	162	98.87	97	98.66		
40-45	153	99.48	101	99.61	52	99.25		
45-50	68	99.77	33	99.85	35	99.64		
50-60	46	99.97	18	99.98	28	99.95		
70-80	6	100.00	3	100.00	3	100.00		
Total	23164	100.00%	13677	59.04%	8883	38.35%	604	2.61%

Table B-10. Junction Analysis H11615 vs. H11614 (all data)

Depth	All	Positive	Negative	Zero

	Count	Percent	Count	Percent	Count	Percent	Count	Percent
0-5	5773	30.37	2873	33.09	2212	22.95	688	3.62
5-10	4877	56.03	3094	68.73	1783	41.45		
10-15	3333	73.56	1726	88.61	1607	58.12		
15-20	1288	80.34	442	93.70	846	66.90		
20-25	1208	86.70	260	96.69	948	76.74		
25-30	997	91.94	119	98.06	878	85.85		
30-35	613	95.17	68	98.85	545	91.50		
35-40	362	97.07	27	99.16	335	94.98		
40-45	260	98.44	20	99.39	240	97.47		
45-50	155	99.25	15	99.56	140	98.92		
50-60	118	99.87	22	99.82	96	99.92		
60-70	13	99.94	7	99.90	6	99.98		
70-80	4	99.96	3	99.93	1	99.99		
80-90	5	99.99	4	99.98	1	100.00		
90-100	2	100.00	2	100.00	0	100.00		
Total	19008	100.00%	8682	45.68%	9638	50.50%	688	3.62%

Details of beam-by-beam comparison of 25 selected crossings for the interferometric data are presented in the Separates IV to this report. The crossings for detailed comparison were randomly selected for spatial and temporal distribution over the entire survey area. ***Concur.***

On days when the vessel was heading into steep seas, residual heave and pitch artifacts are seen in the CUBE Depth surface. These artifacts appear as a cross track ripple with a magnitude of approximately 10 cm. Analysis of crossings in these areas, as well as the final depth uncertainties, verify that the data meet the specified accuracies. ***Concur.***

The **GS+** interferometric system provided both bathymetry data as well as sidescan imagery data. The system was operated at a 25-meter range scale for 100% sidescan bottom coverage. Vessel speed was controlled so that there were more than three pings per meter along track for object detection. While the full swath data provided full bottom coverage there were areas where the full swath was not used in the final BAG grids as a result of the total propagated error on the outer swath exceeding IHO Order 1 maximum allowed errors. Also, filters in the **GS+** software were adjusted to reduce the swath when sound speed profile issues caused smiles or frowns that could not be corrected as well as for some very shallow areas where full swath data was not attainable. The swath was cut down to minimize these impacts on the final depths in the BAGs. ***Concur.***

The Klein 3000 sidescan sonar was operated using a 25-meter range scale to achieve 100% bottom coverage. Vessel speed was controlled so that there were more than three pings per meter along track for object detection. The Odom singlebeam was used for bathymetry in a fixed line spacing mode. ***Concur.***

B.2.1 Multibeam Coverage Analysis

The line spacing used for the Lake Borgne debris mapping survey operations was set to achieve 100% sidescan sonar coverage. The resulting bathymetry coverage was comprised from the combination of the soundings from the singlebeam and interferometric sonar. The six 1-meter node BAGs (H11615_1_of_6.bag, H11615_2_of_6, bag H11615_3_of_6.bag, H11615_4_of_6.bag, H11615_5_of_6.bag and H11615_6_of_6.bag; from north to south, respectively) made from six 1-meter node PFM CUBE Surfaces**,** were used for the demonstration of coverage. The **SABER Gapchecker** routine flagged nodes exceeding the allowable gap limit. In addition the entire surface was visually scanned for holidays. Additional survey lines were run to fill any detected holidays. The **SABER Gapchecker** routine was run on the final PFM CUBE Surfaces resulting in the coverage statistics shown in Table B-11.

Table B-11. Coverage Statistics

Grid	Number of Nodes	Nodes with Valid Depth	> 3 Adjacent Empty Nodes	% Coverage
H11615_1_of_6.bag	39,026,739	39,026,739	0	100.00%
H11615_2_of_6.bag	37,909,138	37,909,137	1	99.99%
H11615_3_of_6.bag	39,580,119	39,579,999	54	99.99%
H11615_4_of_6.bag	36,982,363	36,982,363	279	99.99%
H11615_5_of_6.bag	32,396,554	36,396,554	0	100.00%
H11615_6_of_6.bag	26,404,076	26,403,482	151	99.99%

B.2.2 Survey Systems Error Model

The Total Propagated Error (TPE) model that SAIC has adopted had its genesis at the Naval Oceanographic Office (NAVOCEANO) and is based on years of work by Rob Hare and others. The fidelity of any error model is coupled to the applicability of the equations that are used to estimate each of the components that contribute to the overall error that is inherent in each sounding. SAIC's approach to quantifying the TPE is to decompose the cumulative errors into individual components and then further decompose those into a horizontal and vertical component. The model then combines the horizontal and vertical error components to yield an estimate of the system error as a whole. This cumulative system error is the TPE. By using this approach, SAIC can more easily incorporate future error information provided by sensor manufacturers into the model. This also allows SAIC to continuously improve the fidelity of the model as our

understanding of the sensors increases or as more sophisticated sensors are added to a system.

The data needed to drive the error model are captured as parameters taken from the Error Parameters File (EPF), which is an ASCII text file typically created during survey system installation and integration. The parameters are also obtained from values recorded in the GSF file(s) during data collection and processing. While the input units vary, all error values that contribute to the cumulative TPE estimate are converted to meters by the **SABER errors** program or have units of meters from the beginning. The cumulative TPE estimates are separated into a horizontal and vertical component, and are recorded as the Horizontal Error and Vertical Error records for each beam in the GSF file. These error values are at the two sigma or 95% confidence level. The intent is to use these error estimates to gauge the accuracy of each sounding's coordinates and depth.

As part of the Lake Borgne surveys, SAIC developed an error model for the GeoAcoustics GeoSwath 250kHz interferometric sonar with guidance coming from the sonar manufacturer. This error model included an angle uncertainty of 0.02 degrees and a range uncertainty of 0.04 meters for each sounding. This model also included a footprint correction to the sonar related components that contribute to the Total Propagated Error. The resulting error values produced from this model, match both the magnitude and the shape of the error curve over the entire swath that was apparent in the real survey data as determined by SAIC's Accutest procedures. For more information, see the Data Acquisition and Processing Report (SAIC Doc 07-TR-005 dated 18 January 2008)*.

H11615 used a newer version of the **SABER errors** program than was discussed in the Data Acquisition and Processing Report*. The newer version included improvements in how the footprint perturbation of the error model was implemented by correcting for sign inconsistencies. The newer version also included a correction for the GS+ system to not include the affects of acoustic beam steering that the GS+ sonar system does not support. A more robust method for handling non-monotonically increasing depth/sound speed pairs was implemented as well in the newer version of the **SABER errors** program.

DAPR filed with original field reports, and also submitted to Hydrographic Survey Division (HSD) with survey deliverables.

Table B-12 and Table B-13 show the values entered in the EPF used for the **GS+** data. The only value that varied was the Surface Sound Speed Error (SSSV_measurement_error). When the 25-mm Velport SSV sensor was in use a SSSV_measurement_error of 0.20 meters was used for the TPE calculation. Data were not collected on H11615 by the *F/V Lacey Marie* during the period when no SSV sensor was in use. When the 50-mm Velport SSV sensor was in use, a SSSV_measurement_error of 0.12 meters was used for the TPE calculation. All parameter uncertainties in this file are entered at the one sigma level of confidence, but the outputs from the **SABER errors** program are at the two sigma or 95% confidence level. Sign conventions are: X = positive forward, Y = positive starboard, and Z = positive down.

Table B-12. 2007 *F/V Lacey Marie* Error Parameters

Parameter	Value	Units
static_draft	1.20	Meters
draft_error (uncertainty)	0.02	Meters
squat_error (uncertainty)	0.02	Meters
fixed_heave_error_component (uncertainty)	0.05	Meters
perc_swellheave_err_component (uncertainty)	5.00	Percent
roll_measurement_error (uncertainty)	0.02	Degrees
pitch_measurement_error (uncertainty)	0.02	Degrees
heading_measurement_error (uncertainty)	0.02	Degrees
speed_measurement_error (uncertainty)	0.057	meters/second (m/s)
SSSV_measurement_error (uncertainty)	0.20 or 0.12*	meters/second (m/s)
predicted_tide_measurement_error (uncertainty)	0.18	Meters
observed_tide_measurement_error (uncertainty)	0.12	Meters
tide_zone_error (uncertainty)	0.10	Meters
positioning_device_x_offset	-9.914	Meters
positioning_device_xoffset_err (uncertainty)	0.02	Meters
positioning_device_y_offset	-1.00	Meters
positioning_device_yoffset_err (uncertainty)	0.02	Meters
positioning_device_z_offset	-4.842	Meters
positioning_device_zoffset_err (uncertainty)	0.02	Meters
VRU_device_x_offset	-0.17	Meters
VRU_device_x_offset_error (uncertainty)	0.005	Meters
VRU_device_y_offset	0.09	Meters
VRU_device_y_offset_error (uncertainty)	0.005	Meters
VRU_device_z_offset	0.33	Meters
VRU_device_z_offset_error (uncertainty)	0.005	Meters
gps_latency	0.00	milliseconds (msec)
vru_latency	0.00	milliseconds (msec)
gps_latency_error (uncertainty)	1.00	milliseconds (msec)
vru_latency_error (uncertainty)	1.00	milliseconds (msec)
horizontal_navigation_error (uncertainty)	0.75	Meters
svp_measurement_error (uncertainty)	0.75	meters/second (m/s)

*See explanation regarding SSSV_measurement_error in previous paragraph.

Table B-13. SONAR Parameters GeoSwath Plus

Parameter	Value	Units
transducer_device_x_offset	0.00	Meters
transducer_device_xoffset_error (uncertainty)	0.02	Meters
transducer_device_y_offset	0.00	Meters

Parameter	Value	Units
transducer_device_yoffset_error (uncertainty)	0.02	Meters
transducer_device_z_offset	0.00	Meters
transducer_device_zoffset_error (uncertainty)	0.02	Meters
roll_offset_error (uncertainty)	0.05	Degrees
pitch_offset_error (uncertainty)	0.05	Degrees
heading_offset_error (uncertainty)	0.05	Degrees
sounder_latency	0.00	milliseconds (msec)
sounder_latency_error (uncertainty)	1.00	milliseconds (msec)
model_tuning Factor	-10	Unitless
amplitude_phase_transition	1	Unitless
sounder_installation_angle	60	Degrees
sounder_fore_aft_beamwidth	0.50	Degrees
sounder_athwartship_beamwidth	0.02	Degrees
range_sampling_res	0.017	Meters
pulse_length	0.064	Meters

B.3 Corrections to Echo Soundings

Please refer to the Data Acquisition and Processing Report, SAIC Doc 07-TR-005*, delivered on 18 January 2008 for a description of all corrections applied to echo soundings. The only deviations from the corrections described therein, was the updated Total Propagated Errors program as discussed in Section B.2.2. GeoSwath interferometric GSF format data are fully compatible with Caris 6.1 with hot fix 6. ***Concur. *DAPR filed with original field reports, and also submitted to Hydrographic Survey Division (HSD) with survey deliverables.***

B.4 Data Processing

The survey area of H11615 was broken into six separate BAGs because of the large volume of interferometric data. The areas were H11615_1_of_6.bag, H11615_2_of_6.bag, H11615_3_of_6.bag, H11615_4_of_6.bag, H11615_5_of_6.bag, and H11615_6_of_6.bag (from north to south, respectively). All BAGs were made with a 1-meter node resolution. While the depths for this sheet in areas surveyed with the GeoAcoustics GeoSwath 250kHz interferometric sonar were less than 15 meters, which would indicate the need for 0.5-meter node resolution, the consistently flat bottom merits larger node spacing. SAIC discussed this approach with the Atlantic Hydrographic Branch. The 1-meter BAGs serve for both the delivered bathymetric model and the demonstration of coverage for this survey. ***Concur.***

Throughout the survey effort, sidescan data were reviewed and preliminary contacts identified. On a weekly basis newly identified preliminary sidescan contacts were uploaded to a NOAA SharePoint website. The upload of preliminary contacts allowed NOAA to assess progress and review contact densities and size to prioritize debris removal efforts. After final analysis of all available data, a final set of contacts was established for delivery. The list of preliminary contacts delivered via the SharePoint website was compared to the finalized sidescan contact list. Of the 176 preliminary contacts, 16 were disproved with additional data collected during item investigations and 2 more were removed after further data review. Seventy-four additional contacts were created that were not part of the preliminary weekly deliveries.

C. HORIZONTAL AND VERTICAL CONTROL

A subordinate tide station (8761529 Martello Castle, LA) was installed by John Oswald and Associates and Lowe Engineers, under sub-contract to SAIC. Analysis of water levels obtained from tide station 8761529 and NOAA tide station 8747437 Bay Waveland Yacht Club, MS were performed to determine final water level zoning parameters. Zone boundaries were provided by NOAA. Tide station 8761529 was the source of verified water level heights for corrections to soundings. ***Concur.***

The primary means for analyzing the adequacy of zoning was to conduct a zone to zone analysis. In addition, adequacy of zoning was verified by observing zone boundary crossings in the navigated swath editor, SAIC's **MultiView Editor (MVE)**, and examination of the sun illuminated coverage plots at zone boundaries. Crossline comparisons were used to analyze zoning for the influence of wind and weather. Table C-1 presents the water level zoning parameters for H11615 that were developed based on comparisons to NOAA tide station 8747437 and a zone to zone analysis.

Table C-1. Water Level Zoning Parameters Applied on Sheet H11615

Zone	Time Corrector (hours:minutes)	Range Ratio	Reference Station
CGM87	-1:06	1.052	8761529
CGM88	-0:48	1.039	8761529
CGM89	-0:30	1.026	8761529
CGM90	-0:12	1.013	8761529
CGM91	0:00	1.000	8761529

The survey data for sheet H11615 were collected in horizontal datum NAD-83, using geodetic coordinates, while data display and products used the UTM Zone 16 projection. The equipment used for positioning on the *F/V Lacey Marie* and the *M/V Thomas R. Dowell* are listed in Table C-2.

Table C-2. Positioning Equipment Used for Sheet H11615

Vessel	POS/MV Serial No.	Hardware Firmware	Software Firmware	GPS Receivers
F/V Lacey Marie	2575	2.9-7	03.26	Trimble BD950
M/V Thomas R.Dowell	2579	2.9-7	03.26	Trimble BD950

Differential correctors used for H11615 online data were from the U.S. Coast Guard Stations at English Turn, LA and Mobile Point, AL. The differential receiver was set to only receive data from these two corrector stations. There were two occasions where differential correctors were lost for approximately 5 minutes while on line. However in general any loss observed in differential correctors was less than 40 seconds in duration. There were no positional issues noted for times where the differential correctors were lost. This is consistent with what is expected from a POS/MV inertial system, which has the ability to maintain accurate positions for several minutes after loss of differential correctors.

Please refer to the Horizontal and Vertical Control Report SAIC Doc 07-TR-006* for detailed descriptions of the procedures and systems used to attain hydrographic positioning. ***Concur. *HVCR filed with original field reports, and also submitted to Hydrographic Survey Division (HSD) with survey deliverables.***

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

H11615 was compared to the largest scale Raster Charts (11371, 1/80,000 scale, 11364, 1/80,000 scale and 11367, 1/40,000 scale) and to the Electronic Navigational Charts (ENCs) that covered the statement of work area (US4MS10M and US5LA35M). All positions are presented in horizontal datum NAD-83. ***Concur. ENC "US5LA35M" should read "US4LA35M".***

Chart 11367, 1/40,000 scale, 34th Edition 08/01/2006 corrected by NTM through 02/16/2008.

Chart 11371, 1/80,000 scale, 38th Edition 04/01/2007 corrected by NTM through 02/16/2008.

Chart 11364, 1/80,000 scale, 42nd Edition 09/01/2007 corrected by NTM through 02/16/2008.

ENC US4MS10M, 1/80,000 scale, 6th Edition Issued 12/13/2007, Updated 12/28/2007, area common to chart 11371.

ENC US5LA35M, 1/80,000 scale, 14th Edition Issued 05/25/2007, Updated 01/16/2008, area common to chart 11367 and 11371. ***ENC "US5LA35M" should read "US4LA35M".***

The chart comparisons were conducted by using SAIC's **SABER** software to view the largest scale BSB Raster chart with overlaid layers of H11615 data such as the CUBE gridded surface, selected soundings, and features. For comparisons between the two ENCs to the results of this survey, HydroService's **dKart Inspector** was used in conjunction with **SABER**. Results from the comparisons are described below. Recommend reconstruction of the common areas of all charts using data from this survey.

Chart 11367, 1/40,000 scale

There were three charted objects that were identified for 200% sidescan coverage with resulting bathymetry on chart 11367. These objects were comprised of a wreck, a snag, and an obstruction. ***Concur.***

The charted dangerous wreck labeled PA in 30° 02' 30.73"N 089° 46' 00.17"W was not found during this survey. Recommend removing the wreck symbol, danger curve and label PA. ***Concur.***

The charted snag labeled Snag in 30° 02' 44.51"N 089° 47' 48.68"W was not found during this survey. Recommend removing the label Snag and snag symbol. ***Concur.***

The charted dangerous obstruction labeled Obstn in 30° 02' 45.50"N 089° 48' 00.00"W was covered with 200% sidescan and resulting singlebeam bathymetry to the inshore limit of safe navigation and was not found during this survey. Recommend removing the danger circle, blue tint and label Obstn. ***Concur.***

The charted dangerous obstruction labeled Obstn PA located in 30° 02' 44.84"N 089° 46' 13.88"W at the entrance to Chef Menteur Pass was not found during this survey. The object was covered with 100% sidescan and resulting singlebeam bathymetry. Recommend removing the danger circle, blue tint and label Obstn PA. ***Concur.***

The charted snag located in 30° 02' 46.48"N 089° 47' 27.78"W and labeled Snag was not found during this survey. The object was covered with 100% sidescan and resulting singlebeam bathymetry. Recommend removing the label Snag and snag symbol. ***Concur.***

The charted jetty extending from 30° 02' 48.79"N 089° 47' 31.74"W to 30° 02' 49.81"N 089° 47' 24.87"W was found to extend from 30° 02' 48.63"N 089° 47' 31.08"W (Feature 82) to 30° 02' 49.56"N 089° 47' 23.53"W (Feature 81). ***Concur.***

The Shoal PA (3 ft rep Mar 2007) in ~~30° 02’ 30” N 089° 46’ 34”W~~ is in depths of 7 feet. Recommend removal of the Shoal PA label. ***Do not concur. The location of the charted shoal is located at 30° 02’ 33”N, 089° 46’ 12”W. No 7 ft shoal exists in this location. Depths in this location exceed 30 feet. Recommend to remove Shoal PA (3 ft rep 2007) from the chart.***

Numerous obstructions were found in the area southeast of the entrance to Chef Menteur Pass in 30° 02’ 41.66”N 089° 46’ 04.26”W. One feature was identified with a height of 1.22 feet in 7.22 feet (Table D-1) in this area.

Table D-1. Features in the Foul Area Southeast of the Entrance to Chef Menteur Pass

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters
	Latitude (N)	Longitude (W)		
17	30° 02’ 38.69”N	089° 46’ 02.82”W	6.00 (1.83)	N/A

There were two obstructions identified as sidescan contacts in this area with numerous smaller objects noted in the review log. Recommend charting a foul area with the following coordinates (see Figure D-1):

30° 02’ 46.86”N 089° 46’ 06.40”W
30° 02’ 45.12”N 089° 46’ 06.42”W
30° 02’ 38.64”N 089° 46’ 04.63”W
30° 02’ 36.46”N 089° 46’ 00.76”W
30° 02’ 46.55”N 089° 46’ 05.49”W

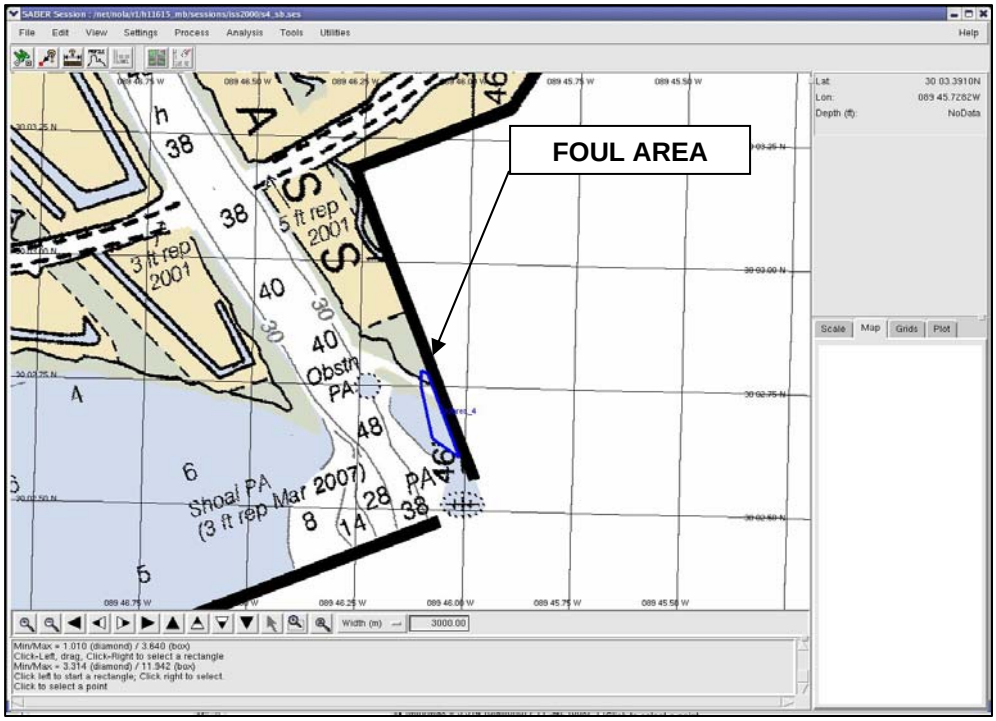


Figure D-1. Foul Area (Blue Polygon) Southeast of the Entrance to Chef Menteur Pass

Concur.

Numerous obstructions were found in the area west of the entrance to Chef Menteur Pass in 30° 02’ 42.37”N 089° 46’ 25.10”W extending west to 30° 02’ 48.43”N 089° 47’ 04.19”W and extending approximately 300 meters offshore. Two features (Table D-2) were identified with heights of 2.04 feet in 6.89 feet (Feature 65) and 3.19 feet in 7.78 feet (Feature 64).

Table D-2. Features in the Foul Area West of the Entrance to Chef Menteur Pass

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters
	Latitude (N)	Longitude (W)		
64*	30° 02’ 41.95”N	089° 46’ 42.41”W	4.59 (1.40)*	N/A
65*	30° 02’ 42.16”N	089° 46’ 36.10”W	4.85 (1.48)*	N/A

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were five obstructions identified as sidescan contacts in this area with many smaller objects noted in the review log. Recommend charting a foul area with the following coordinates (see Figure D-2):
30° 02’ 48.39”N 089° 47’ 04.03”W
30° 02’ 49.62”N 089° 47’ 01.11”W
30° 02’ 48.04”N 089° 46’ 54.38”W
30° 02’ 48.79”N 089° 46’ 52.36”W
30° 02’ 44.28”N 089° 46’ 31.68”W
30° 02’ 38.65”N 089° 46’ 30.56”W
30° 02’ 38.01”N 089° 46’ 50.04”W
30° 02’ 42.18”N 089° 46’ 58.38”W
30° 02’ 45.60”N 089° 47’ 03.42”W

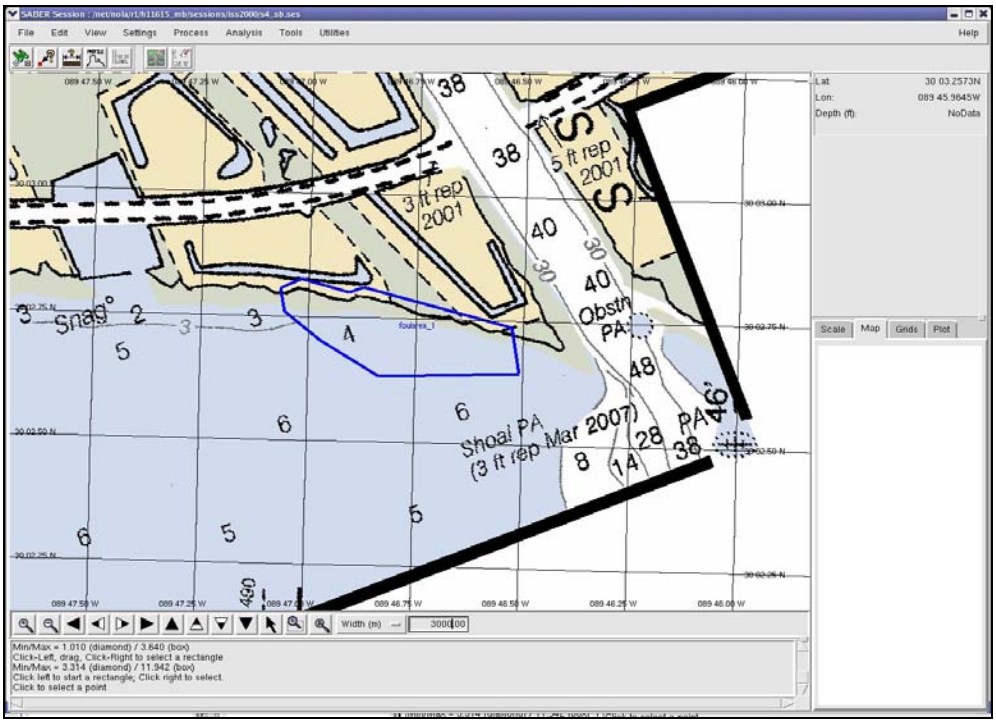


Figure D-2. Foul Area (Blue Polygon) West of the Entrance to Chef Menteur Pass

Concur.

The soundings within the main channel entering Chef Menteur Pass were found to be shoaler than the charted soundings. The charted 48 foot sounding in 30° 02' 39.57"N 089° 46' 13.39"W was surveyed as 41 feet while the charted 38 foot sounding in 30° 02' 30.23"N 089° 46' 06.86"W was surveyed as 32 feet. Soundings throughout the surveyed area covered by chart 11367 deeper than the 6 foot depth curve tended to be 1 to 2 feet deeper than charted. Soundings from the 3 foot depth curve shoreward were generally 3 to 4 feet deeper than charted. The three foot depth curve has migrated north and west and is now located generally along the currently charted coastline. ***Concur with clarification. In addition, the charted 40 foot sounding in Chef Menteur Pass was surveyed as 36 feet. At the entrance to Bayou Thomas, there is a charted 28 foot sounding that was surveyed as 18 feet. Regarding shoreline changes, recommend to obtain RSD aerial imagery.***

Recommend the chart be updated with the results of this survey.

Uncharted Wrecks and Obstructions

No uncharted wrecks were found in H11615. Table D-3 lists other uncharted obstructions found in H11615 that are recommended for charting in chart 11367, 1/40,000 scale.

Table D-3. Uncharted Obstructions in Chart 11367, 1/40,000 scale

Feature Number	Feature Position (NAD83)		Least Depth (Meters)	Uncertainty Meters	Charting Recommendations
	Latitude (N)	Longitude (W)			
1	30° 02’ 29.53”	089° 47’ 22.96”	6.33 (1.93)	N/A	OBSTR Chart sounding and label Obstn ***Concur.***
12	30° 01’ 48.25”	089° 48’ 53.14”	5.87 (1.79)	N/A	OBSTR Chart sounding and label Obstn ***Do not concur. Height insignificant amongst surrounding soundings.***
16	30° 02’ 36.39”	089° 46’ 30.42”	8.82 (2.69)	N/A	OBSTR Chart sounding and label Obstn ***Do not concur. Height insignificant amongst surrounding soundings.***
67*	30° 01’ 06.46”	089° 50’ 34.62”	5.77 (1.76)	N/A	OBSTR Chart sounding and label Obstn ***Concur***
78	30° 01’ 28.35”	089° 50’ 30.35”	Exposed	N/A	OBSTR Chart ruined jetty and label Ruins ***Concur.***

* Found by sidescan sonar only, least depth estimated from sidescan data.

Recommend chart 11367 be updated with the results of this survey.

Chart 11371, 1/80,000 scale

There were 19 charted objects that were identified for 200% sidescan coverage on chart 11371; six wrecks, four obstructions, five piles, two snags, one pipe, and one shoal area.

The charted dangerous wreck labeled PA in 30° 02’ 42.58”N 089° 37’ 44.18”W was not found during this survey. Recommend removing the wreck symbol, blue tint, danger circle and label PA. ***Concur.***

The charted dangerous wreck labeled PA in 30° 01’ 16.80”N 089° 43’ 41.80”W was not found during this survey. Recommend removing the wreck symbol, danger circle and label PA. ***Concur.***

The charted dangerous wreck labeled PA in 29° 59’ 57.11”N 089° 46’ 15.31”W was not found during this survey. Recommend removing the wreck symbol, blue tint, danger circle and label PA. ***Concur.***

The charted dangerous wreck labeled PA in 30° 01’ 55.19”N 089° 45’ 41.86”W was not found during this survey. Recommend removing the wreck symbol, blue tint, danger circle and label PA. ***Concur.***

The charted dangerous wreck labeled PA in 30° 02’ 32.50”N 089° 45’ 59.48”W was not found during this survey. Recommend removing the wreck symbol, blue tint, danger circle and label PA. ***Concur.***

The charted dangerous wreck labeled PA in 30° 00’ 33.24”N 089° 48’ 58.44”W was not found during this survey. Recommend removing the wreck symbol, blue tint, danger circle and label PA. ***Concur.***

The charted dangerous obstruction labeled Obstn PA in 30° 02’ 28.06”N 089° 40’ 12.28”W was not found during this survey. Recommend removing the danger circle, blue tint, and label Obstn PA. ***Concur with clarification. Slight Obstn was found, however insignificant height compared to surrounding depths.***

The charted dangerous obstruction labeled Obstn PA in 30° 00’ 02.13”N 089° 38’ 58.96”W was not found during this survey. Recommend removing the danger circle, blue tint, and label Obstn PA. ***Concur.***

The charted dangerous obstruction labeled Obstn in 30° 02’ 46.73”N 089° 47’ 58.12”W was not found during this survey. The area was surveyed to the limits of safe navigation at the 5 foot curve. Recommend removing the danger circle and label Obstn. ***Concur.***

The charted dangerous obstruction labeled Obstn PA in 29° 57’ 33.67”N 089° 43’ 50.36”W was not found during this survey. Recommend removing the danger circle, blue tint, and label Obstn PA. ***Concur with clarification. Very slight Obstn noted however insignificant amongst surrounding depths.***

The charted submerged piles labeled Subm piles PA in 30° 02’ 47.02”N 089° 40’ 50.83”W was not found during this survey. Recommend removing the pile symbol and label Subm piles PA. ***Concur.***

The charted submerged pile labeled Subm pile PA in 30° 02’ 31.83”N 089° 40’ 12.30”W was not found during this survey. Recommend removing the pile symbol and label Subm pile PA. ***Concur.***

The charted pile labeled Pile PA in 30° 00’ 13.56”N 089° 49’ 00.81”W was not found during this survey. Recommend removing the pile symbol and label Pile PA. ***Concur.***

The charted pile labeled Pile in 29° 58’ 28.69”N 089° 48’ 10.54”W was not found during this survey. Recommend removing the pile symbol and label Pile. ***Concur.***

The charted pile labeled Pile PA in 29° 56’ 51.45”N 089° 49’ 13.76”W was not found during this survey. Recommend removing the pile symbol and label Pile PA. ***Concur.***

The charted snags labeled Snags in 30° 02’ 45.85”N 089° 47’ 46.65”W were not found during this survey. Recommend removing the snag symbol and label Snags. ***Concur.***

The charted snag labeled Snag in 29° 56’ 07.57”N 089° 48’ 53.73”W was not found during this survey. The object is also within a foul area with numerous obstructions (see description of foul area east of Martello Castle). Recommend removing the snag symbol and label Snag. ***Concur.***

The charted submerged pipe labeled Subm pipe PA in 30° 02’ 36.55”N 089° 40’ 47.98”W was not found during this survey. Recommend removing the pipe symbol and label Subm pipe PA. ***Concur.***

The charted 3 foot sounding with blue tint and 3 foot curve in 30° 00’ 02.35”N 089° 49’ 55.47”W was covered with 200% sidescan and nearly 200% multibeam. There are two small mounds in the area. The shoalest mound has a CUBE depth of 6 feet (1.89 meters, 0.329 meter uncertainty) in 30° 00’ 00.10”N 089° 49’ 56.59”W. Recommend removing the 3 foot sounding, blue tint and depth curve. ***Concur with clarification. Spot soundings will be taken from the interferometric data set to disprove the 3 foot charted shoal.***

The charted pile labeled Pile PA in 29° 56’ 09.67”N 089° 49’ 13.21”W was not found during this survey. This charted object was covered with 100% sidescan and resulting singlebeam bathymetry. The object is also within a foul area with numerous obstructions (see description of foul area east of Martello Castle). Recommend removing the pile symbol and label Pile PA. ***Concur.***

The charted snag labeled Snag in 29° 56’ 23.58”N 089° 49’ 38.66”W was not found during this survey. This charted object was covered with 100% sidescan and resulting singlebeam bathymetry. The object is also within a foul area with numerous obstructions (see description of foul area east of Martello Castle). Recommend removing the snag symbol and label Snag. ***Concur.***

The charted sign labeled Sign in 30° 01’ 56.42”N 089° 44’ 47.02”W was not found during this survey. Recommend removing the sign symbol and label Sign. ***Concur.***

The charted pipe labeled Pipe in 30° 02’ 15.43”N 089° 45’ 09.76”W was not found during this survey. Recommend removing the pipe symbol and label Pipe. ***Concur.***

The charted ruins labeled Ruins at the entrance to Big Star Bayou in 30° 01’ 56.30”N 089° 43’ 04.03”W were not found during this survey. Recommend removing the ruins symbol and label Ruins. ***Concur.***

The charted shoal labeled Shl PA (3 ft rep 2007) and arrow in 30° 02’ 34.36”N 089° 46’ 11.77”W was not found during this survey. Survey depths in this area ranged from 10 to 38 feet. Recommend removing the label Shl PA (3 ft rep 2007) and arrow. ***Concur.***

The charted landmark labeled MARTELLO CASTLE in 29° 56’ 44.95”N 089° 50’ 06.87”W is now in ruins recommend charting a ruins symbol in this position and label MARTELLO CASTLE (ruins). ***Concur.***

An uncharted, exposed pipeline was found during this survey. The pipeline starts at Feature 85 in 29° 58’ 19.20”N 089° 37’ 23.75”W and ends at a platform, Feature 51, in 29° 59’ 14.22”N 089° 39’ 30.77”W. Intermediate points along the pipeline are marked as Features 26 and 27. Feature 26 (29° 58’ 36.36”N 089° 38’ 01.91”W) marks where the pipeline is suspended approximately 4 feet above the bottom resulting in a least depth of 6.13 (1.87 meters, 0.329 meter uncertainty). Feature 27 (29° 58’ 42.68”N 089° 38’ 15.80”W) marks where the pipeline is suspended approximately 2 feet above the bottom resulting in a least depth of 9.09 (2.77 meters, 0.329 meter uncertainty). Recommend charting a 6 foot sounding, danger circle, blue tint, and label Obstn in 29° 58’ 36.36”N 089° 38’ 01.91”W ***(concur – this feature was submitted in DtoN Report 6 and is already charted)*** and a 9 foot sounding and label Obstn in 29° 58’ 42.68”N 089° 38’ 15.80”W ***(do not concur – least depth insignificant compared to surrounding depths and nearby obstruction)***. Also recommend charting an exposed pipeline in:

29° 58’ 19.20”N 089° 37’ 23.75”W (Feature 85) ***Concur.***
29° 58’ 36.36”N 089° 38’ 01.91”W (Feature 26) ***Concur.***
29° 58’ 42.68”N 089° 38’ 15.80”W (Feature 27) ***Concur.***
29° 59’ 14.22”N 089° 39’ 30.77”W (Feature 51) ***Concur.***

Also chart Obstn (LD=6.8 ft) in close proximity to discovered platforms at the following location: *29° 59’ 15.13”N 089° 39’ 32.53”W.*

Two uncharted platforms were present in 30° 01’ 37.69”N 089° 42’ 11.80”W (Feature 35) and 30° 01’ 38.01”N 089° 42’ 11.36”W (Feature 36). Recommend charting a platform symbol in 30° 01’ 37.69”N 089° 42’ 11.80”W and label Platforms. ***Concur.***

Four uncharted platforms were present in 30° 02’ 43.33”N 089° 41’ 10.91”W (Feature 38), 30° 02’ 43.24”N 089° 41’ 12.33”W (Feature 39), 30° 02’ 42.73”N 089° 41’ 12.40”W (Feature 40), and 30° 02’ 42.71”N 089° 41’ 10.82”W (Feature 41). Recommend charting a platform symbol in 30° 02’ 43.33”N 089° 41’ 10.91”W and label Platforms. ***Concur.***

Two uncharted platforms were present in 30° 02’ 13.86”N 089° 41’ 22.66”W (Feature 42), and 30° 02’ 13.83”N 089° 41’ 23.79”W (Feature 43). Recommend charting a platform symbol in 30° 02’ 13.86”N 089° 41’ 22.66”W and label Platforms. ***Concur.***

Three uncharted platforms were present in 29° 59’ 14.48”N 089° 39’ 32.22”W (Feature 49), 29° 59’ 14.96”N 089° 39’ 31.66”W (Feature 50), and 29° 59’ 14.22”N 089° 39’

30.77”W (Feature 51). Recommend charting a platform symbol in 29° 59’ 14.48”N 089° 39’ 32.22”W and label Platforms. ***Concur.***

Three uncharted platforms were present in 30° 00’ 41.12”N 089° 43’ 05.59”W (Feature 52), 30° 00’ 42.46”N 089° 43’ 03.25”W (Feature 53), and 30° 00’ 41.14”N 089° 43’ 02.76”W (Feature 60). Recommend charting a platform symbol in 30° 00’ 41.12”N 089° 43’ 05.59”W and label Platforms. ***Concur.***

An uncharted platform was present in 30° 00’ 15.20”N 089° 42’ 45.41”W (Feature 54). Recommend charting a platform symbol in 30° 00’ 15.20”N 089° 42’ 45.41”W and label Platform. ***Concur.***

Three uncharted platforms were present in 30° 01’ 31.13”N 089° 42’ 12.77”W (Feature 55), 30° 01’ 29.82”N 089° 42’ 13.15”W (Feature 58), and 30° 01’ 29.79”N 089° 42’ 12.34”W (Feature 59). Recommend charting a platform symbol in 30° 01’ 31.13”N 089° 42’ 12.77”W and label Platforms. ***Concur.***

The charted jetty extending from 30° 02’ 49.84”N 089° 47’ 31.84”W to 30° 02’ 50.58”N 089° 47’ 25.26”W was found to extend from 30° 02’ 48.63”N 089° 47’ 31.08”W (Feature 82) to 30° 02’ 49.56”N 089° 47’ 23.53”W (Feature 81). ***Concur.***

Uncharted piles were located in 29° 59’ 35.81”N 089° 51’ 17.22”W (Feature 76) and 29° 59’ 34.37”N 089° 51’ 17.24”W (Feature 77). Recommend charting a pile symbol in 29° 59’ 35.81”N 089° 51’ 17.22”W and 29° 59’ 34.37”N 089° 51’ 17.24”W and label Piles. ***Concur.***

Uncharted piles were located in 29° 59’ 58.45”N 089° 51’ 26.51”W (Feature 83) and 29° 59’ 53.13”N 089° 51’ 25.38”W (Feature 84). Recommend charting a pile symbol in 29° 59’ 58.45”N 089° 51’ 26.51”W and 29° 59’ 53.13”N 089° 51’ 25.38”W and label Piles. ***Concur.***

An uncharted rock jetty with ruined pier was located in 30° 01’ 28.35”N 089° 50’ 30.35”W (Feature 78). Recommend charting a ruined jetty in 30° 01’ 28.35”N 089° 50’ 30.35”W and label Ruins. ***Concur.***

A yellow special purpose buoy was located in 29° 57’ 09.61”N 089° 38’ 20.93”W (Feature 86). The buoy is located near the charted exposed pipeline in 29° 57’ 09.19”N 089° 38’ 20.03”W. This is the only location where the pipeline is exposed within H11615. Recommend charting a buoy symbol in 29° 57’ 09.61”N 089° 38’ 20.93”W and label Y (priv). ***Concur.***

Two yellow special purpose buoys were located in 29° 56’ 06.36”N 089° 38’ 36.48”W (Feature 37) and 29° 56’ 43.24”N 089° 37’ 53.79”W (Feature 87). There was no indication of a pipeline between these. Recommend charting buoy symbols in 29° 56’

06.36”N 089° 38’ 36.48”W and 29° 56’ 43.24”N 089° 37’ 53.79”W label Y (priv). ***Concur.***

The charted depths at the entrance to Chef Menteur Pass in 30° 02’ 37.60”N 089° 46’ 12.64”W agree with the survey depth. ***Do not concur. There is a charted 23 foot sounding which was surveyed as 20 feet. Supersede charting soundings with the results of this survey.***

Numerous obstructions were found during this survey in the area extending southeast from the east side of the entrance to Chef Menteur Pass in 30° 02’ 47.13”N 089° 46’ 06.04”W to the charted Sign in 30° 01’ 56.42”N 089° 44’ 47.02”W and extending approximately 330 meters offshore. Seven features (Table D-4) were identified with heights of 0.92 feet in 5.97 feet; Feature 5; to 2.72 feet in 6.59 feet; Feature 79.

Table D-4. Features in the Foul Area Southeast of the Entrance to Chef Menteur Pass

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters
	Latitude (N)	Longitude (W)		
5	30° 02’ 11.01”	089° 44’ 59.99”	5.05 (1.54)	N/A
6	30° 02’ 18.58”	089° 45’ 11.81”	3.57 (1.09)	N/A
8	30° 02’ 43.50”	089° 46’ 02.02”	3.97 (1.21)	N/A
17	30° 02’ 38.69”	089° 46’ 02.82”	6.00 (1.83)	N/A
72*	30° 02’ 28.19”	089° 45’ 38.05”	4.72 (1.44)*	N/A
73*	30° 02’ 34.78”	089° 45’ 55.02”	4.42 (1.35)*	N/A
79*	30° 02’ 40.55”	089° 45’ 56.85”	3.87 (1.18)*	N/A

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were fourteen obstructions identified as sidescan contacts in this area with many smaller objects noted in the review log. Recommend charting a foul area with the following coordinates (see Figure D-3):

30° 02’ 46.86”N 089° 46’ 06.40”W
30° 02’ 42.25”N 089° 45’ 52.43”W
30° 02’ 36.43”N 089° 45’ 43.01”W
30° 02’ 30.10”N 089° 45’ 36.64”W
30° 02’ 24.85”N 089° 45’ 22.77”W
30° 02’ 18.45”N 089° 45’ 07.02”W
30° 02’ 12.96”N 089° 44’ 58.20”W
30° 02’ 06.09”N 089° 44’ 51.17”W
30° 01’ 59.19”N 089° 44’ 47.18”W
30° 01’ 58.44”N 089° 44’ 48.44”W
30° 02’ 00.85”N 089° 44’ 54.49”W
30° 02’ 00.67”N 089° 44’ 59.02”W
30° 02’ 15.34”N 089° 45’ 26.86”W
30° 02’ 25.51”N 089° 45’ 42.28”W
30° 02’ 32.30”N 089° 45’ 52.96”W

30° 02’ 38.64”N 089° 46’ 04.63”W
30° 02’ 45.12”N 089° 46’ 06.42”W

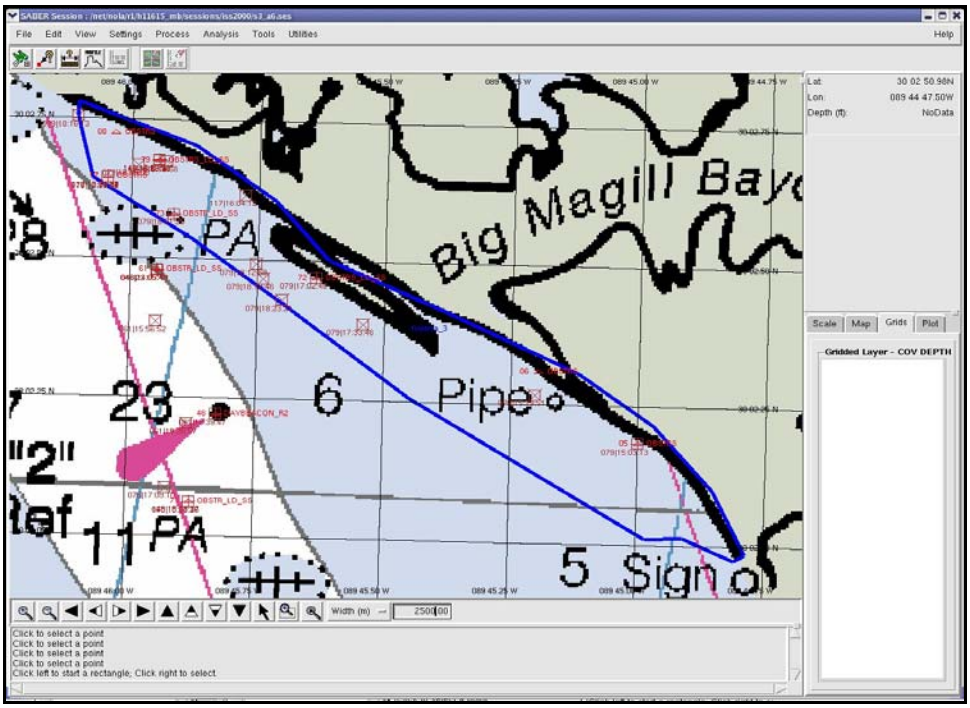


Figure D-3. Foul Area (Blue Polygon) Southeast of the Entrance to Chef Menteur Pass

Concur. Chart foul area.

Numerous obstructions were found during this survey in the area extending from the west side of the entrance to Chef Menteur Pass in 30° 02’ 42.37”N 089° 46’ 25.10”W to 30° 02’ 48.43”N 089° 47’ 04.19”W and extending approximately 300 meters offshore. Two features (Table D-5) were identified with heights of 2.04 feet in 6.89 feet; Feature 65; and 3.19 feet in 7.78 feet; Feature 64.

Table D-5. Features in the Foul Area West of the Entrance to Chef Menteur Pass

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters
	Latitude (N)	Longitude (W)		
64*	30° 02’ 41.95”	089° 46’ 42.41”	4.59 (1.40)*	N/A
65*	30° 02’ 42.16”	089° 46’ 36.10”	4.85 (1.48)*	N/A

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were five obstructions identified as sidescan contacts in this area with many smaller objects noted in the review log. Recommend charting a foul area with the following coordinates (see Figure D-4):

30° 02’ 48.39”N 089° 47’ 04.04”W

30° 02’ 49.62”N 089° 47’ 01.11”W
30° 02’ 48.04”N 089° 46’ 54.38”W
30° 02’ 48.70”N 089° 46’ 52.36”W
30° 02’ 44.29”N 089° 46’ 31.68”W
30° 02’ 38.65”N 089° 46’ 30.56”W
30° 02’ 38.01”N 089° 46’ 50.04”W
30° 02’ 42.18”N 089° 46’ 58.38”W
30° 02’ 45.60”N 089° 47’ 03.42”W

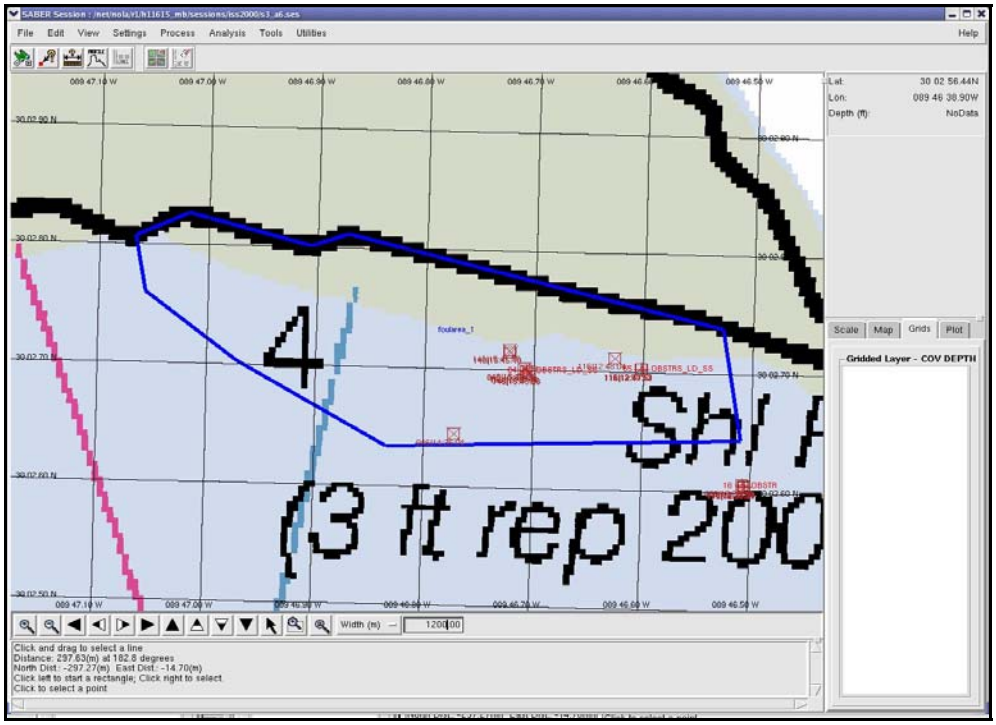


Figure D-4. Foul Area (Blue Polygon) West of the Entrance to Chef Menteur Pass

Concur. Chart foul area.

The charted foul area in 29° 56 17.93”N 089° 49’ 26.87”W does not adequately represent the extents of the foul area. Numerous submerged rocks and obstructions were found during this survey in the area extending east-southeast from the east side of Martello Castle in 29° 56’ 39.65”N 089° 50’ 12.73”W to 29° 56’ 01.95”N 089° 48’ 07.00”W and extending approximately 650 meters offshore. Six features (Table D-6) were identified with heights of 0.59 feet in 7.41 feet; Feature 18; to 3.48 feet in 6.46 feet; Feature 10.

Table D-6. Features in the Foul Area East of Martello Castle

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters
	Latitude (N)	Longitude (W)		
3	29° 56’ 18.06”	089° 49’ 13.90”	6.82 (2.08)	N/A
4	29° 56’ 22.48”	089° 49’ 17.43”	7.25 (2.21)	N/A

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters
	Latitude (N)	Longitude (W)		
10	29° 56’ 26.55”	089° 49’ 45.46”	2.98 (0.91)	N/A
18	29° 56’ 41.54”	089° 50’ 08.30”	6.82 (2.08)	N/A
19	29° 56’ 42.94”	089° 50’ 05.68”	5.77 (1.76)	N/A
74*	29° 56’ 04.33”	089° 48’ 44.27”	3.93 (1.20)*	N/A

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were 16 obstructions identified as sidescan contacts in this area with many smaller objects noted in the review log. Recommend removing the small foul area charted in 29° 56” 18.33”N 089° 49’ 26.75”W and charting a larger foul area with the following coordinates (see Figure D-5):

29° 56’ 37.53”N 089° 50’ 15.96”W
29° 56’ 32.33”N 089° 50’ 05.98”W
29° 56’ 32.41”N 089° 50’ 04.57”W
29° 56’ 24.73”N 089° 49’ 51.82”W
29° 56’ 23.40”N 089° 49’ 46.19”W
29° 56’ 21.50”N 089° 49’ 45.43”W
29° 56’ 14.30”N 089° 49’ 32.31”W
29° 56’ 05.65”N 089° 49’ 13.30”W
29° 56’ 02.08”N 089° 48’ 45.42”W
29° 56’ 00.31”N 089° 48’ 11.95”W
29° 56’ 02.13”N 089° 48’ 06.91”W
29° 56’ 06.28”N 089° 48’ 09.59”W
29° 56’ 12.27”N 089° 48’ 20.96”W
29° 56’ 17.74”N 089° 48’ 29.78”W
29° 56’ 19.51”N 089° 48’ 50.87”W
29° 56’ 29.99”N 089° 49’ 13.66”W
29° 56’ 29.80”N 089° 49’ 23.78”W
29° 56’ 32.15”N 089° 49’ 30.12”W
29° 56’ 34.90”N 089° 49’ 37.71”W
29° 56’ 39.19”N 089° 49’ 44.82”W
29° 56’ 40.27”N 089° 49’ 49.51”W
29° 56’ 43.37”N 089° 49’ 56.41”W
29° 56’ 43.32”N 089° 50’ 01.28”W
29° 56’ 44.65”N 089° 50’ 04.72”W
29° 56’ 42.01”N 089° 50’ 09.13”W

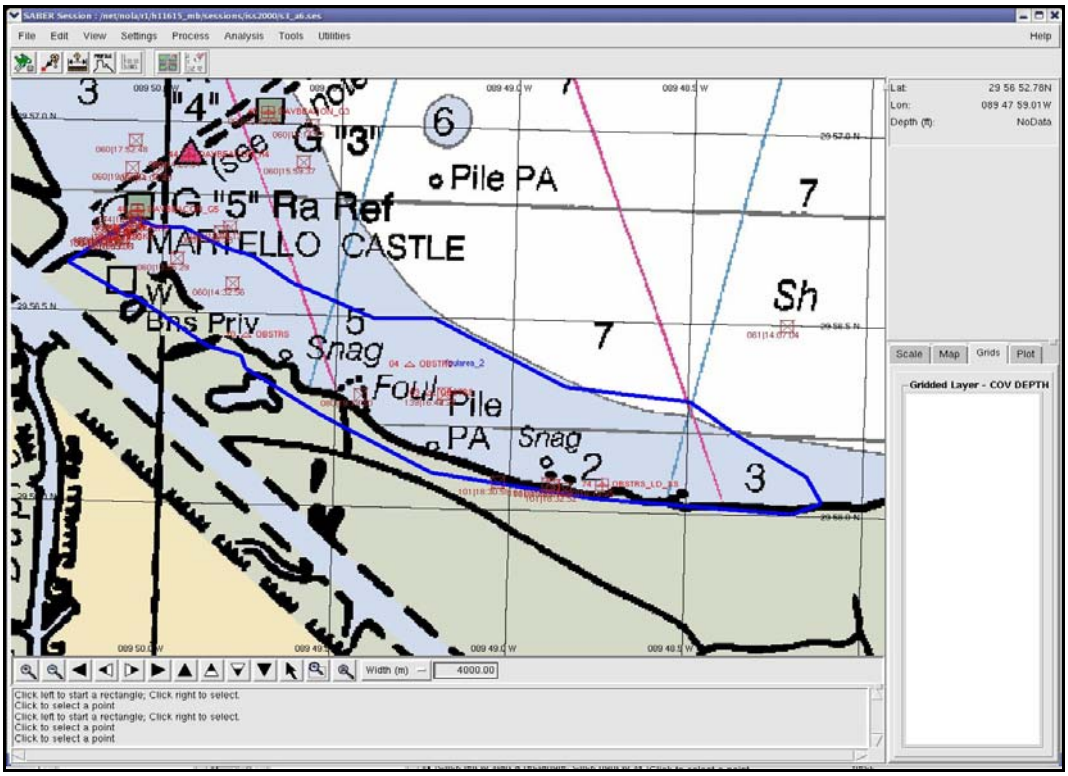


Figure D-5. Foul Area (Blue Polygon) East of Martello Castle

Concur. Chart foul area.

The charted shoreline has receded and is no longer accurate. Soundings were obtained over charted land in the following areas:

- Starting in 30° 02’ 33.65’N 089° 43’ 37.77”W to Alligator Point ending in 30° 01’ 22.00”N 089° 43’ 22.34”W, soundings of 3 and 4 feet were obtained inland of the charted shoreline by much as 250 meters. ***Concur.***
- From the entrance to Bayou Bienvenue in 30° 00’ 09.00”N 089° 51’ 25.30”W to Proctor Point in 29° 56’ 48.73”N 089° 42’ 48.14”W, soundings of 3 to 7 feet were obtained between 50 and 220 meters inland of the charted shoreline. ***Concur.***

The charted 6 foot curve throughout the survey area is closer to shore than charted.

- From Alligator Bend in 30° 03’ 27.81”N 089° 43’ 19.39”W to Alligator Point in 30° 01’ 42.00”N 089° 42’ 55.00”W the 6 foot curve has moved approximately 200 to 400 meters west of its charted position. Survey depths between the 6 foot curve and shoreline are 2 feet deeper than the charted depths in this area. ***Concur.***
- From Alligator Point in 30° 01’ 42.00”N 089° 42’ 55.00”W to Bayou Bienvenue in 30° 00’ 09.00”N 089° 51’ 25.30”W the 6 foot curve has moved approximately 650 to 4000 meters north of its charted position. Survey depths between the 6 foot curve and the shoreline are 2 feet deeper than the charted depths in this area. ***Concur.***
- From Bayou Bienvenue in 30° 00’ 09.00”N 089° 51’ 25.30”W to Martello Castle in 29° 56’ 46.19”N 089° 50’ 07.25”W the 6 foot curve has moved approximately

640 to 1800 meters west of its charted position. Survey depths between the 6 foot curve and shoreline are 2 feet deeper than the charted depths in this area. ***Concur with clarification. Survey depths between the 6 foot curve and shoreline are 2-5 feet deeper than the charted depths in this area.***

- From Martello Castle in 29° 56' 46.19"N 089° 50' 07.25"W to Proctor Point in 29° 56' 48.73"N 089° 42' 48.14"W the 6 foot curve has moved approximately 200 to 1000 meters south of its charted position. Survey depths between the 6 foot curve and shoreline are generally 2 feet deeper than the charted depths in this area. ***Concur with clarification. The 6 foot curve has moved 100-1000 meters south of its charted position. Survey depths between the 6 foot curve and shoreline are 2-5 feet deeper than the charted depths.***
- From Proctor Point in 29° 56' 48.73"N 089° 42' 48.14"W to Flagpole Bayou in 29° 56' 11.34"N 089° 44' 09.61"W the 6 foot curve has moved approximately 650 meters west of its charted position. Survey depths between the 6 foot curve and shoreline are generally 2 feet deeper than the charted depths in this area. ***Concur.***

Uncharted Wrecks and Obstructions

No uncharted wrecks were found in H11615. Table D-7 lists other uncharted obstructions found in H11615 that are recommended for charting in chart 11371, 1/80,000 scale.

Table D-7. Uncharted Obstructions in Chart 11371, 1/80,000 scale

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters	Charting Recommendations
	Latitude (N)	Longitude (W)			
1	30° 02' 29.53"	089° 47' 22.96"	6.33 (1.93)	N/A	OBSTR Chart sounding and label Obstn ***Concur.***
11	30° 01' 50.37"	089° 45' 56.65"	9.44 (2.88)	N/A	OBSTR Chart sounding and label Obstn ***Do not concur. Not significant amongst surrounding soundings. SB LD sounding designated, no further action required.***
12	30° 01' 48.25"	089° 48' 53.14"	5.87 (1.79)	N/A	OBSTR Chart sounding and label Obstn ***Concur.***
14	29° 59' 50.97"	089° 51' 24.92"	4.72 (1.44)	N/A	OBSTR Chart sounding and label Obstn ***Concur.***

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters	Charting Recommendations
	Latitude (N)	Longitude (W)			
15	30° 01’ 37.00”	089° 43’ 02.54”	4.26 (1.30)	N/A	OBSTR Chart sounding and label Obstn ***Do not concur, insignificant amongst surrounding soundings..***
16	30° 02’ 36.39”	089° 46’ 30.42”	8.82 (2.69)	N/A	OBSTR Chart sounding and label Obstn ***Do not concur. Height insignificant amongst surrounding soundings.***
21	30° 02’ 56.88”	089° 40’ 59.47”	7.84 (2.39)	0.329	OBSTR Chart sounding and label Obstn ***Do not concur, feature is insignificant in surrounding soundings.***
22	30° 02’ 35.34”	089° 43’ 04.96”	5.28 (1.61)	0.352	OBSTRS Chart sounding, danger circle, blue tint, and label Obstns ***Concur.***
23	30° 00’ 20.75”	089° 47’ 10.47”	3.93 (1.20)	0.444	OBSTR Chart sounding, danger circle, blue tint, and label Obstns ***Concur.***
25	29° 57’ 51.14”	089° 43’ 53.62”	4.92 (1.50)	0.428	OBSTRS Chart sounding, danger circle, blue tint, and label Obstns **Concur.**
28	29° 57’ 39.92”	089° 44’ 50.30”	6.06 (1.85)	0.490	OBSTR Chart sounding, danger circle, blue tint, and label Obstn ***Concur.***
29	29° 59’ 52.17”	089° 46’ 52.26”	4.85 (1.48)	0.329	OBSTR Chart sounding, danger circle, blue tint, and label Obstn ***Concur.***
30	29° 56’ 14.78”	089° 47’ 51.20”	6.66 (2.03)	0.329	OBSTR Chart sounding, danger circle, blue tint, and label Obstn ***Concur.***

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters	Charting Recommendations
	Latitude (N)	Longitude (W)			
31	29° 57’ 29.16”	089° 44’ 18.92”	4.29 (1.31)	0.329	OBSTR Chart sounding, danger circle, blue tint, and label Obstn ***Concur.***
32	29° 59’ 01.37”	089° 41’ 59.53”	5.51 (1.68)	0.495	OBSTR Chart sounding, danger circle, blue tint, and label Obstn. ***Concur. Already charted because submitted in DtoN Report 6.***
33	29° 57’ 28.99”	089° 43’ 33.24”	6.85 (2.09)	0.329	OBSTR Chart sounding, danger circle, blue tint, and label Obstn ***Do not concur. Insignificant amongst surrounding depths..***
34	30° 02’ 13.92”	089° 41’ 24.00”	2.32	0.329	OBSTRN ***Concur.***
61*	30° 02’ 28.73”	089° 45’ 56.79”	5.97 (1.82)*	N/A	OBSTR Chart sounding, danger circle, blue tint, and label Obstn ***Concur.***
66*	29° 59’ 57.23”	089° 51’ 09.18”	4.65 (1.42)*	N/A	OBSTRS Chart sounding, danger circle, blue tint, and label Obstns ***Concur.***
67*	30° 01’ 06.46”	089° 50’ 34.62”	5.77 (1.76)*	N/A	OBSTR Chart sounding and label Obstn ***Concur.***
68*	30° 00’ 44.92”	089° 50’ 53.08”	5.15 (1.57)*	N/A	OBSTR Chart sounding and label Obstn ***Concur.***
70*	30° 01’ 37.69”	089° 42’ 54.64”	7.38 (2.25)*	N/A	OBSTR Chart sounding danger circle and label Obstn ***Concur.***
71*	30° 02’ 03.69”	089° 45’ 52.44”	12.00 (3.66)*	N/A	OBSTR Chart sounding danger circle and label Obstn ***Concur.***
75	30° 01’ 40.13”	089° 47’ 12.92”	N/A	N/A	SNAG Chart snag symbol and label Snag ***Concur.***
	29° 59’ 15.13”	***089° 39’ 32.53”***	***6.8 ft***		***OBSTN, in close proximity to platforms. Chart sounding and label OBSTN***

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters	Charting Recommendations
	Latitude (N)	Longitude (W)			
	29° 59' 52.40"	***089° 47' 20.91***	***6.0 ft***		***WK Chart previously uncharted WK with sounding and label WK***
	30° 01' 51.93"	***089° 39' 39.21"***	***7.2 ft***		***OBSTN Chart sounding and label OBSTN***

* Found by sidescan sonar only, least depth estimated from sidescan data.

An uncharted ruined platform was found in 29° 59' 28.19"N 089° 39' 22.95" (Feature 20). The ruined platform was submitted as Danger to Navigation Report 1 and subsequently charted on chart 11371. On 01 February 2008, SAIC received an E-mail from Mr. Tim Osborn, Navigation Manager Eastern Gulf of Mexico Region, stating that the ruined platform had been removed. This E-mail included a Site Clearance 07-0031 Verification Report documenting the removal (see Appendix V). The ruined platform is no longer charted. ***Concur.***

There are nine navigational aids charted within H11615 survey bounds and within the chart extents of 11371. There were eight navigation aids found to be in their charted positions and one that was not found. See section D.1.2 for additional information.

The navigation aids that were found during this survey and are on chart 11371 are:
R "4" Ra Ref (Feature 44) ***Concur.***
R "2" Ra Ref (Feature 57) ***Concur.***
G "5" Ra Ref (Feature 48) ***Concur.***
G "3" Ra Ref (Feature 45) ***Concur.***
Fl G 6s 17ft 5M Ra Ref (Feature 56) ***Concur.***
Fl G 2.5s 17ft 5M Ra Ref (Feature 47) ***Concur.***
Fl G 4s 17ft 5M "1" (Feature 62) ***Concur.***
Fl R 4s 17ft 5M "2" (Feature 46) ***Concur.***

Recommend removing both the charted symbol and label "W Bns Priv" that was not found during this survey which is charted in 29° 56' 34.93"N 089° 50' 06.94". ***Concur.***

Recommend chart 11371 be updated with the results of this survey.

Chart 11364, 1/80,000 scale

There were 9 charted objects that were identified for 200% sidescan coverage on chart 11364; one wreck, three piles, one shoal area, two obstructions, and two snags.

The charted dangerous wreck labeled PA in 30° 00' 30.20"N 089° 48' 59.99"W was not found during this survey. Recommend removing the wreck symbol, blue tint, danger circle and label PA. ***Concur.***

The charted pile labeled Pile PA in 30° 00’ 12.45”N 089° 49’ 00.95”W was not found during this survey. Recommend removing the pile symbol and label Pile PA. ***Concur.***

The charted pile labeled Pile in 29° 58’ 28.02”N 089° 48’ 12.00”W was not found during this survey. Recommend removing the pile symbol and label Pile. ***Concur.***

The charted pile labeled Pile PA in 29° 56’ 50.67”N 089° 49’ 13.97”W was not found during this survey. Recommend removing the pile symbol and label Pile PA. ***Concur.***

The charted 3 foot sounding with blue tint and 3 foot depth curve in 30° 00’ 00.73”N 089° 49’ 56.97”W was found to be comprised of two small mounds in the area. The shoalest mound has a CUBE depth of 6 feet (1.89 meters, 0.329 meter uncertainty) in 30° 00’ 00.10”N 089° 49’ 56.59”W. Recommend removing the 3 foot sounding, blue tint and depth curve. ***Concur with clarification. Spot soundings will be taken from the interferometric data set to disprove the 3 foot charted shoal.***

The charted dangerous obstruction labeled Obstn PA in 30° 00’ 00.82”N 089° 38’ 58.77”W was not found during this survey. Recommend removing the danger circle, blue tint, and label Obstn PA. ***Concur.***

The charted dangerous obstruction labeled Obstn PA in 29° 57’ 32.52”N 089° 43’ 50.36”W was not found during this survey. Recommend removing the danger circle, blue tint, and label Obstn PA. ***Concur with clarification. Very slight Obstn noted however insignificant amongst surrounding depths.***

The charted snag labeled Snag in 29° 56’ 05.20”N 089° 48’ 53.79”W was not found during this survey. The object is also within a foul area with numerous obstructions (see description of foul area east of Martello Castle). Recommend removing the snag symbol and label Snag. ***Concur.***

The charted snag labeled Snag in 29° 56’ 21.58”N 089° 49’ 37.77”W was not found during this survey. The object is charted within a foul area with numerous obstructions (see description of foul area east of Martello Castle). Recommend removing the snag symbol and label Snag. ***Concur.***

The charted pile labeled Pile in 29° 56’ 07.53”N 089° 49’ 13.66”W was not found during this survey. The pile is charted within a foul area with numerous obstructions (see description of foul area east of Martello Castle). Recommend removing the pile symbol and label Pile. ***Concur.***

The charted foul area in 29° 56’ 16.46”N 089° 49’ 27.21”W does not adequately represent the extents of the foul area. Numerous submerged rocks and obstructions were found during the survey in the area extending east-southeast from the east side of Martello Castle in 29° 56’ 39.65”N 089° 50’ 12.73”W to 29° 56’ 01.95”N 089° 48’ 07.00”W and extending approximately 650 meters offshore. Six features (Table D-8)

were identified with heights of 0.59 feet in 7.41 feet; Feature 18; to 3.48 feet in 6.46 feet; Feature 10.

Table D-8. Features in the Foul Area East of Martello Castle

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters
	Latitude (N)	Longitude (W)		
3	29° 56’ 18.06”	089° 49’ 13.90”	6.82 (2.08)	N/A
4	29° 56’ 22.48”	089° 49’ 17.43”	7.25 (2.21)	N/A
10	29° 56’ 26.55”	089° 49’ 45.46”	2.98 (0.91)	N/A
18	29° 56’ 41.54”	089° 50’ 08.30”	6.82 (2.08)	N/A
19	29° 56’ 42.94”	089° 50’ 05.68”	5.77 (1.76)	N/A
74*	29° 56’ 04.33”	089° 48’ 44.27”	3.93 (1.20)*	N/A

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were 16 obstructions identified as sidescan contacts in this area with many smaller objects noted in the review log. Recommend removing the small foul area charted in 29° 56’ 16.46”N 089° 49’ 27.21”W and charting a larger foul area with the following coordinates (see Figure D-6):

29° 56’ 37.53”N 089° 50’ 15.96”W
29° 56’ 32.33”N 089° 50’ 05.98”W
29° 56’ 32.41”N 089° 50’ 04.57”W
29° 56’ 24.73”N 089° 49’ 51.82”W
29° 56’ 23.40”N 089° 49’ 46.19”W
29° 56’ 21.50”N 089° 49’ 45.43”W
29° 56’ 14.30”N 089° 49’ 32.31”W
29° 56’ 05.65”N 089° 49’ 13.30”W
29° 56’ 02.08”N 089° 48’ 45.42”W
29° 56’ 00.31”N 089° 48’ 11.95”W
29° 56’ 02.13”N 089° 48’ 06.91”W
29° 56’ 06.28”N 089° 48’ 09.59”W
29° 56’ 12.27”N 089° 48’ 20.96”W
29° 56’ 17.74”N 089° 48’ 29.78”W
29° 56’ 19.51”N 089° 48’ 50.87”W
29° 56’ 29.99”N 089° 49’ 13.66”W
29° 56’ 29.80”N 089° 49’ 23.78”W
29° 56’ 32.15”N 089° 49’ 30.12”W
29° 56’ 34.90”N 089° 49’ 37.71”W
29° 56’ 39.19”N 089° 49’ 44.82”W
29° 56’ 40.27”N 089° 49’ 49.51”W
29° 56’ 43.37”N 089° 49’ 56.41”W
29° 56’ 43.32”N 089° 50’ 01.28”W
29° 56’ 44.65”N 089° 50’ 04.72”W
29° 56’ 42.01”N 089° 50’ 09.13”W

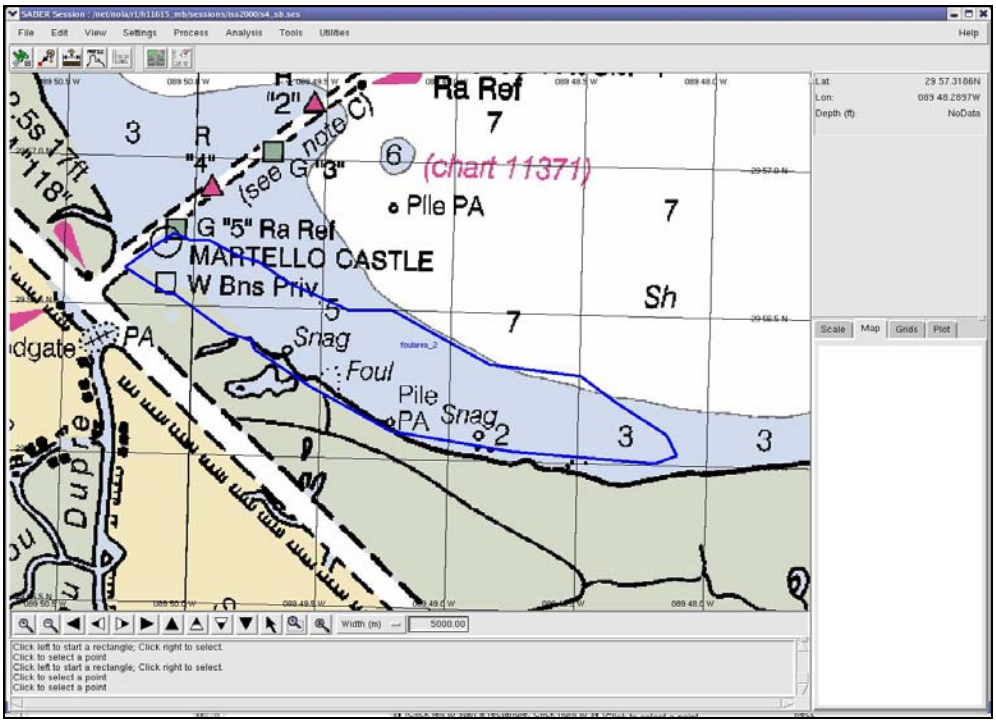


Figure D-6. Foul Area (Blue Polygon) East of Martello Castle

Concur. Chart foul area.

The charted landmark labeled MARTELLO CASTLE in 29° 56’ 42.84”N 089° 50’ 06.57”W is now in ruins. Recommend charting a ruins symbol in this position and label MARTELLO CASTLE (ruins). ***Concur.***

An uncharted, exposed pipeline was found during this survey. The pipeline starts at Feature 85 in 29° 58’ 19.20”N 089° 37’ 23.75”W and ends at a platform, Feature 51, in 29° 59’ 14.22”N 089° 39’ 30.77”W. Intermediate points along the pipeline are marked as Features 26 and 27. Feature 26 (29° 58’ 36.36”N 089° 38’ 01.91”W) marks where the pipeline is suspended approximately 4 feet above the bottom resulting in a least depth of 6.13 (1.87 meters, 0.329 meter uncertainty). Feature 27 (29° 58’ 42.68”N 089° 38’ 15.80”W) marks where the pipeline is suspended approximately 2 feet above the bottom resulting in a least depth of 9.09 (2.77 meters, 0.329 meter uncertainty). Recommend charting a 6 foot sounding, danger circle, blue tint, and label Obstn in 29° 58’ 36.36”N 089° 38’ 01.91”W ***(concur – this feature was submitted in DtoN Report 6 and is already charted)*** and a 9 foot sounding and label Obstn in 29° 58’ 42.68”N 089° 38’ 15.80”W ***(do not concur – least depth insignificant compared to surrounding depths and nearby obstruction)***. Also recommend charting an exposed pipeline in:

29° 58’ 19.20”N 089° 37’ 23.75”W (Feature 85) ***Concur.***
29° 58’ 36.36”N 089° 38’ 01.91”W (Feature 26) ***Concur.***
29° 58’ 42.68”N 089° 38’ 15.80”W (Feature 27) ***Concur.***
29° 59’ 14.22”N 089° 39’ 30.77”W (Feature 51) ***Concur.***

Concur, and also chart Obstn in close proximity to discovered platforms at the following location: *29° 59' 15.13"N 089° 39' 32.53"W*

Three uncharted platforms were present in 29° 59' 14.48"N 089° 39' 32.22"W (Feature 49), 29° 59' 14.96"N 089° 39' 31.66"W (Feature 50), and 29° 59' 14.22"N 089° 39' 30.77"W (Feature 51). Recommend charting a platform symbol in 29° 59' 14.48"N 089° 39' 32.22"W and label Platforms. ***Concur.***

An uncharted platform was present in 30° 00' 15.20"N 089° 42' 45.41"W (Feature 54). Recommend charting a platform symbol in 30° 00' 15.20"N 089° 42' 45.41"W and label Platform. ***Concur.***

Uncharted piles were located in 29° 59' 35.81"N 089° 51' 17.22"W (Feature 76) and 29° 59' 34.37"N 089° 51' 17.24"W (Feature 77). Recommend charting a pile symbol in 29° 59' 35.81"N 089° 51' 17.22"W and 29° 59' 34.37"N 089° 51' 17.24"W and label Piles. ***Concur.***

Uncharted piles were located in 29° 59' 58.45"N 089° 51' 26.51"W (Feature 83) and 29° 59' 53.13"N 089° 51' 25.38"W (Feature 84). Recommend charting a pile symbol in 29° 59' 58.45"N 089° 51' 26.51"W and 29° 59' 53.13"N 089° 51' 25.38"W and label Piles. ***Concur.***

A yellow special purpose buoy was located in 29° 57' 09.61"N 089° 38' 20.93"W (Feature 86). The buoy is located near the charted exposed pipe in 29° 57' 09.19"N 089° 38' 20.03"W. This is the only location where the pipeline is exposed within H11615. Recommend charting a buoy symbol in 29° 57' 09.61"N 089° 38' 20.93"W and label Y (priv). ***Concur.***

Two yellow special purpose buoys were located in 29° 56' 06.36"N 089° 38' 36.48"W (Feature 37) and 29° 56' 43.24"N 089° 37' 53.79"W (Feature 87). There was no indication of a pipeline between these. Recommend charting buoy symbols in 29° 56' 06.36"N 089° 38' 36.48"W and 29° 56' 43.24"N 089° 37' 53.79"W and label Y (priv). ***Concur.***

The charted shoreline has receded and is no longer accurate. Soundings were obtained over charted land in the following area:

- From the entrance to Bayou Bienvenue in 30° 00' 09.00"N 089° 51' 25.30"W to Proctor Point in 29° 56' 48.73"N 089° 42' 48.14"W, soundings of 3 to 7 feet were obtained between 50 and 220 meters inland of the charted shoreline. ***Concur.***

The charted 6 foot depth curve throughout the survey area is closer to shore than charted.

- From Bayou Bienvenue in 30° 00' 09.00"N 089° 51' 25.30"W to Martello Castle in 29° 56' 46.19"N 089° 50' 07.25"W the 6 foot curve has moved approximately 640 to 1800 meters west of its charted position. Survey depths between the 6 foot curve and shoreline are 2 feet deeper than the charted depths in this area. ***Concur***

with clarification. Survey depths between the 6 foot curve and shoreline are 2-5 feet deeper than the charted depths in this area.

- From Martello Castle in 29° 56’ 46.19”N 089° 50’ 07.25”W to Proctor Point in 29° 56’ 48.73”N 089° 42’ 48.14”W the 6 foot curve has moved approximately 200 to 1000 meters south of its charted position. Survey depths between the 6 foot curve and shoreline are 2 feet deeper than the charted depths in this area. ***The 6 foot curve has moved 100-1000 meters south of its charted position. Survey depths between the 6 foot curve and shoreline are 2-5 feet deeper than the charted depths.***
- From Proctor Point in 29° 56’ 48.73”N 089° 42’ 48.14”W to Flagpole Bayou in 29° 56’ 11.34”N 089° 44’ 09.61”W the 6 foot curve has moved approximately 650 meters west of its charted position. Survey depths between the 6 foot curve and shoreline are 2 feet deeper than the charted depths in this area. ***Concur.***

Uncharted Wrecks and Obstructions

No uncharted wrecks were found in H11615. Table D-9 lists other uncharted obstructions found in H11615 that are recommended for charting in chart 11364, 1/80,000 scale.

Table D-9. Uncharted Obstructions in Chart 11364, 1/80,000 scale

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters	Charting Recommendations
	Latitude (N)	Longitude (W)			
14	29° 59’ 50.97”	089° 51’ 24.92”	4.72 (1.44)	N/A	OBSTR Chart sounding and label Obstn ***Concur.***
23	30° 00’ 20.75”	089° 47’ 10.47”	3.93 (1.20)	0.444	OBSTR Chart sounding and label Obstn ***Concur.***
25	29° 57’ 51.14”	089° 43’ 53.62”	4.92 (1.50)	0.428	OBSTRS Chart sounding and label Obstns ***Concur.***
28	29° 57’ 39.92”	089° 44’ 50.30”	6.06 (1.85)	0.490	OBSTR Chart sounding and label Obstn ***Concur.***
29	29° 59’ 52.17”	089° 46’ 52.26”	4.85 (1.48)	0.329	OBSTR Chart sounding and label Obstn ***Concur.***
30	29° 56’ 14.78”	089° 47’ 51.20”	6.65 (2.03)	0.329	OBSTR Chart sounding and label Obstn ***Concur.***
31	29° 57’ 29.16”	089° 44’ 18.92”	4.29 (1.31)	0.329	OBSTR Chart sounding and label Obstn ***Concur.***
32	29° 59’ 01.37”	089° 41’ 59.53”	5.51 (1.68)	0.495	OBSTR Chart sounding and label Obstn ***Concur. Already charted because submitted in DtoN Report 6.***

Feature Number	Feature Position (NAD83)		Least Depth Feet (Meters)	Uncertainty Meters	Charting Recommendations
	Latitude (N)	Longitude (W)			
33	29° 57’ 28.99”	089° 43’ 33.24”	6.85 (2.09)	0.329	OBSTR Chart sounding and label Obstn ***Do not concur. Insignificant amongst surrounding depths.***
66*	29° 59’ 57.23”	089° 51’ 09.18”	4.65 (1.42)*	N/A	OBSTR Chart sounding and label Obstn ***Concur.***

* Found by sidescan sonar only, least depth estimated from sidescan data.

An uncharted ruined platform was found in 29° 59’ 28.19”N 089° 39’ 22.95” (Feature 20). The ruined platform was submitted as Danger to Navigation Report 1 and subsequently charted on chart 11364. On 01 February 2008, SAIC received an E-mail from Mr. Tim Osborn, Navigation Manager Eastern Gulf of Mexico Region, stating that the ruined platform had been removed. This E-mail included a Site Clearance 07-0031 Verification Report documenting the removal (see Appendix V). The ruined platform is no longer charted. ***Concur.***

The six navigational aids charted within H11615 survey bounds and within the chart extends of 11364 were found to be in their charted positions. See section D.1.2 for additional information.

There are seven navigational aids charted within H11615 survey bounds and within the chart extents of 11364. There were six navigation aids found to be in their charted positions and one that was not found. See section D.1.2 for additional information.

The navigation aids that were found during this survey and are on chart 11364 are:
R “4” Ra Ref (Feature 44) ***Concur.***
R “2” Ra Ref (Feature 57) ***Concur.***
G “5” Ra Ref (Feature 48) ***Concur.***
G “3” Ra Ref (Feature 45) ***Concur.***
Fl G 6s 17ft 5M Ra Ref (Feature 56) ***Concur.***
Fl G 4s 17ft 5M “1” (Feature 62) ***Concur.***

Recommend removing both the charted symbol and label “W Bns Priv” that was not found during this survey which is charted in 29° 56’ 34.61”N 089° 50’ 06.38”. ***Concur.***

Recommend chart 11364 be updated with the results of this survey.

ENC US4MS10M, 1/80,000 scale

There were 11 objects that were identified for 200% sidescan coverage on ENC US4MS10M; four wrecks, two obstructions, four obstructions (snags/stump), and one pile (PIPE).

The dangerous submerged wreck in 30° 02’ 42.42”N 089° 37’ 44.40”W was not found during this survey. Recommend removing the dangerous wreck object. ***Concur.***

The dangerous submerged wreck in 30° 01’ 16.56”N 089° 43’ 42.01”W was not found during this survey. Recommend removing the dangerous wreck object. ***Concur.***

The dangerous submerged wreck in 30° 01’ 55.09”N 089° 45’ 42.66”W was not found during this survey. Recommend removing the dangerous wreck object. ***Concur.***

The dangerous submerged wreck in 30° 02’ 32.25”N 089° 45’ 59.90”W was not found during this survey. Recommend removing the dangerous wreck object. ***Concur.***

The submerged obstruction in 30° 02’ 27.64”N 089° 40’ 12.3”W was not found during this survey. Recommend removing the submerged obstruction object. ***Concur.***

The submerged obstruction in 30° 02’ 45.87”N 089° 47’ 58.86”W was not found during this survey. The area was surveyed to the limits of safe navigation at the 5 foot curve. Recommend removing the submerged obstruction object. ***Concur.***

The submerged snag/stump obstruction in 30° 02’ 47.01”N 089° 40’ 51.09”W was not found during this survey. Recommend removing the submerged obstruction object. ***Concur.***

The submerged snag/stump obstruction in 30° 02’ 36.53”N 089° 40’ 48.16”W was not found during this survey. Recommend removing the submerged obstruction object. ***Concur.***

The submerged snag/stump obstruction in 30° 02’ 31.86”N 089° 40’ 12.29”W was not found during this survey. Recommend removing the submerged obstruction object. ***Concur.***

The submerged snag/stump obstruction in 30° 02’ 45.61”N 089° 47’ 47.34”W was not found during this survey. Recommend removing the submerged obstruction object. ***Concur.***

The Pipe in 30° 02’ 15.32”N 089° 45’ 10.35”W was not found during this survey. Recommend removing the pile point object. ***Concur.***

The special purpose beacon in 30° 01’ 56.18”N 089° 44’ 47.58”W was not found during this survey. Recommend removing the special purpose beacon object. ***Concur.***

The submerged ruined crib obstruction in 30° 01’ 55.85”N 089° 43’ 03.81”W was not found during this survey. Recommend removing the submerged obstruction. ***Concur.***

The submerged obstruction in 30° 02’ 44.97”N 089° 46’ 14.92”W was not found during this survey. Recommend removing the submerged obstruction object. ***Concur.***

The shoreline construction, pier (jetty) extending from 30° 02’ 49.95”N 089° 47’ 32.80”W to 30° 02’ 50.60”N 089° 47’ 25.77”W was found in 30° 02’ 48.63”N 089° 47’ 31.08”W (Feature 82) and 30° 02’ 49.56”N 089° 47’ 23.53”W (Feature 81). ***Concur.***

The caution area in 30° 02’ 34.00”N 089° 46’ 12.00”W, noting a 0.9 meters/3 feet shoal reported in 2007 was not found during this survey. Survey depths in this area were from 11.8 to 13.1 meters. Recommend removing the caution area object. ***Concur.***

Two platforms were present in 30° 01’ 37.69”N 089° 42’ 11.80”W (Feature 35) and 30° 01’ 38.01”N 089° 42’ 11.36”W (Feature 36) that are not depicted. Recommend adding two offshore platform objects in 30° 01’ 37.69”N 089° 42’ 11.80”W and 30° 01’ 38.01”N 089° 42’ 11.36”W. ***Concur.***

Four platforms were present in 30° 02’ 43.33”N 089° 41’ 10.91”W (Feature 38), 30° 02’ 43.24”N 089° 41’ 12.33”W (Feature 39), 30° 02’ 42.73”N 089° 41’ 12.40”W (Feature 40), and 30° 02’ 42.71”N 089° 41’ 10.82”W (Feature 41) that are not depicted. Recommend adding four offshore platform objects in 30° 02’ 43.33”N 089° 41’ 10.91”W, 30° 02’ 43.24”N 089° 41’ 12.33”W, 30° 02’ 42.73”N 089° 41’ 12.40”W, and 30° 02’ 42.71”N 089° 41’ 10.82”W. ***Concur.***

Two platforms were present in 30° 02’ 13.86”N 089° 41’ 22.66”W (Feature 42), and 30° 02’ 13.83”N 089° 41’ 23.79”W (Feature 43) that are not depicted. Recommend adding two offshore platform objects in 30° 02’ 13.86”N 089° 41’ 22.66”W and 30° 02’ 13.83”N 089° 41’ 23.79”W. ***Concur.***

Three platforms were present in 30° 01’ 31.13”N 089° 42’ 12.77”W (Feature 55), 30° 01’ 29.82”N 089° 42’ 13.15”W (Feature 58), and 30° 01’ 29.79”N 089° 42’ 12.34”W (Feature 59) that are not depicted. Recommend adding three offshore platform objects in 30° 01’ 31.13”N 089° 42’ 12.77”W, 30° 01’ 29.82”N 089° 42’ 13.15”W, and 30° 01’ 29.79”N 089° 42’ 12.34”W. ***Concur.***

A rock jetty with ruined pier was located in 30° 01’ 28.35”N 089° 50’ 30.35”W (Feature 78) is not depicted. Recommend adding a shoreline construction object, pier (jetty), with a condition of ruined in 30° 01’ 28.35”N 089° 50’ 30.35”W. ***Concur.***

The depths depicted at the entrance to Chef Menteur Pass in 30° 02’ 37.60”N 089° 46’ 12.64”W agree with the survey depth. ***Do not concur, depths should be superseded with the results from this survey.***

Numerous obstructions were found during this survey in the area extending southeast from the east side of the entrance to Chef Menteur Pass in 30° 02’ 47.13”N 089° 46’ 06.04”W to the sign in 30° 01’ 56.42”N 089° 44’ 47.02”W and extending approximately 330 meters offshore. Seven features (Table D-10) were identified with heights of 0.28 meters in 1.82 meters; Feature 5; to 0.83 meters in 2.01 meters; Feature 79.

Table D-10. Features in the Foul Area Southeast of the Entrance to Chef Menteur Pass

Feature Number	Feature Position (NAD83)		Least Depth Meters	Uncertainty Meters
	Latitude (N)	Longitude (W)		
5	30° 02’ 11.01”	089° 44’ 59.99”	1.54	N/A
6	30° 02’ 18.58”	089° 45’ 11.81”	1.09	N/A
8	30° 02’ 43.50”	089° 46’ 02.02”	1.21	N/A
17	30° 02’ 38.69”	089° 46’ 02.82”	1.83	N/A
72*	30° 02’ 28.19”	089° 45’ 38.05”	1.44*	N/A
73*	30° 02’ 34.78”	089° 45’ 55.02”	1.35*	N/A
79*	30° 02’ 40.55”	089° 45’ 56.85”	1.18*	N/A

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were fourteen obstructions identified as sidescan contacts in this area with many smaller objects noted in the review log. Recommend adding a foul area object with the following coordinates (see Figure D-7):

30° 02’ 46.86”N 089° 46’ 06.40”W
30° 02’ 42.25”N 089° 45’ 52.43”W
30° 02’ 36.43”N 089° 45’ 43.01”W
30° 02’ 30.10”N 089° 45’ 36.64”W
30° 02’ 24.85”N 089° 45’ 22.77”W
30° 02’ 18.45”N 089° 45’ 07.02”W
30° 02’ 12.96”N 089° 44’ 58.20”W
30° 02’ 06.09”N 089° 44’ 51.17”W
30° 01’ 59.19”N 089° 44’ 47.18”W
30° 01’ 58.44”N 089° 44’ 48.44”W
30° 02’ 00.85”N 089° 44’ 54.49”W
30° 02’ 00.67”N 089° 44’ 59.02”W
30° 02’ 15.34”N 089° 45’ 26.86”W
30° 02’ 25.51”N 089° 45’ 42.28”W
30° 02’ 32.30”N 089° 45’ 52.96”W
30° 02’ 38.64”N 089° 46’ 04.63”W
30° 02’ 45.12”N 089° 46’ 06.42”W

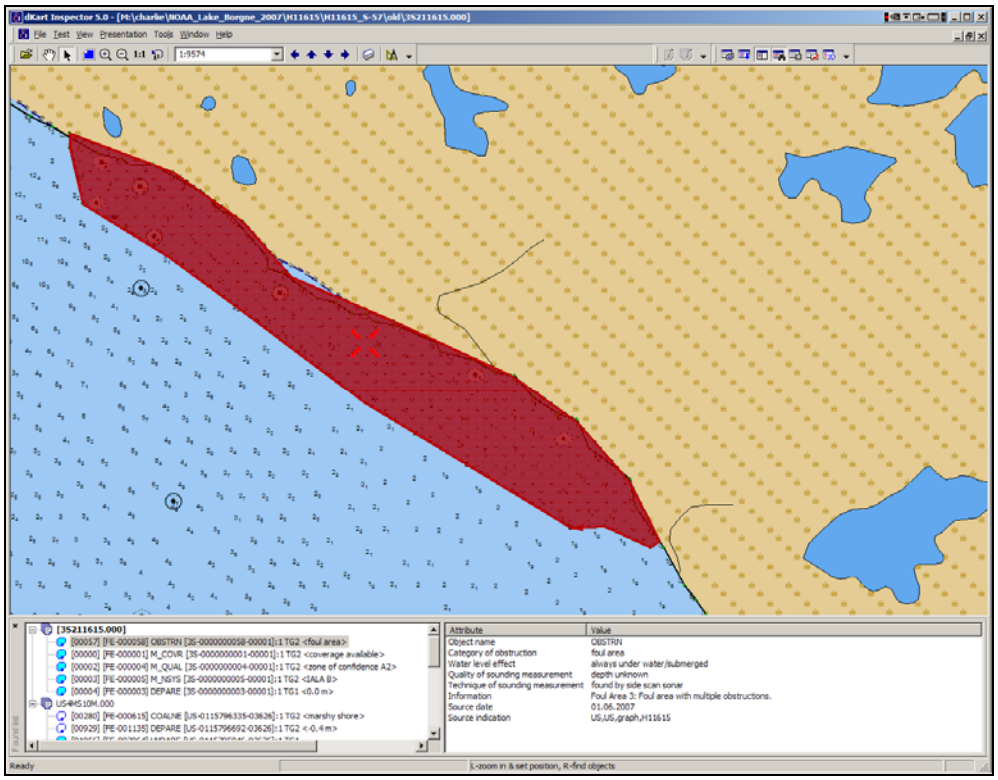


Figure D-7. Foul Area Southeast of the Entrance to Chef Menteur Pass

Concur.

Numerous obstructions were found during this survey in the area extending from the west side of the entrance to Chef Menteur Pass in 30° 02’ 42.37”N 089° 46’ 25.10”W to 30° 02’ 48.43”N 089° 47’ 04.19”W and extending approximately 300 meters offshore. Two features (Table D-11) were identified with heights of 0.62 meters in 2.10 meters; Feature 65; and 0.97 meters in 2.37 meters; Feature 64.

Table D-11. Features in the Foul Area West of the Entrance to Chef Menteur Pass

Feature Number	Feature Position (NAD83)		Least Depth Meters	Uncertainty Meters
	Latitude (N)	Longitude (W)		
64*	30° 02’ 41.95”	089° 46’ 42.41”	1.40*	N/A
65*	30° 02’ 42.16”	089° 46’ 36.10”	1.48*	N/A

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were five obstructions identified as sidescan contacts in this area with many smaller objects noted in the review log. Recommend adding a foul area object with the following coordinates (see Figure D-8):

30° 02’ 48.39”N 089° 47’ 04.04”W
30° 02’ 49.62”N 089° 47’ 01.11”W
30° 02’ 48.04”N 089° 46’ 54.38”W
30° 02’ 48.70”N 089° 46’ 52.36”W

30° 02’ 44.29”N 089° 46’ 31.68”W
30° 02’ 38.65”N 089° 46’ 30.56”W
30° 02’ 38.01”N 089° 46’ 50.04”W
30° 02’ 42.18”N 089° 46’ 58.38”W
30° 02’ 45.60”N 089° 47’ 03.42”W

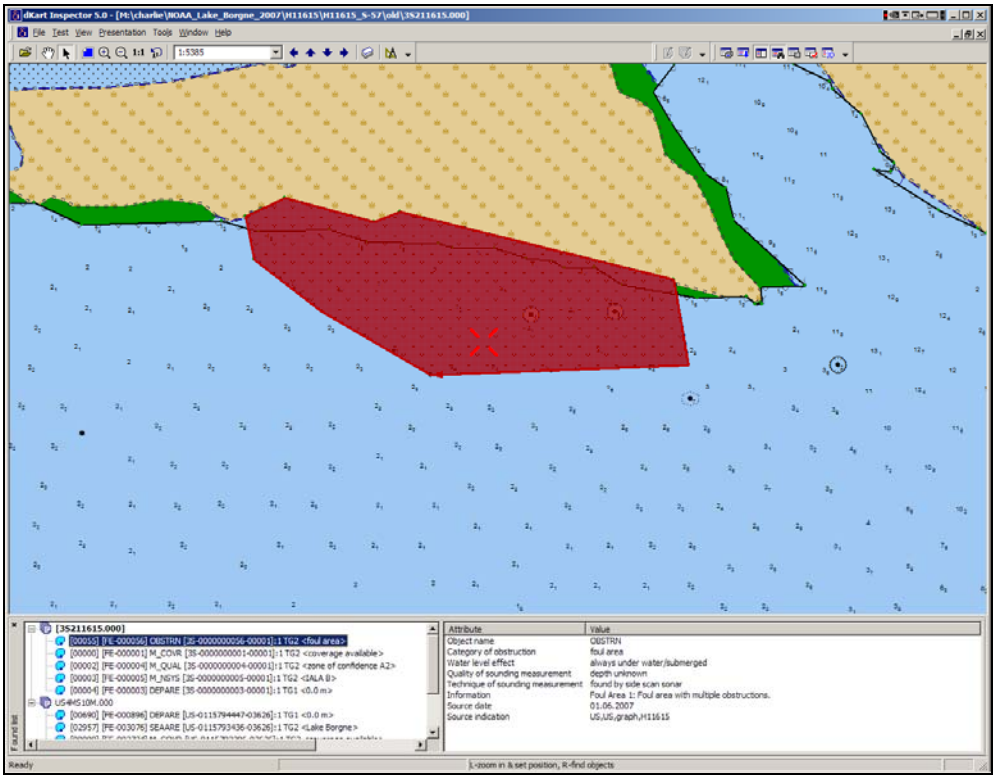


Figure D-8. Foul Area West of the Entrance to Chef Menteur Pass

Concur.

The depicted shoreline has receded and is no longer accurate. Soundings were obtained over depicted land in the following area:

- Starting in 30° 02’ 33.65’N 089° 43’ 37.77”W to Alligator Point ending in 30° 01’ 22.00”N 089° 43’ 22.34”W, soundings of 0.9 to 2.8 meters were obtained inland of the depicted shoreline by as much as 250 meters. ***Concur.***

The 1.8 meter curve throughout the survey area is closer to shore than depicted.

- From Alligator Bend in 30° 03’ 27.81”N 089° 43’ 19.39”W to Alligator Point in 30° 01’ 42.00”N 089° 42’ 55.00”W the 1.8 meter curve has moved approximately 200 to 400 meters west of its depicted position. Survey depths between the 1.8 meter curve and shoreline are 0.5 meters deeper than the depicted depths in this area. ***Concur.***
- From Alligator Point in 30° 01’ 42.00”N 089° 42’ 55.00”W to 30° 01’ 19.23”N 089° 43’ 46.15”W the 1.8 meter curve has moved approximately 650 to 1000 meters north of its depicted position. Survey depths between the 1.8 meter curve

and the shoreline are generally 0.5 meters deeper than the depicted depths in this area. ***Concur.***

Other Wrecks and Obstructions not depicted on ENC US4MS10M

No wrecks were found in H11615. Table D-12 lists other obstructions found in H11615 that should be depicted on ENC US4MS10M, 1/80,000 scale.

Table D-12. Other Objects Found in H11615 not on ENC US4MS10M

Feature Number	Feature Position (NAD83)		Least Depth Meters	Uncertainty Meters	Object
	Latitude (N)	Longitude (W)			
1	30° 02’ 29.53”	089° 47’ 22.96”	1.93	N/A	OBSTRN ***Concur.***
2	30° 02’ 26.37”	089° 49’ 04.29”	2.28	N/A	OBSTRN ***Do not concur, height insignificant amongst surrounding depths.***
7	30° 01 36.61”	089° 44’ 22.81”	1.24	N/A	OBSTRN ***Do not concur, height insignificant amongst surrounding depths. LD sounding designated, no further action required.***
11	30° 01’ 50.37”	089° 45’ 56.65”	2.88	N/A	OBSTRN ***Do not concur. Not significant amongst surrounding soundings.***
12	30° 01’ 48.25”	089° 48’ 53.14”	1.79	N/A	OBSTRN ***Concur.***
15	30° 01’ 37.00”	089° 43’ 02.54”	1.30	N/A	OBSTRN ***Do not concur, insignificant amongst surrounding soundings.***
16	30° 02’ 36.39”	089° 46’ 30.42”	2.69	N/A	OBSTRN ***Do not concur. Height insignificant amongst surrounding soundings.***
21	30° 02’ 56.88”	089° 40’ 59.47”	2.39	0.329	OBSTRN ***Do not concur, insignificant amongst surrounding depths.***
22	30° 02’ 35.34”	089° 43’ 04.96”	1.61	0.352	OBSTRN ***Concur.***
34	30° 02’ 13.92”	089° 41’ 24.00”	2.32	0.329	OBSTRN ***Concur.***
61*	30° 02’ 28.73”	089° 45’ 56.79”	1.82*	N/A	OBSTRN ***Concur.***

Feature Number	Feature Position (NAD83)		Least Depth Meters	Uncertainty Meters	Object
	Latitude (N)	Longitude (W)			
63*	30° 02’ 38.64”	089° 46’ 19.23”	6.17*	N/A	OBSTRN ***Do not concur. Height insignificant when compared to SB depths from this survey.***
67*	30° 01’ 06.46”	089° 50’ 34.62”	1.76*	N/A	OBSTRN ***Concur.***
69*	30° 01 51.85”	089° 43’ 04.77”	1.94*	N/A	OBSTRN ***Do not concur, insignificant amongst surrounding soundings.***
70*	30° 01’ 37.69”	089° 42’ 54.64”	2.25*	N/A	OBSTRN ***Concur.***
71*	30° 02’ 03.69”	089° 45’ 52.44”	3.66*	N/A	OBSTRN ***Concur.***
75	30° 01’ 40.13”	089° 47’ 12.92”	N/A	N/A	OBSTRN ***Concur.***

*Found by sidescan sonar only, least depth estimated from sidescan data.

The two depicted navigational aids within H11615 survey bounds and within the extents of ENC US4MS10M were found to be near their depicted positions. See section D.1.2 for additional information. ***Concur.***

The navigation aids that were found during this survey and are on ENC US4MS10M are:
Alligator Point Light (Feature 47) ***Concur.***
Chef Menteur Pass light 2 (Feature 46) ***Concur.***

Recommend electronic chart US4MS10M be updated with the results of this survey.

ENC US5LA35M, 1/80,000 scale ***ENC “US5LA35M” should read “US4LA35M”.***

There were 8 objects that were identified for 200% sidescan coverage on ENC US5LA35M; one wreck, two submerged obstructions, three piles, one obstruction (snags/stump) and one shoal area.

The dangerous submerged wreck in 30° 00’ 30.92”N 089° 48’ 59.84”W was not found during this survey. Recommend removing the wreck object. ***Concur.***

The submerged obstruction in 30° 00’ 01.41”N 089° 38’ 58.61”W was not found during this survey. Recommend removing the submerged obstruction object. ***Concur.***

The submerged obstruction in 29° 57’ 32.60”N 089° 43’ 50.60”W was not found during this survey. Recommend removing the obstruction object. ***Concur with clarification. Very slight Obstn noted however insignificant amongst surrounding depths.***

The pile in 30° 00’ 13.00”N 089° 49’ 01.00”W was not found during this survey. Recommend removing the pile object. ***Concur.***

The pile in 29° 58’ 28.28”N 089° 48’ 11.63”W was not found during this survey. Recommend removing the pile object. ***Concur.***

The pile in 29° 56’ 51.00”N 089° 49’ 14.00”W was not found during this survey. Recommend removing the pile object. ***Concur.***

The snag/stump obstruction in 29° 56’ 05.90”N 089° 48’ 52.69”W was not found during this survey. The object is also within a foul area with numerous obstructions (see description of foul area east of Martello Castle). Recommend removing the snag/stump obstruction object. ***Concur.***

The 0.9 meter sounding and 1.8 meter depth curve in 30° 00’ 01.08”N 089° 49’ 56.73”W was covered with 200% sidescan and nearly 200% interferometric bathymetry. There are two small mounds in the area. The shoalest mound has a CUBE depth of 1.89 meters, 0.329 meter uncertainty, in 30° 00’ 00.10”N 089° 49’ 56.59”W. Recommend removing the 0.9 meter sounding and 1.8 meter depth curve. ***Concur with clarification. Spot soundings will be taken from the interferometric data set to disprove the 3 foot charted shoal.***

The pile in 29° 56’ 07.00”N 089° 49’ 14.00”W was not found during this survey. This object was covered with 100% sidescan and resulting singlebeam bathymetry. Recommend removing the pile object. ***Concur.***

The snag/stump obstruction in 29° 56’ 21.98”N 089° 49’ 37.89”W was not found during this survey. This object was covered with 100% sidescan and resulting singlebeam bathymetry. The object is also within a foul area with numerous obstructions (see description of foul area east of Martello Castle). Recommend removing the snag object. ***Concur.***

The caution area object in 30° 00’ 20.79”N 089° 50’ 48.06”W reports 1.5 meters for a depth. Depths from this survey in this location are 2.2 meters. Recommend updating depth information to 2.2 meters. ***Concur.***

The collapsed platform in 29° 59’ 27.66”N 089° 39’ 23.15”W was submitted as Danger to Navigation Report 1 (Feature 20). On 01 February 2008, SAIC received an E-mail from Mr. Tim Osborn, Navigation Manager Eastern Gulf of Mexico Region, stating that the ruined platform had been removed. This E-mail included a Site Clearance 07-0031 Verification Report documenting the removal (see Appendix V). Recommend removing the collapsed platform object. ***Concur.***

The landmark Martello Castle in 29° 56’ 43.33”N 089° 50’ 06.65”W is now in ruins. Recommend updating the object condition to ruined. ***Concur.***

An exposed pipeline was found during this survey that is not depicted. The pipeline starts at Feature 85 in 29° 58’ 19.20”N 089° 37’ 23.75”W and ends at a platform, Feature

51, in 29° 59’ 14.22”N 089° 39’ 30.77”W. Intermediate points along the pipeline are marked as Features 26 and 27. Feature 26 (29° 58’ 36.36”N 089° 38’ 01.91”W) marks where the pipeline is suspended approximately 1.2 meters above the bottom resulting in a least depth of 1.87 meters, 0.329 meter uncertainty. Feature 27 (29° 58’ 42.68”N 089° 38’ 15.80”W) marks where the pipeline is suspended approximately 0.6 meters above the bottom resulting in a least depth of 2.77 meters, 0.329 meter uncertainty. Recommend adding an obstruction object with a least depth of 1.87 meters in 29° 58’ 36.36”N 089° 38’ 01.91”W ***(Concur)*** and adding an obstruction object with a least depth of 2.77 meters in 29° 58’ 42.68”N 089° 38’ 15.80”W ***(Do not concur, insignificant)***. Also recommend adding a pipeline object along the following lines:

29° 58’ 19.20”N 089° 37’ 23.75”W (Feature 85)
29° 58’ 36.36”N 089° 38’ 01.91”W (Feature 26)
29° 58’ 42.68”N 089° 38’ 15.80”W (Feature 27)
29° 59’ 14.22”N 089° 39’ 30.77”W (Feature 51)

Concur, and also chart Obstn in close proximity to discovered platforms at the following location: *29° 59’ 15.13”N 089° 39’ 32.53”W*

Three platforms were present in 29° 59’ 14.48”N 089° 39’ 32.22”W (Feature 49), 29° 59’ 14.96”N 089° 39’ 31.66”W (Feature 50), and 29° 59’ 14.22”N 089° 39’ 30.77”W (Feature 51) that are not depicted. Recommend adding offshore platform objects in 29° 59’ 14.48”N 089° 39’ 32.22”W, 29° 59’ 14.96”N 089° 39’ 31.66”W, and 29° 59’ 14.22”N 089° 39’ 30.77”W. ***Concur.***

Three platforms were present in 30° 00’ 41.12”N 089° 43’ 05.59”W (Feature 52), 30° 00’ 42.46”N 089° 43’ 03.25”W (Feature 53), and 30° 00’ 41.14”N 089° 43’ 02.76”W (Feature 60) that are not depicted. Recommend adding offshore platform objects in 30° 00’ 41.12”N 089° 43’ 05.59”W, 30° 00’ 42.46”N 089° 43’ 03.25”W, and 30° 00’ 41.14”N 089° 43’ 02.76”W. ***Concur.***

A platform was present in 30° 00’ 15.29”N 089° 42’ 42.40”W (Feature 54) that is not depicted. Recommend adding an offshore platform object in 30° 00’ 15.29”N 089° 42’ 42.40”W. ***Concur.***

Piles were located in 29° 59’ 35.81”N 089° 51’ 17.22”W (Feature 76) and 29° 59’ 34.37”N 089° 51’ 17.24”W (Feature 77) that are not depicted. Recommend adding pile objects in 29° 59’ 35.81”N 089° 51’ 17.22”W and 29° 59’ 34.37”N 089° 51’ 17.24”W. ***Concur.***

Piles were located in 29° 59’ 58.45”N 089° 51’ 26.51”W (Feature 83) and 29° 59’ 53.13”N 089° 51’ 25.38”W (Feature 84) that are not depicted. Recommend adding pile objects in 29° 59’ 58.45”N 089° 51’ 26.51”W and 29° 59’ 53.13”N 089° 51’ 25.38”W. ***Concur.***

A yellow special purpose buoy was located in 29° 57’ 09.61”N 089° 38’ 20.93”W (Feature 86). The buoy is located along the exposed pipe in 29° 57’ 09.19”N 089° 38’ 20.03”W. This is the only location where the pipeline is exposed within H11615.

Recommend adding a special purpose buoy object in 29° 57’ 09.61”N 089° 38’ 20.93”W. ***Concur.***

Two yellow special purpose buoys were located in 29° 56’ 06.36”N 089° 38’ 36.48”W (Feature 37) and 29° 56’ 43.24”N 089° 37’ 53.79”W (Feature 87). There was no indication of a pipeline between these. Recommend adding special purpose buoy objects in 29° 56’ 06.36”N 089° 38’ 36.48”W and 29° 56’ 43.24”N 089° 37’ 53.79”W. ***Concur.***

Numerous submerged rocks and obstructions were found during this survey in the area extending east-southeast from the east side of Martello Castle in 29° 56’ 39.65”N 089° 50’ 12.73”W to 29° 56’ 01.95”N 089° 48’ 07.00”W and extending approximately 650 meters offshore. Six features (Table D-13) were identified with heights of 0.19 meters in 2.27 meters; Feature 18; to 1.06 meters in 1.97 meters; Feature 10.

Table D-13. Features in the Foul Area East of Martello Castle

Feature Number	Feature Position (NAD83)		Least Depth Meters	Uncertainty Meters
	Latitude (N)	Longitude (W)		
3	29° 56’ 18.06”	089° 49’ 13.90”	2.08	N/A
4	29° 56’ 22.48”	089° 49’ 17.43”	2.21	N/A
10	29° 56’ 26.55”	089° 49’ 45.46”	0.91	N/A
18	29° 56’ 41.54”	089° 50’ 08.30”	2.08	N/A
19	29° 56’ 42.94”	089° 50’ 05.68”	1.76	N/A
74*	29° 56’ 04.33”	089° 48’ 44.27”	1.20*	N/A

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were 16 obstructions identified as sidescan contacts in this area with many smaller objects noted in the review log. Recommend removing the small foul area in 29° 56” 18.33”N 089° 49’ 26.75”W and adding a larger foul area with the following coordinates (see Figure D-9):

29° 56’ 37.53”N 089° 50’ 15.96”W
29° 56’ 32.33”N 089° 50’ 05.98”W
29° 56’ 32.41”N 089° 50’ 04.57”W
29° 56’ 24.73”N 089° 49’ 51.82”W
29° 56’ 23.40”N 089° 49’ 46.19”W
29° 56’ 21.50”N 089° 49’ 45.43”W
29° 56’ 14.30”N 089° 49’ 32.31”W
29° 56’ 05.65”N 089° 49’ 13.30”W
29° 56’ 02.08”N 089° 48’ 45.42”W
29° 56’ 00.31”N 089° 48’ 11.95”W
29° 56’ 02.13”N 089° 48’ 06.91”W
29° 56’ 06.28”N 089° 48’ 09.59”W
29° 56’ 12.27”N 089° 48’ 20.96”W
29° 56’ 17.74”N 089° 48’ 29.78”W
29° 56’ 19.51”N 089° 48’ 50.87”W
29° 56’ 29.99”N 089° 49’ 13.66”W

29° 56’ 29.80”N 089° 49’ 23.78”W
29° 56’ 32.15”N 089° 49’ 30.12”W
29° 56’ 34.90”N 089° 49’ 37.71”W
29° 56’ 39.19”N 089° 49’ 44.82”W
29° 56’ 40.27”N 089° 49’ 49.51”W
29° 56’ 43.37”N 089° 49’ 56.41”W
29° 56’ 43.32”N 089° 50’ 01.28”W
29° 56’ 44.65”N 089° 50’ 04.72”W
29° 56’ 42.01”N 089° 50’ 09.13”W

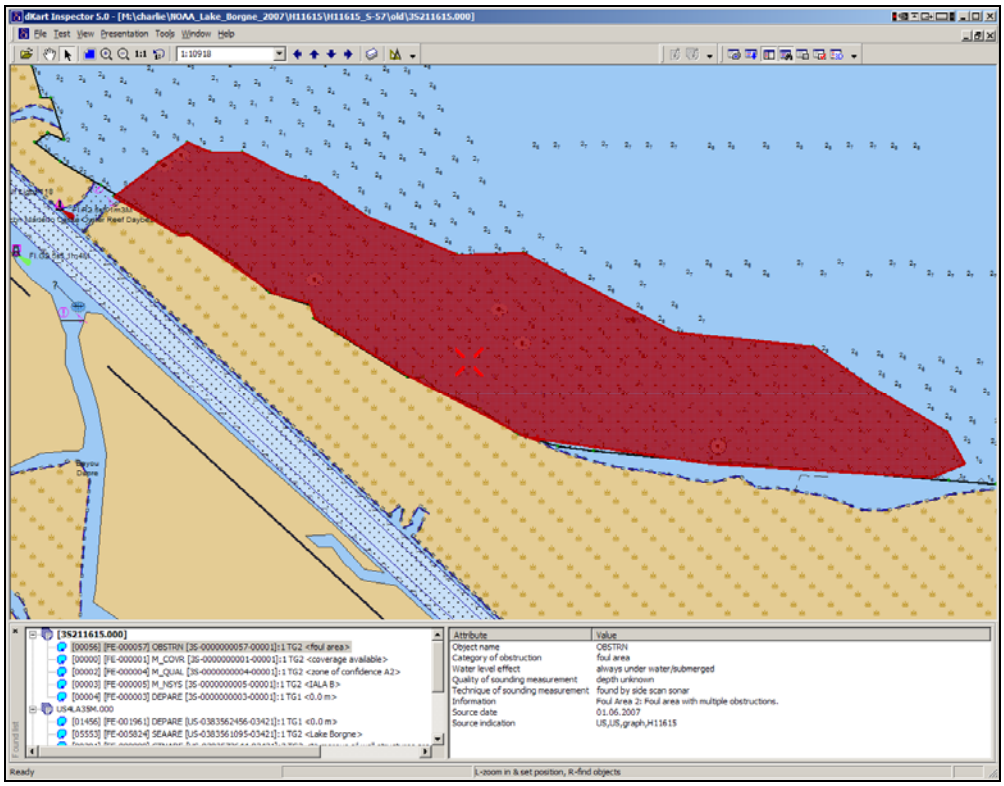


Figure D-9. Foul Area East of Martello Castle

Concur.

Surveyed depths within the depicted dredge area with depth of 2.2 meters and depicted in 29° 56’ 56.72”N 089° 49’ 54.47”W are generally 2.2 meters or deeper. ***Concur.***

The shoreline has receded and is no longer accurate. Soundings were obtained over depicted land in the following area:

- From the entrance to Bayou Bienvenue in 30° 00’ 09.00”N 089° 51’ 25.30”W to Proctor Point in 29° 56’ 48.73”N 089° 42’ 48.14”W, soundings of 1.2 to 1.9 meters were obtained between 50 and 220 meters inland of the depicted shoreline. ***Concur.***

The 1.8 meter curve throughout the survey area is closer to shore than depicted.

- From Bayou Bienvenue in 30° 00’ 09.00”N 089° 51’ 25.30”W to Martello Castle in 29° 56’ 46.19”N 089° 50’ 07.25”W the 1.8 meter curve has moved approximately 640 to 1800 meters west of its depicted position. Survey depths between the 1.8 meter curve and shoreline are 0.5 meters deeper than the depicted depths in this area. ***Concur.***
- From Martello Castle in 29° 56’ 46.19”N 089° 50’ 07.25”W to Proctor Point in 29° 56’ 48.73”N 089° 42’ 48.14”W the 1.8 meter curve has moved approximately 200 to 1000 meters south of its depicted position. Survey depths between the 1.8 meter curve and shoreline are 0.5 meters deeper than the depicted depths in this area. ***Concur.***
- From Proctor Point in 29° 56’ 48.73”N 089° 42’ 48.14”W to Flagpole Bayou in 29° 56’ 11.34”N 089° 44’ 09.61”W the 1.8 meter curve has moved approximately 650 meters west of its depicted position. Survey depths between the 1.8 meter curve and shoreline are 0.5 meters deeper than the depicted depths in this area. ***Concur with clarification. The 1.8 meter curve has moved between 250-900 meters west of its depicted position.***

Other Wrecks and Obstructions not depicted on ENC US4MS35M ***Should read “US4LA35M”***

No wrecks were found in H11615. Table D-14 lists other obstructions found in H11615 that should be depicted on ENC US5LA35M, 1/80,000 scale.

Table D-14. Other Objects Found in H11615 not on ENC US4MS35M ***Should read “US4LA35M”***

Feature Number	Feature Position (NAD83)		Least Depth Meters	Uncertainty Meters	Object
	Latitude (N)	Longitude (W)			
9	29° 57’ 58.72”	089° 50’ 54.75”	1.35	N/A	OBSTRN ***Do not concur, insignificant amongst surrounding depths.***
13	29° 57’ 16.47”	089° 44’ 06.35”	1.51	N/A	OBSTRN ***Do not concur, insignificant amongst surrounding depths.***
14	29° 59’ 50.97”	089° 51’ 24.92”	1.44	N/A	OBSTRN ***Concur.***
23	30° 00’ 20.75”	089° 43’ 04.96”	1.20	0.444	OBSTRN ***Concur.***
24	29° 57’ 49.77”	089° 43’ 52.67”	2.02	0.329	OBSTRN ***Concur.***
25	29° 57’ 51.14”	089° 43’ 53.62”	1.50	0.428	OBSTRN ***Concur.***
28	29° 57’ 39.93”	089° 44’ 50.30”	1.85	0.490	OBSTRN ***Concur.***
29	29° 59’ 52.17”	089° 46’ 52.26”	1.48	0.329	OBSTRN ***Concur.***
30	29° 56’ 14.78”	089° 47’ 51.20”	2.03	0.329	OBSTRN ***Concur.***
31	29° 57’ 29.16”	089° 44’ 18.92”	1.31	0.329	OBSTRN ***Concur.***

Feature Number	Feature Position (NAD83)		Least Depth Meters	Uncertainty Meters	Object
	Latitude (N)	Longitude (W)			
32	29° 59’ 01.37”	089° 41’ 56.93”	1.68	0.495	OBSTRN ***Concur. Already charted because submitted in DtoN Report 6.***
33	29° 57’ 28.99”	089° 43’ 33.24”	2.09	0.329	OBSTRN ***Do not concur, insignificant amongst surrounding depths.***
66*	29° 59’ 57.24”	089° 51’ 09.18”	1.42*	N/A	OBSTRN ***Concur.***
68*	30° 00’ 44.92”	089° 50’ 53.08”	1.57*	N/A	OBSTRN ***Concur.***
80	29° 58’ 27.00”	089° 51’ 04.58”	0.94*	N/A	OBSTRN ***Concur.***

* Found by sidescan sonar only, least depth estimated from sidescan data.

There were seven depicted navigational aids within H11615 survey bounds and within the extents of ENC US5LA35M ***(should read US4LA35M)***. There were six navigation aids found to be close to their depicted positions and one that was not found. See section D.1.2 for additional information.

The navigation aids that were found during this survey and are on ENC US5LA35M are:
Bayou Dupree Light 1 (Feature 62) ***Concur.***
Bayou Dupree Daybeacon 2 (Feature 57) ***Concur.***
Bayou Dupree Daybeacon 3 (Feature 45) ***Concur.***
Bayou Dupree Daybeacon 4 (Feature 44) ***Concur.***
Bayou Dupree Daybeacon 5 (Feature 48) ***Concur.***
Proctor Point Light (Feature 56) ***Concur.***

Recommend removing the depicted Beacon, special purpose/general object labeled “Martello Castle Oyster Reef Daybeacons(6)” that was not found during this survey which is depicted at 29° 56’ 33.00”N 089° 50’ 05.00”. ***Concur.***

Recommend electronic chart US5LA35M be updated with the results of this survey. ***“US5LA35M” should read “US4LA35M”.***

D.1.1 AWOIS Item Investigations

There were no AWOIS investigations assigned for H11615. However all charted wrecks, rocks and obstructions were to be verified during main-scheme survey operations and a 2nd 100% coverage for a radius of 100 meters around the charted position was required to verify or disprove the item. ***Concur.***

The Statement of Work states that the 50 most significant items for the survey be investigated (SAIC assumed 50 per sheet). On H11615, 45 items were deemed significant and investigated. This methodology was discussed with the COTR prior to

item investigations being performed. See Appendix V Supplemental Survey Records and Correspondence for more information. ***Concur.***

D.1.2 Navigational Aids

Table D–15 lists the found navigational aids within the H11615 survey bounds that are listed on the USCG Light List, Volume 4, Gulfport Ship Channel, MS to Lakes Pontchartrain and Maurepas, LA (Figure D–10 through Figure D–13).

Table D-15. Aids to Navigation found within H11615

Light List Name	ENC Name	Confirmed Position (NAD83)		Feature Number
		Latitude (N)	Longitude (W)	
Fl G 6s 17ft 5M Ra Ref	Proctor Point Light ***Concur.***	29° 56’ 47.02”	89 42’ 30.54”	56
Fl G 2.5s 17ft 5M Ra Ref	Alligator Point Light ***Concur.***	30° 01’ 10.50”	89 43’ 11.82”	47
Fl G 4s 17ft 5M “1”	Bayou Dupree Light 1 ***Concur.***	29° 57’ 15.97”	89 49’ 22.16”	62
Fl R 4s 17ft 5M “2”	Chef Menteur Pass Light 2	30° 02’ 13.22”	89 45’ 49.56”	46
R “4” Ra Ref	Bayou Dupree DayBeacon 4 ***Concur.***	29° 56’ 54.70”	89 49’ 55.92”	44
R “2” Ra Ref	Bayou Dupree DayBeacon 2 ***Concur.***	29° 57’ 11.48”	89 49’ 33.38”	57
G “5” Ra Ref	Bayou Dupree DayBeacon 5 ***Concur.***	29° 56’ 43.81”	89 50’ 04.37”	48
G “3” Ra Ref	Bayou Dupree DayBeacon 3 ***Concur.***	29° 57’ 01.71”	89 49’ 42.59”	45

Concur.

Figure D-10. Day Beacon at Proctor Point

Figure D-11. Day Beacon at Chef Menteur Pass Light 2

Figure D-12. Day Beacon at Alligator Point Light

Figure D-13. Day Beacons at the Entrance to Bayou Dupree

D.1.3 Danger to Navigation Reports

Six Dangers to Navigation Reports were submitted during this survey and can be found in Appendix I. ***Concur.***

D.1.4 Additional Results

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

E. APPROVAL SHEET

14 March 2008

LETTER OF APPROVAL

REGISTRY NUMBER: H11615

This report and the accompanying digital data for project S-J977-KR-SAIC, Lake Borgne, Louisiana are respectfully submitted.

Field operations and data processing contributing to the accomplishment of this survey, H11615, were conducted under supervision of myself and lead hydrographer Paul L. Donaldson with frequent personal checks of progress and adequacy. This Descriptive Report, digital data, and all accompanying records are approved, and are submitted as complete and adequate in compliance with the Statement of Work.

Reports previously submitted to NOAA for this project include:

Report	Submission Date
Descriptive Report H11613, SAIC Doc 07-TR-002	09 November 2007
Data Acquisition and Processing Report, SAIC Doc 07-TR-005	09 November 2007
Data Acquisition and Processing Report, SAIC Doc 07-TR-005 *This report replaces the Data Acquisition and Processing Report submitted on 09 November 2007*	18 January 2008
Descriptive Report H11612, SAIC Doc 07-TR-001	18 January 2008
Descriptive Report H11614, SAIC Doc 07-TR-003	15 February 2008

Reports concurrently submitted to NOAA for this project include:

Report	Submission Date
Horizontal and Vertical Control Report, SAIC Doc 07-TR-006	14 March 2008

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Gary R. Davis
Chief Hydrographer
Science Applications International Corporation
Friday, 14 March 2008

APPENDIX I. DANGER TO NAVIGATION REPORTS (AHB SUBMISSION TO MCD)

SAIC H11615 Dton Report #1

Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sub-locality: West

Project Number: OPR-S-J977-KR-SAIC

Survey Date: 02/27/2007

Charts Affected

Number	Version	Date	Scale
11364	41st Ed.	12/1/2005	1:80000
11371	37th Ed.	10/1/2004	1:80000
11366	10th Ed.	5/1/2006	1:250000
1116A	71st Ed.	9/1/2006	1:458596
11340	71st Ed.	9/1/2006	1:458596
11006	32nd Ed.	8/1/2005	1:875000
411	51st Ed.	12/1/2006	1:2160000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	DtoN1-Collapsed Platform	GP	-3.66 m	029° 59' 27.664" N	89° 39' 23.155" W	---

1 – DToNs

1.1) DtoN1-Collapsed Platform

DANGER TO NAVIGATION

Survey Summary

Survey Position: 029° 59' 27.664" N, 89° 39' 23.155" W

Least Depth: -3.66 m

Timestamp: 2007-058.00:00:00.000 (02/27/2007)

GP Dataset: H11615_dtn1.txt

GP No.: 1

Charts Affected: 11364_1, 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

Two legs of the platform are exposed approximately 12 feet above datum (MLLW). A pipe is also exposed approximately 10 feet above datum and has a white light and solar panels. Light characteristics and operational condition was not verified.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11615_dtn1.txt	1	0.000	0.000	Primary

Hydrographer Recommendations

Chart a ruined offshore platform at the given location.

Cartographically-Rounded Depth (Affected Charts):

-12ft (11364_1, 11371_1)

-2fm (1116A_1, 11340_1, 11006_1, 411_1)

-2fm 0ft (11366_1)

S-57 Data

Geo object 1: Offshore platform (OFSPLF)

Attributes: CONDTN - 2:ruined
CONVIS - 1:visual conspicuous
HEIGHT - -3.66 m
INFORM - Two legs of the platform are exposed approximately 12 feet above datum (MLLW). A pipe is also exposed approximately 10 feet above datum and has a white

light and solar panels.
NATCON - 6,7:wooden,metal
OBJNAM - Collapsed Platform
RECDAT – 20070314
SORDAT – 20070227
SORIND - US,US,SAIC,H11615
STATUS - 4:disused
VERDAT - 12:Mean lower low water

Office Notes

Data submission is preliminary. No data have been submitted nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted.

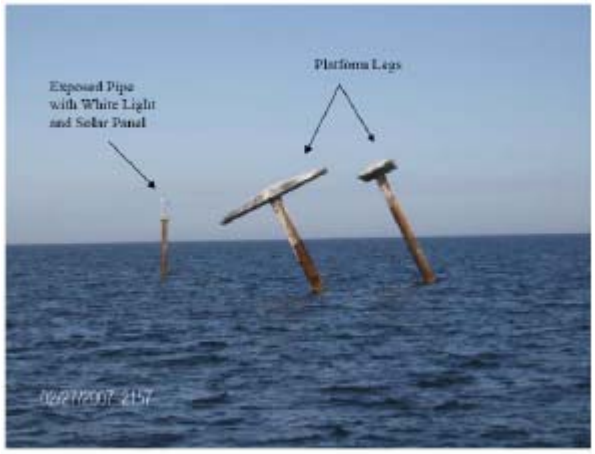


Figure 1 Photograph of collapsed platform within H11615.

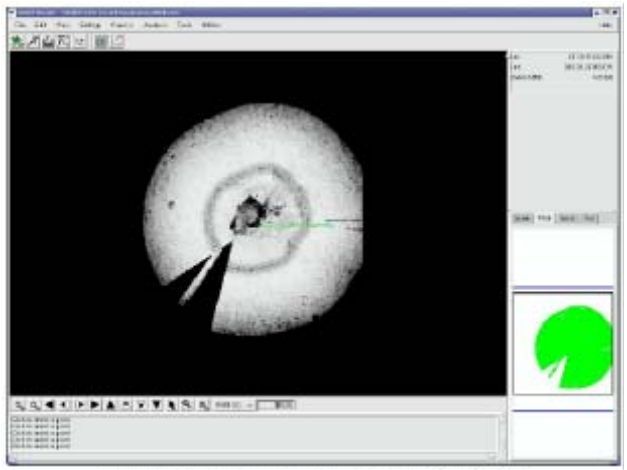


Figure 2 Side Scan Image of collapsed platform within H11615.

SAIC H11615 Dton Report #2

Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sub-locality: West

Project Number: OPR-S-J977-KR-SAIC

Survey Date: 03/28/2007

Charts Affected

Number	Version	Date	Scale
11364	41st Ed.	12/1/2005	1:80000
11371	37th Ed.	10/1/2004	1:80000
11366	10th Ed.	5/1/2006	1:250000
1116A	71st Ed.	9/1/2006	1:458596
11340	71st Ed.	9/1/2006	1:458596
11006	32nd Ed.	8/1/2005	1:875000
411	51st Ed.	12/1/2006	1:2160000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Platform	GP	[None]	029° 59' 15.000" N	89° 39' 31.800" W	---
1.2	Platform	GP	[None]	029° 59' 14.160" N	89° 39' 30.780" W	---

1 – DToNs

1.1) Platform

DANGER TO NAVIGATION

Survey Summary

Survey Position: 029° 59' 15.000" N, 89° 39' 31.800" W

Least Depth: [None]

Timestamp: 2007-087.14:52:00.000 (03/28/2007)

GP Dataset: H11615_dtn2.txt

GP No.: 1

Charts Affected: 11364_1, 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

This uncharted platform was noted during survey operations and is within 25 m of the other platform in this submittal.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11615_dtn2.txt	1	0.00	000.0	Primary

Hydrographer Recommendations

Chart a platform at the given location.

S-57 Data

Geo object 1: Offshore platform (OFSPLF)

Attributes:
CATOFP - 1:oil derrick / rig
CONVIS - 1:visual conspicuous
INFORM - Another platform is located 25 m from this one.
NATCON - 7:metal
OBJNAM – Platform
RECDAT - 20070409
SORDAT – 20070328
SORIND - US,US,surve,H11615
STATUS - 1:permanent

Office Notes

Data submission is preliminary. No data have been submitted nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted.

Feature Images

Figure 1. Photograph of platform within H11615.

Figure 1.1.1

Figure 2. Side scan mosaic of platform located within H11615.

Figure 1.1.2

1.2) Platform

DANGER TO NAVIGATION

Survey Summary

Survey Position: 029° 59' 14.160" N, 89° 39' 30.780" W

Least Depth: [None]

Timestamp: 2007-087.14:52:00.000 (03/28/2007)

GP Dataset: H11615_dtn2.txt

GP No.: 2

Charts Affected: 11364_1, 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

This uncharted platform was noted during survey operations and is within 25 m of the other platform in this submittal.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11615_dtn2.txt	2	0.00	000.0	Primary

Hydrographer Recommendations

Chart a platform at the given location.

S-57 Data

Geo object 1: Offshore platform (OFSPLF)

Attributes:
CATOFP - 1:oil derrick / rig
CONVIS - 1:visual conspicuous
INFORM - 25 m from another Platform.
NATCON - 7:metal
OBJNAM – Platform
RECDAT - 20070409
SORDAT – 20070328
SORIND - US,US,surve,H11615
STATUS - 1:permanent

Office Notes

Data submission is preliminary. No data have been submitted nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted.

SAIC H11615 Dton Report #3

Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sub-locality: West

Project Number: OPR-S-J977-KR-SAIC

Survey Date: 04/02/2007

Charts Affected

Number	Version	Date	Scale
11364	41st Ed.	12/1/2005	1:80000
11371	37th Ed.	10/1/2004	1:80000
11366	10th Ed.	5/1/2006	1:250000
1116A	71st Ed.	9/1/2006	1:458596
11340	71st Ed.	9/1/2006	1:458596
11006	32nd Ed.	8/1/2005	1:875000
411	51st Ed.	12/1/2006	1:2160000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Platform	GP	[None]	030° 00' 41.640" N	89° 43' 03.960" W	---
1.2	Platform	GP	[None]	030° 00' 42.480" N	89° 43' 03.240" W	---

1 – DToNs

1.1) Platform

DANGER TO NAVIGATION

Survey Summary

Survey Position: 030° 00' 41.640" N, 89° 43' 03.960" W

Least Depth: [None]

Timestamp: 2007-092.17:02:00.000 (04/02/2007)

GP Dataset: H11615_dton3.txt

GP No.: 1

Charts Affected: 11364_1, 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

This Platform (MANTI A and B) was noted during survey operations and is within 40 meters of another platform. It had a barge moored along side with piles present on the perimeter of the barge.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11615_dtn3.txt	1	0.00	000.0	Primary

Hydrographer Recommendations

Chart a platform at the given location.

S-57 Data

Geo object 1: Offshore platform (OFSPLF)

Attributes:
CATOFP - 2,8:production platform,floating production, storage and off-loading vessel (FPSO)
CONVIS - 1:visual conspicuous
INFORM - Platform had a barge moored along side with piles present on the perimeter of the barge.
NATCON - 6,7:wooden,metal
OBJNAM - Platform, MANTI A and B
RECDAT – 20070410
SORDAT – 20070402
SORIND - US,US,surve,H11615
STATUS - 1:permanent

Office Notes

Data submission is preliminary. No data have been submitted to nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted to AHB.

Feature Images

Figure 4 Photograph of platforms and piles within H11615.

Figure 1.1.1

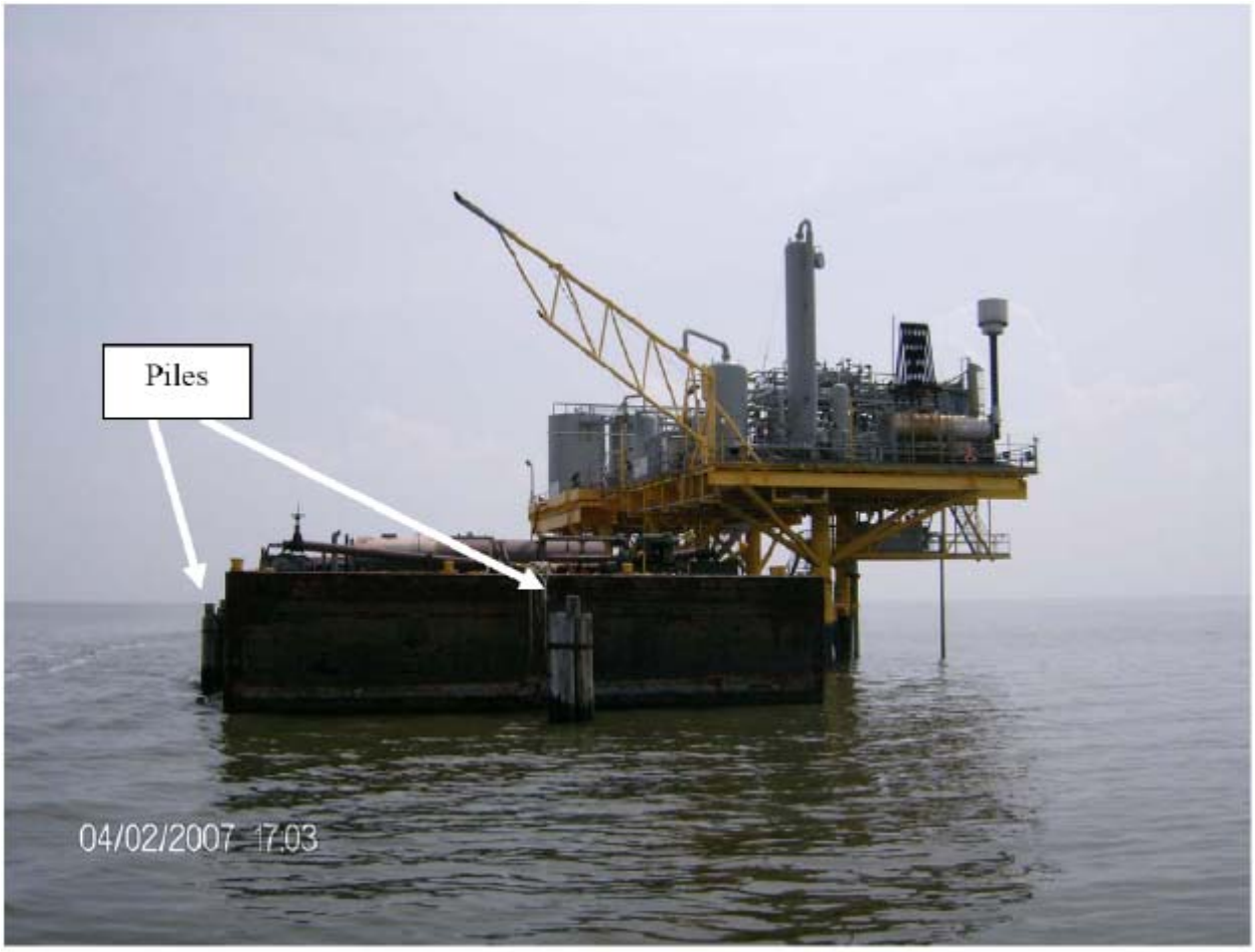


Figure 2 Photograph of barge moored to piles by MANTI A and B within H11615.

Figure 1.1.2

Figure 1 Photograph of platform (MANTI A and B with barge) within H11615.

Figure 1.1.3

1.2) Platform

DANGER TO NAVIGATION

Survey Summary

Survey Position: 030° 00' 42.480" N, 89° 43' 03.240" W

Least Depth: [None]

Timestamp: 2007-092.17:02:00.000 (04/02/2007)

GP Dataset: H11615_dton3.txt

GP No.: 2

Charts Affected: 11364_1, 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

This Platform was noted during survey operations and is within 40 meters of another platform (MANTI A and B).

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11615_dtn3.txt	2	0.00	000.0	Primary

Hydrographer Recommendations

Chart a platform at the given location.

S-57 Data

Geo object 1: Offshore platform (OFSPLF)

Attributes:
CATOFP - 2:production platform,
CONVIS - 1:visual conspicuous
INFORM - Another platform, MANTI A and B, is located 40 meters away.
NATCON - 6,7:wooden,metal
OBJNAM - Platform
RECDAT – 20070409
SORDAT – 20070402
SORIND - US,US,surve,H11615
STATUS - 1:permanent

Office Notes

Data submission is preliminary. No data have been submitted to nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted to AHB.

Feature Images

Figure 3 Photograph of platform within H11615.

Figure 1.2.1

SAIC H11615 DtoN Reports #4 and #5

Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sub-locality: West

Project Number: OPR-S-J977-KR-SAIC

Survey Date: 04/12/2007

Charts Affected

Number	Version	Date	Scale
11364	41st Ed.	12/1/2005	1:80000
11371	37th Ed.	10/1/2004	1:80000
11366	10th Ed.	5/1/2006	1:250000
1116A	71st Ed.	9/1/2006	1:458596
11340	71st Ed.	9/1/2006	1:458596
11006	32nd Ed.	8/1/2005	1:875000
411	51st Ed.	12/1/2006	1:2160000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Platform 4	GP	[None]	030° 01' 30.900" N	89° 42' 12.180" W	---
1.2	Platform 5	GP	[None]	030° 00' 15.060" N	89° 42' 45.720" W	---

1.1) Platform 4

DANGER TO NAVIGATION

Survey Summary

Survey Position: 030° 01' 30.900" N, 89° 42' 12.180" W

Least Depth: [None]

Timestamp: 2007-102.00:00:00.000 (04/12/2007)

GP Dataset: DtoNs_4and5_import.txt

GP No.: 1

Charts Affected: 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

Three platforms were noted during survey operations. The three platforms are located within 50 meters of one
another. Each platform is equipped with a light. Characteristics of the light were not determined.

Feature Correlation

Address	Feature	Range	Azimuth	Status
DtoNs_4and5_import.txt	1	0.00	000.0	Primary

Hydrographer Recommendations

Do not chart. The sheet affected contains the following note: "Numerous oil well structures are located within the limits of this chart" (Note C).

S-57 Data

Geo object 1: Offshore platform (OFSPLF)

Attributes:
CATOFP - 1:oil derrick / rig
CONVIS - 1:visual conspicuous
INFORM -Three platforms are located within 50 meters of one another.
NATCON - 7:metal
OBJNAM – Platform
RECDAT -20070430
SORDAT – 20070412
SORIND - US,US,surve,H11615
STATUS - 1:permanent

Office Notes

Data submission is preliminary. No data have been submitted to nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted to AHB.

Feature Images

Figure 1 Photograph of Three Platforms within H11615.

Figure 1.1.1

1.2) Platform 5

DANGER TO NAVIGATION

Survey Summary

Survey Position: 030° 00' 15.060" N, 89° 42' 45.720" W

Least Depth: [None]

Timestamp: 2007-102.00:00:00.000 (04/12/2007)

GP Dataset: DtoNs_4and5_import.txt

GP No.: 2

Charts Affected: 11364_1, 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

A single platform was noted during survey operations. The platform is equipped with a light. Light characteristics were not determined.

Feature Correlation

Address	Feature	Range	Azimuth	Status
DtoNs_4and5_import.txt	2	0.00	000.0	Primary

Hydrographer Recommendations

Do not chart. The sheet affected contains the following note: "Numerous oil well structures are located within the
limits of this chart" (Note C).

S-57 Data

Geo object 1: Offshore platform (OFSPLF)

Attributes:
CATOFP - 1:oil derrick / rig
CONVIS - 1:visual conspicuous
INFORM -A single platform with a light.
NATCON - 7:metal
OBJNAM – Platform
RECDAT -20070430
SORDAT – 20070412
SORIND - US,US,surve,H11615
STATUS - 1:permanent

Office Notes

Data submission is preliminary. No data have been submitted to nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted to AHB.

Feature Images

Figure 1 Photograph of Platform within H11615.

Figure 1.2.1

SAIC H11615 DToN Report #6

Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sub-locality: West

Project Number: OPR-S-J977-KR-SAIC

Survey Date: 05/31/2007

Charts Affected

Number	Version	Date	Scale
11364	41st Ed.	12/1/2005	1:80000
11371	37th Ed.	10/1/2004	1:80000
11366	10th Ed.	5/1/2006	1:250000
1116A	71st Ed.	9/1/2006	1:458596
11340	71st Ed.	9/1/2006	1:458596
11006	32nd Ed.	8/1/2005	1:875000
411	51st Ed.	12/1/2006	1:2160000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	obstruction	GP	1.87 m	29° 58' 36.360" N	089° 38' 01.910" W	---
1.2	obstruction	GP	1.68 m	29° 59' 01.370" N	089° 41' 59.528" W	---

1 - Danger To Navigation

1.1) obstruction

DANGER TO NAVIGATION

Survey Summary

Survey Position: 29° 58' 36.360" N, 089° 38' 01.910" W

Least Depth: 1.87 m

Timestamp: 2007-151.00:00:00.000 (05/31/2007)

GP Dataset: H11615_DToN#6.xls

GP No.: 1

Charts Affected: 11364_1, 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

The following item was found during hydrographic survey operations. Submerged Obstruction with a minimum depth of 6 feet (1.87 meters, 0.329 meter uncertainty)

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11615_DToN#6.xls	1	0.00	000.0	Primary

Hydrographer Recommendations

Chart 6 foot sounding, danger circle, blue tint (K-41) in 29° 58’ 36.36”N 089° 38’ 01.91”W (NAD 83) and label Obstn.

Cartographically-Rounded Depth (Affected Charts):

6ft (11364_1, 11371_1)

1fm (1116A_1, 11340_1, 11006_1, 411_1)

1fm 0ft (11366_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known

SORDAT - 20070531

SORIND - US,US,Survy,H11615

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 1.87 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Data submission is preliminary. No data have been submitted nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted.

Feature Images

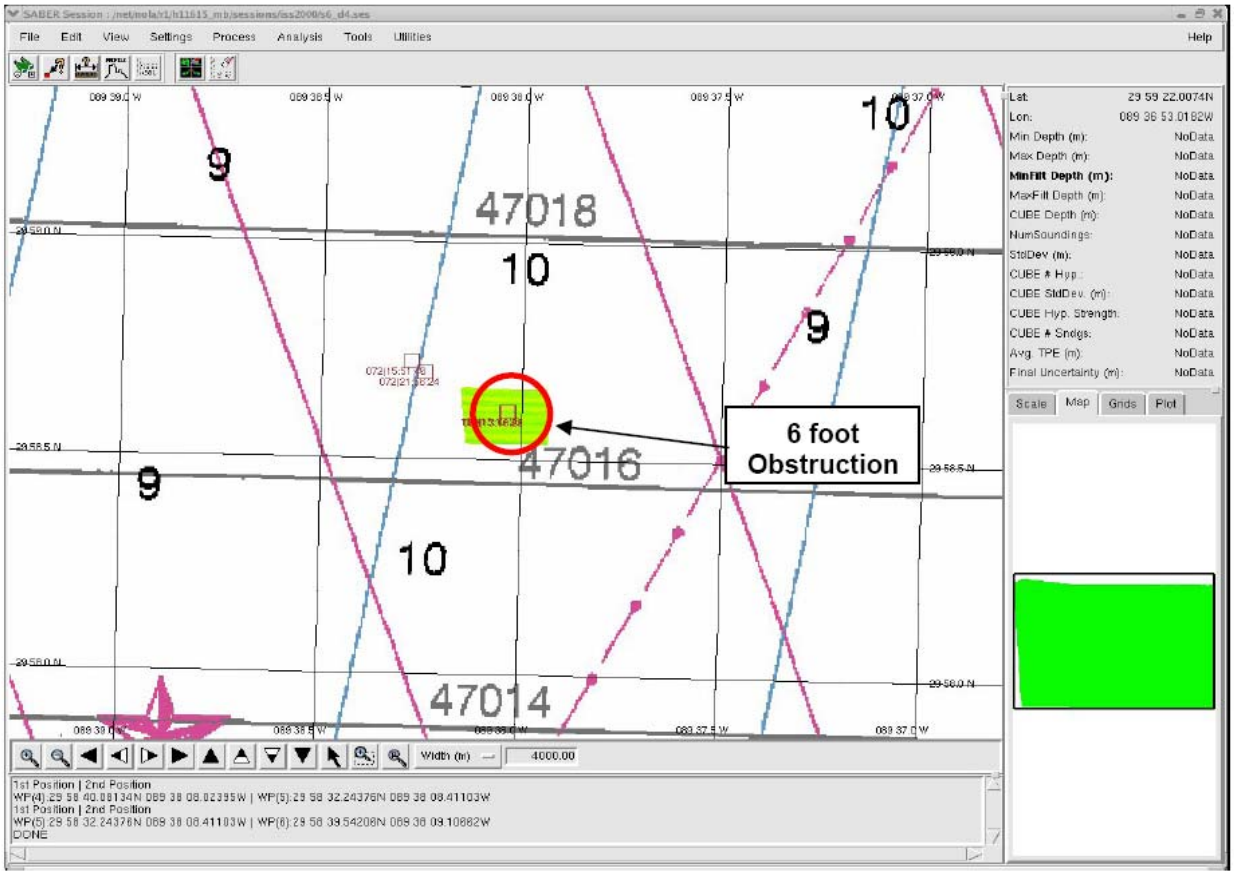


Figure 1.1.1

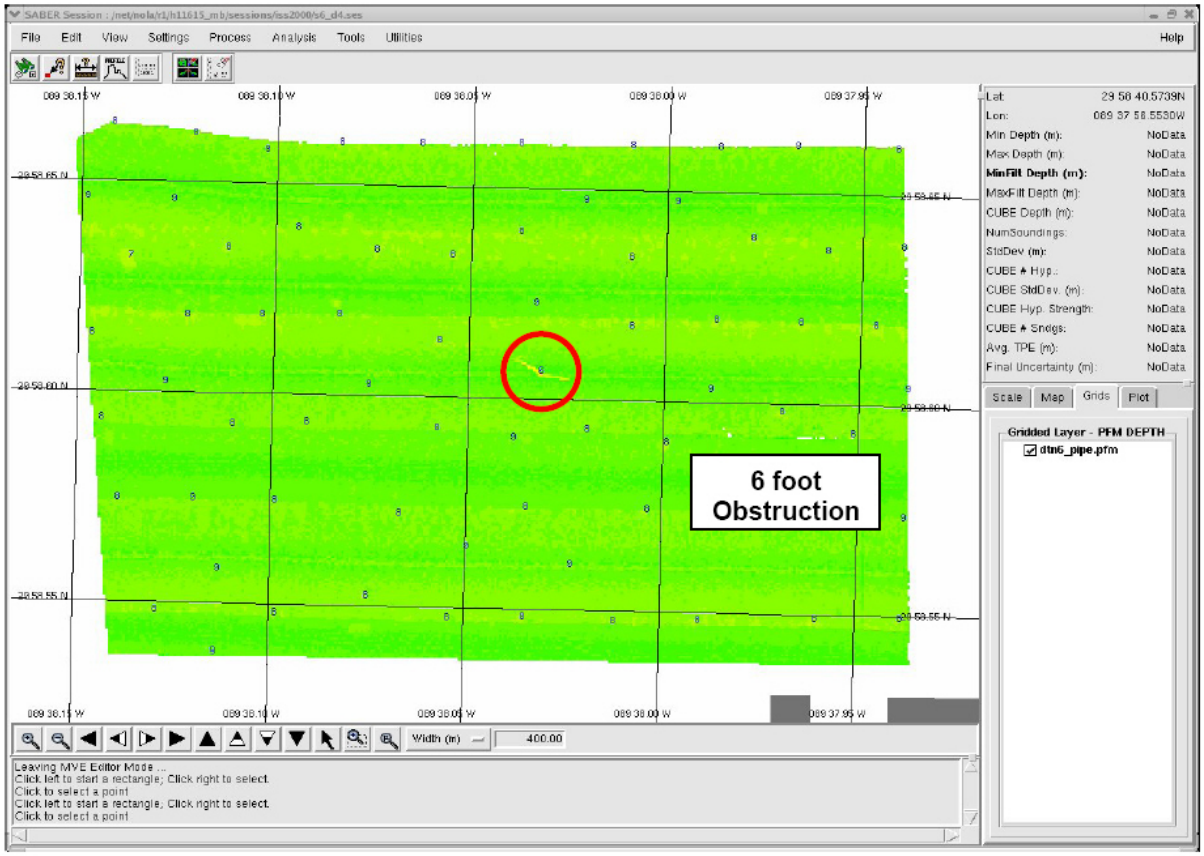

File
Edit
View
Settings
Process
Analysis
Tools
Utilities
Help
6 foot
Obstruction
Scale
Map
Grids
Plot
Gridded Layer - PFM DEPTH
dtm6_pipe.pfm

Figure 1.1.2

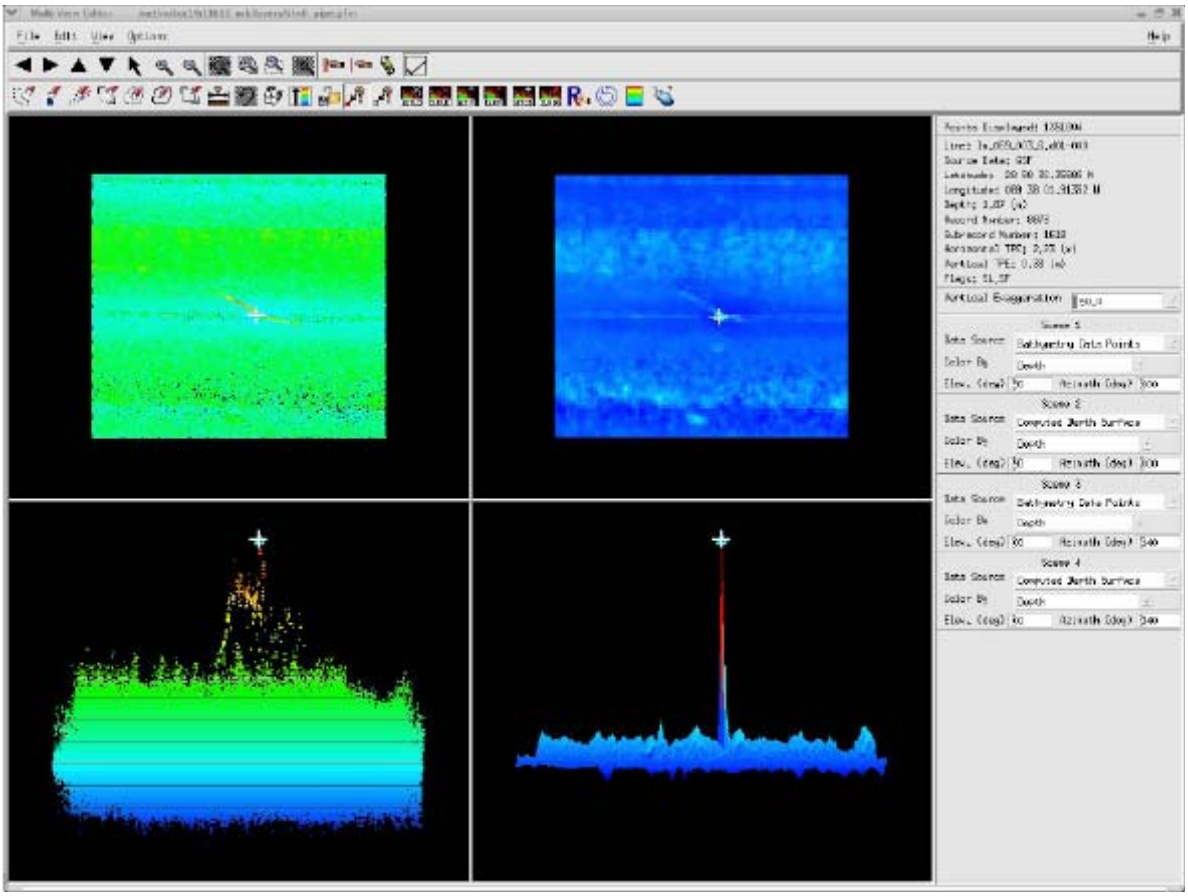


Figure 1.1.3

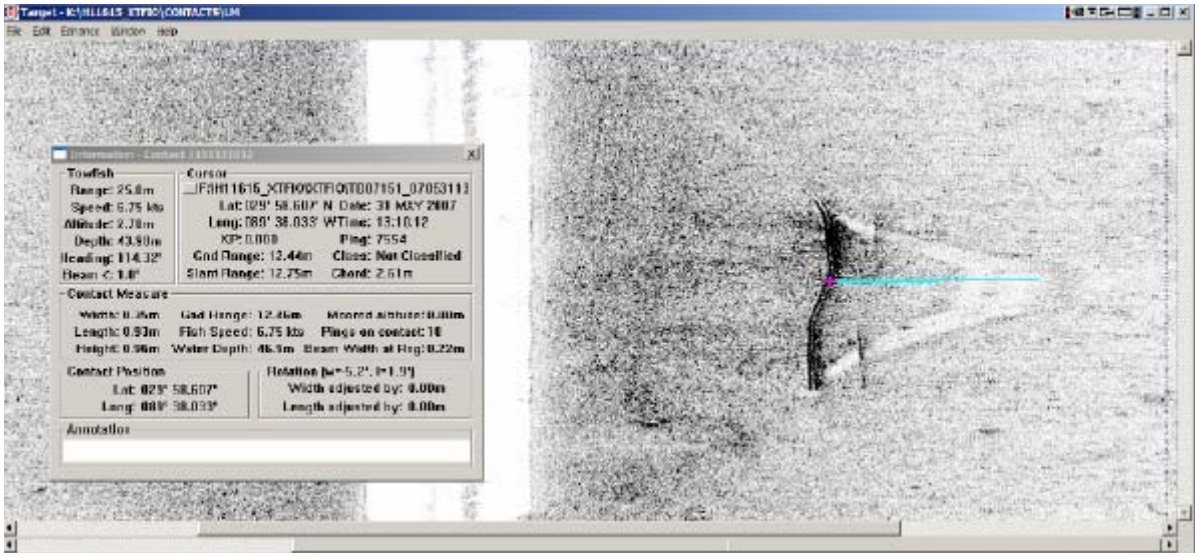


Figure 1.1.4

1.2) obstruction

DANGER TO NAVIGATION

Survey Summary

Survey Position:	29° 59' 01.370" N, 089° 41' 59.528" W
Least Depth:	1.68 m
Timestamp:	2007-151.00:00:00.000 (05/31/2007)
GP Dataset:	H11615_DToN#6.xls
GP No.:	2
Charts Affected:	11364_1, 11371_1, 11366_1, 1116A_1, 11340_1, 11006_1, 411_1

Remarks:

The following item was found during hydrographic survey operations. Submerged Obstruction with a minimum depth of 5 feet (1.68 meters, 0.495 meter uncertainty)

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11615_DToN#6.xls	2	0.00	000.0	Primary

Hydrographer Recommendations

Chart 5 foot sounding, danger circle, blue tint (K-41) in 29° 59’ 01.37”N 089° 41’ 59.53”W (NAD 83) and label Obstn.

Cartographically-Rounded Depth (Affected Charts):

5ft (11364_1, 11371_1)

0 ¾fm (1116A_1, 11340_1, 11006_1, 411_1)

0fm 5ft (11366_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes:

QUASOU – 6 least depth known

SORDAT – 20070531

SORIND - US,US,Survy,H11615

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 1.68 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Data submission is preliminary. No data have been submitted nor verified by AHB. Feature will be reviewed and verified once the survey data have been submitted.

Feature Images

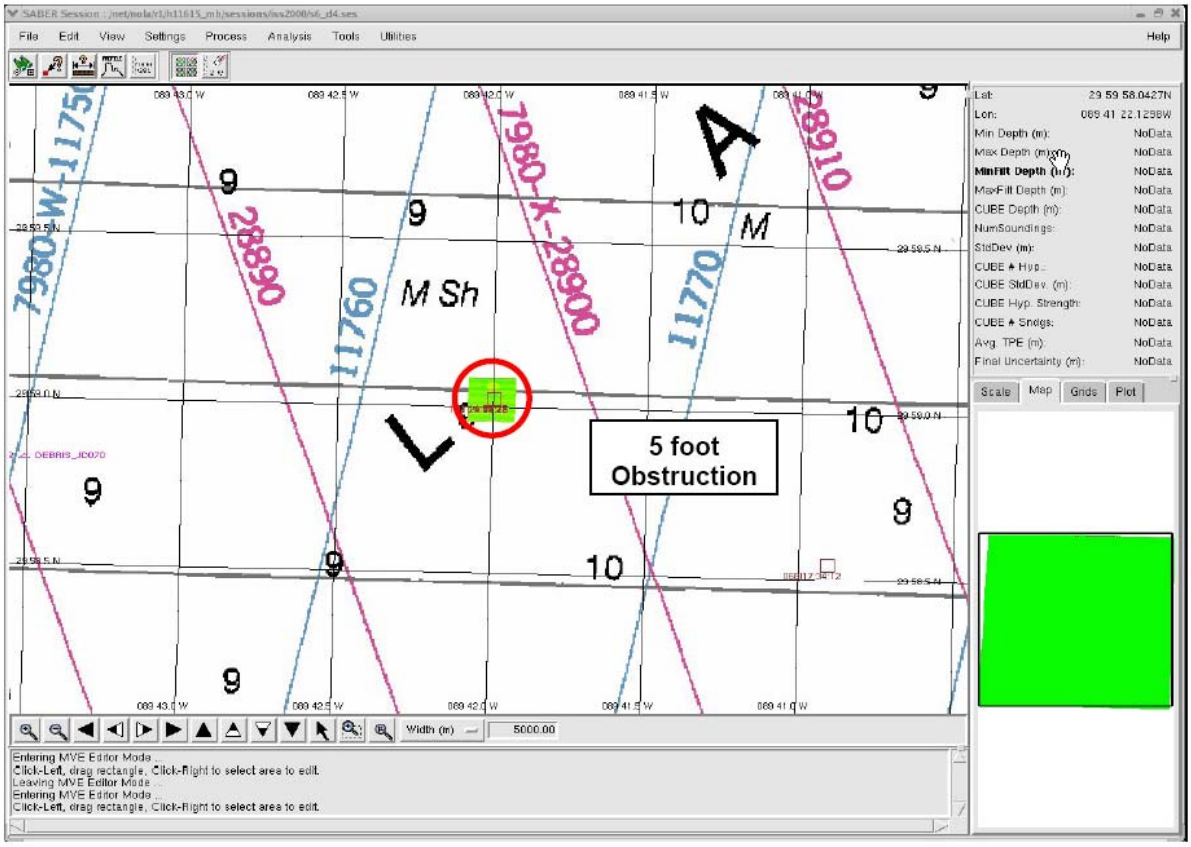


Figure 1.2.1

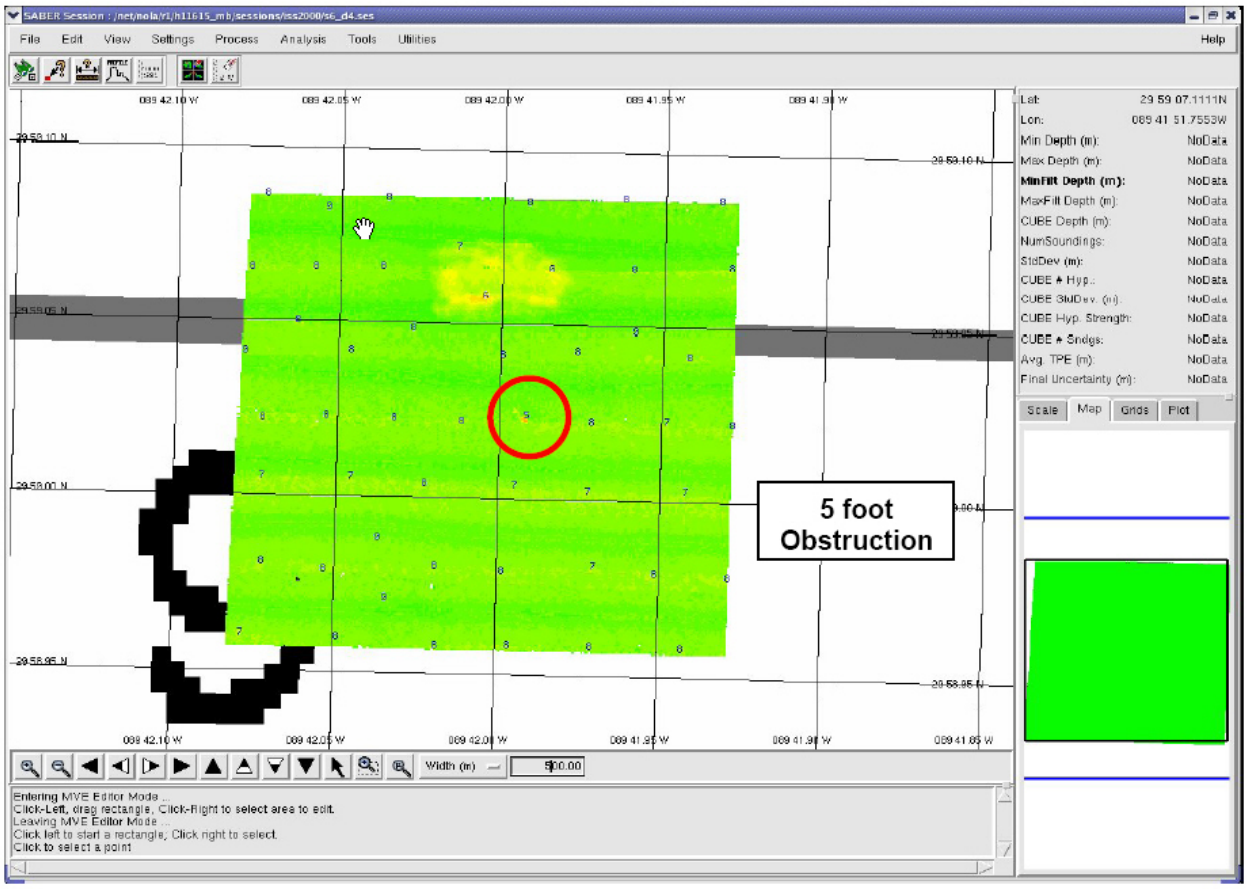


Figure 1.2.2

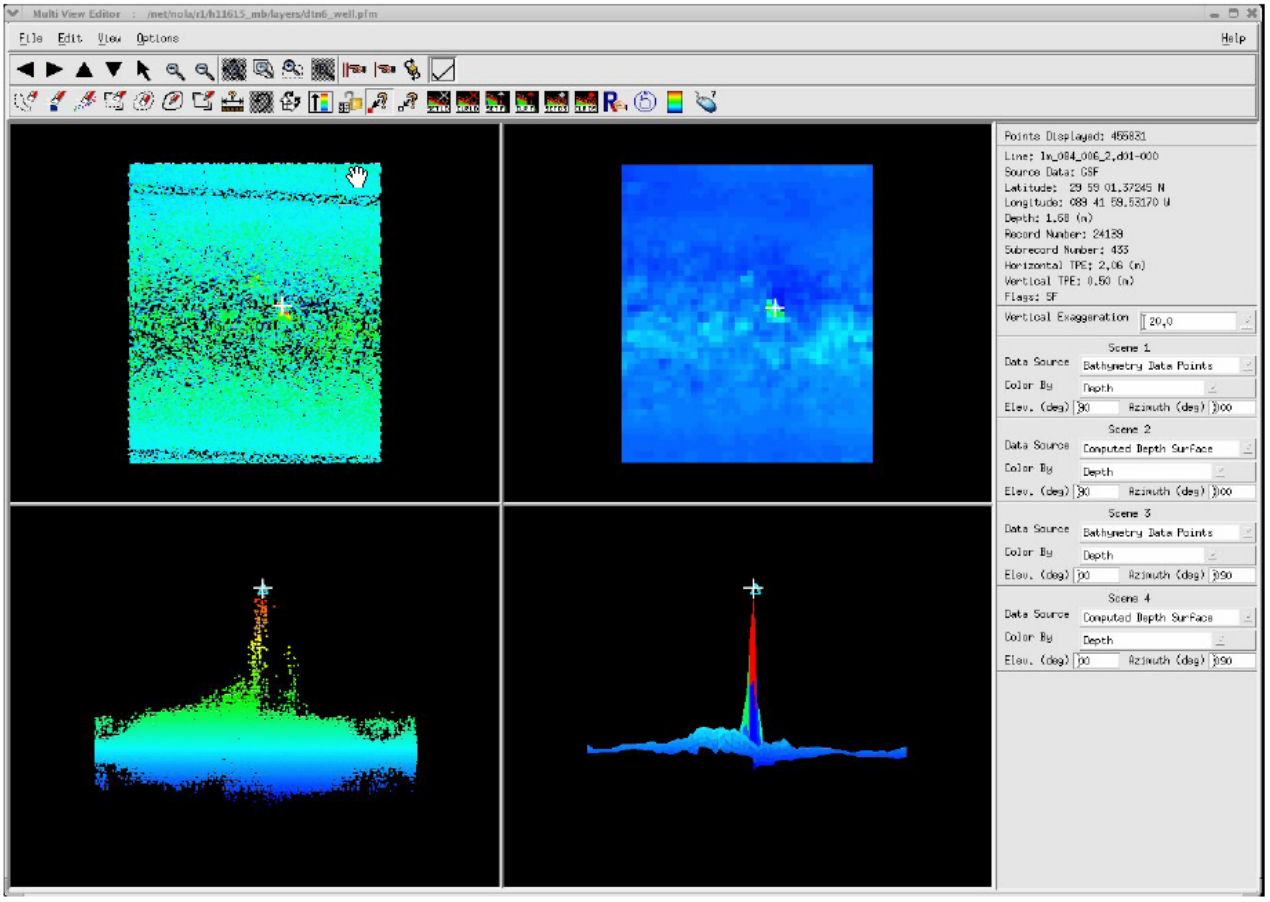
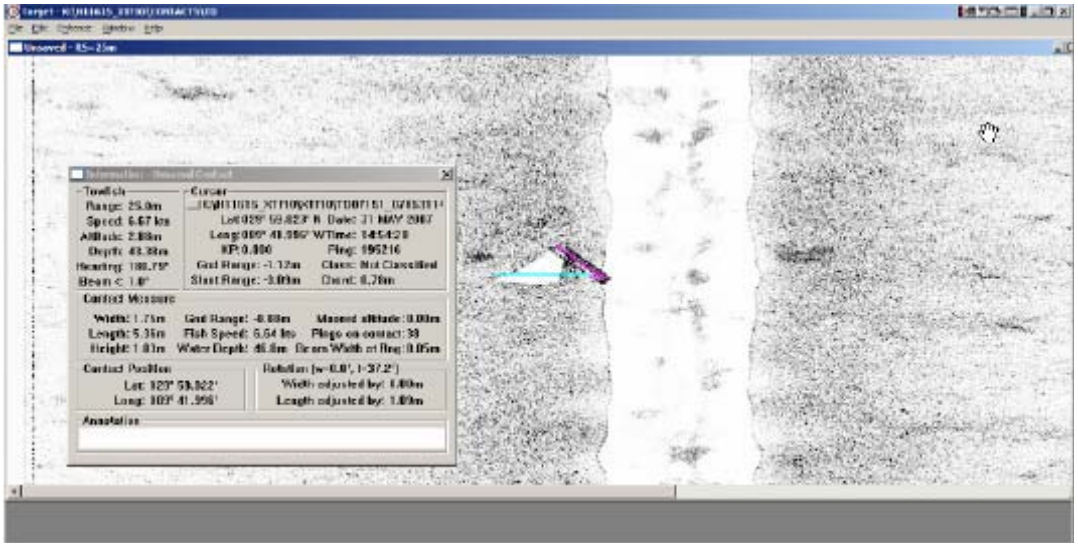

File Edit View Options
Help
Points Displayed: 466881
Vertical Exaggeration
Scene 1
Data Source
Bathymetry Data Points
Color By
Depth
Scene 2
Computed Depth Surface
Scene 3
Scene 4

Figure 1.2.3



APPENDIX II. SURVEY FEATURE REPORT

This survey feature report consists of the following files:

- One excel spreadsheet and one corresponding PDF file, titled *H11615_Bathymetry_Feature_List.xls*, describing all bathymetry features that can be observed in the S-57 feature file,
- One excel spreadsheet and one corresponding PDF file, titled *H11615_Side_Scan_Contacts_List.xls*, describing all side scan contacts identified on H11615.
- Eighty Seven PDF files containing feature correlator sheets, listed below:

H11615_F01.pdf	H11615_F30.pdf	H11615_F59.pdf
H11615_F02.pdf	H11615_F31.pdf	H11615_F60.pdf
H11615_F03.pdf	H11615_F32.pdf	H11615_F61.pdf
H11615_F04.pdf	H11615_F33.pdf	H11615_F62.pdf
H11615_F05.pdf	H11615_F34.pdf	H11615_F63.pdf
H11615_F06.pdf	H11615_F35.pdf	H11615_F64.pdf
H11615_F07.pdf	H11615_F36.pdf	H11615_F65.pdf
H11615_F08.pdf	H11615_F37.pdf	H11615_F66.pdf
H11615_F09.pdf	H11615_F38.pdf	H11615_F67.pdf
H11615_F10.pdf	H11615_F39.pdf	H11615_F68.pdf
H11615_F11.pdf	H11615_F40.pdf	H11615_F69.pdf
H11615_F12.pdf	H11615_F41.pdf	H11615_F70.pdf
H11615_F13.pdf	H11615_F42.pdf	H11615_F71.pdf
H11615_F14.pdf	H11615_F43.pdf	H11615_F72.pdf
H11615_F15.pdf	H11615_F44.pdf	H11615_F73.pdf
H11615_F16.pdf	H11615_F45.pdf	H11615_F74.pdf
H11615_F17.pdf	H11615_F46.pdf	H11615_F75.pdf
H11615_F18.pdf	H11615_F47.pdf	H11615_F76.pdf
H11615_F19.pdf	H11615_F48.pdf	H11615_F77.pdf
H11615_F20.pdf	H11615_F49.pdf	H11615_F78.pdf
H11615_F21.pdf	H11615_F50.pdf	H11615_F79.pdf
H11615_F22.pdf	H11615_F51.pdf	H11615_F80.pdf
H11615_F23.pdf	H11615_F52.pdf	H11615_F81.pdf
H11615_F24.pdf	H11615_F53.pdf	H11615_F82.pdf
H11615_F25.pdf	H11615_F54.pdf	H11615_F83.pdf
H11615_F26.pdf	H11615_F55.pdf	H11615_F84.pdf
H11615_F27.pdf	H11615_F56.pdf	H11615_F85.pdf
H11615_F28.pdf	H11615_F57.pdf	H11615_F86.pdf
H11615_F29.pdf	H11615_F58.pdf	H11615_F87.pdf

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0087 Least Depth: Lat: 29 56 43.24N Lon: 089 37 53.79W Ping: Beam:

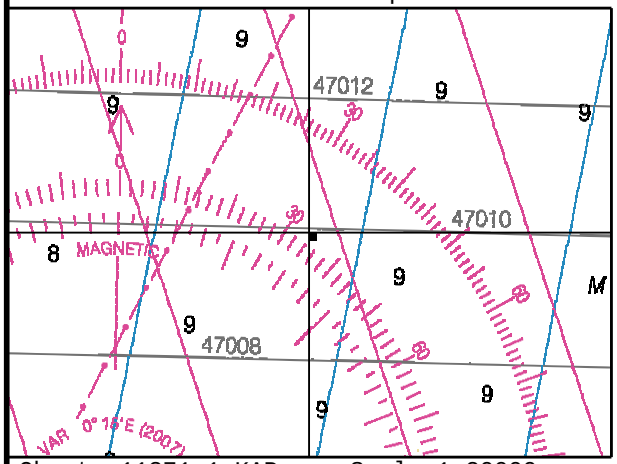


Chart: 11371_1.KAP Scale 1:20000

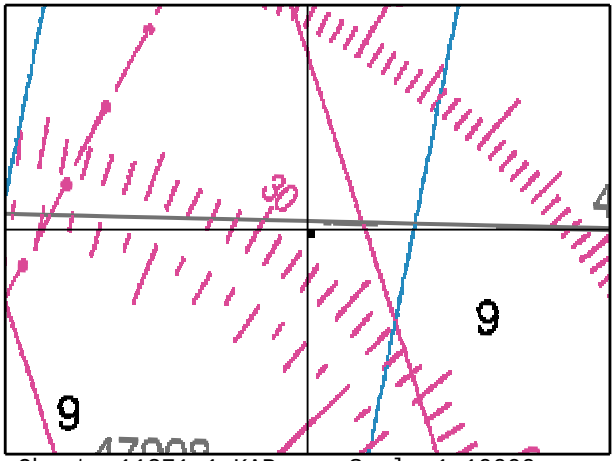
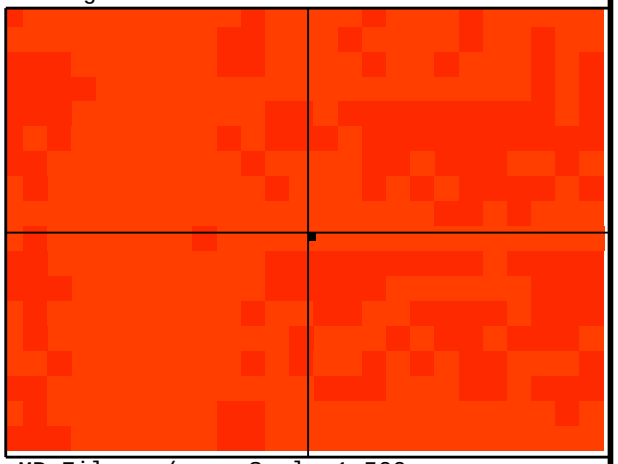
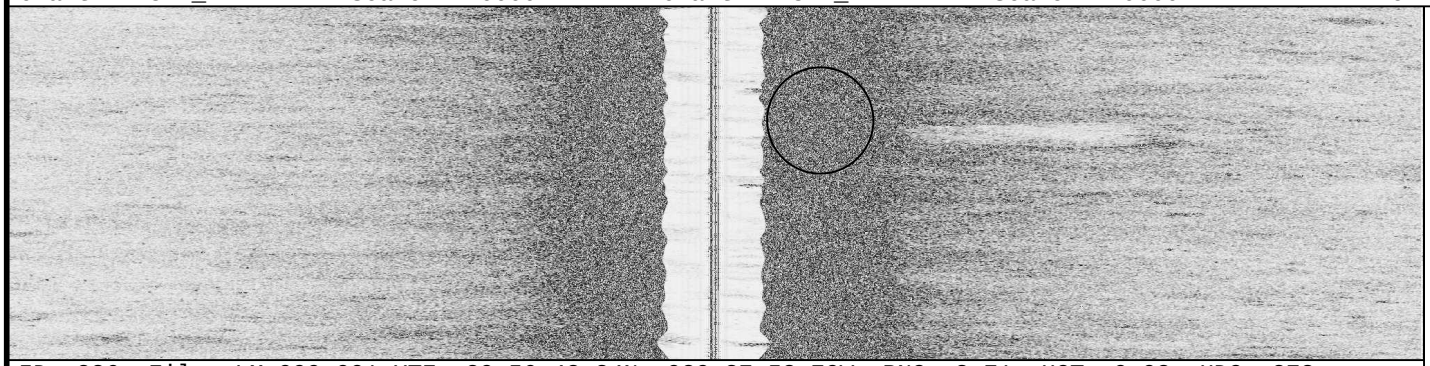


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 236 File: LM_099_001.XTF 29 56 43.24N 089 37 53.79W RNG: 3.71 HGT: 0.03 HDG: 273

COMMENT:
Plot special purpose buoy symbol and label Y Priv

CORRELATED SS CONTACTS:

Contact	Range/Height
099115155	3.71/0.03

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0086 Least Depth: Lat: 29 57 09.96N Lon: 089 38 20.60W Ping: Beam:

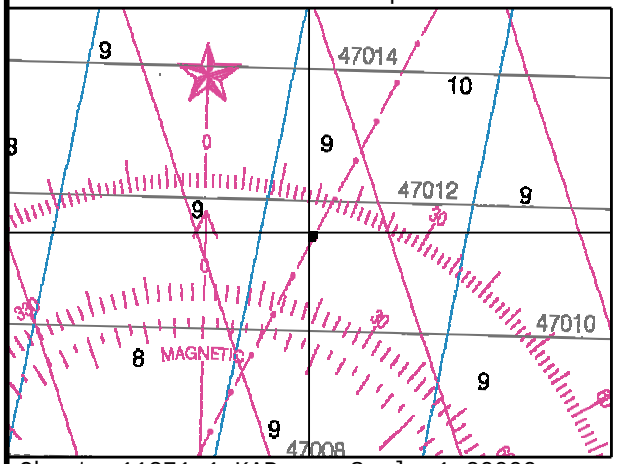


Chart: 11371_1.KAP Scale 1:20000

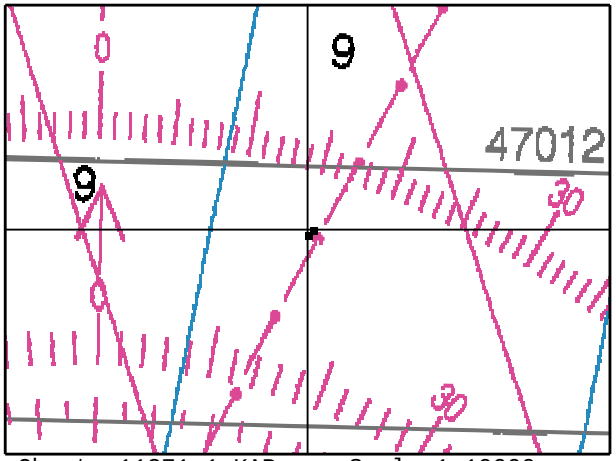
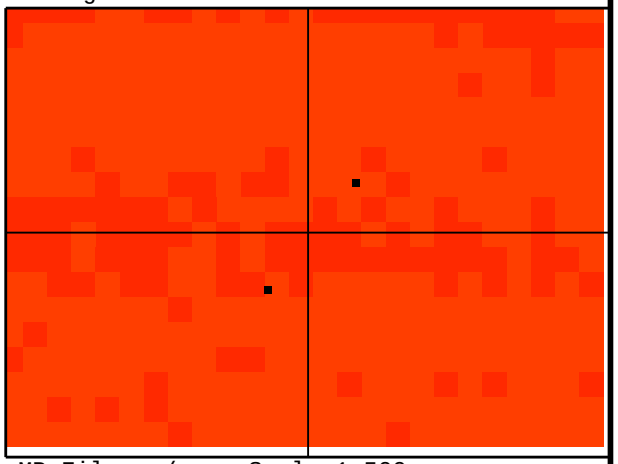
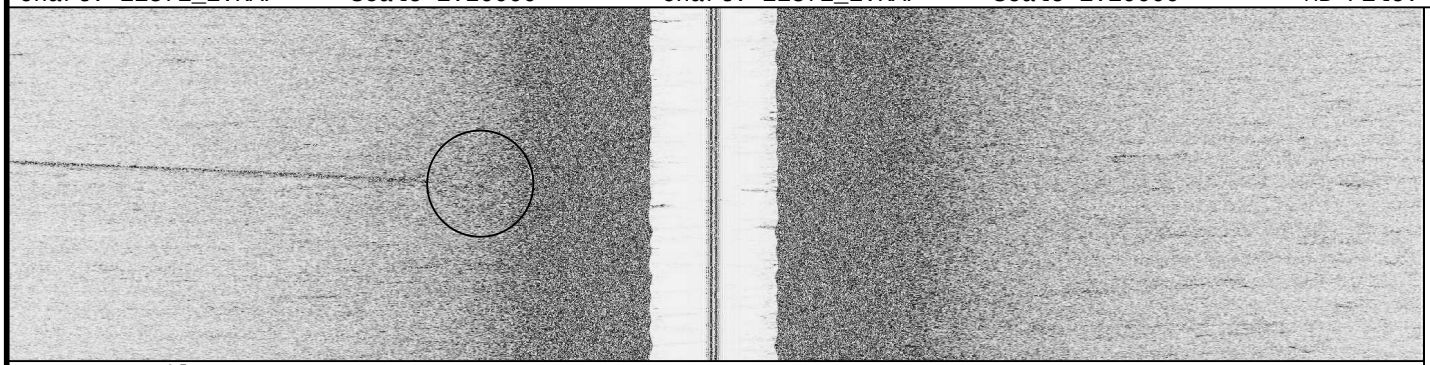


Chart: 11371_1.KAP Scale 1:10000

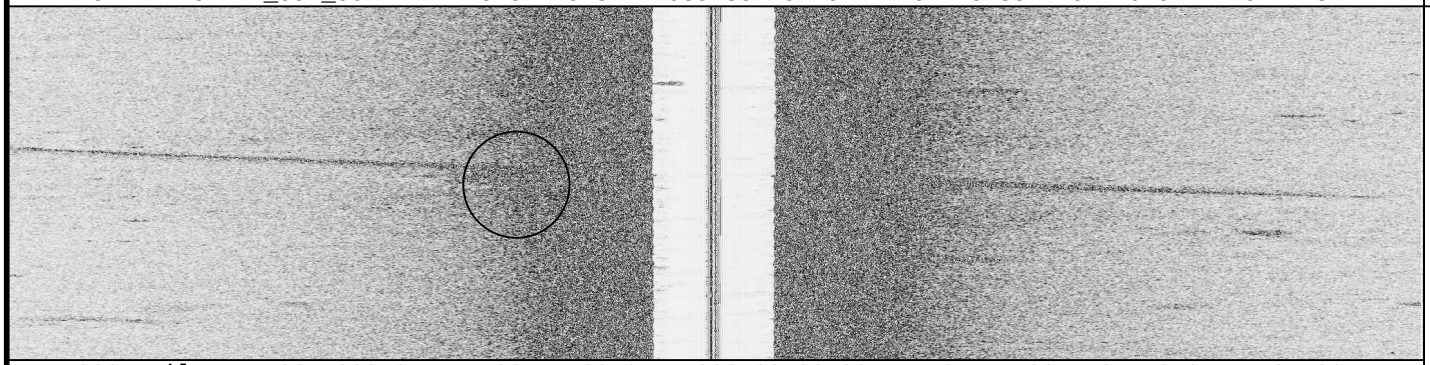


MB File: n/a Scale 1:500



ID: 231 File: LM_091_001.XTF 29 57 10.31N 089 38 20.26W RNG: -8.30 HGT: 0.01 HDG: 273

COMMENT:
Plot special purpose buoy
symbol and label Y Priv



ID: 232 File: LM_091_002_2.XTF 29 57 09.61N 089 38 20.93W RNG: -7.03 HGT: 0.01 HDG: 091

CORRELATED SS CONTACTS:

Contact	Range/Height
091122422	-8.30/0.01
091133644	-7.03/0.01

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0085 Least Depth: 10(ft), 2.99(m) Lat: 29 58 19.20N Lon: 089 37 23.75W Ping: Beam:

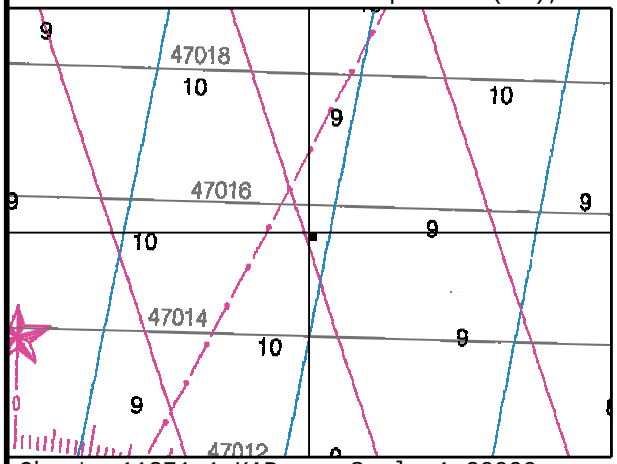


Chart: 11371_1.KAP Scale 1:20000

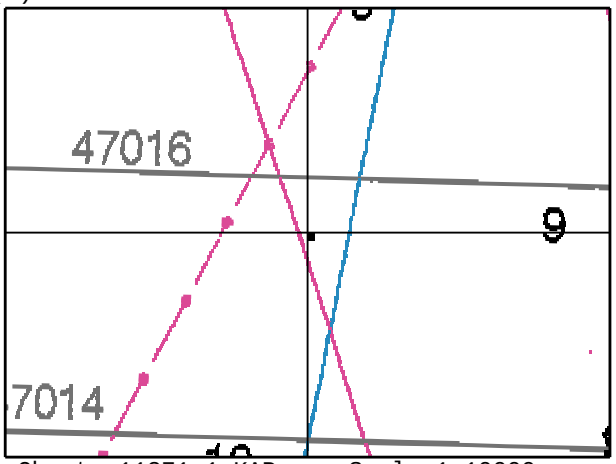
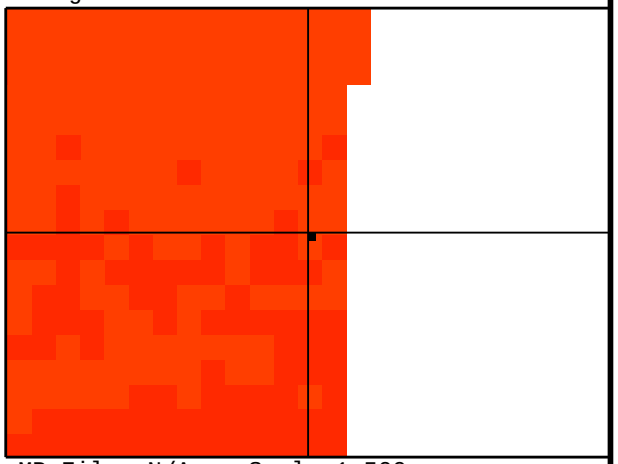
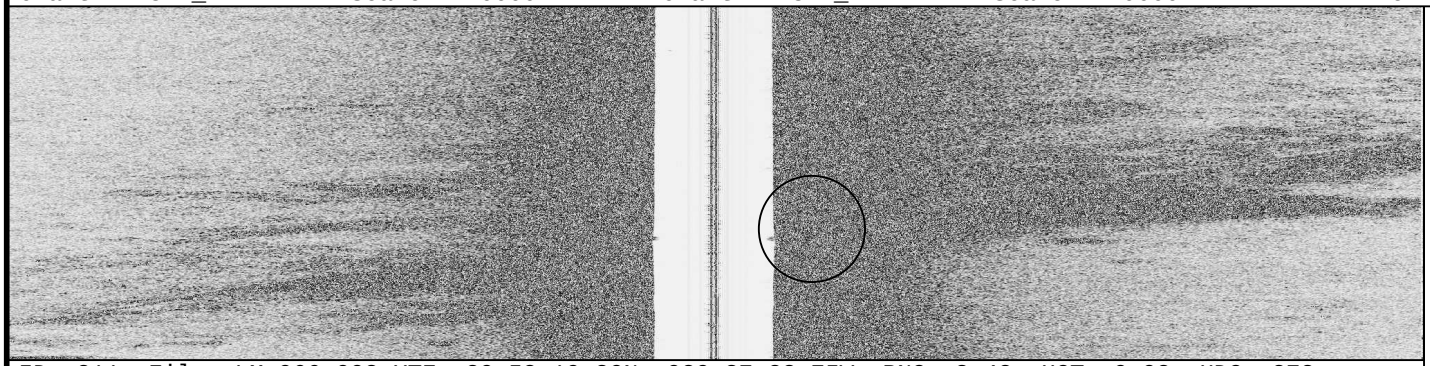


Chart: 11371_1.KAP Scale 1:10000



MB File: N/A Scale 1:500



ID: 211 File: LM_066_008.XTF 29 58 19.20N 089 37 23.75W RNG: 3.42 HGT: 0.02 HDG: 272

COMMENT:
Pipeline Connect F85 F26 F27 F51

CORRELATED SS CONTACTS:

Contact	Range/Height
066204323	3.42/0.02

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0084 Least Depth: Lat: 29 59 53.13N Lon: 089 51 25.38W Ping: Beam:

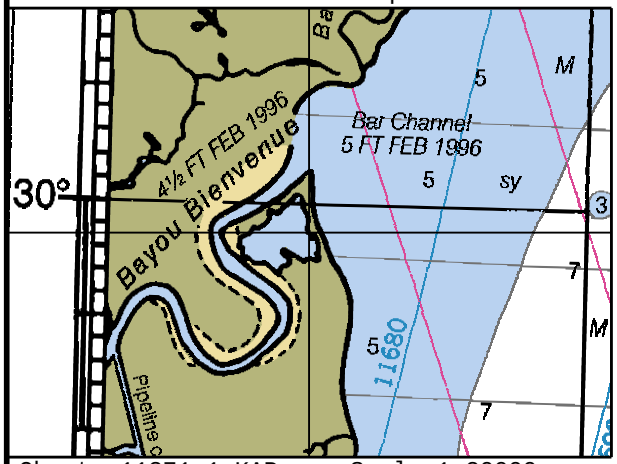


Chart: 11371_1.KAP Scale 1:20000

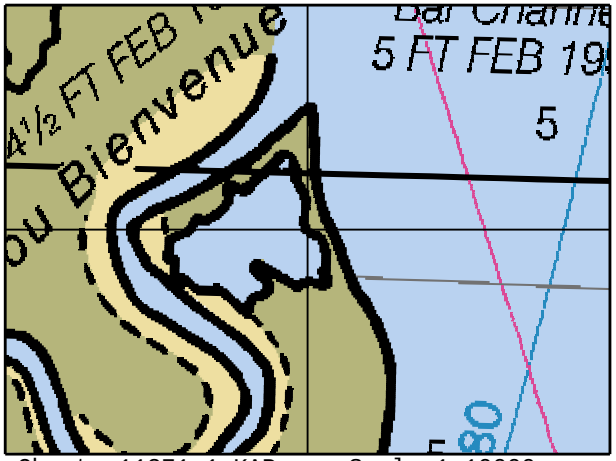
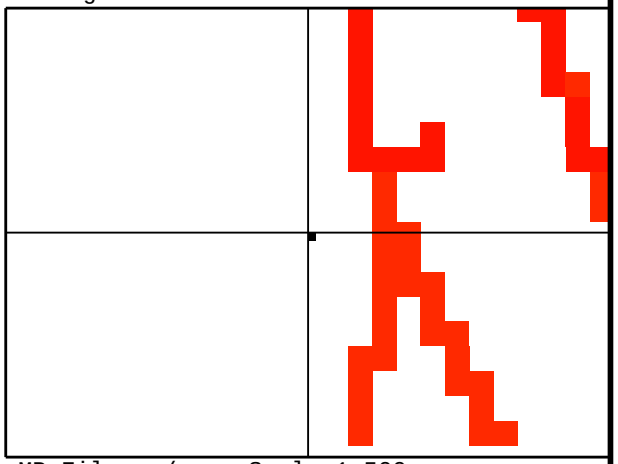
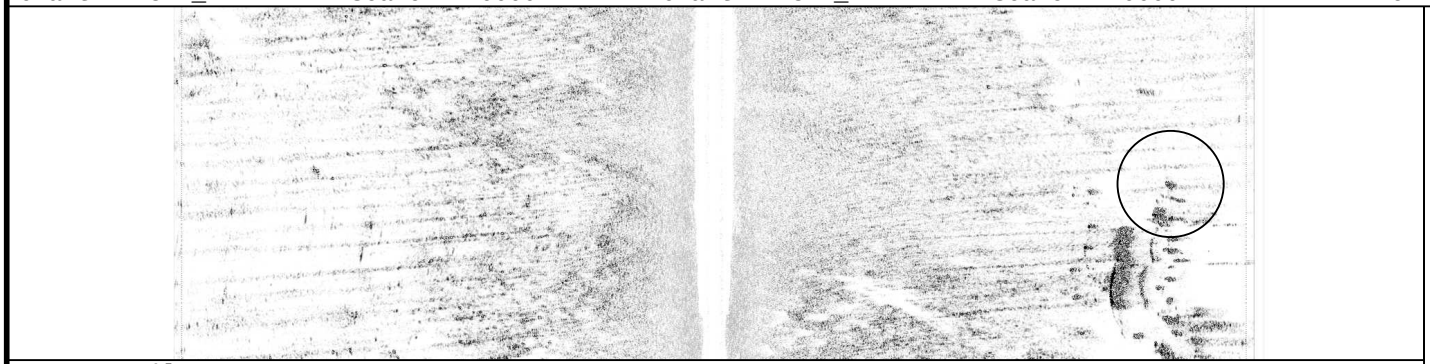


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 80 File: TD07106_070416145900.XTF 29 59 53.13N 089 51 25.38W RNG: 20.59 HGT: 0.12 HDG: 153

COMMENT:
Plot Pile symbol

CORRELATED SS CONTACTS:

Contact	Range/Height
106150530	20.59/0.12

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0083 Least Depth: Lat: 29 59 58.45N Lon: 089 51 26.51W Ping: Beam:

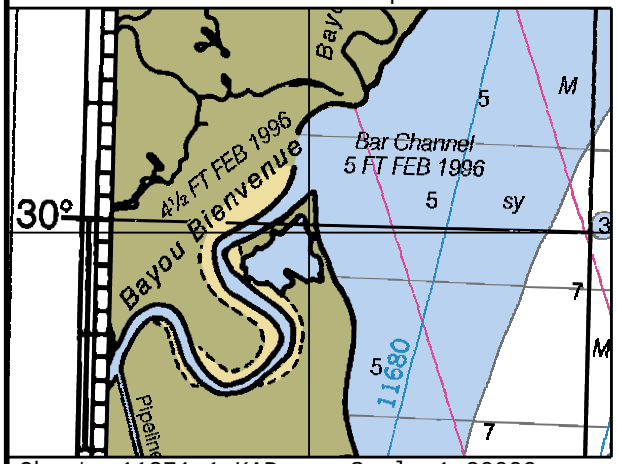


Chart: 11371_1.KAP Scale 1:20000

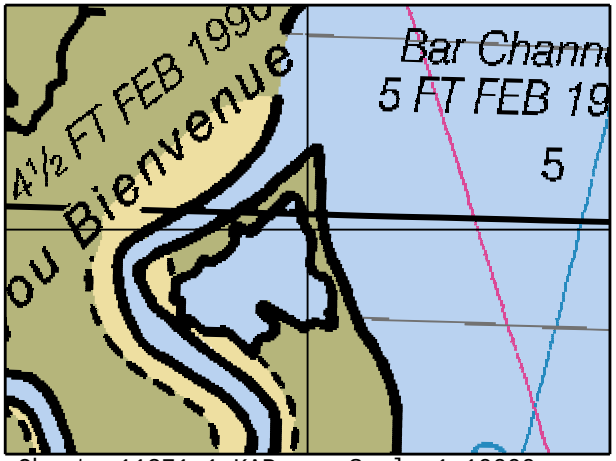
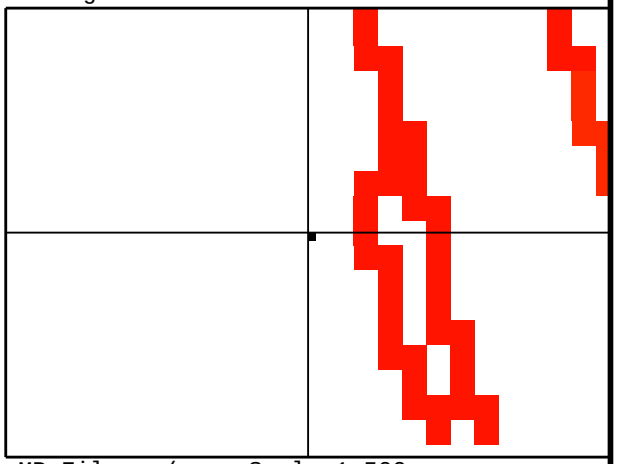
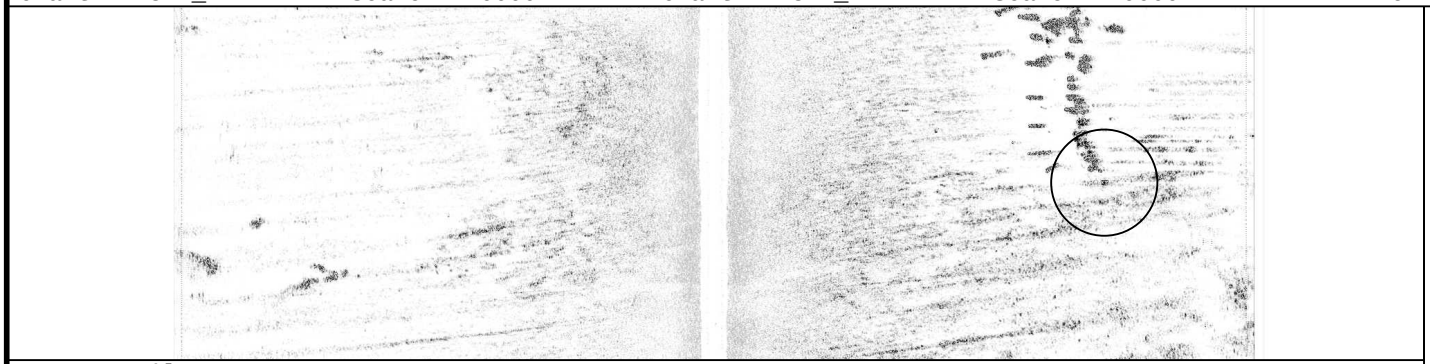


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 79 File: TD07106_070416145900.XTF 29 59 58.45N 089 51 26.51W RNG: 17.59 HGT: 0.16 HDG: 180

COMMENT:
Plot Pile symbol and label
Piles See F84

CORRELATED SS CONTACTS:

Contact	Range/Height
106150422	17.59/0.16

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0082 Least Depth: Lat: 30 02 48.63N Lon: 089 47 31.08W Ping: Beam:

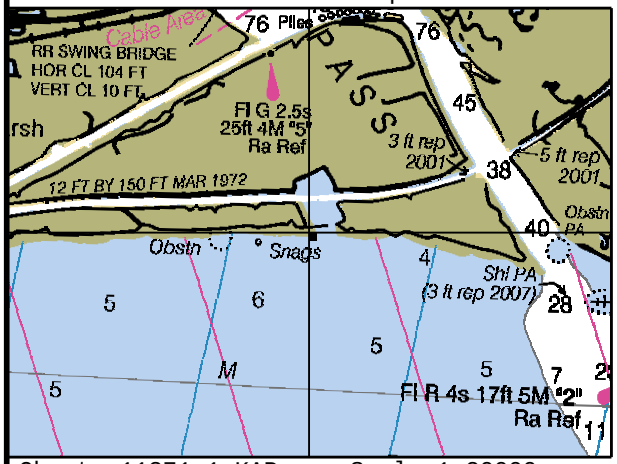


Chart: 11371_1.KAP Scale 1:20000

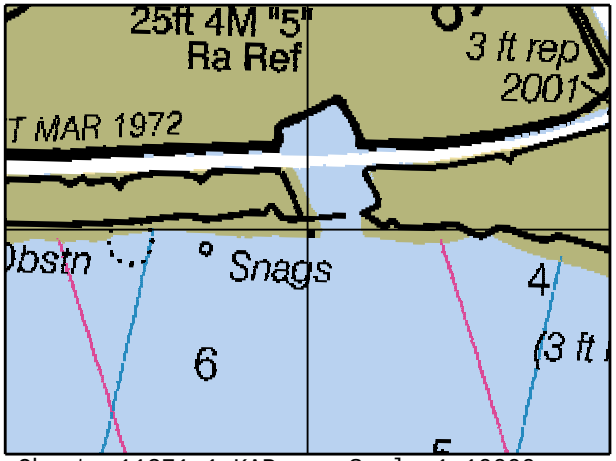
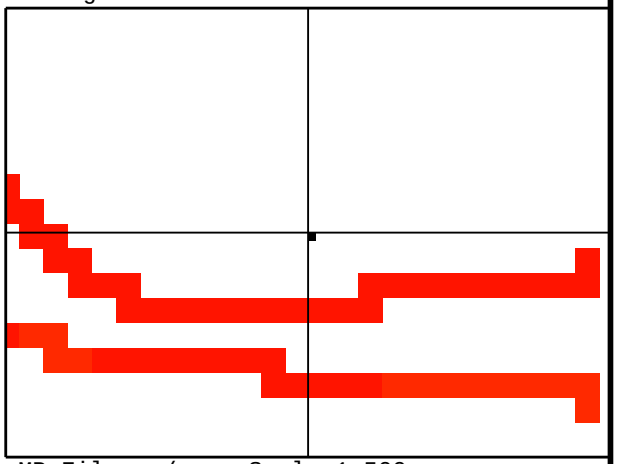
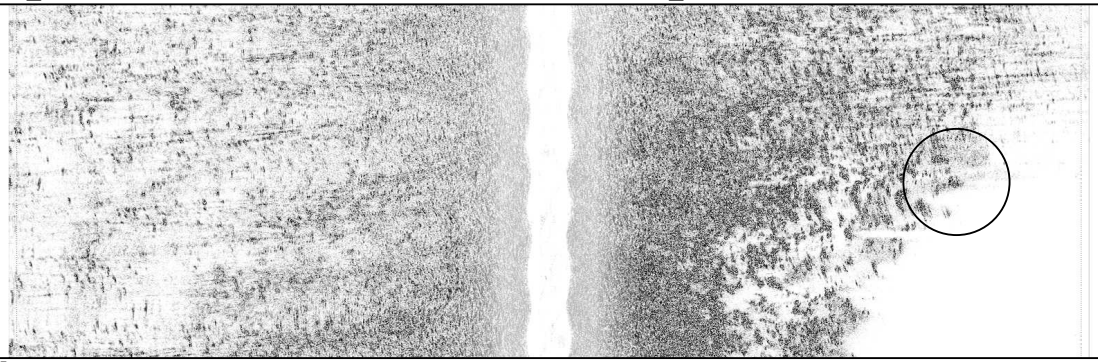


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 69 File: TD07098_070408191400.XTF 30 02 48.63N 089 47 31.08W RNG: 18.38 HGT: 0.18 HDG: 254

COMMENT:
Plot Jetty Symbol F81 to F82

CORRELATED SS CONTACTS:

Contact	Range/Height
098192353	18.38/0.18

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0081 Least Depth: Lat: 30 02 49.56N Lon: 089 47 23.53W Ping: Beam:

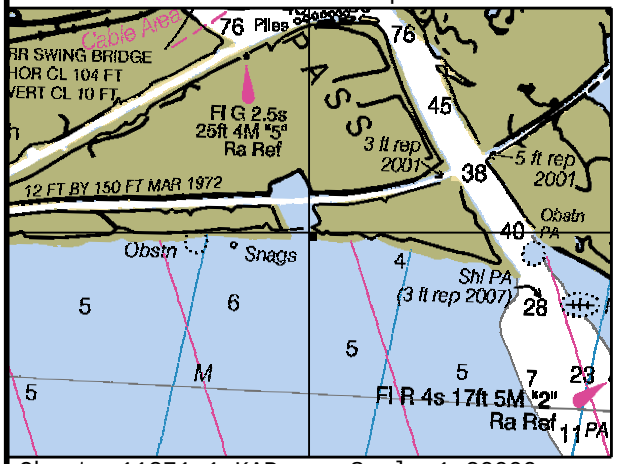


Chart: 11371_1.KAP Scale 1:20000

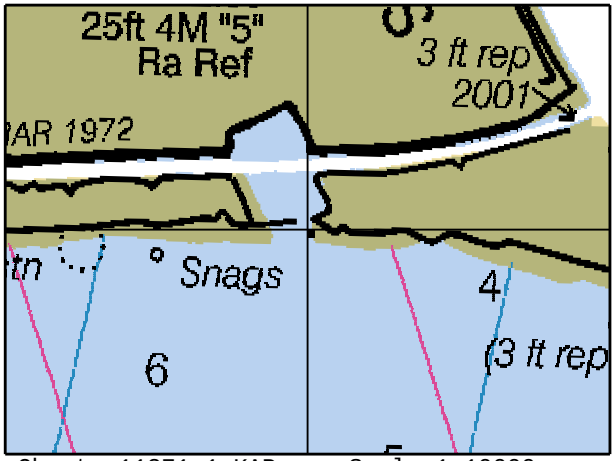
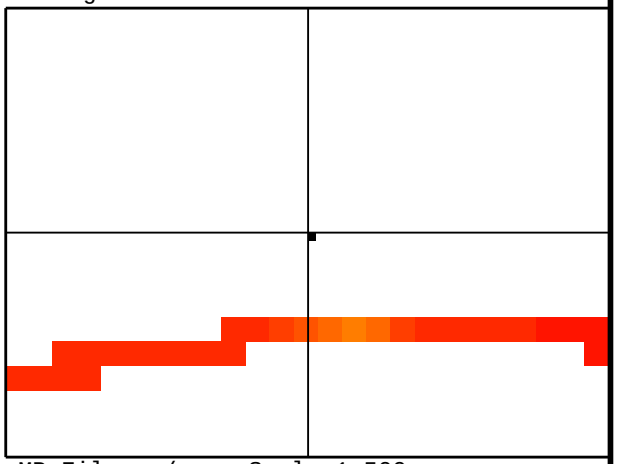
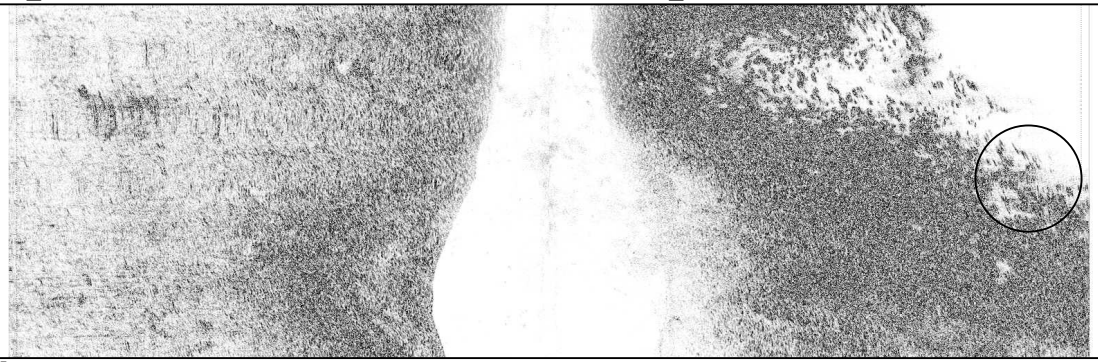


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 68 File: TD07098_070408191400.XTF 30 02 49.56N 089 47 23.53W RNG: 21.62 HGT: 0.31 HDG: 262

COMMENT:
Plot Jetty Symbol F81 to F82

CORRELATED SS CONTACTS:

Contact	Range/Height
098192127	21.62/0.31

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0080 Least Depth: 3(ft), 0.94(m) Lat: 29 58 27.00N Lon: 089 51 04.58W Ping: Beam:

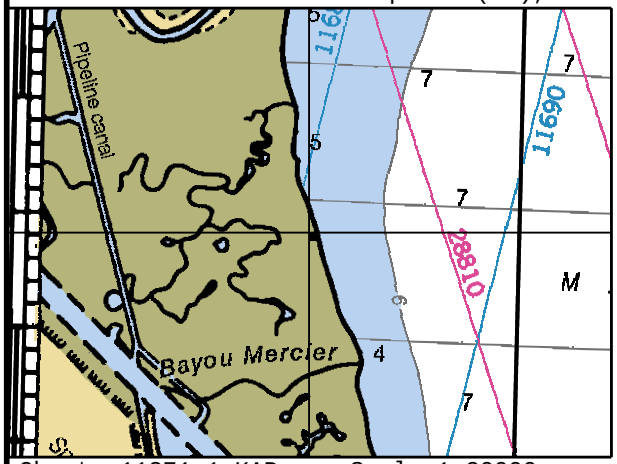


Chart: 11371_1.KAP Scale 1:20000

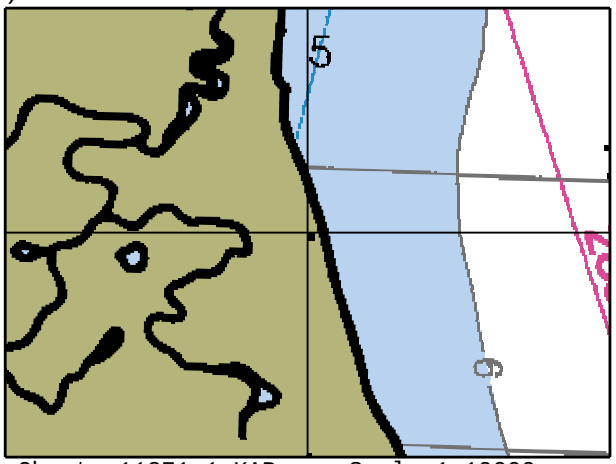
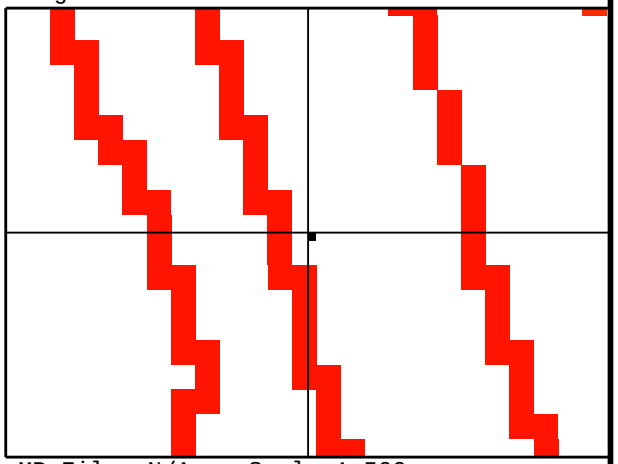
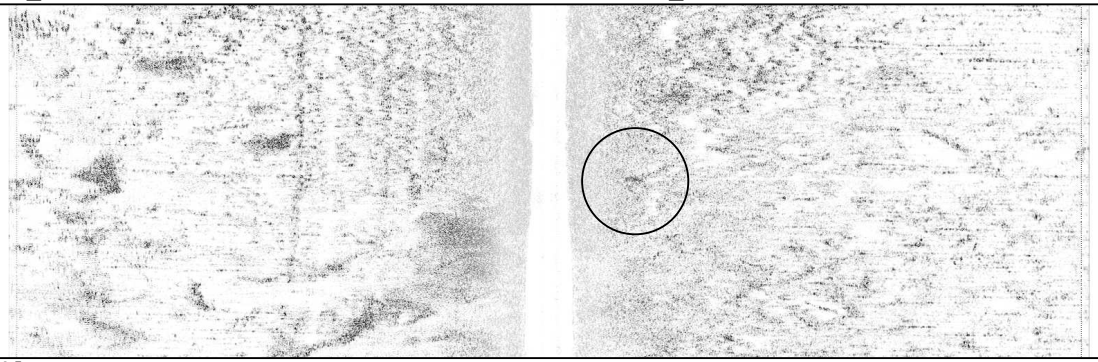


Chart: 11371_1.KAP Scale 1:10000



MB File: N/A Scale 1:500



ID: 107 File: TD07117_070427171200.XTF 29 58 27.00N 089 51 04.58W RNG: 3.84 HGT: 0.57 HDG: 341

COMMENT:
No Plot - Nonsig

CORRELATED SS CONTACTS:

Contact	Range/Height
117172523	3.84/0.57

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0079 Least Depth: 4(ft), 1.18(m) Lat: 30 02 40.55N Lon: 089 45 56.85W Ping: Beam:

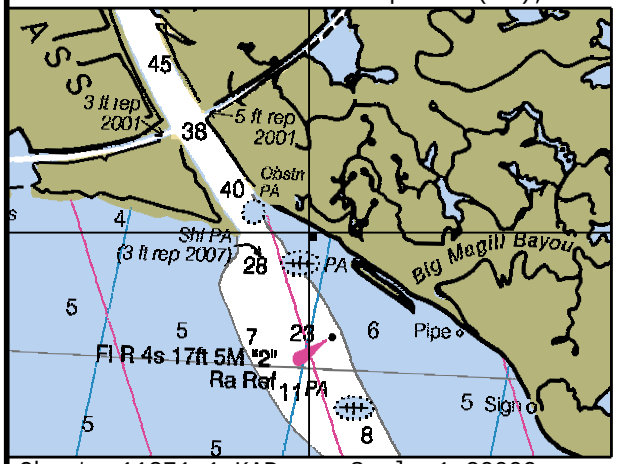


Chart: 11371_1.KAP Scale 1:20000

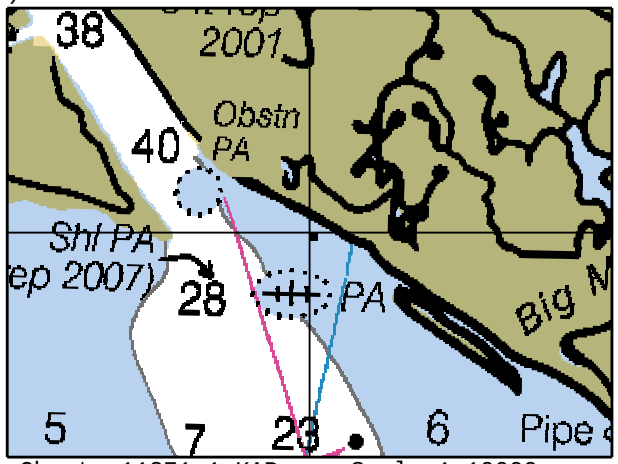
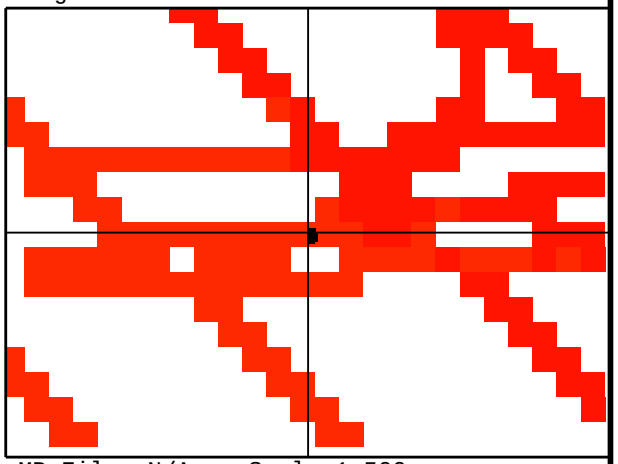
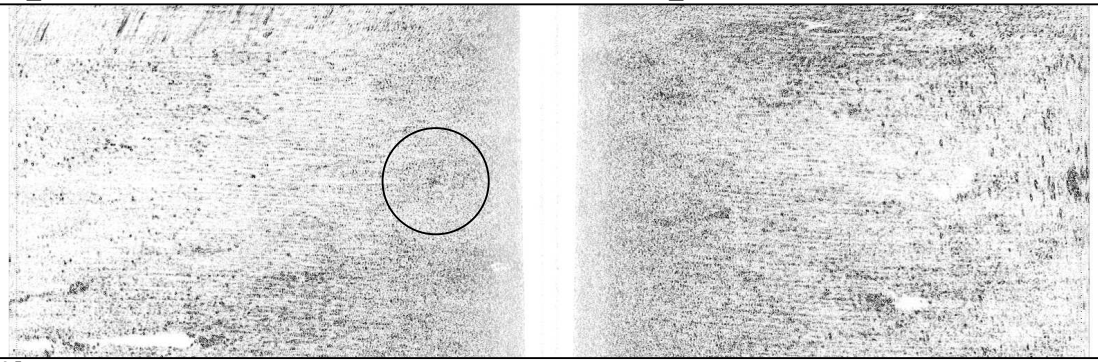


Chart: 11371_1.KAP Scale 1:10000

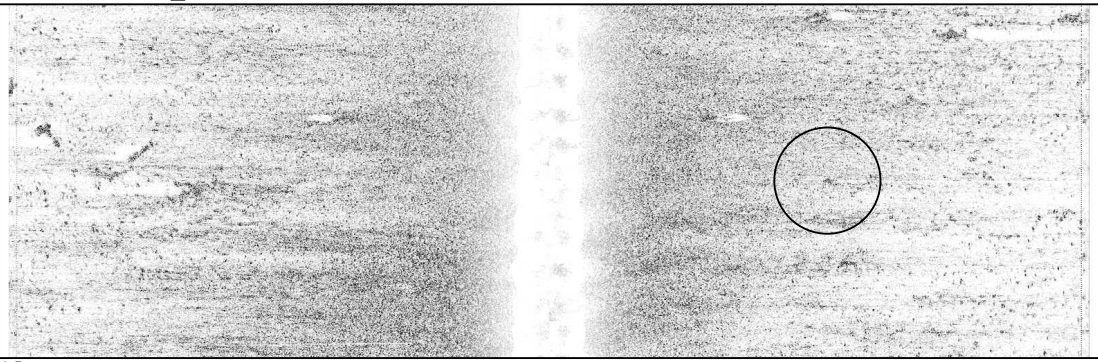


MB File: N/A Scale 1:500



ID: 105 File: TD07117_070427160500.XTF 30 02 40.53N 089 45 56.86W RNG: -5.19 HGT: 0.83 HDG: 265

COMMENT:
No Plot - foul area



ID: 139 File: TD07148_070528151800.XTF 30 02 40.58N 089 45 56.85W RNG: 12.53 HGT: 0.70 HDG: 087

CORRELATED SS CONTACTS:

Contact	Range/Height
117160623	-5.19/0.83
148151951	12.53/0.70
148152238	-10.53/0.79
148152533	-2.16/1.13

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0078 Least Depth: Lat: 30 01 28.35N Lon: 089 50 30.35W Ping: Beam:

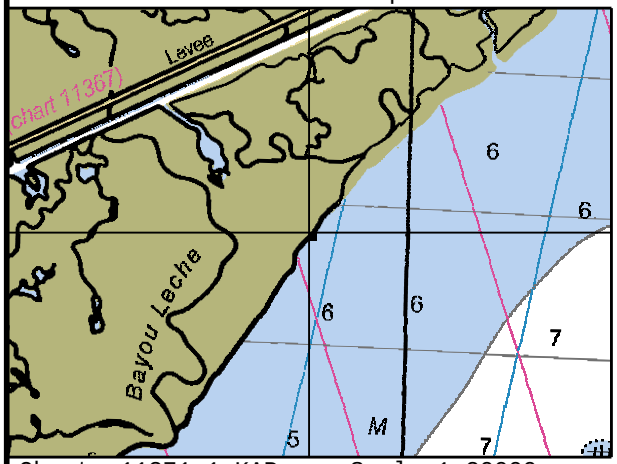


Chart: 11371_1.KAP Scale 1:20000

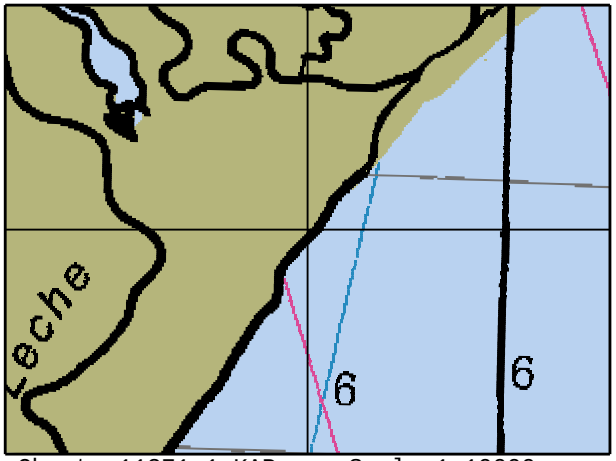
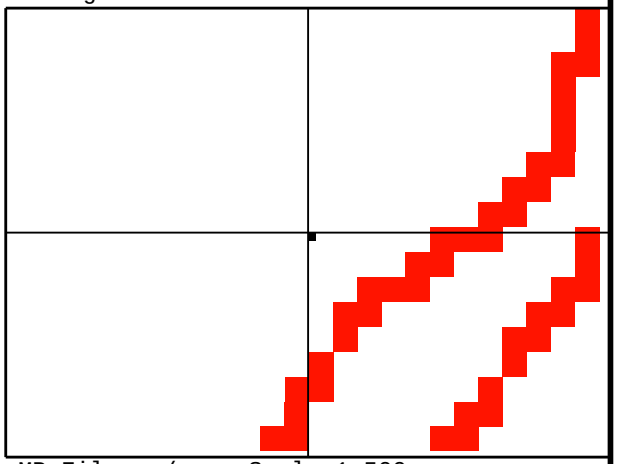
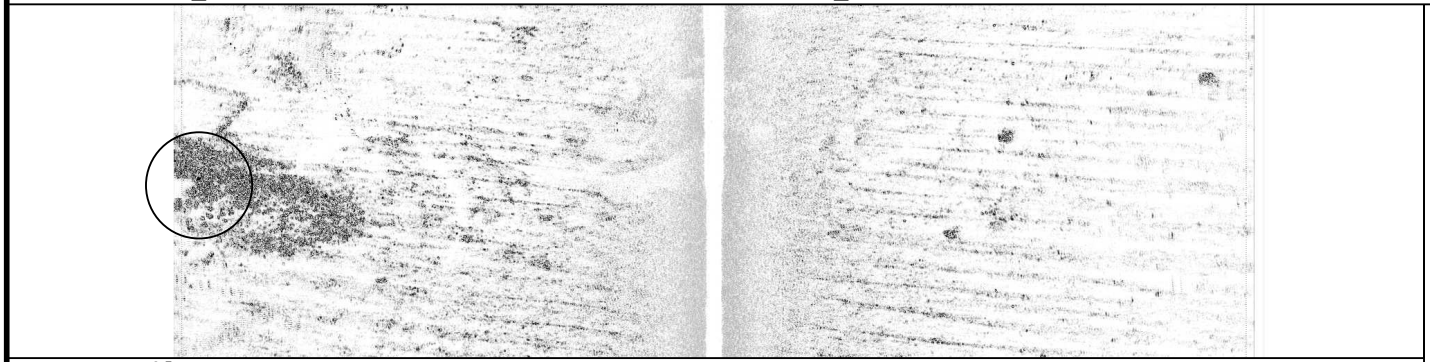


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 78 File: TD07106_070416135700.XTF 30 01 28.35N 089 50 30.35W RNG: -23.34 HGT: 0.01 HDG: 046

COMMENT:
Plot ruined jetty and label Ruins

CORRELATED SS CONTACTS:

Contact	Range/Height
106141446	-23.34/0.01

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0077 Least Depth: Lat: 29 59 34.37N Lon: 089 51 17.24W Ping: Beam:

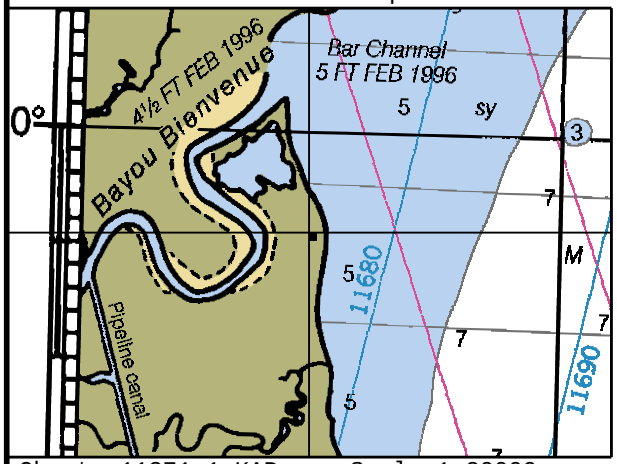


Chart: 11371_1.KAP Scale 1:20000

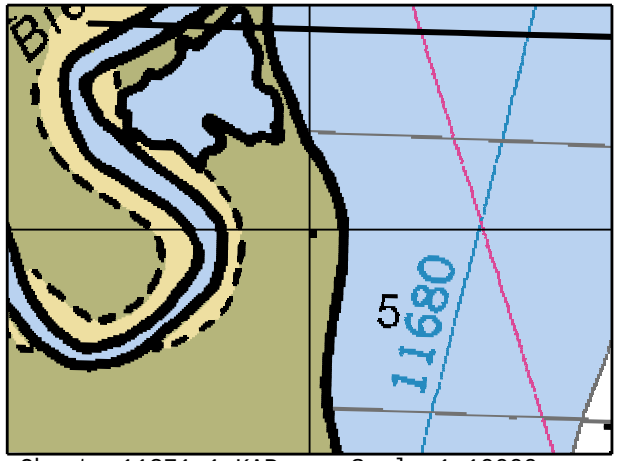
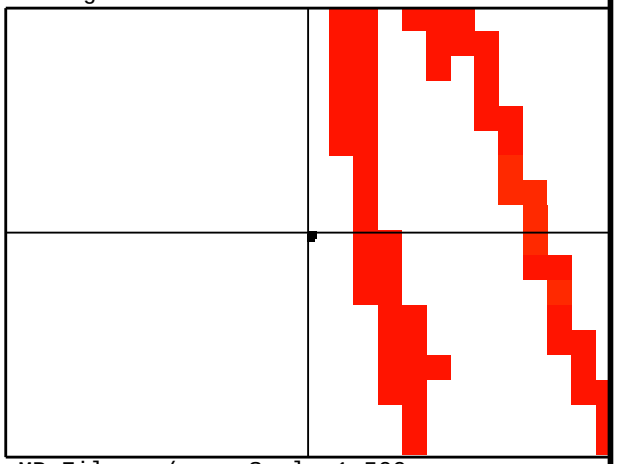
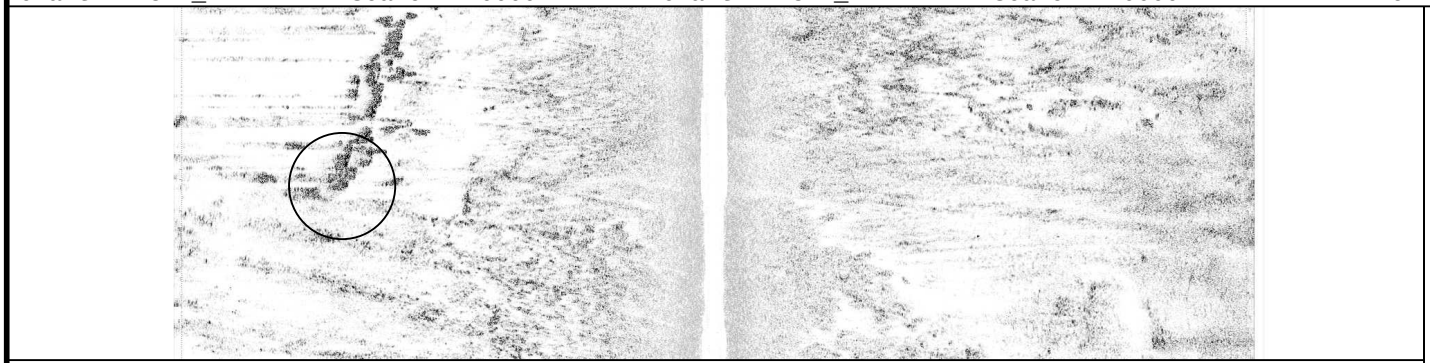


Chart: 11371_1.KAP Scale 1:10000

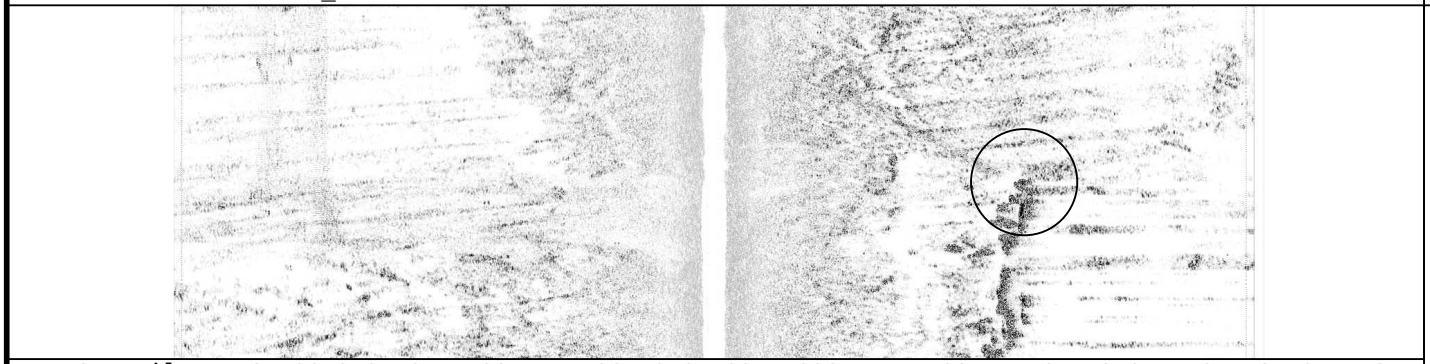


MB File: n/a Scale 1:500



ID: 81 File: TD07106_070416151000.XTF 29 59 34.36N 089 51 17.25W RNG: -16.88 HGT: 0.16 HDG: 348

COMMENT:
Plot Pile symbol



ID: 84 File: TD07106_070416154700.XTF 29 59 34.38N 089 51 17.23W RNG: 13.97 HGT: 0.19 HDG: 173

CORRELATED SS CONTACTS:

Contact	Range/Height
106151113	-16.88/0.16
106155043	13.97/0.19

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0076 Least Depth: Lat: 29 59 35.81N Lon: 089 51 17.22W Ping: Beam:

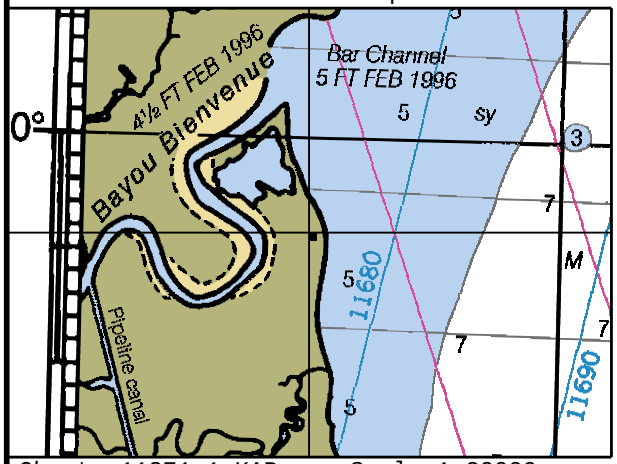


Chart: 11371_1.KAP Scale 1:20000

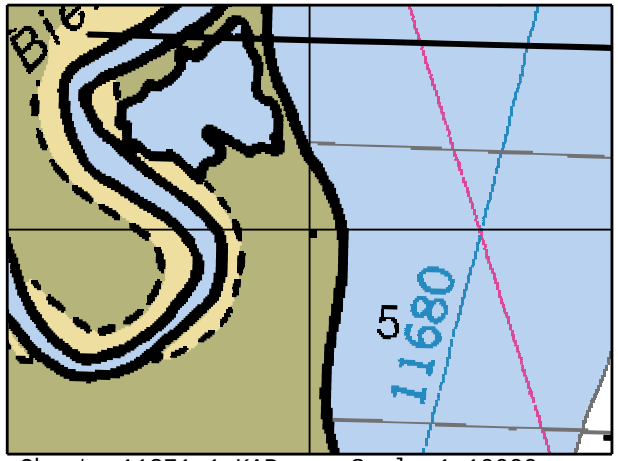
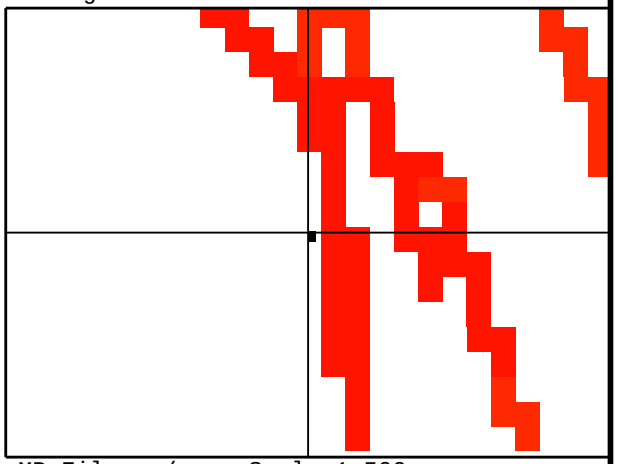
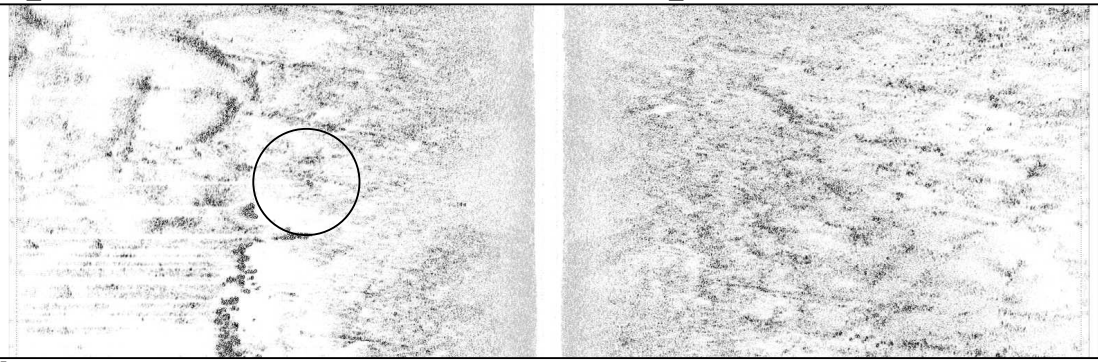


Chart: 11371_1.KAP Scale 1:10000

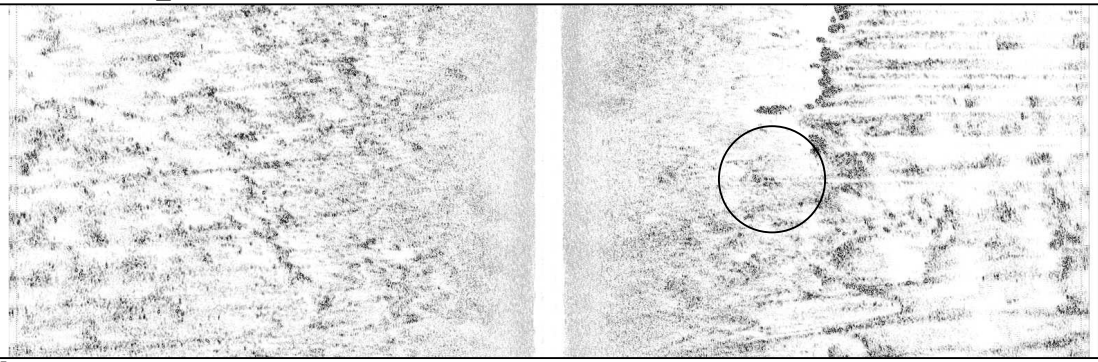


MB File: n/a Scale 1:500



ID: 82 File: TD07106_070416151000.XTF 29 59 35.79N 089 51 17.22W RNG: -11.03 HGT: 0.31 HDG: 355

COMMENT:
Plot Pile symbol and label
Piles See F77



ID: 83 File: TD07106_070416154700.XTF 29 59 35.82N 089 51 17.22W RNG: 10.03 HGT: 0.37 HDG: 174

CORRELATED SS CONTACTS:

Contact	Range/Height
106151131	-11.03/0.31
106155020	10.03/0.37

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0075 Least Depth: Lat: 30 01 40.13N Lon: 089 47 12.92W Ping: Beam:

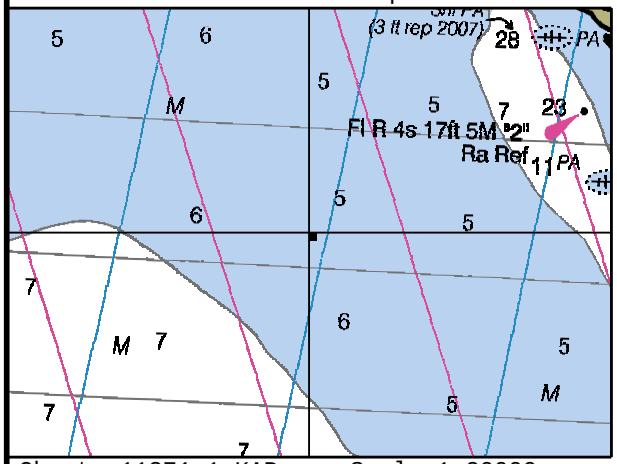


Chart: 11371_1.KAP Scale 1:20000

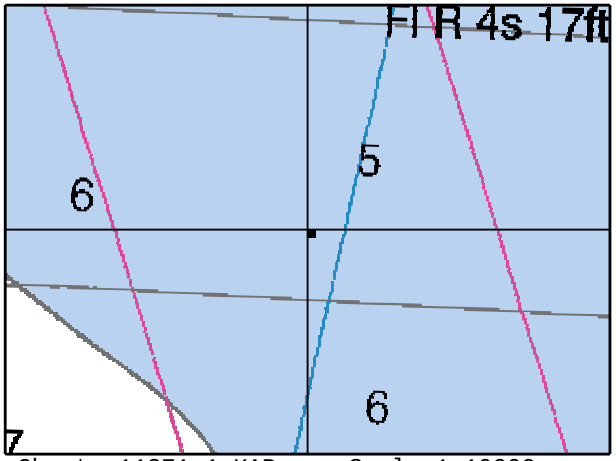
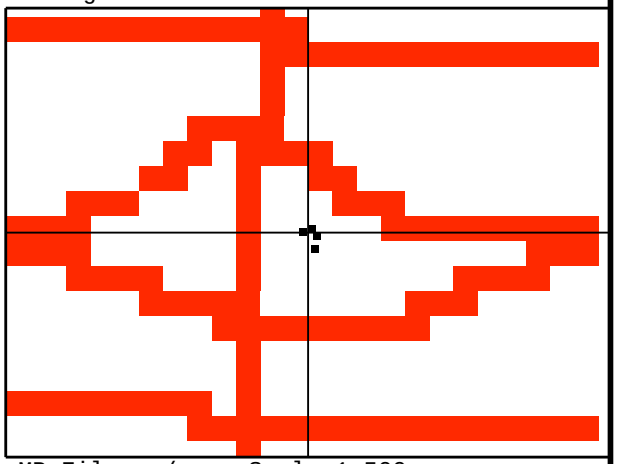
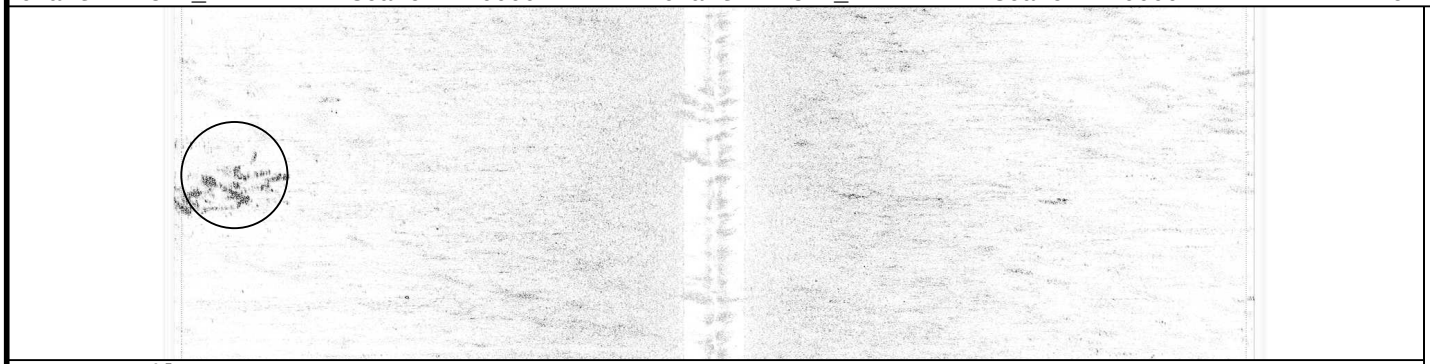


Chart: 11371_1.KAP Scale 1:10000

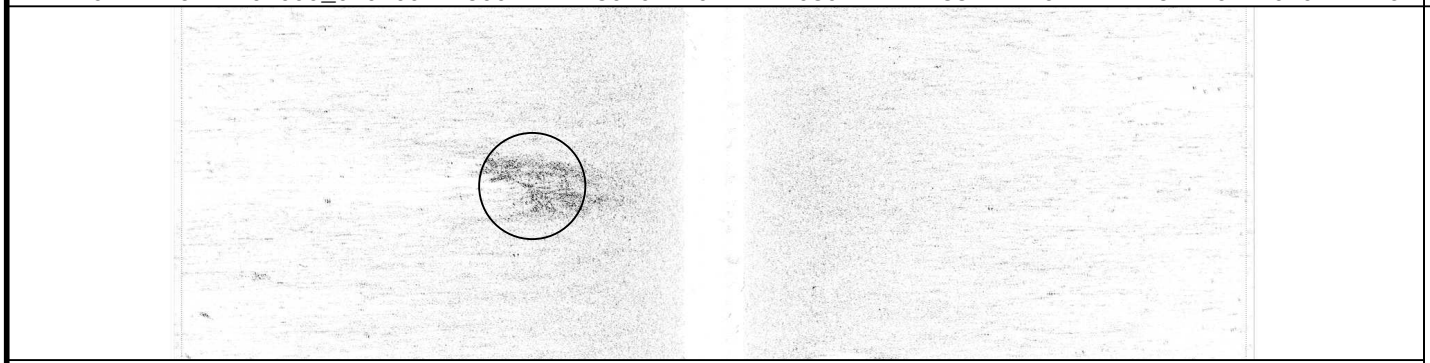


MB File: n/a Scale 1:500



ID: 70 File: TD07099_070409142500.XTF 30 01 40.14N 089 47 12.88W RNG: -21.75 HGT: 0.04 HDG: 105

COMMENT:
Plot Snag symbol and label
Snag



ID: 85 File: TD07109_070419163200.XTF 30 01 40.18N 089 47 12.93W RNG: -8.28 HGT: 0.72 HDG: 187

CORRELATED SS CONTACTS:

Contact	Range/Height
099144614	-21.75/0.04
109164404	-8.28/0.72
114131221	-13.28/0.46
114131546	-11.94/0.51

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0074 Least Depth: 4(ft), 1.20(m) Lat: 29 56 04.33N Lon: 089 48 44.27W Ping: Beam:

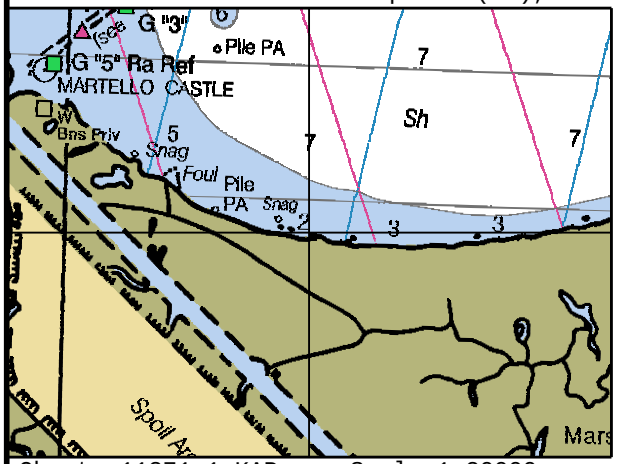


Chart: 11371_1.KAP Scale 1:20000

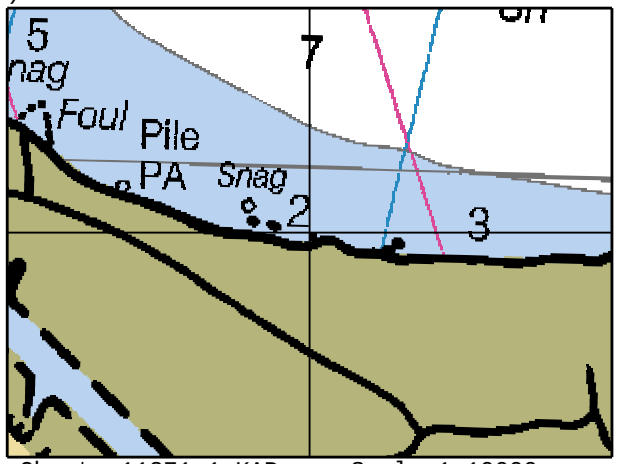
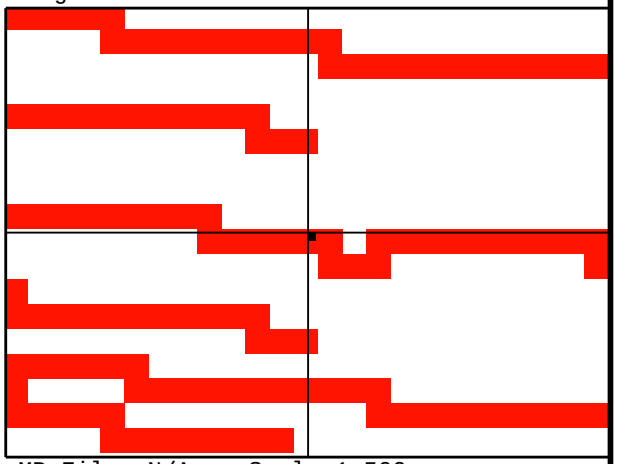


Chart: 11371_1.KAP Scale 1:10000



MB File: N/A Scale 1:500

ID: 65 File: TD07080_070321181000.XTF 29 56 04.33N 089 48 44.27W RNG: 5.12 HGT: 0.67 HDG: 278

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height
080181554	5.12/0.67

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0073 Least Depth: 4(ft), 1.35(m) Lat: 30 02 34.78N Lon: 089 45 55.02W Ping: Beam:

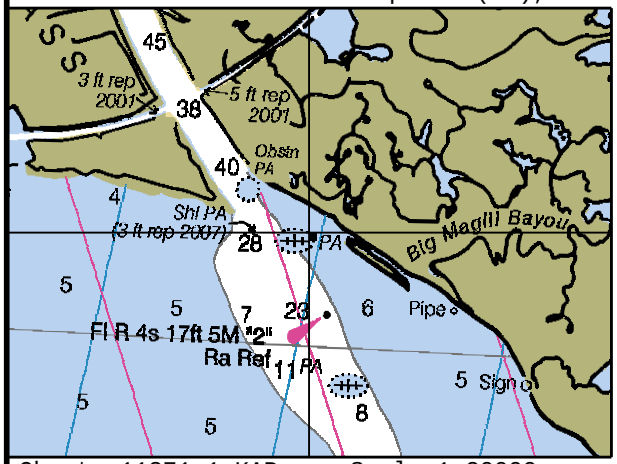


Chart: 11371_1.KAP Scale 1:20000

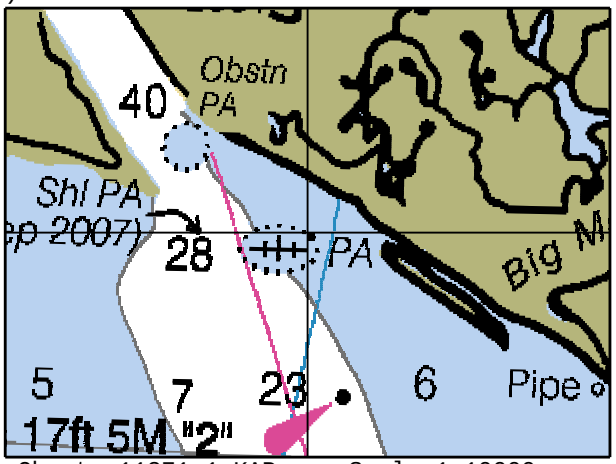
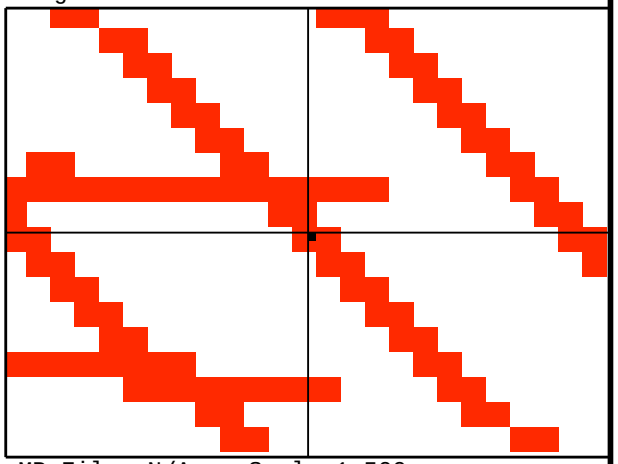
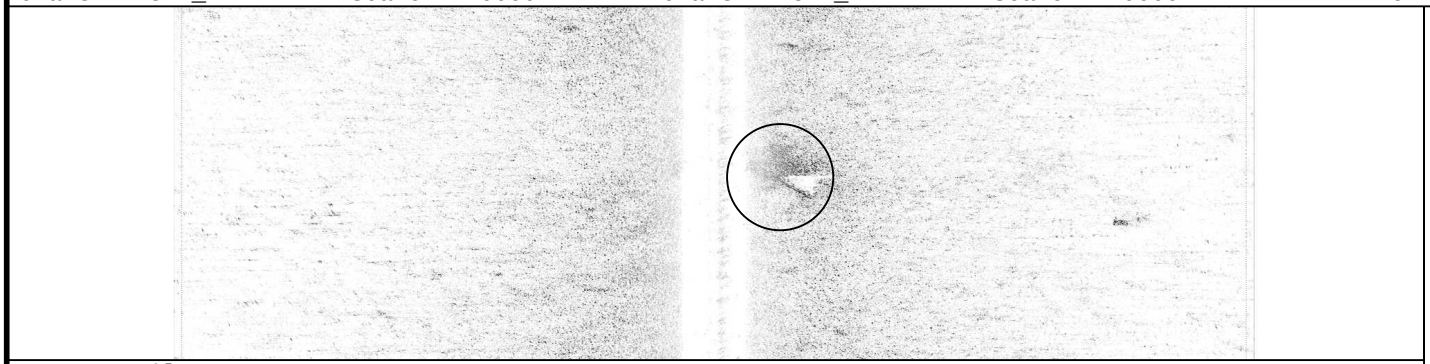


Chart: 11371_1.KAP Scale 1:10000



MB File: N/A Scale 1:500



ID: 62 File: TD07079_070320181600.XTF 30 02 34.78N 089 45 55.02W RNG: 2.94 HGT: 0.68 HDG: 133

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height
079182125	2.94/0.68

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0072 Least Depth: 4(ft), 1.44(m) Lat: 30 02 28.19N Lon: 089 45 38.05W Ping: Beam:

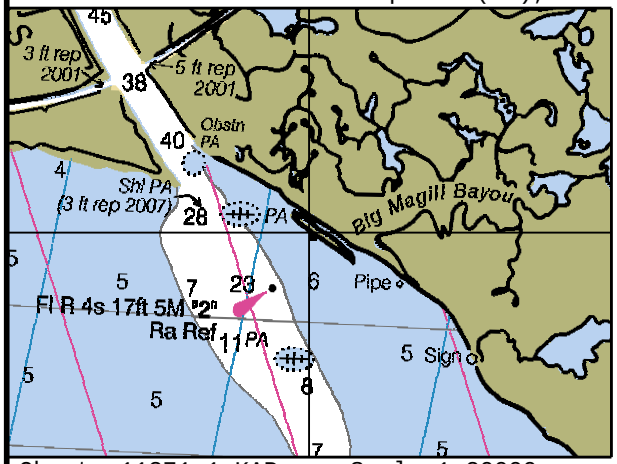


Chart: 11371_1.KAP Scale 1:20000

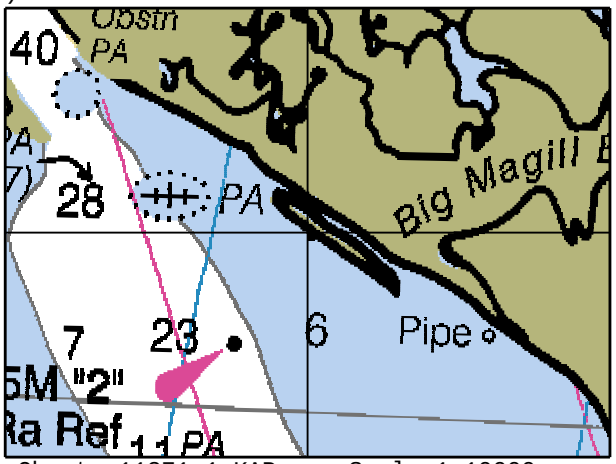
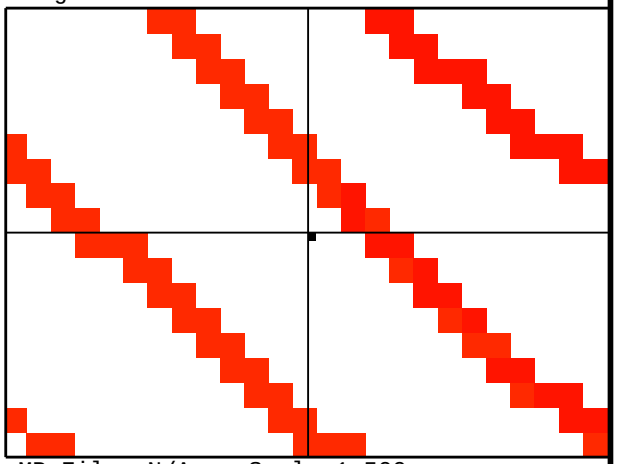
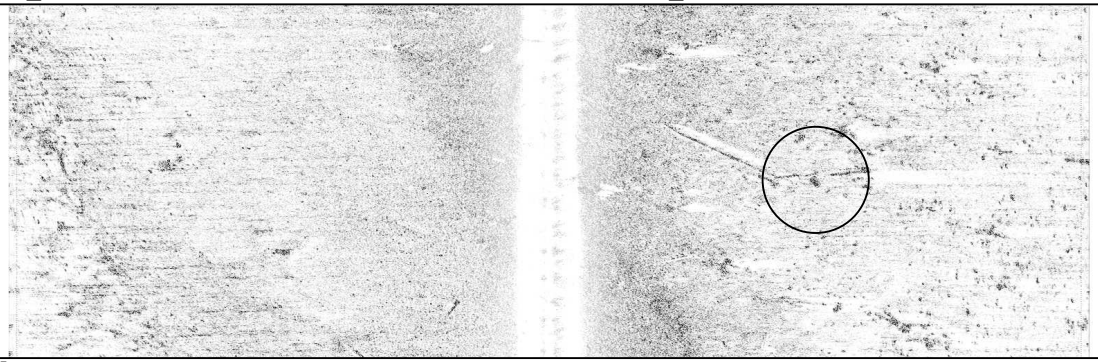


Chart: 11371_1.KAP Scale 1:10000



MB File: N/A Scale 1:500



ID: 56 File: TD07079_070320170000.XTF 30 02 28.19N 089 45 38.05W RNG: 12.00 HGT: 0.51 HDG: 131

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height
079170247	12.00/0.51

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0071 Least Depth: 12(ft), 3.66(m) Lat: 30 02 03.69N Lon: 089 45 52.44W Ping: Beam:

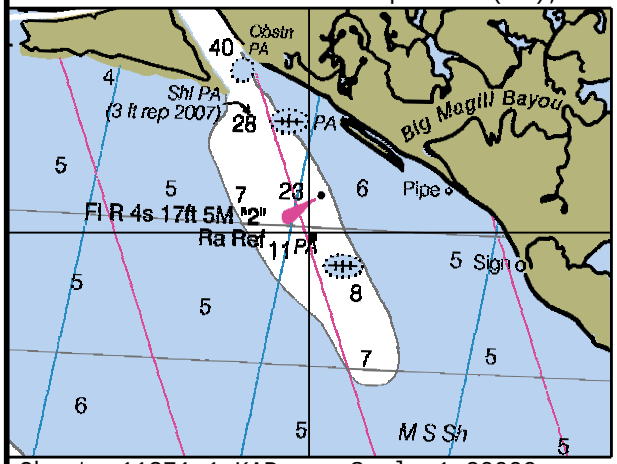


Chart: 11371_1.KAP Scale 1:20000

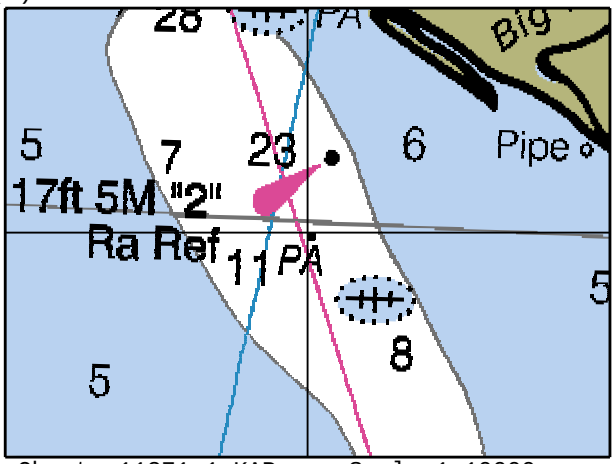
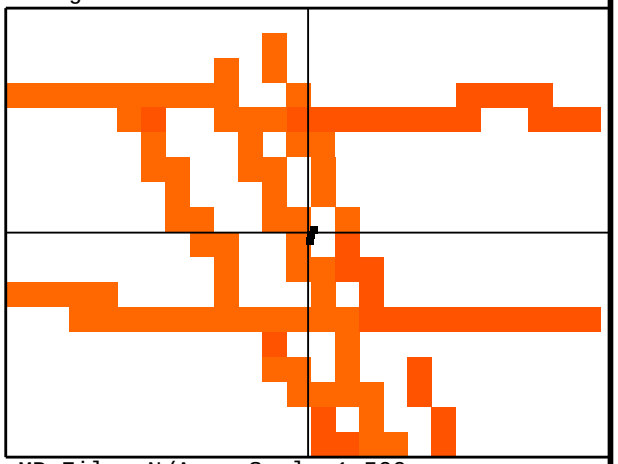
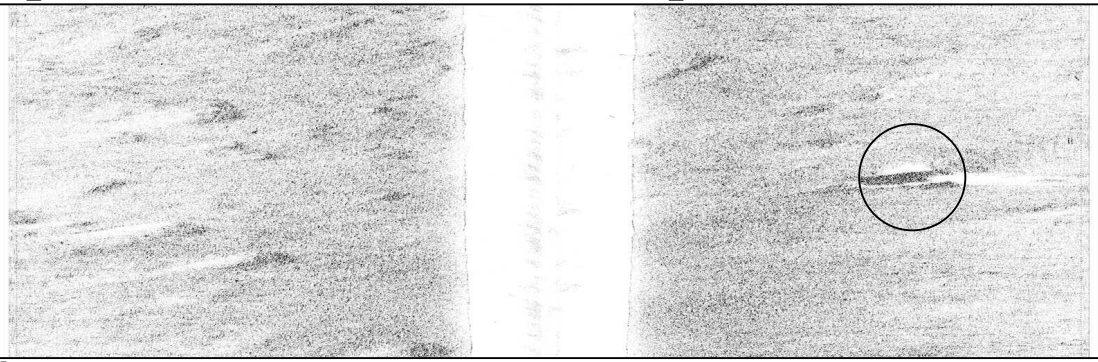


Chart: 11371_1.KAP Scale 1:10000

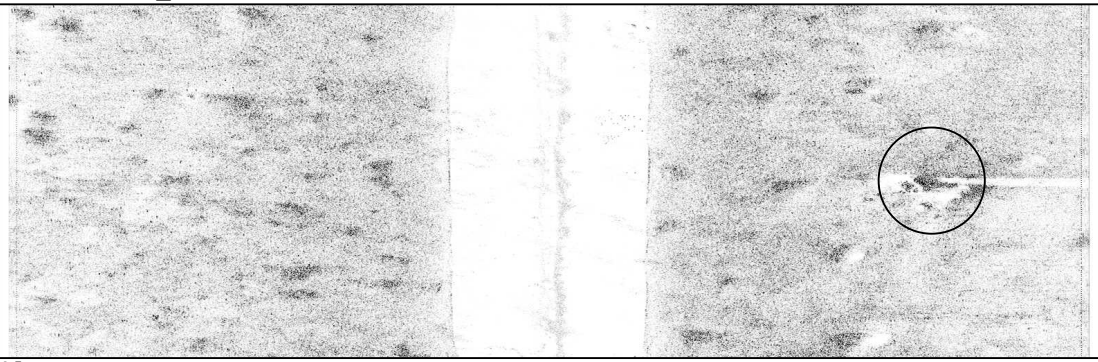


MB File: N/A Scale 1:500



ID: 46 File: TD07075_070316180600.XTF 30 02 03.67N 089 45 52.45W RNG: 16.38 HGT: 0.88 HDG: 264

COMMENT:
Plot sounding danger circle
and lable Obstn



ID: 137 File: TD07148_070528150200.XTF 30 02 03.71N 089 45 52.45W RNG: 17.25 HGT: 1.21 HDG: 326

CORRELATED SS CONTACTS:

Contact	Range/Height
075181115	16.38/0.88
148150524	17.25/1.21
148150936	-9.75/2.18

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0070 Least Depth: 7(ft), 2.25(m) Lat: 30 01 37.69N Lon: 089 42 54.64W Ping: Beam:

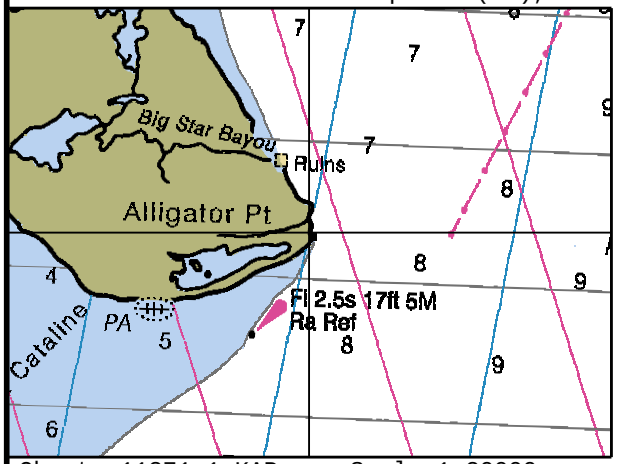


Chart: 11371_1.KAP Scale 1:20000

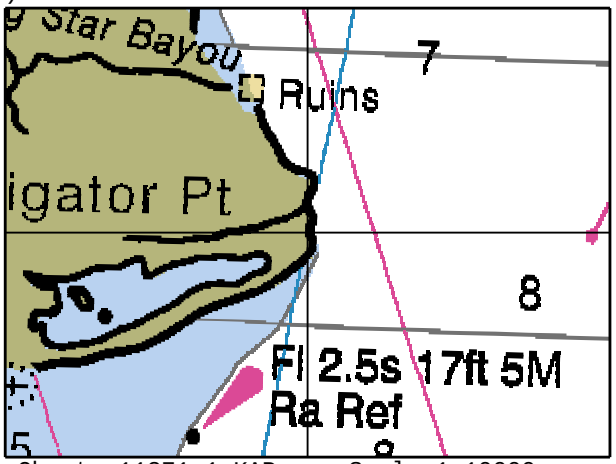
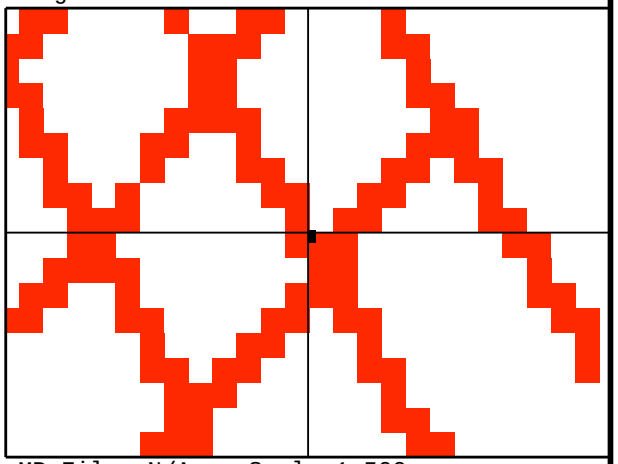
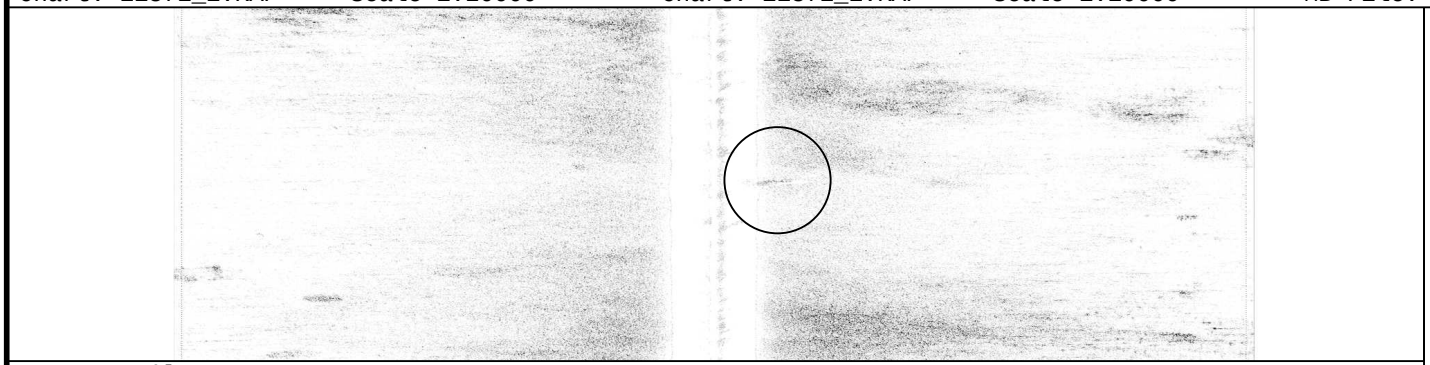


Chart: 11371_1.KAP Scale 1:10000

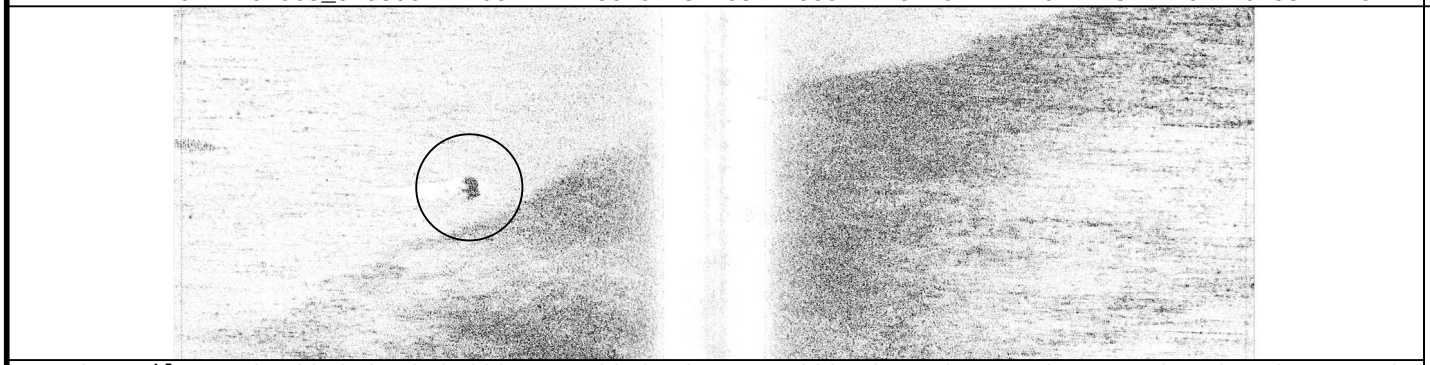


MB File: N/A Scale 1:500



ID: 42 File: TD07065_070306224100.XTF 30 01 37.68N 089 42 54.64W RNG: 2.81 HGT: 0.58 HDG: 149

COMMENT:
Plot sounding danger circle and lable Obstn



ID: 87 File: TD07109_070419195600.XTF 30 01 37.71N 089 42 54.65W RNG: -11.12 HGT: 0.57 HDG: 040

CORRELATED SS CONTACTS:

Contact	Range/Height
065225225	2.81/0.58
109195940	-11.12/0.57

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0069 Least Depth: 6(ft), 1.94(m) Lat: 30 01 51.85N Lon: 089 43 04.77W Ping: Beam:

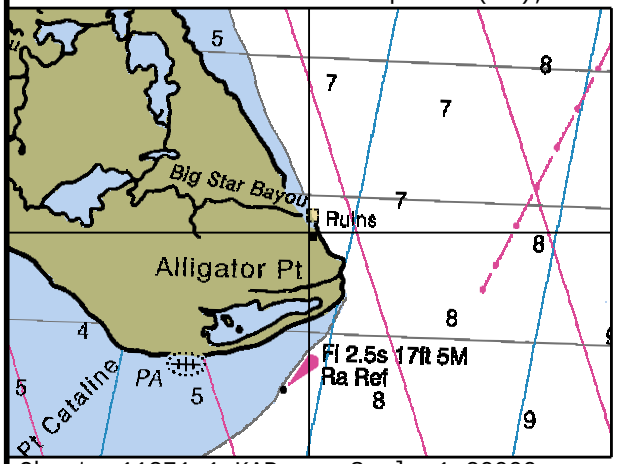


Chart: 11371_1.KAP Scale 1:20000

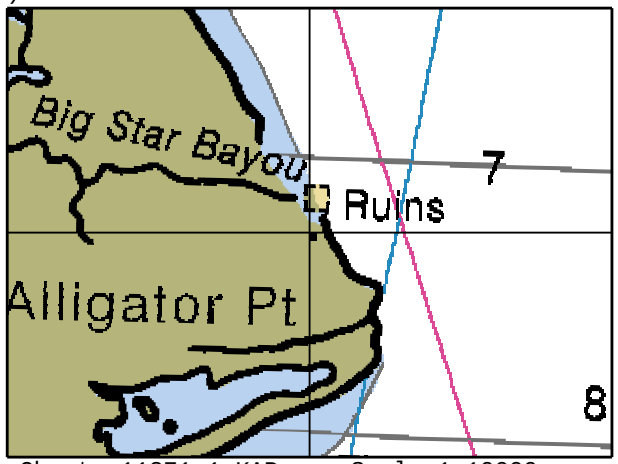
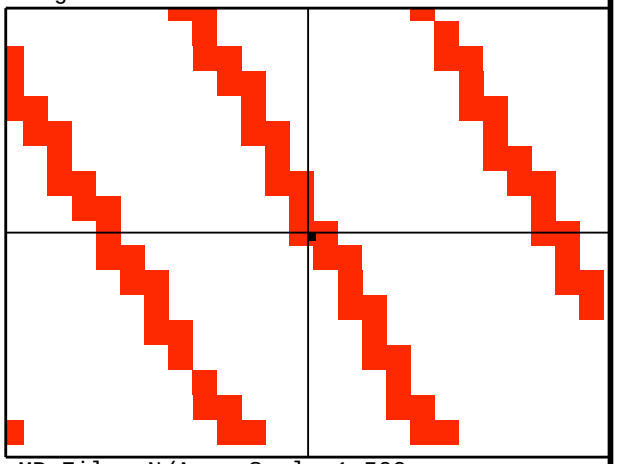
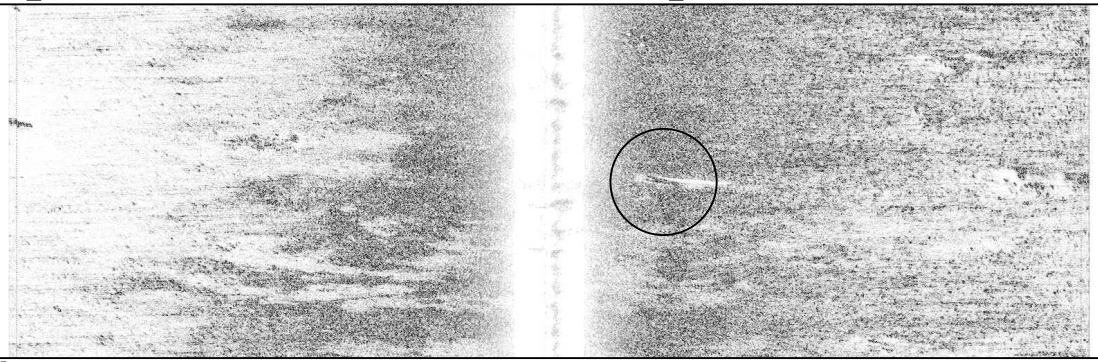


Chart: 11371_1.KAP Scale 1:10000



MB File: N/A Scale 1:500



ID: 41 File: TD07065_070306224100.XTF 30 01 51.85N 089 43 04.77W RNG: 5.12 HGT: 0.56 HDG: 152

COMMENT:
No Plot - Nonsig

CORRELATED SS CONTACTS:

Contact	Range/Height
065225015	5.12/0.56

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0068 Least Depth: 5(ft), 1.57(m) Lat: 30 00 44.92N Lon: 089 50 53.08W Ping: Beam:

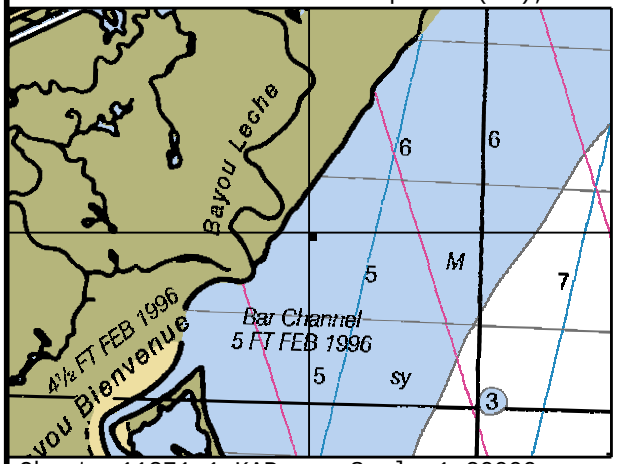


Chart: 11371_1.KAP Scale 1:20000

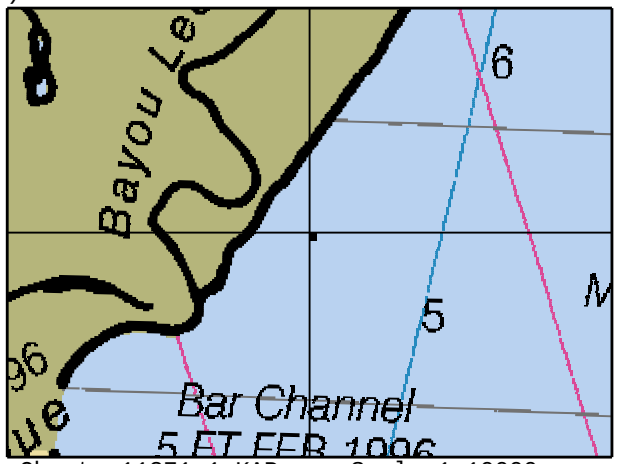
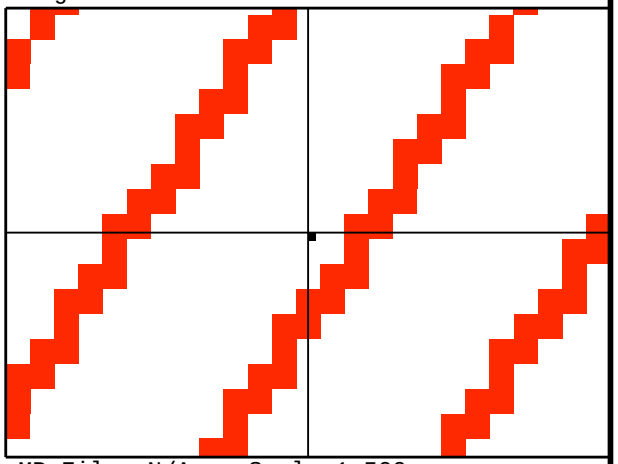
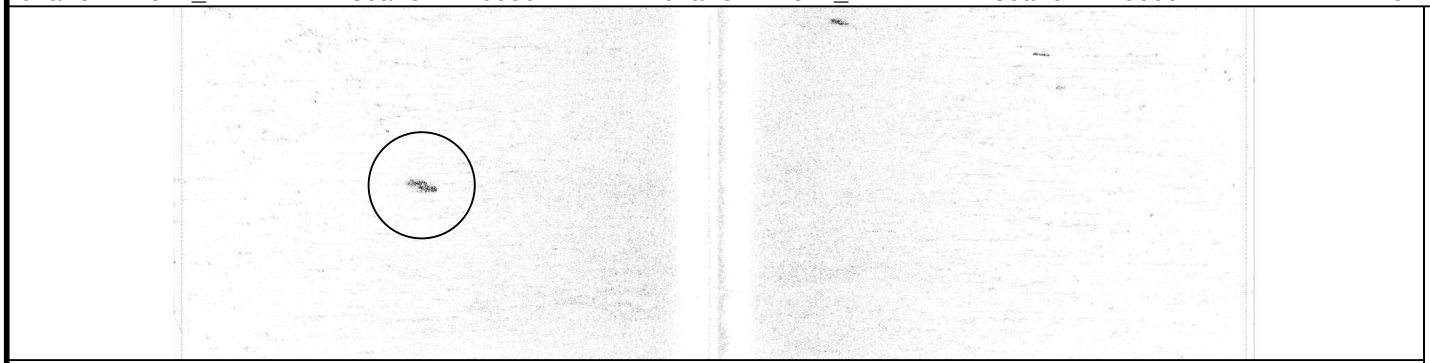


Chart: 11371_1.KAP Scale 1:10000



MB File: N/A Scale 1:500



ID: 20 File: TD07056_070225231100.XTF 30 00 44.92N 089 50 53.08W RNG: -13.28 HGT: 0.64 HDG: 033

COMMENT:
Plot sounding and lable
Obstn

CORRELATED SS CONTACTS:

Contact	Range/Height
056231841	-13.28/0.64

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0067 Least Depth: 6(ft), 1.76(m) Lat: 30 01 06.46N Lon: 089 50 34.62W Ping: Beam:

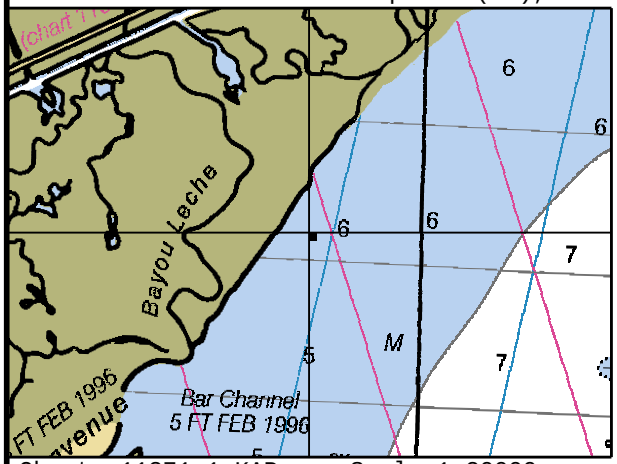


Chart: 11371_1.KAP Scale 1:20000

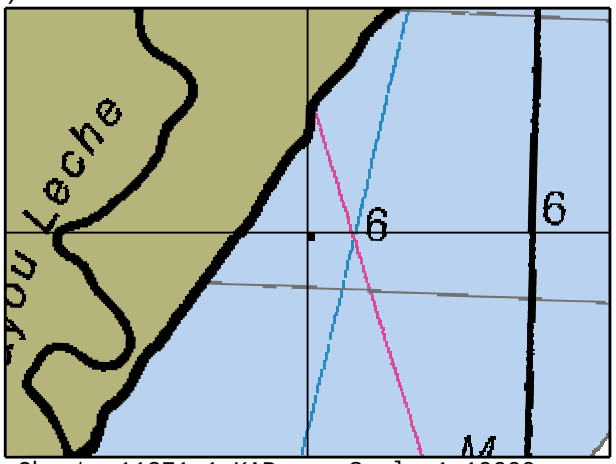
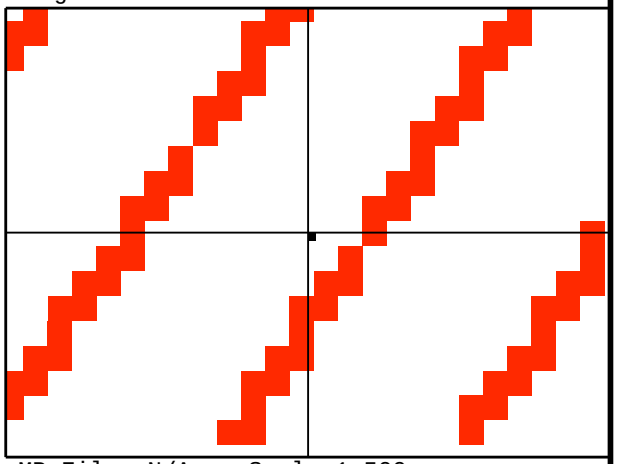
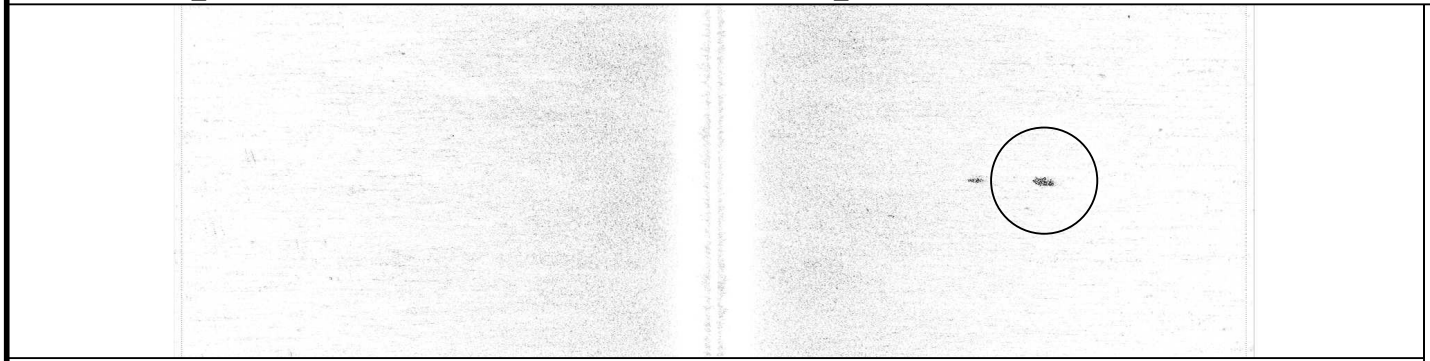


Chart: 11371_1.KAP Scale 1:10000



MB File: N/A Scale 1:500



ID: 19 File: TD07056_070225225700.XTF 30 01 06.46N 089 50 34.62W RNG: 14.88 HGT: 0.54 HDG: 213

COMMENT:
Plot sounding and label
Obstn

CORRELATED SS CONTACTS:

Contact	Range/Height
056230238	14.88/0.54

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0066 Least Depth: 4(ft), 1.42(m) Lat: 29 59 57.23N Lon: 089 51 09.18W Ping: Beam:

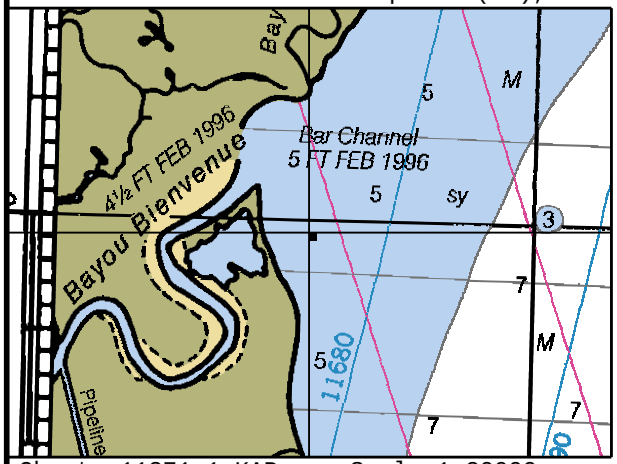


Chart: 11371_1.KAP Scale 1:20000

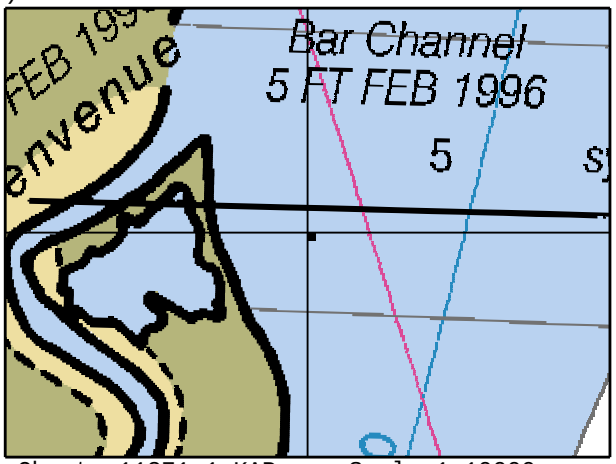
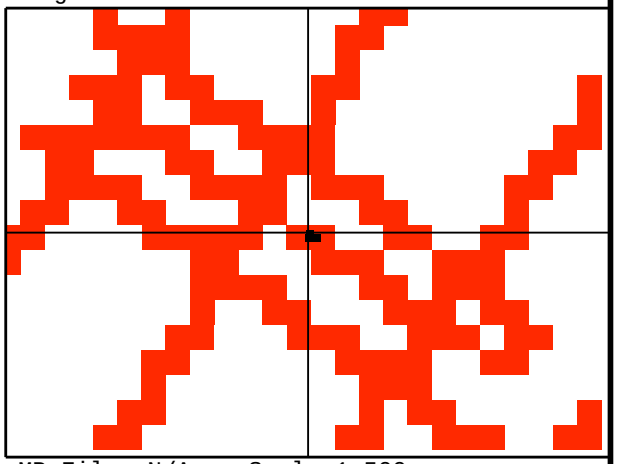
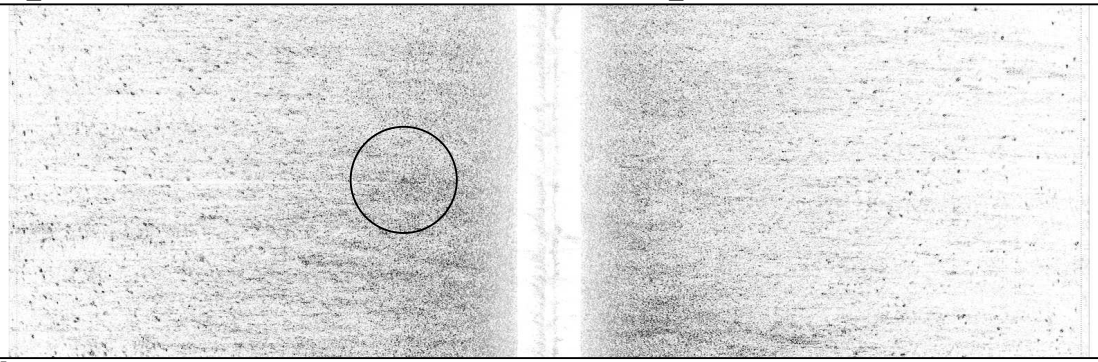


Chart: 11371_1.KAP Scale 1:10000

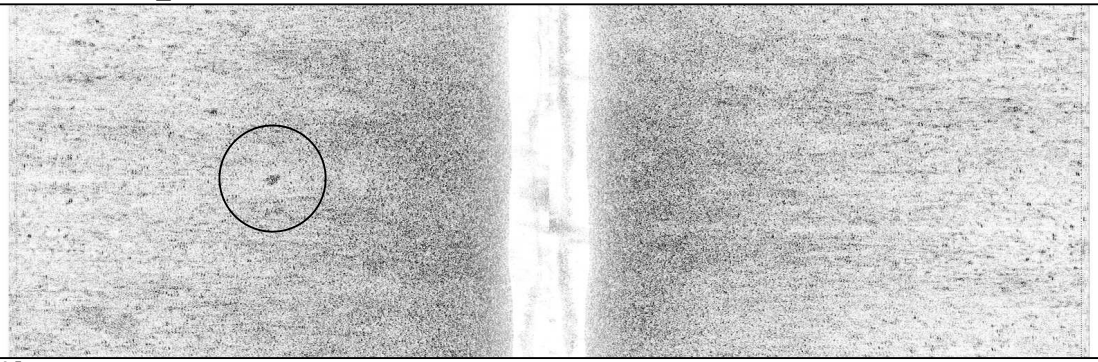


MB File: N/A Scale 1:500



ID: 16 File: TD07056_070225202000.XTF 29 59 57.22N 089 51 09.20W RNG: -6.62 HGT: 1.03 HDG: 214

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstns



ID: 167 File: TD07151_070531210000.XTF 29 59 57.25N 089 51 09.19W RNG: -12.56 HGT: 0.81 HDG: 304

CORRELATED SS CONTACTS:

Contact	Range/Height
056203736	-6.62/1.03
151210148	-12.56/0.81
151210433	-14.81/0.63

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0065 Least Depth: 5(ft), 1.48(m) Lat: 30 02 42.16N Lon: 089 46 36.10W Ping: Beam:

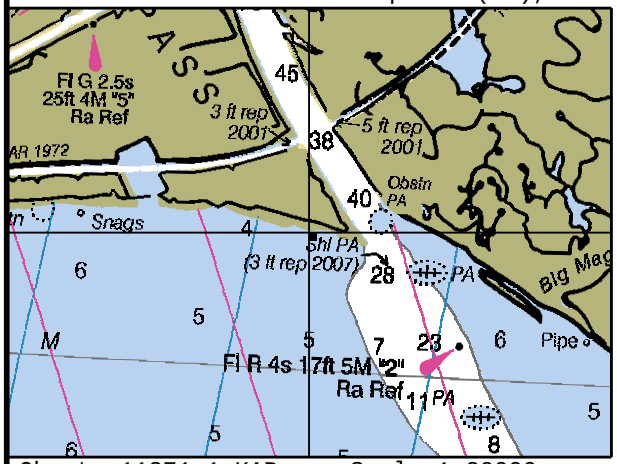


Chart: 11371_1.KAP Scale 1:20000

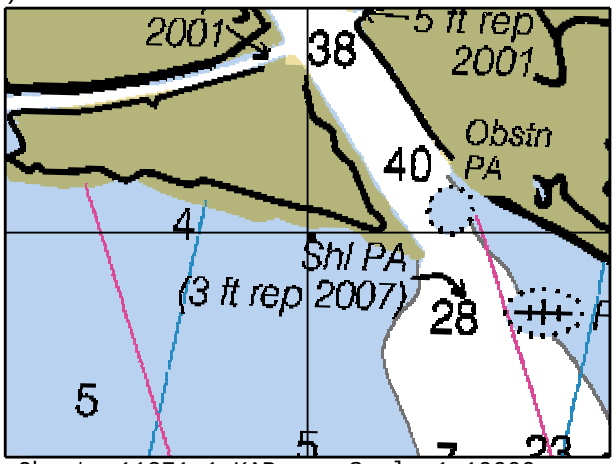
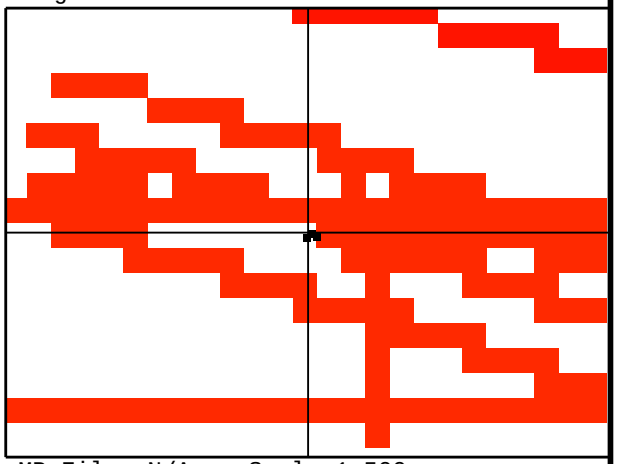
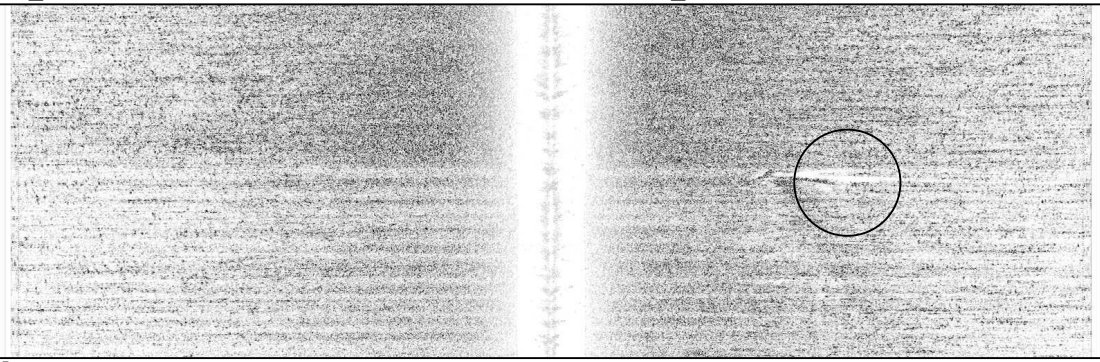


Chart: 11371_1.KAP Scale 1:10000

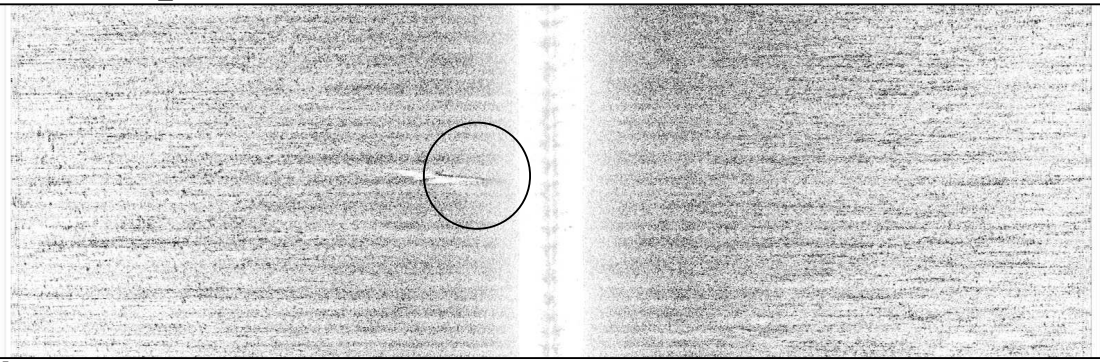


MB File: N/A Scale 1:500



ID: 95 File: TD07116_070426124000.XTF 30 02 42.16N 089 46 36.06W RNG: 13.34 HGT: 0.65 HDG: 286

COMMENT:
No Plot - foul area



ID: 96 File: TD07116_070426124600.XTF 30 02 42.15N 089 46 36.14W RNG: -3.41 HGT: 0.50 HDG: 287

CORRELATED SS CONTACTS:

Contact	Range/Height
116124150	13.34/0.65
116124751	-3.41/0.50
116125019	2.19/0.57

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0064 Least Depth: 4(ft), 1.40(m) Lat: 30 02 41.95N Lon: 089 46 42.41W Ping: Beam:

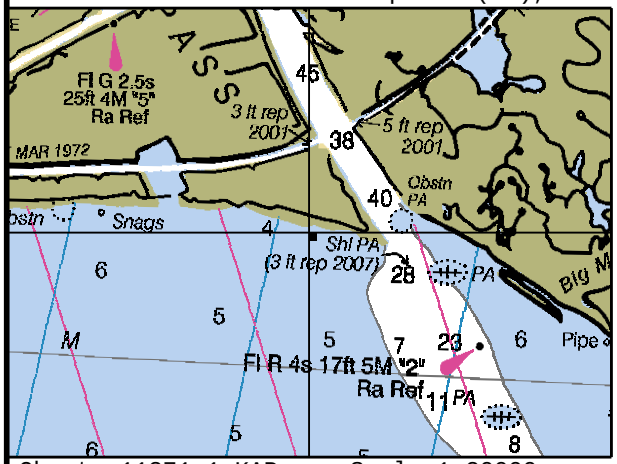


Chart: 11371_1.KAP Scale 1:20000

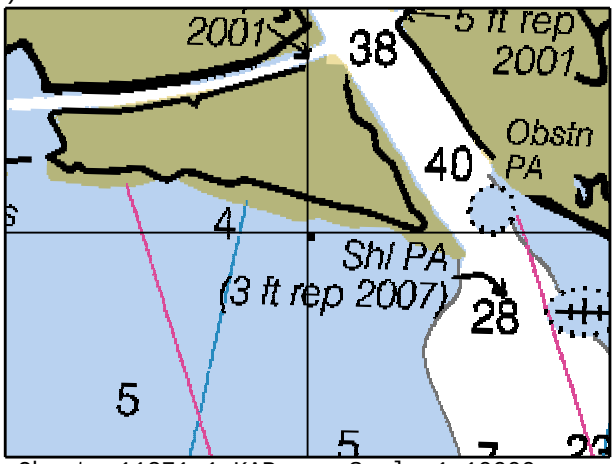
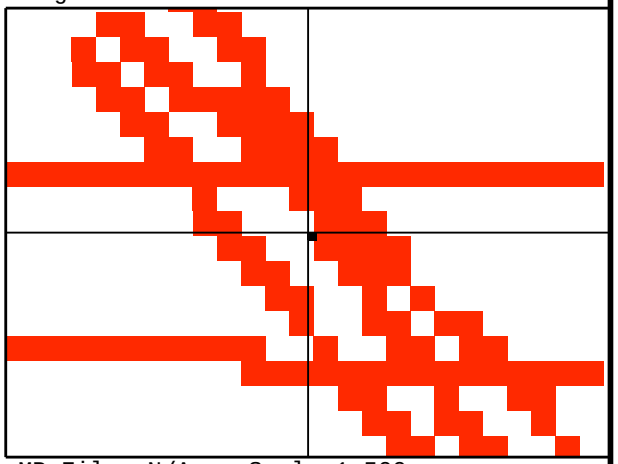
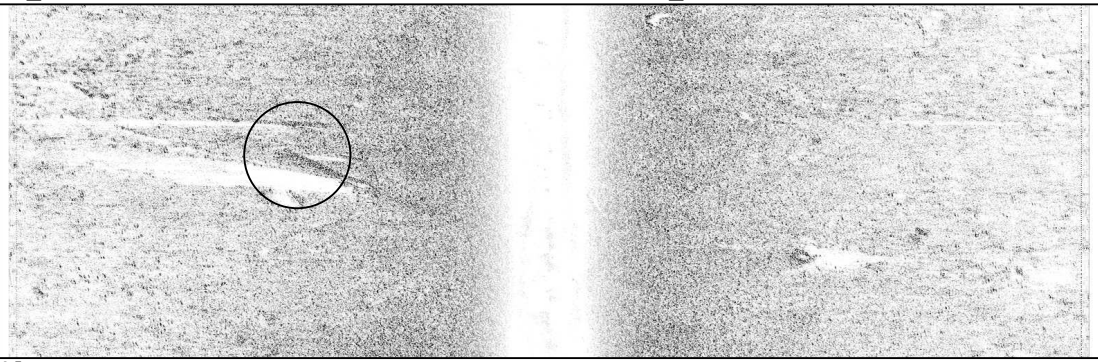


Chart: 11371_1.KAP Scale 1:10000

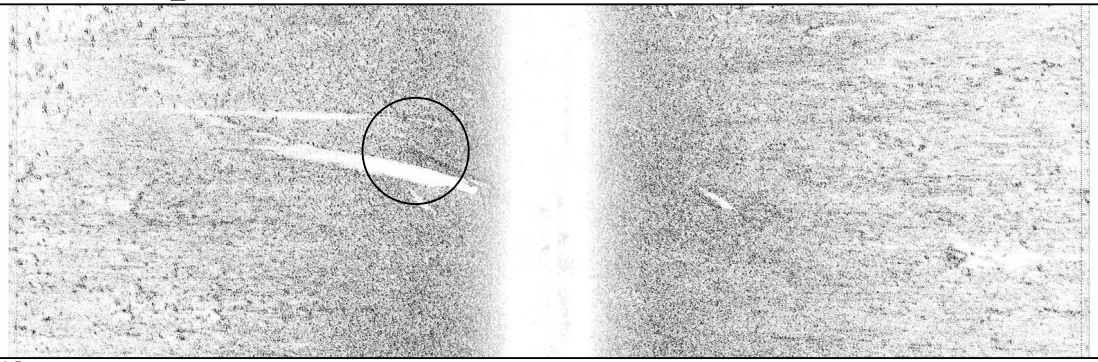


MB File: N/A Scale 1:500



ID: 144 File: TD07148_070528153700.XTF 30 02 41.95N 089 46 42.41W RNG: -11.44 HGT: 0.86 HDG: 321

COMMENT:
No Plot - foul area



ID: 148 File: TD07148_070528154700.XTF 30 02 41.96N 089 46 42.42W RNG: -6.09 HGT: 1.07 HDG: 326

CORRELATED SS CONTACTS:

Contact	Range/Height
148154144	-11.44/0.86
148154930	-6.09/1.07

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0063 Least Depth: 20(ft), 6.17(m) Lat: 30 02 38.64N Lon: 089 46 19.23W Ping: Beam:

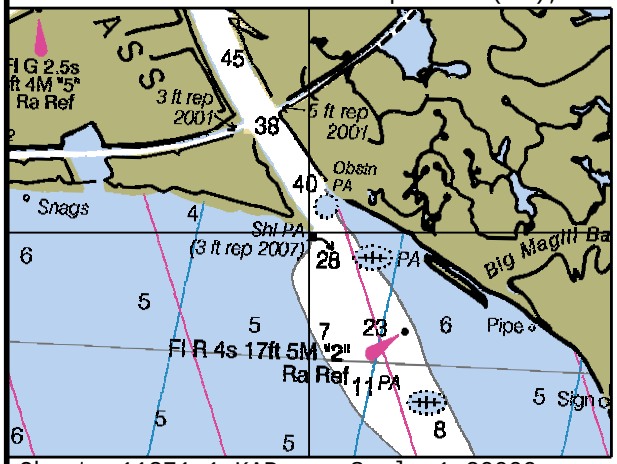


Chart: 11371_1.KAP Scale 1:20000

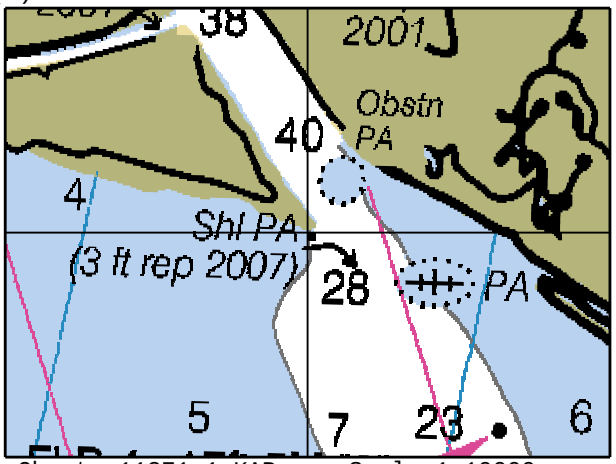
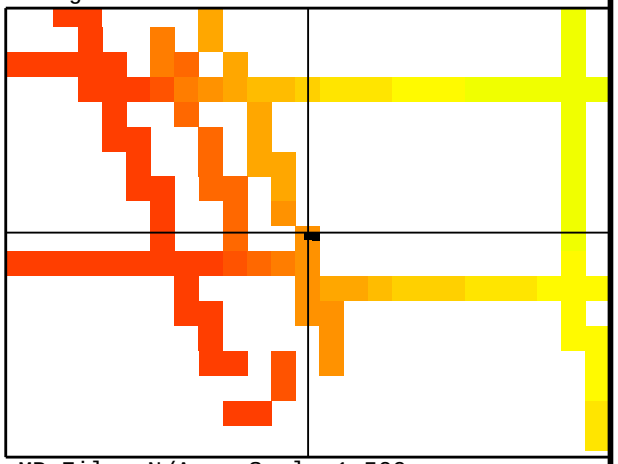
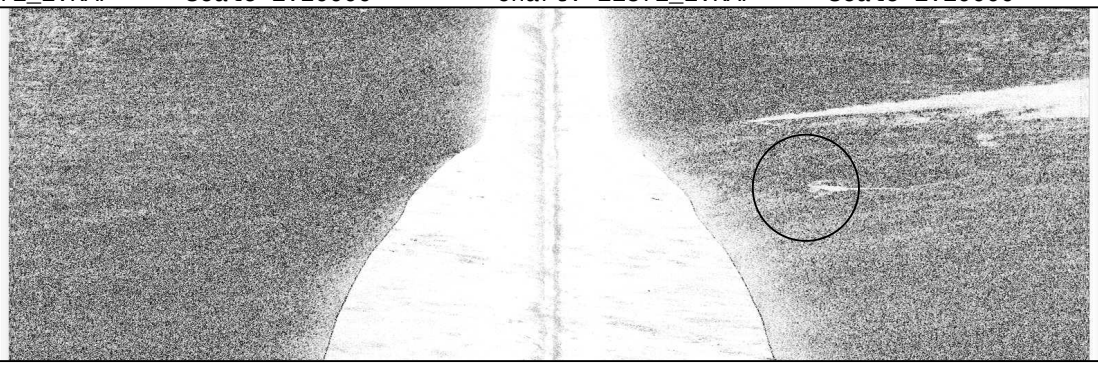


Chart: 11371_1.KAP Scale 1:10000

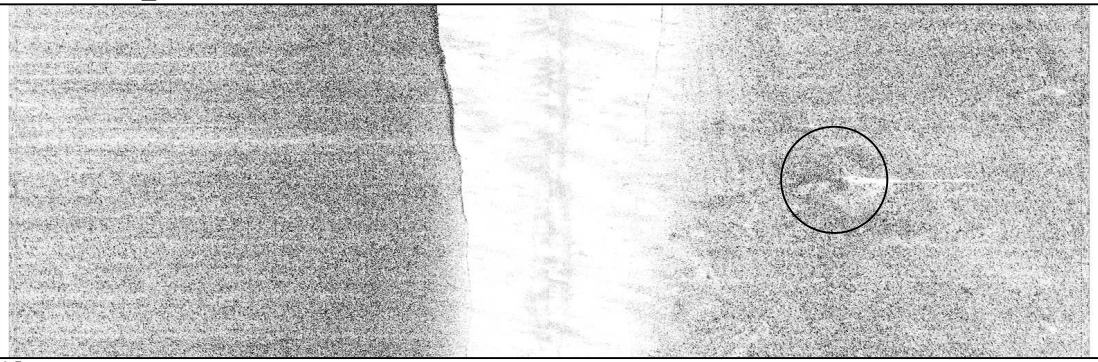


MB File: N/A Scale 1:500



ID: 6 File: TD07046_070215141900.XTF 30 02 38.65N 089 46 19.26W RNG: 11.56 HGT: 1.83 HDG: 268

COMMENT:
No Plot - Nonsig



ID: 143 File: TD07148_070528153500.XTF 30 02 38.64N 089 46 19.20W RNG: 12.84 HGT: 1.27 HDG: 337

CORRELATED SS CONTACTS:

Contact	Range/Height
046142259	11.56/1.83
148153605	12.84/1.27

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0062 Least Depth: Lat: 29 57 15.97N Lon: 089 49 22.16W Ping: Beam:

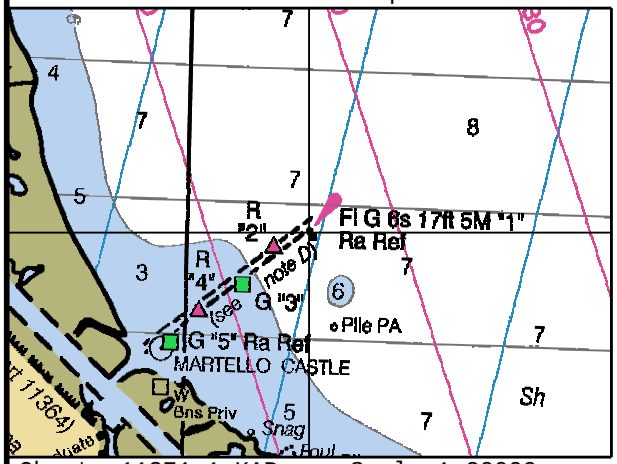


Chart: 11371_1.KAP Scale 1:20000

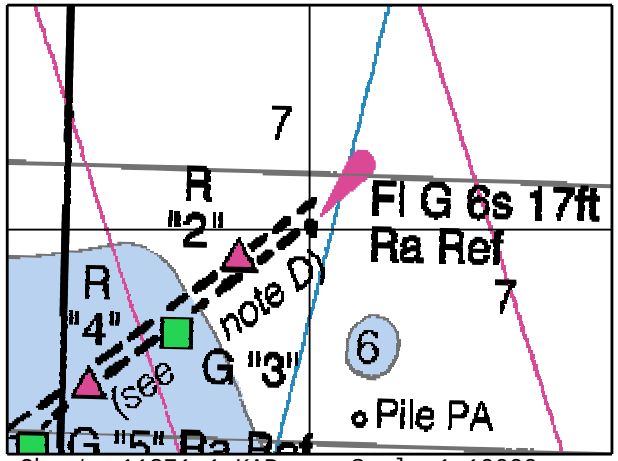
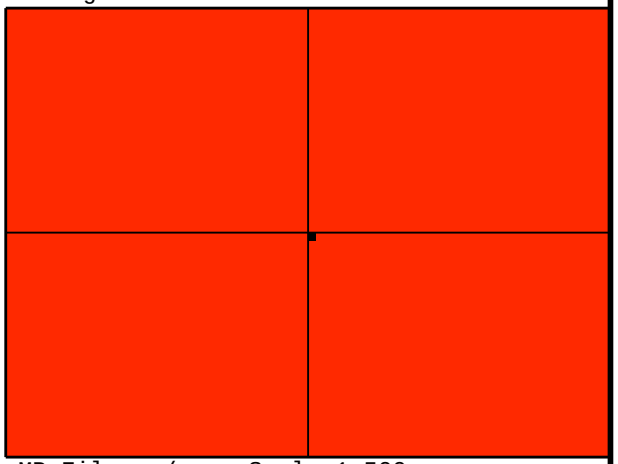
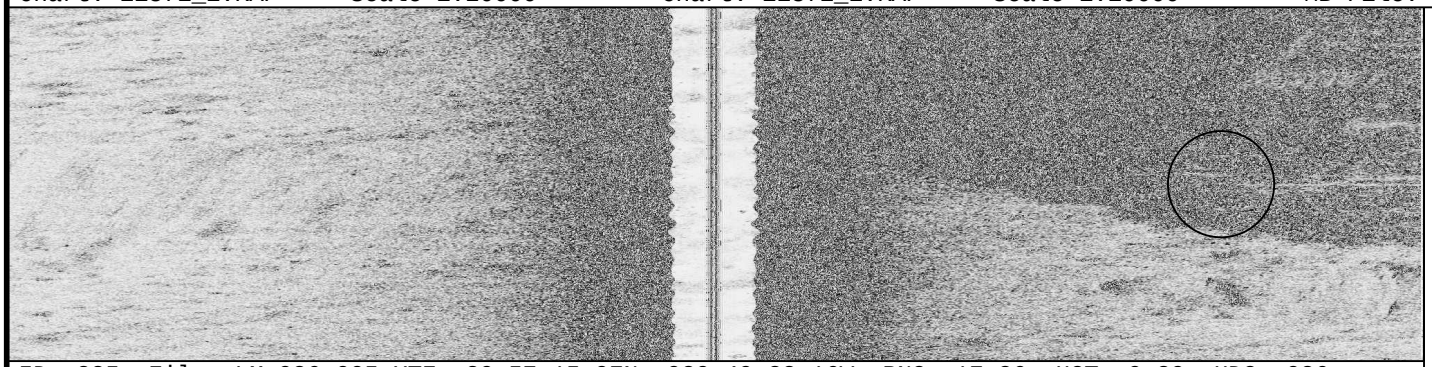


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 225 File: LM_086_005.XTF 29 57 15.97N 089 49 22.16W RNG: 17.86 HGT: 0.39 HDG: 086

COMMENT:
Plot Beacon symbol and label
Fl G 6s 17ft 5M "1" Ra Ref

CORRELATED SS CONTACTS:

Contact	Range/Height
086154928	17.86/0.39

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0061 Least Depth: 6(ft), 1.82(m) Lat: 30 02 28.73N Lon: 089 45 56.79W Ping: Beam:

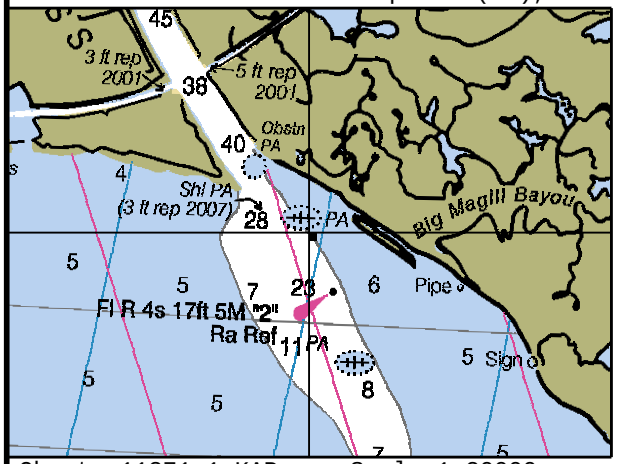


Chart: 11371_1.KAP Scale 1:20000

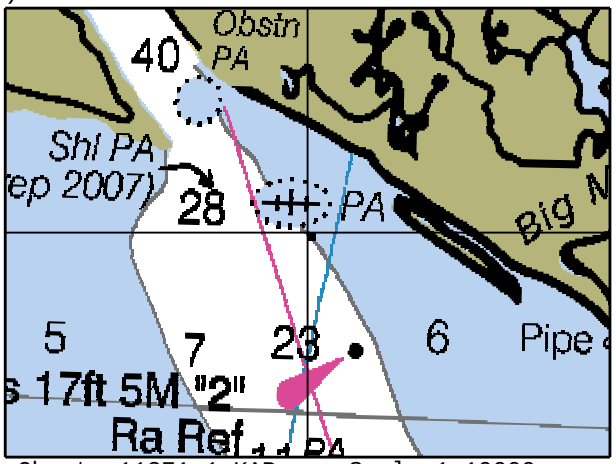
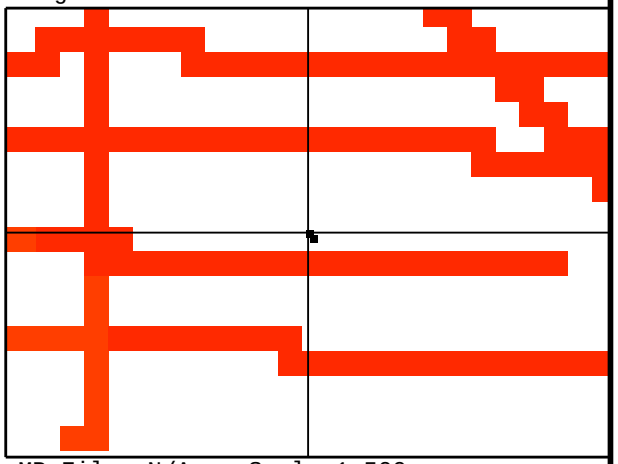
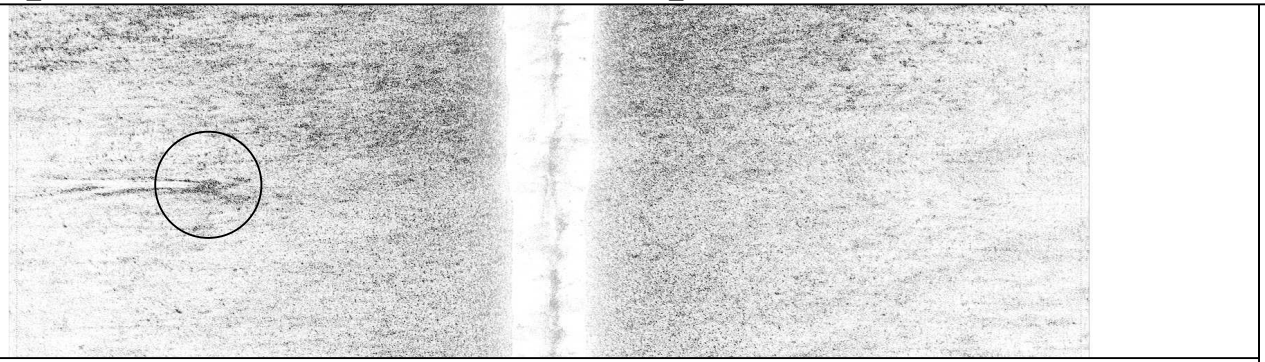


Chart: 11371_1.KAP Scale 1:10000

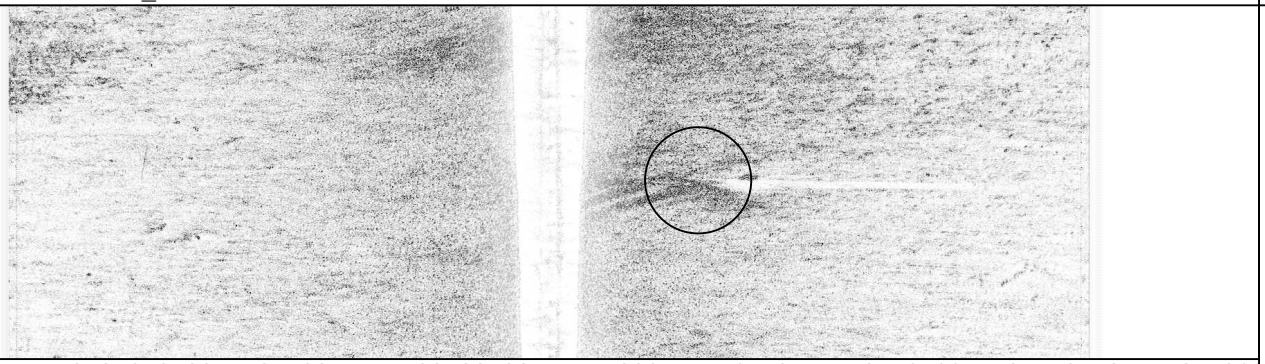


MB File: N/A Scale 1:500



ID: 2 File: TD07043_070212220400.XTF 30 02 28.74N 089 45 56.81W RNG: -15.47 HGT: 0.53 HDG: 274

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn.
Least depth from sidescan



ID: 5 File: TD07046_070215135700.XTF 30 02 28.71N 089 45 56.78W RNG: 6.69 HGT: 0.73 HDG: 269

CORRELATED SS CONTACTS:

Contact	Range/Height
043220543	-15.47/0.53
046140540	6.69/0.73

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0060 Least Depth: Lat: 30 00 41.14N Lon: 089 43 02.76W Ping: Beam:

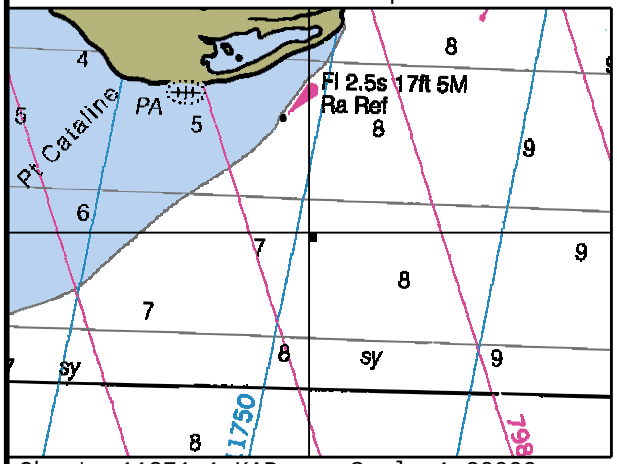


Chart: 11371_1.KAP Scale 1:20000

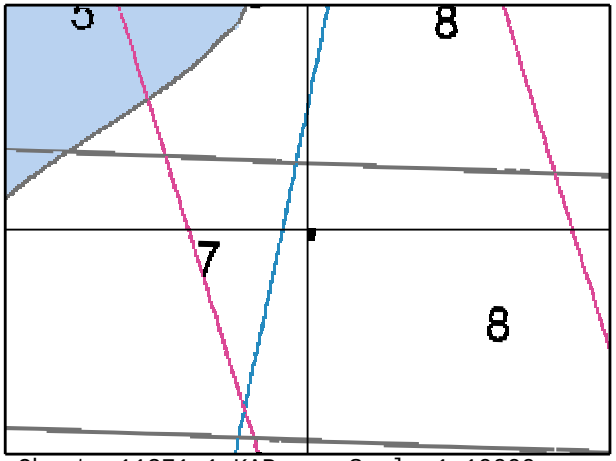
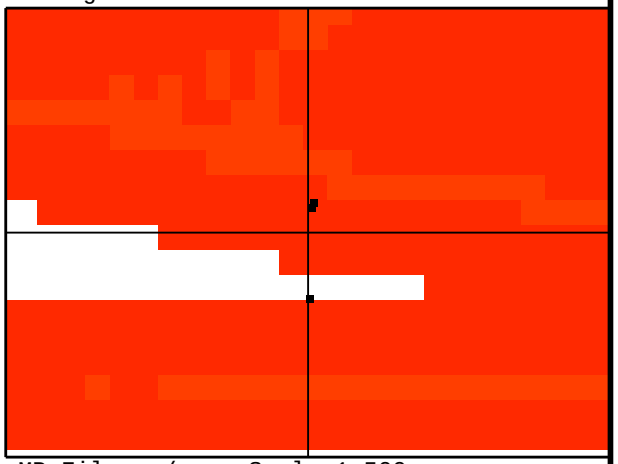
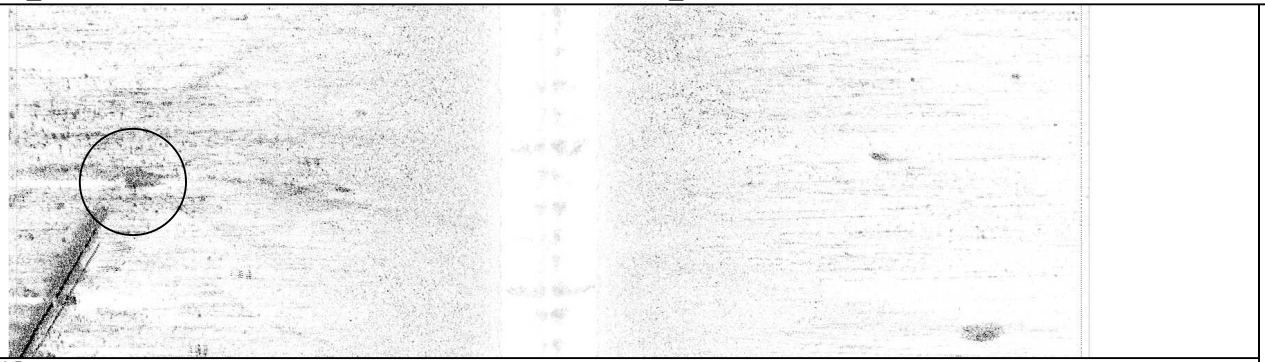


Chart: 11371_1.KAP Scale 1:10000

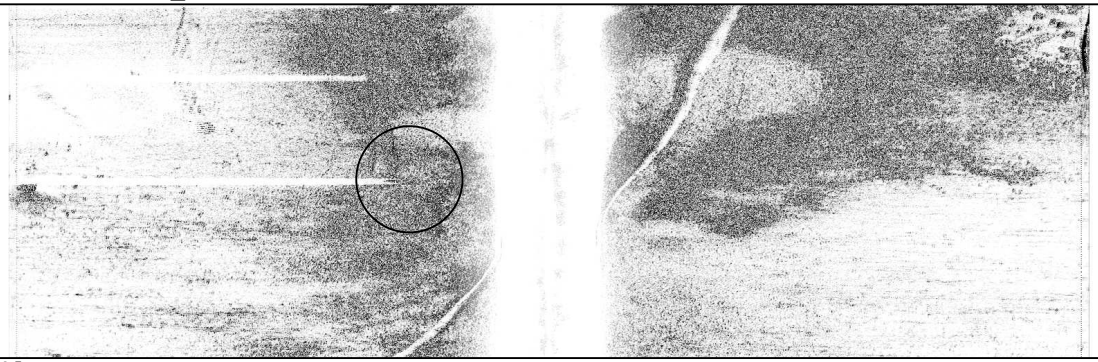


MB File: n/a Scale 1:500



ID: 127 File: TD07133_070513151300.XTF 30 00 40.73N 089 43 02.76W RNG: -18.88 HGT: 0.44 HDG: 090

COMMENT:
No Plot - See F52 DTN3



ID: 128 File: TD07133_070513151700.XTF 30 00 41.33N 089 43 02.76W RNG: -6.38 HGT: 1.59 HDG: 276

CORRELATED SS CONTACTS:

Contact	Range/Height
133151557	-18.88/0.44
133152028	-6.38/1.59
092170151	-12.00/1.06

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0059 Least Depth: Lat: 30 01 29.79N Lon: 089 42 12.34W Ping: Beam:

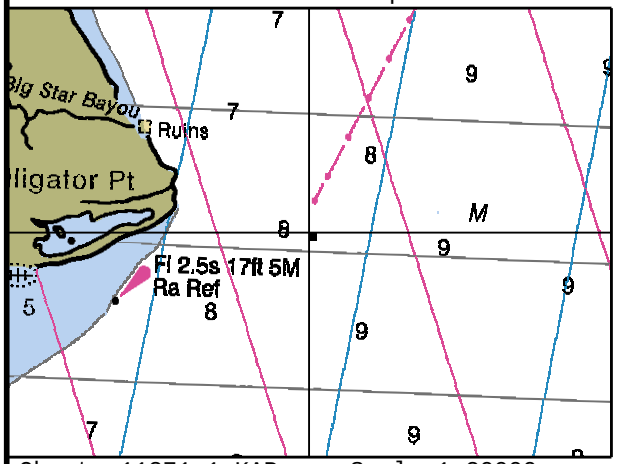


Chart: 11371_1.KAP Scale 1:20000

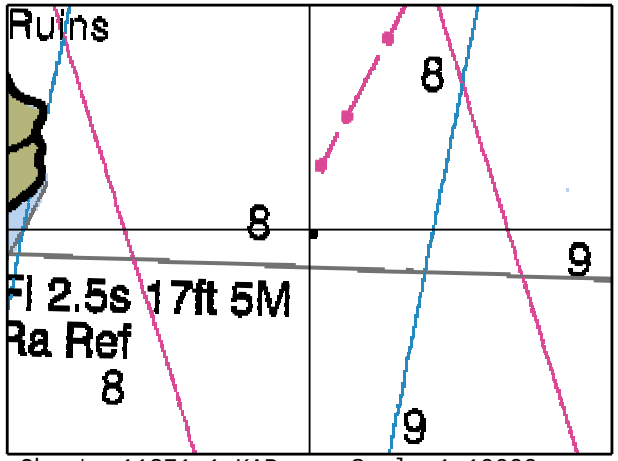
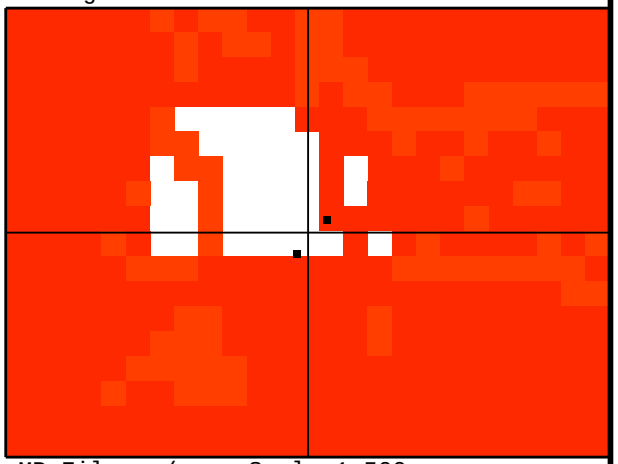
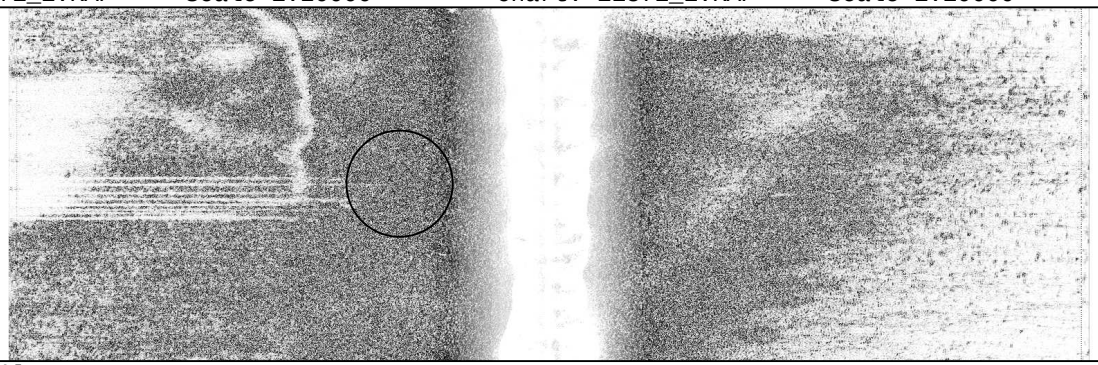


Chart: 11371_1.KAP Scale 1:10000

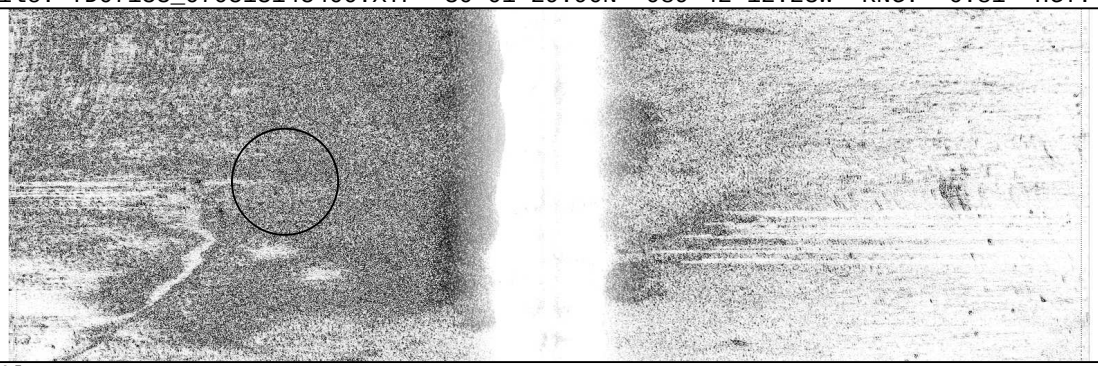


MB File: n/a Scale 1:500



ID: 121 File: TD07133_070513145400.XTF 30 01 29.90N 089 42 12.23W RNG: -6.81 HGT: 1.29 HDG: 341

COMMENT:
No Plot - See F55. DTN 4



ID: 125 File: TD07133_070513150200.XTF 30 01 29.67N 089 42 12.46W RNG: -12.00 HGT: 0.51 HDG: 174

CORRELATED SS CONTACTS:

Contact	Range/Height
133145629	-6.81/1.29
133150406	-12.00/0.51

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0058 Least Depth: Lat: 30 01 29.82N Lon: 089 42 13.15W Ping: Beam:

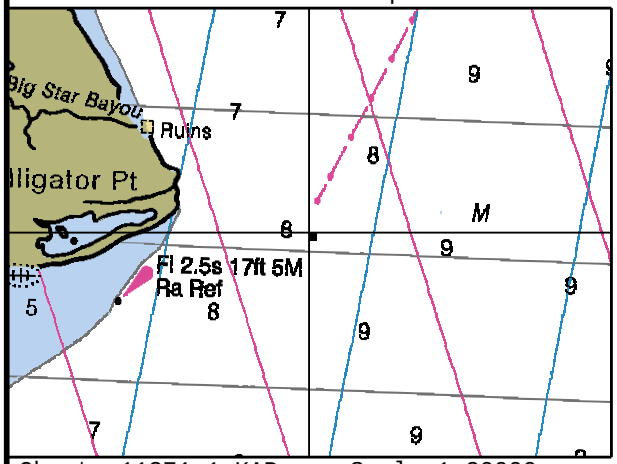


Chart: 11371_1.KAP Scale 1:20000

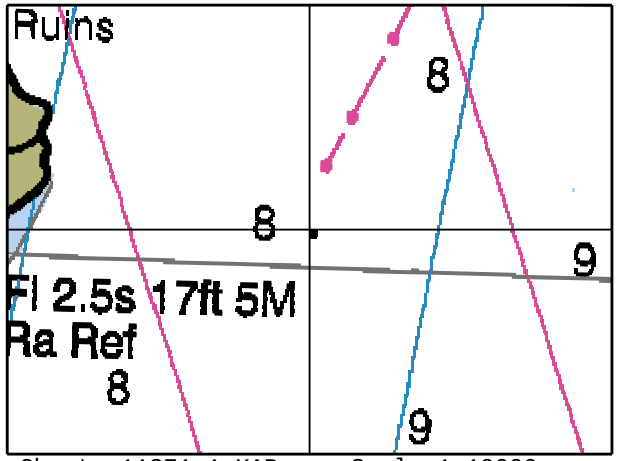
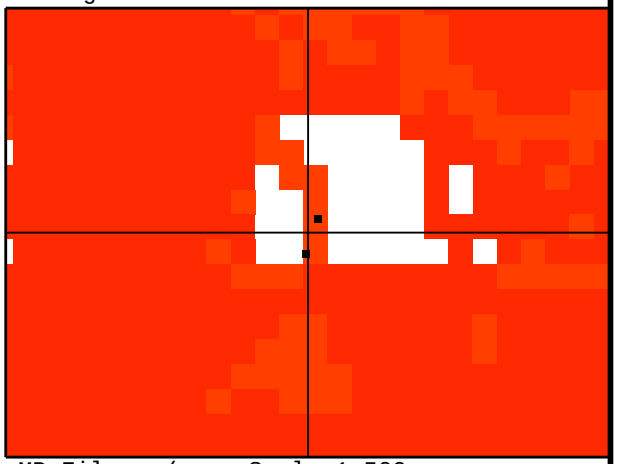
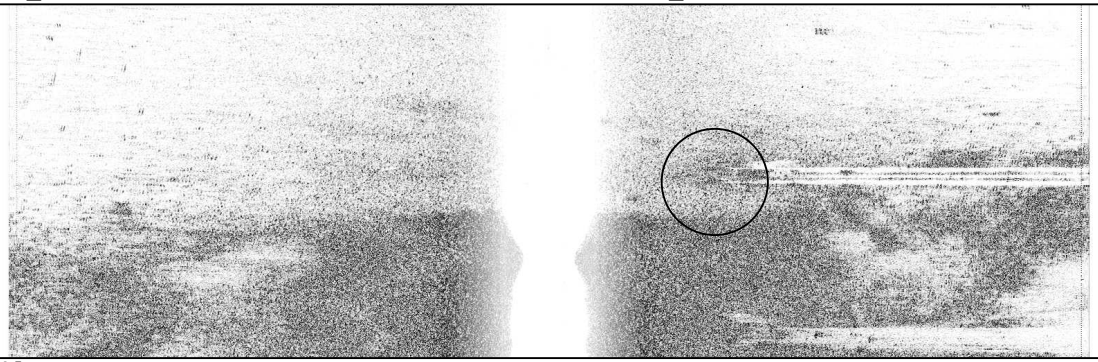


Chart: 11371_1.KAP Scale 1:10000

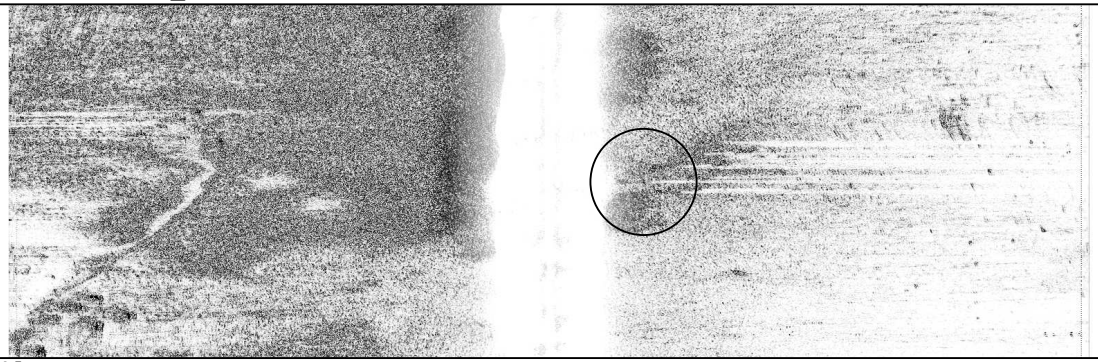


MB File: n/a Scale 1:500



ID: 110 File: TD07129_070509155300.XTF 30 01 29.71N 089 42 13.20W RNG: 7.44 HGT: 1.32 HDG: 280

COMMENT:
No Plot - See F55 DTN 4



ID: 124 File: TD07133_070513150200.XTF 30 01 29.94N 089 42 13.11W RNG: 4.22 HGT: 2.74 HDG: 157

CORRELATED SS CONTACTS:

Contact	Range/Height
129155612	7.44/1.32
133150402	4.22/2.74

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0057 Least Depth: Lat: 29 57 11.48N Lon: 089 49 33.38W Ping: Beam:

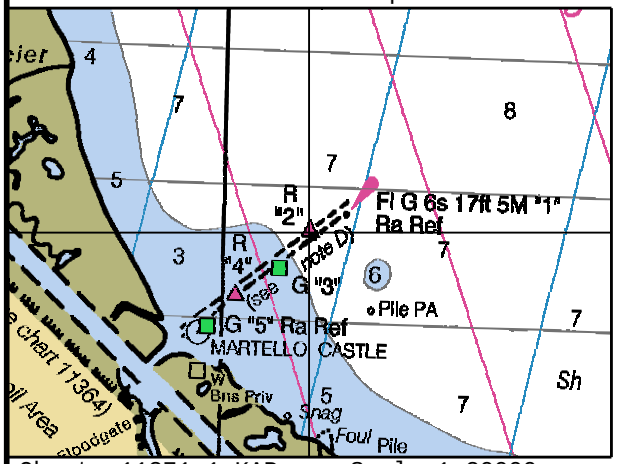


Chart: 11371_1.KAP Scale 1:20000

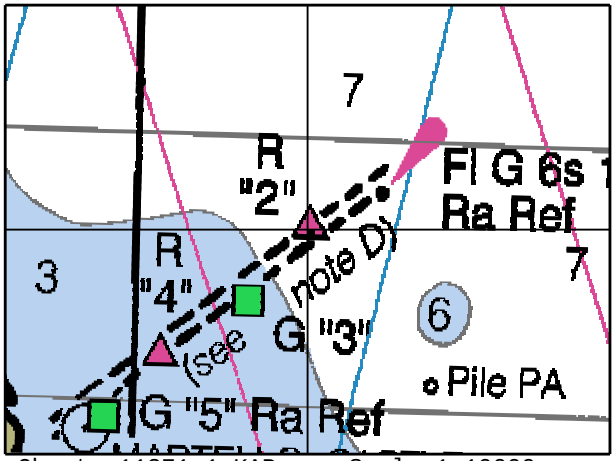
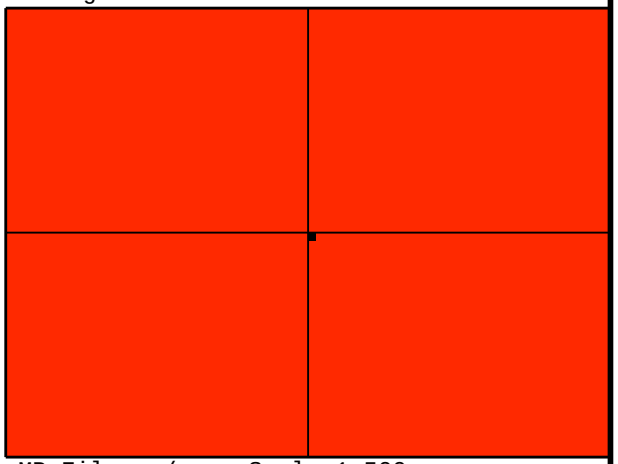
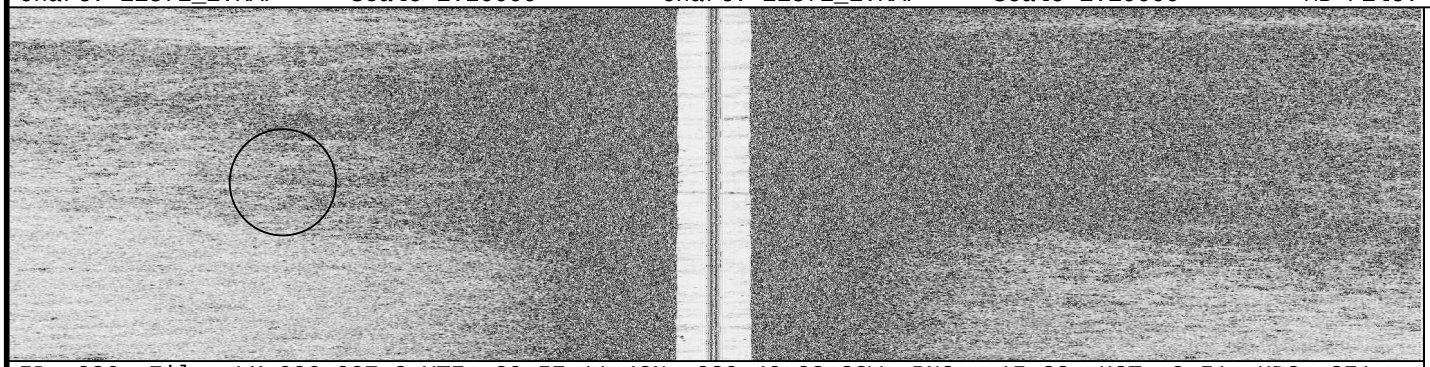


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 226 File: LM_086_007_3.XTF 29 57 11.48N 089 49 33.38W RNG: -15.28 HGT: 0.51 HDG: 271

COMMENT:
Plot Daybeacon symbol and label R "2"

CORRELATED SS CONTACTS:

Contact	Range/Height
086171736	-15.28/0.51

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0056 Least Depth: Lat: 29 56 47.02N Lon: 089 42 30.54W Ping: Beam:

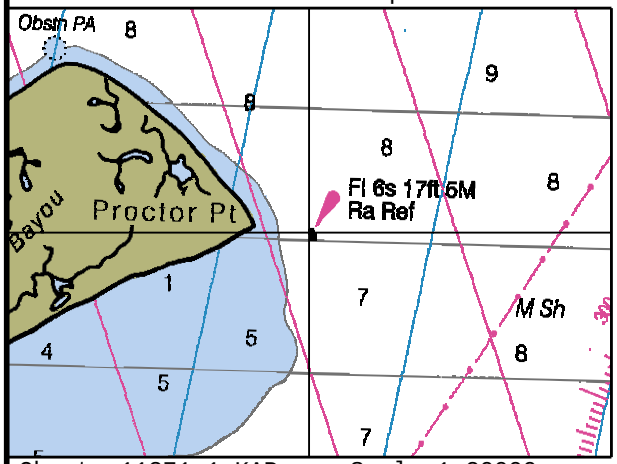


Chart: 11371_1.KAP Scale 1:20000

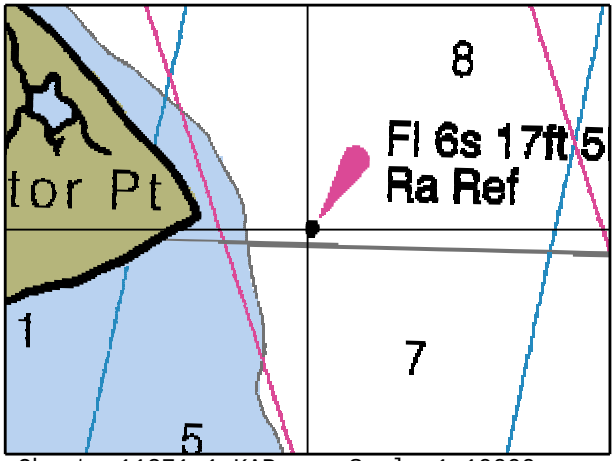
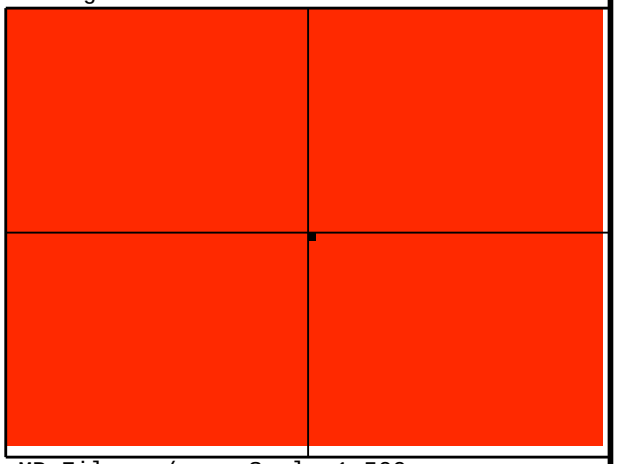
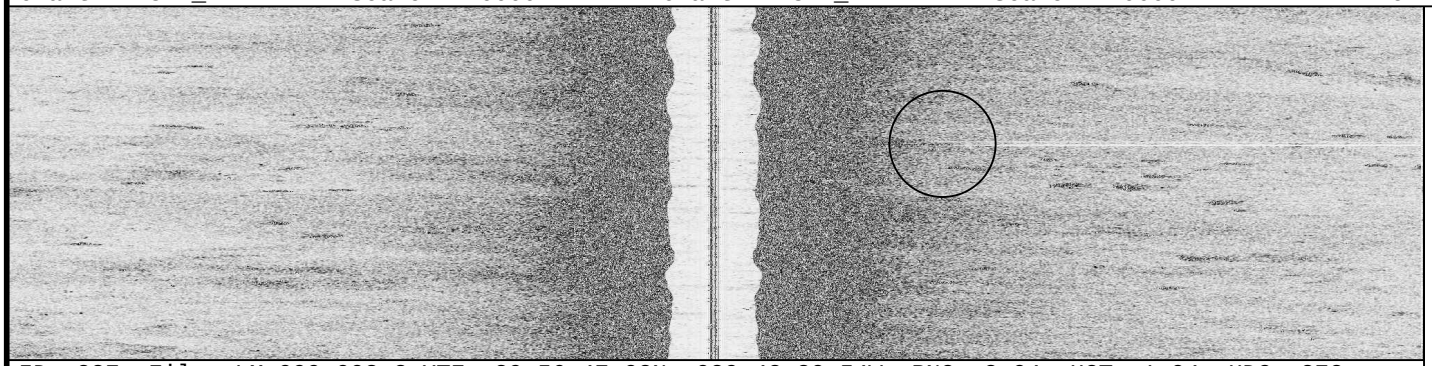


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 237 File: LM_099_003_3.XTF 29 56 47.02N 089 42 30.54W RNG: 8.04 HGT: 1.04 HDG: 272

COMMENT:
Plot Beacon symbol and label
Fl 6s 17ft 5M Ra Ref

CORRELATED SS CONTACTS:

Contact	Range/Height
099135503	8.04/1.04

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0055 Least Depth: Lat: 30 01 31.13N Lon: 089 42 12.77W Ping: Beam:

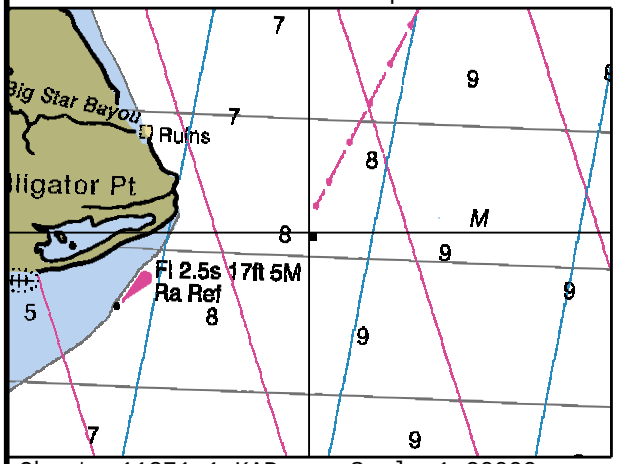


Chart: 11371_1.KAP Scale 1:20000

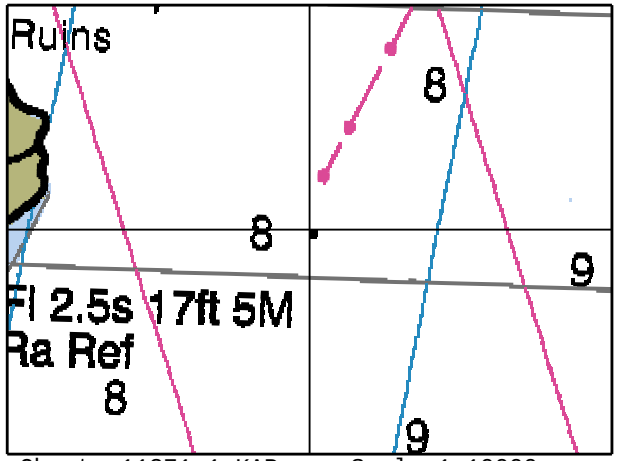
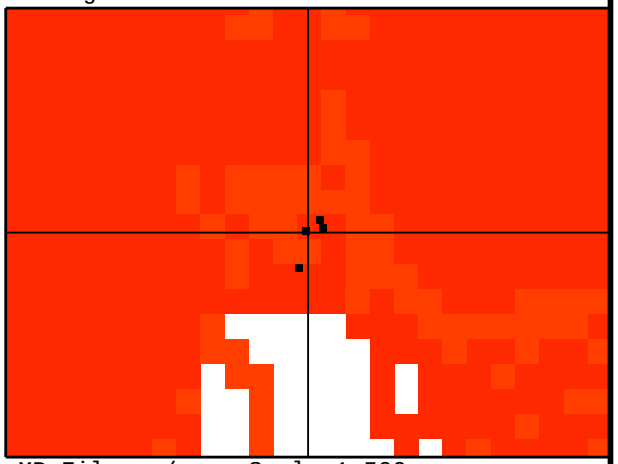
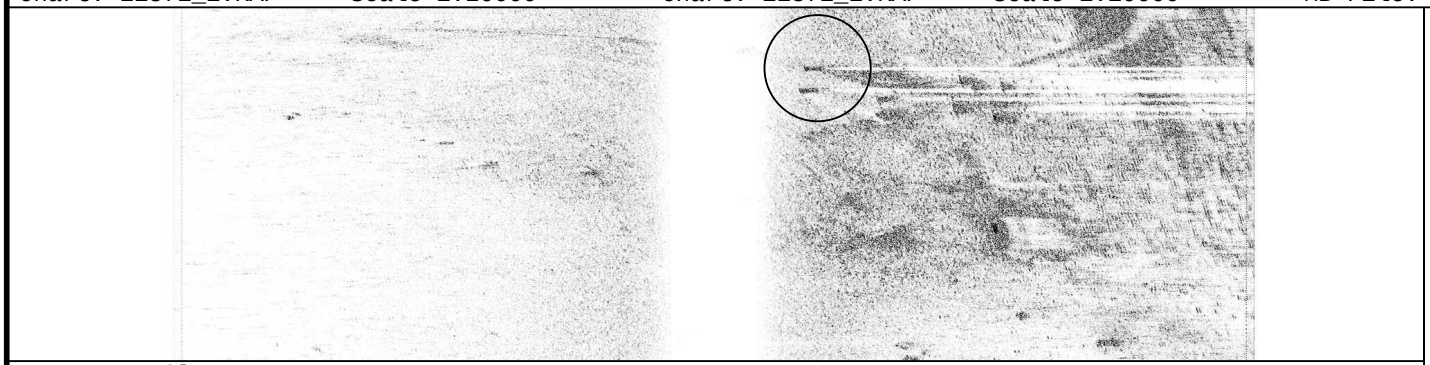


Chart: 11371_1.KAP Scale 1:10000

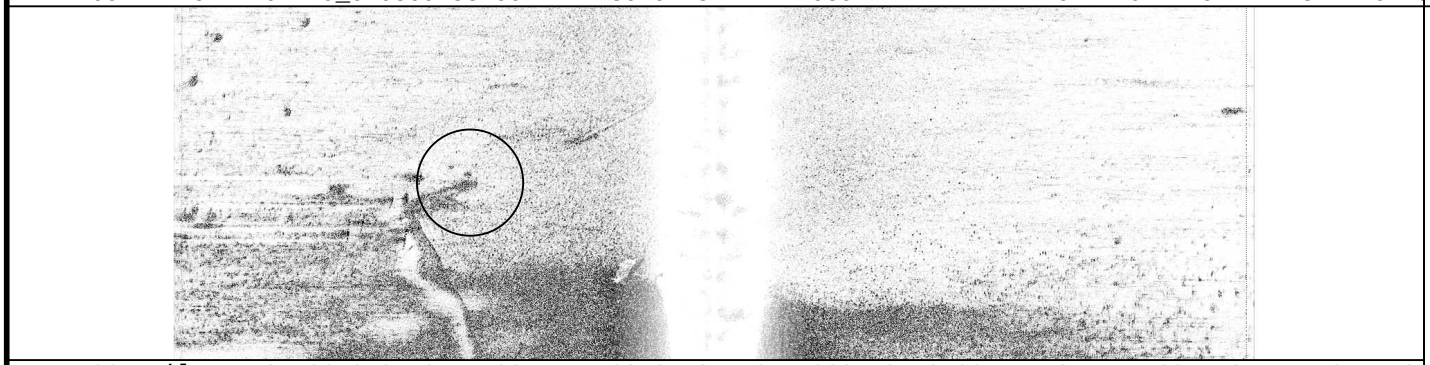


MB File: n/a Scale 1:500



ID: 109 File: TD07129_070509153400.XTF 30 01 31.24N 089 42 12.71W RNG: 4.62 HGT: 1.48 HDG: 074

COMMENT:
Plot Platform symbol and label Platforms see F58 and F59. DTN 4



ID: 122 File: TD07133_070513145400.XTF 30 01 31.19N 089 42 12.69W RNG: -11.09 HGT: 1.19 HDG: 353

CORRELATED SS CONTACTS:

Contact	Range/Height
129155035	4.62/1.48
133145642	-11.09/1.19
133150356	-19.06/0.48
102215035	9.09/1.07

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0054 Least Depth: Lat: 30 00 15.20N Lon: 089 42 45.41W Ping: Beam:

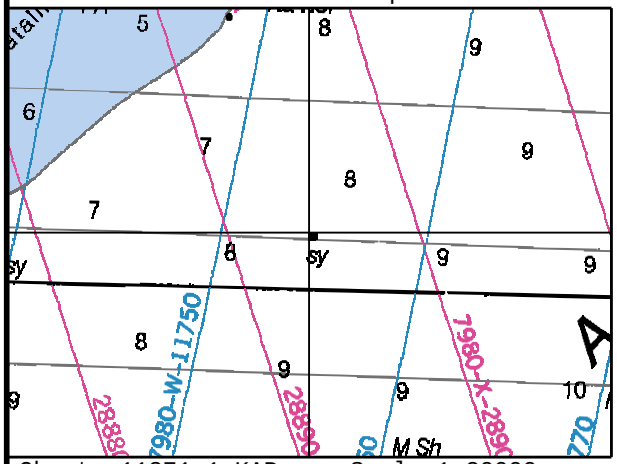


Chart: 11371_1.KAP Scale 1:20000

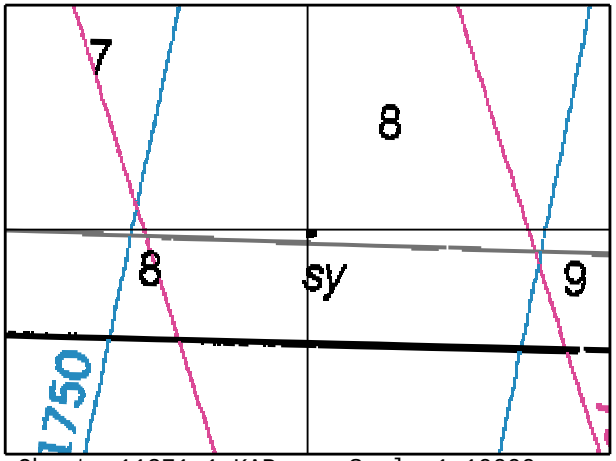
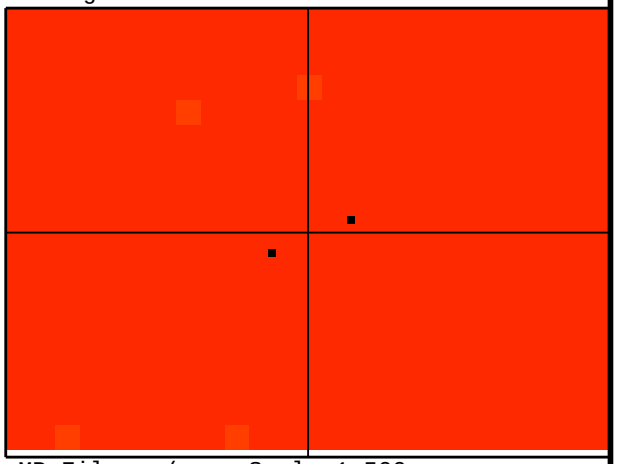
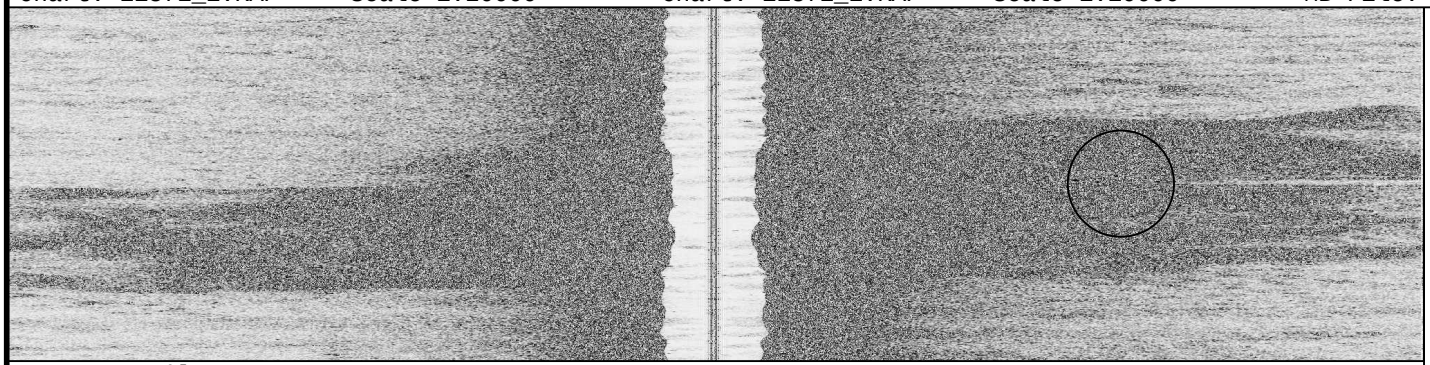


Chart: 11371_1.KAP Scale 1:10000

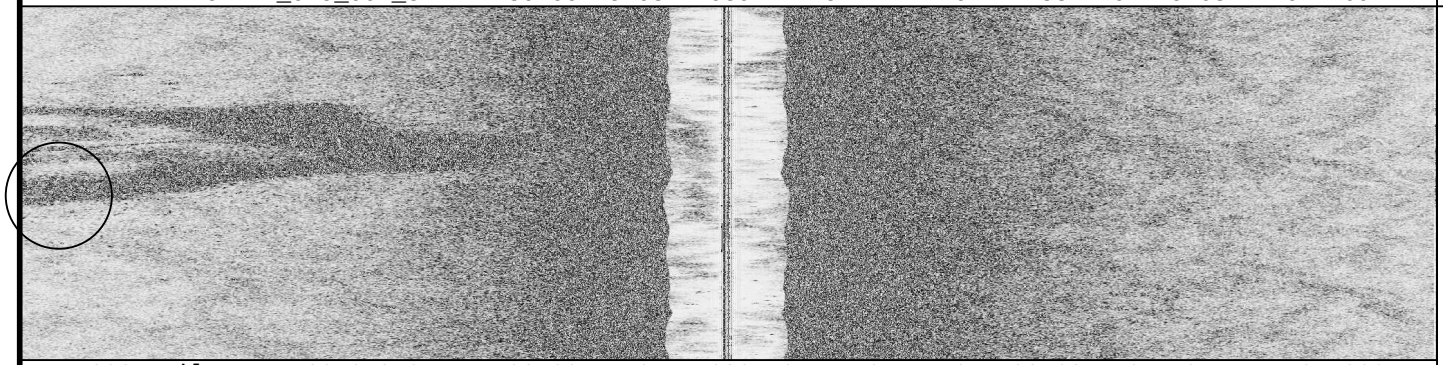


MB File: n/a Scale 1:500



ID: 217 File: LM_075_001_3.XTF 30 00 15.08N 089 42 45.71W RNG: 14.33 HGT: 0.63 HDG: 269

COMMENT:
Plot Platform symbol and label Platform. DTN 5



ID: 238 File: LM_100_010_3.XTF 30 00 15.31N 089 42 45.10W RNG: -23.68 HGT: 0.11 HDG: 266

CORRELATED SS CONTACTS:

Contact	Range/Height
075131514	14.33/0.63
100163614	-23.68/0.11

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0053 Least Depth: Lat: 30 00 42.46N Lon: 089 43 03.25W Ping: Beam:

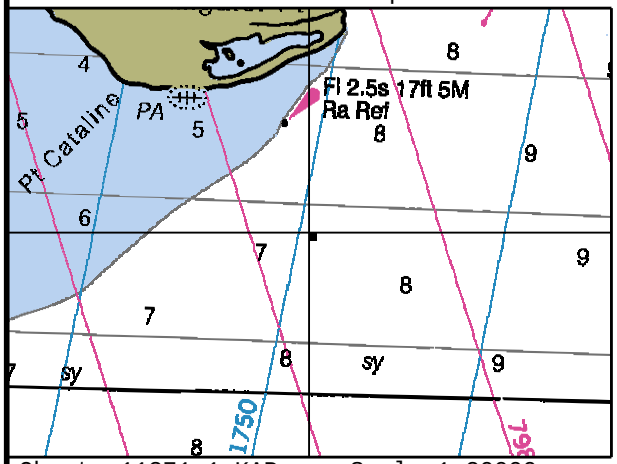


Chart: 11371_1.KAP Scale 1:20000

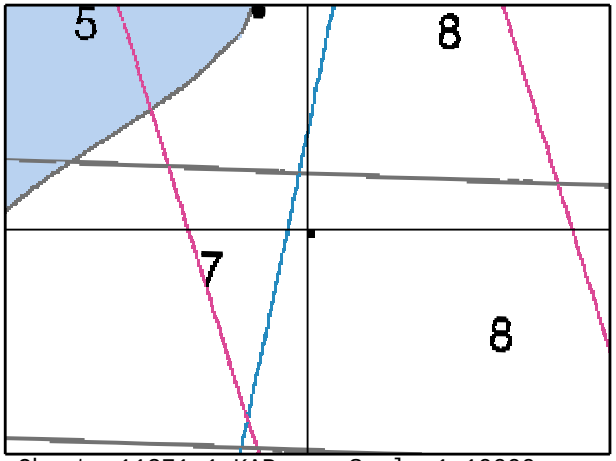
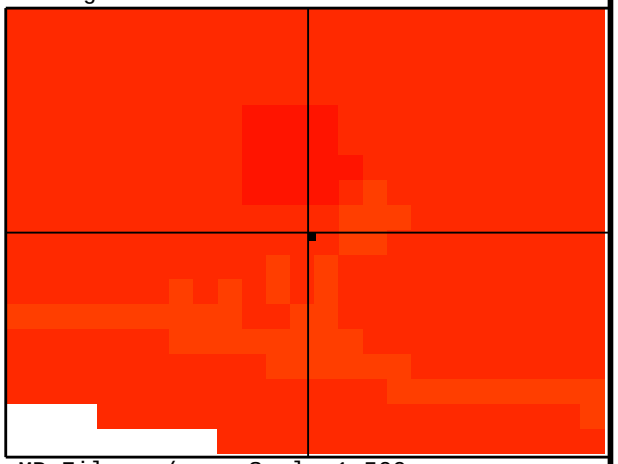
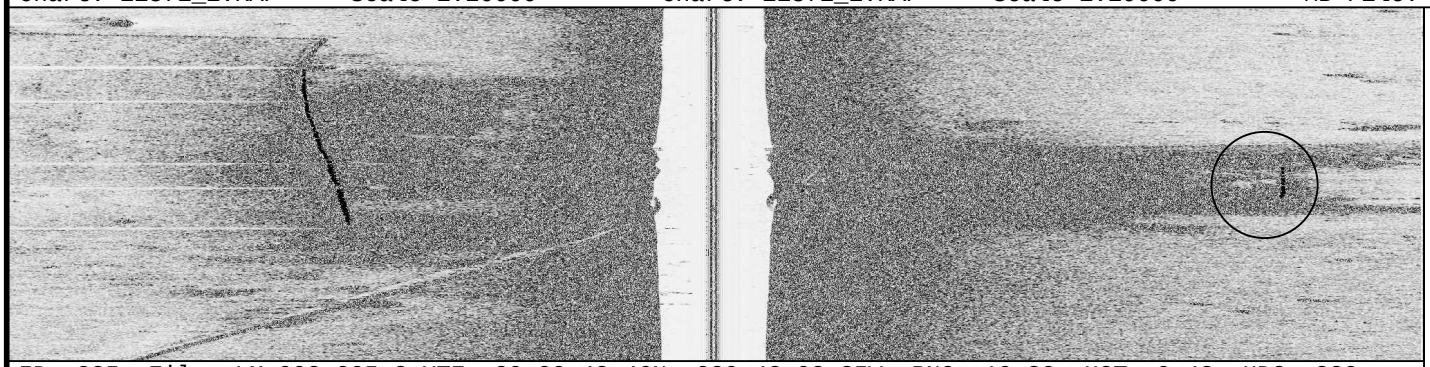


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 235 File: LM_092_005_3.XTF 30 00 42.46N 089 43 03.25W RNG: 19.39 HGT: 0.42 HDG: 280

COMMENT:
No Plot - See F52 DTN3

CORRELATED SS CONTACTS:

Contact	Range/Height
092170156	19.39/0.42

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0052 Least Depth: Lat: 30 00 41.12N Lon: 089 43 05.59W Ping: Beam:

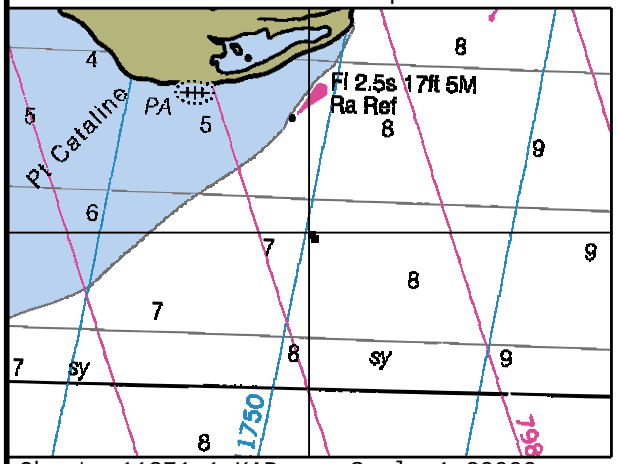


Chart: 11371_1.KAP Scale 1:20000

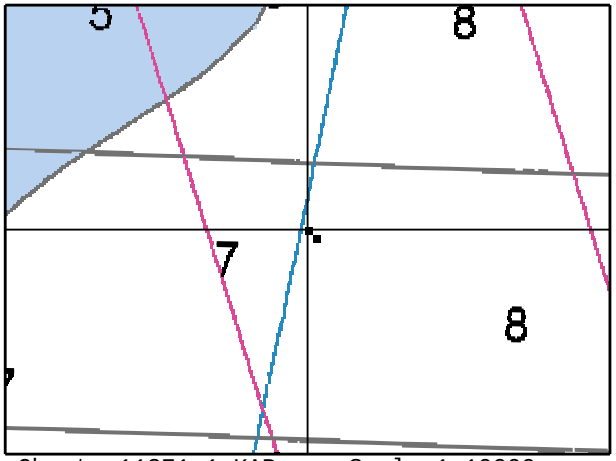
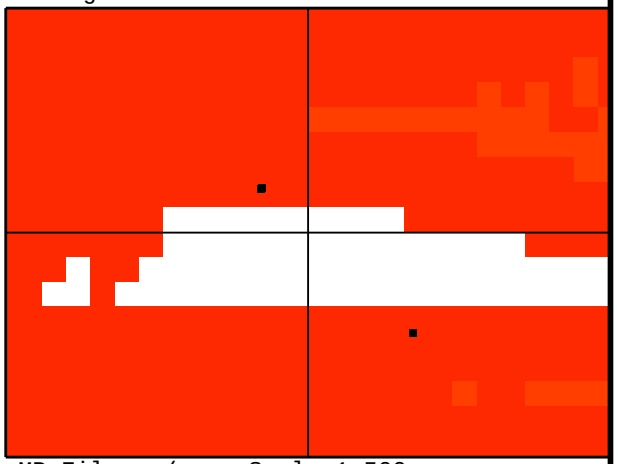
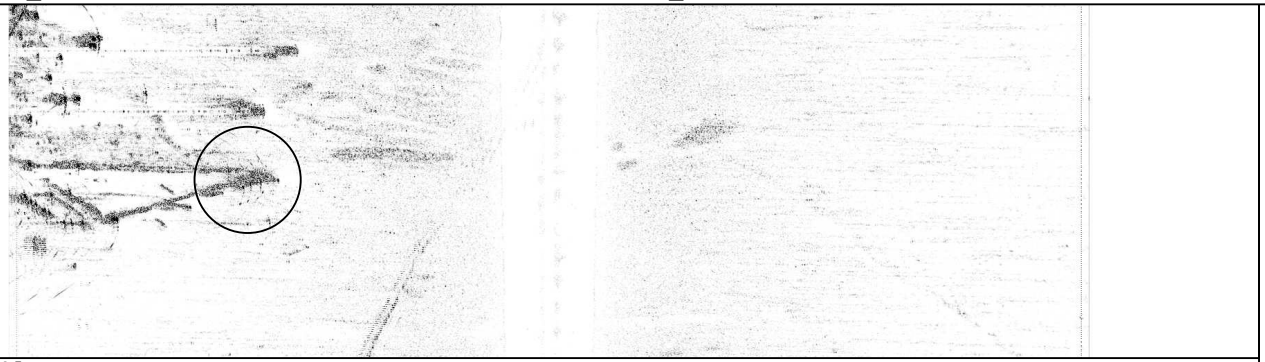


Chart: 11371_1.KAP Scale 1:10000

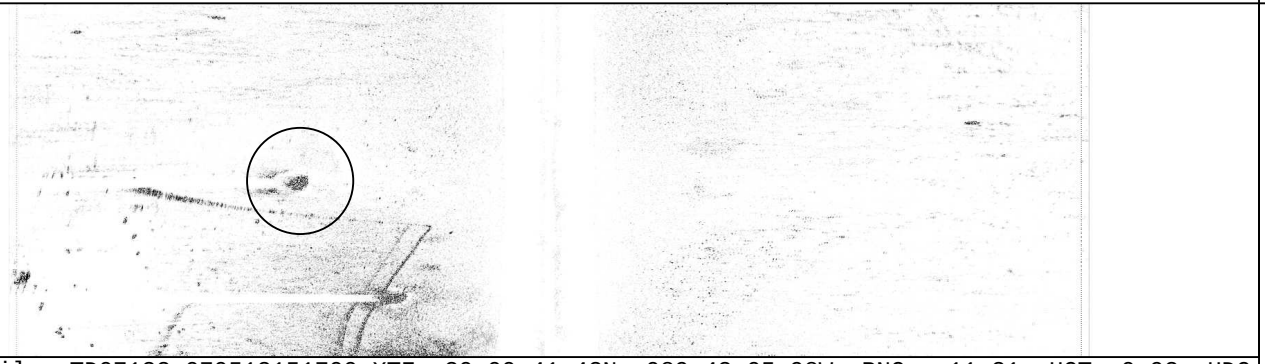


MB File: n/a Scale 1:500



ID: 126 File: TD07133_070513151300.XTF 30 00 40.51N 089 43 04.79W RNG: -13.69 HGT: 0.78 HDG: 090

COMMENT:
Plot Platform symbol and lable Platforms see F53 and F60. DTN 3



ID: 129 File: TD07133_070513151700.XTF 30 00 41.43N 089 43 05.98W RNG: -11.31 HGT: 0.93 HDG: 252

CORRELATED SS CONTACTS:

Contact	Range/Height
133151540	-13.69/0.78
133152055	-11.31/0.93
133153522	-13.41/0.83

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0051 Least Depth: Lat: 29 59 14.22N Lon: 089 39 30.77W Ping: Beam:

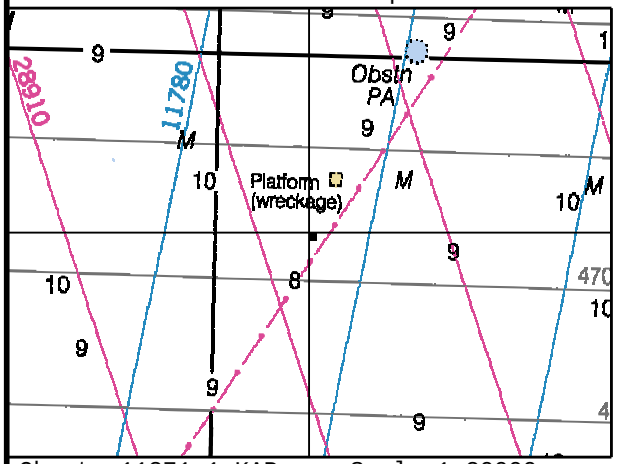


Chart: 11371_1.KAP Scale 1:20000

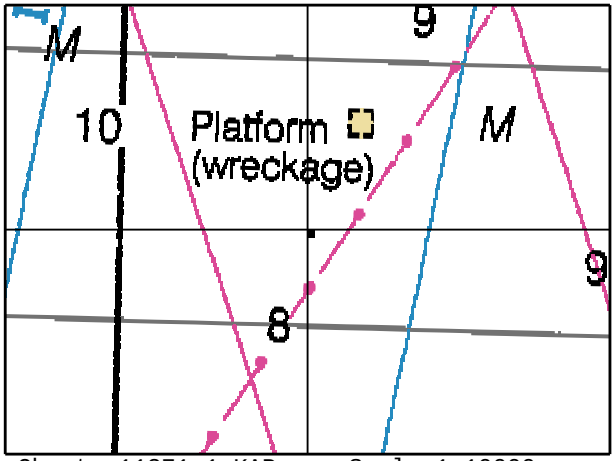
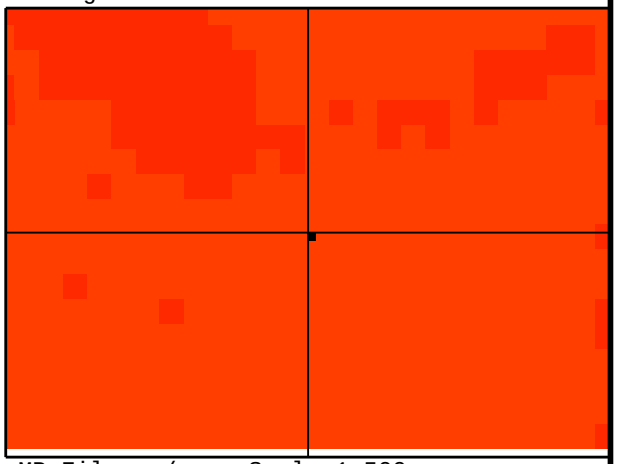
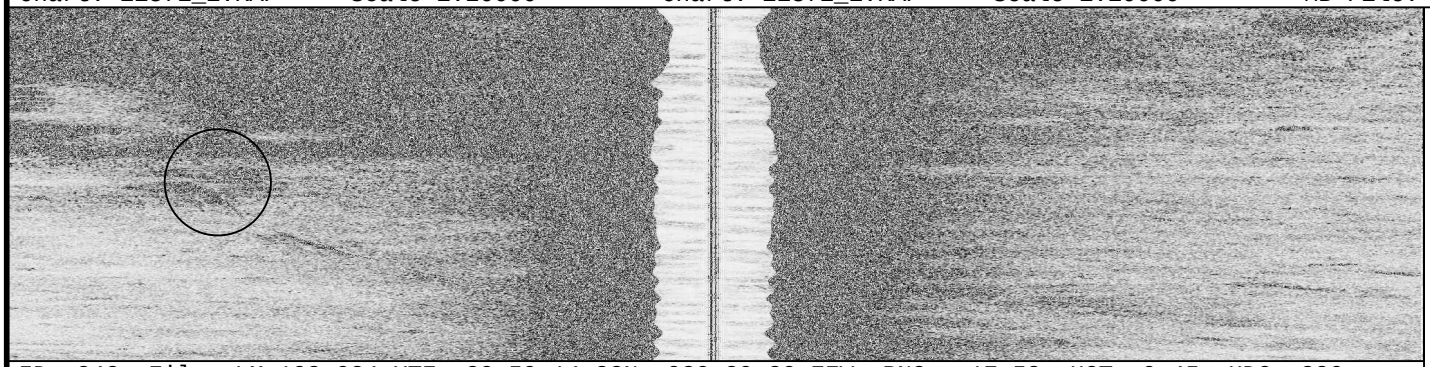


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 242 File: LM_103_024.XTF 29 59 14.22N 089 39 30.77W RNG: -17.58 HGT: 0.45 HDG: 320

COMMENT:
No plot - See F49, DTN 2

CORRELATED SS CONTACTS:

Contact	Range/Height
103142514	-17.58/0.45

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0050 Least Depth: Lat: 29 59 14.96N Lon: 089 39 31.66W Ping: Beam:

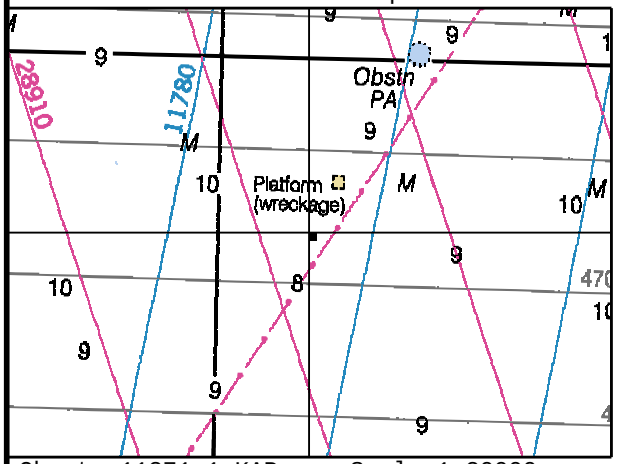


Chart: 11371_1.KAP Scale 1:20000

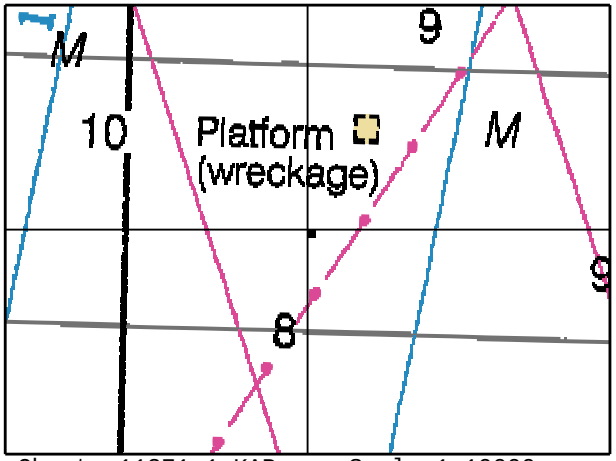
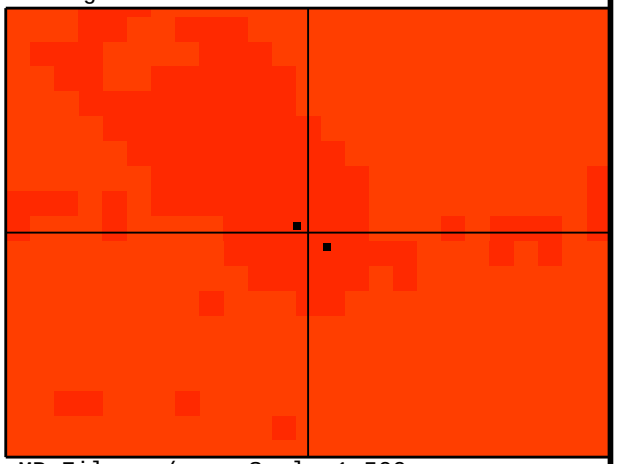
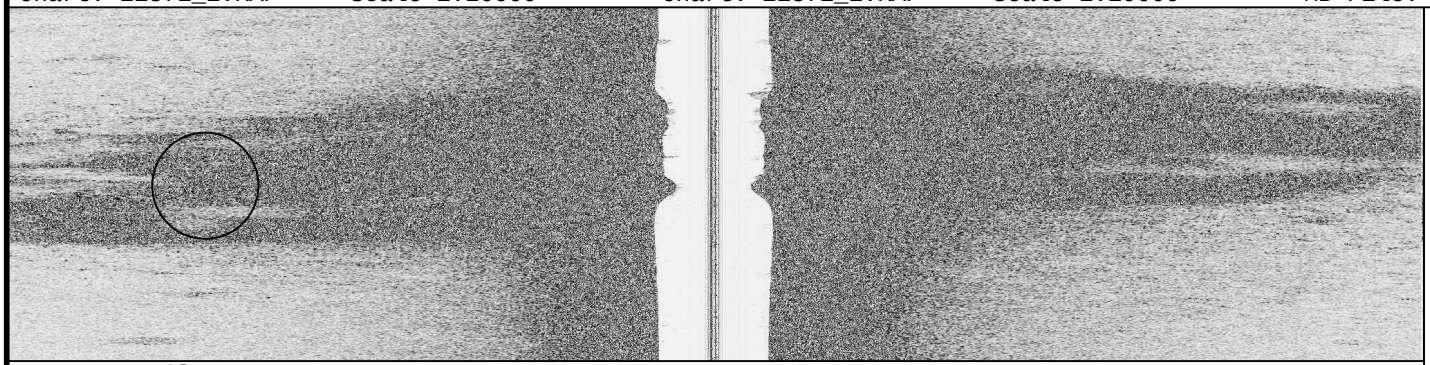


Chart: 11371_1.KAP Scale 1:10000

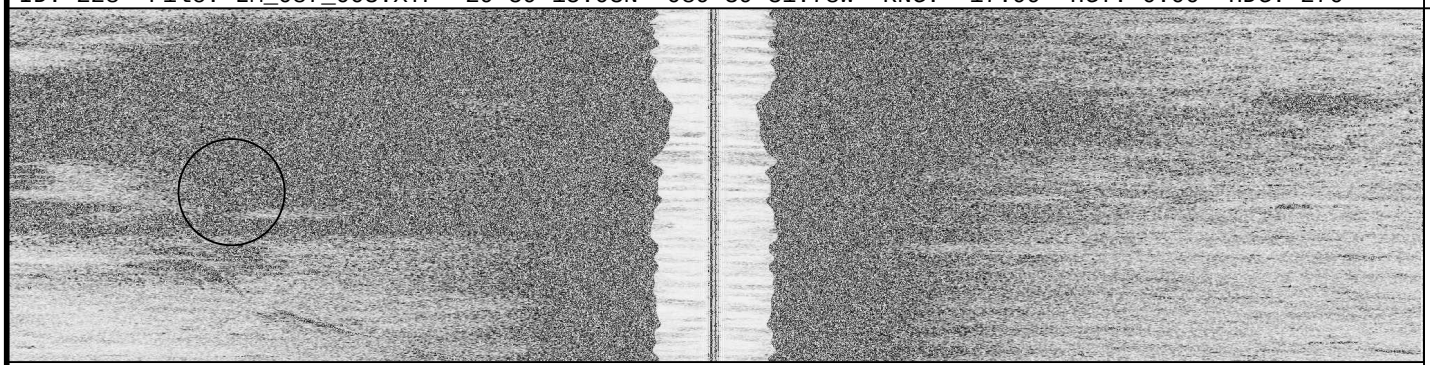


MB File: n/a Scale 1:500



ID: 228 File: LM_087_003.XTF 29 59 15.03N 089 39 31.78W RNG: -17.99 HGT: 0.00 HDG: 270

COMMENT:
No plot - See F49, DTN 2



ID: 243 File: LM_103_024.XTF 29 59 14.90N 089 39 31.54W RNG: -17.09 HGT: 0.50 HDG: 307

CORRELATED SS CONTACTS:

Contact	Range/Height
087152432	-17.99/0.00
103142522	-17.09/0.50

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0049 Least Depth: Lat: 29 59 14.48N Lon: 089 39 32.22W Ping: Beam:

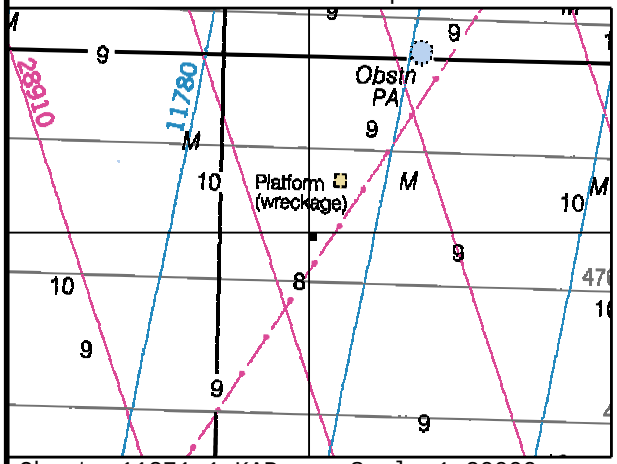


Chart: 11371_1.KAP Scale 1:20000

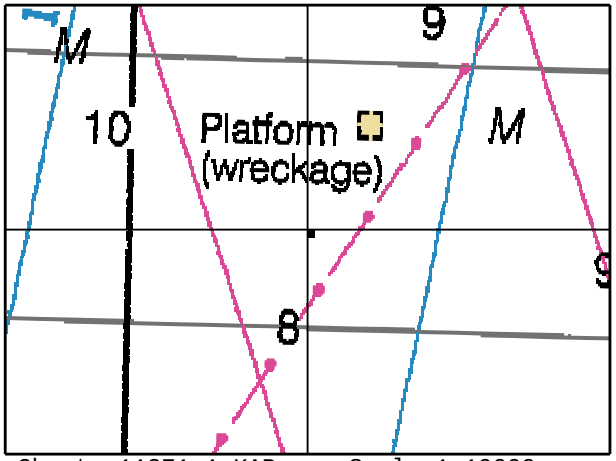
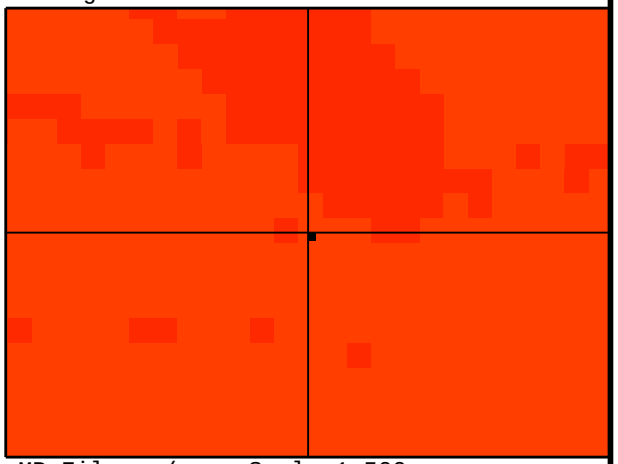
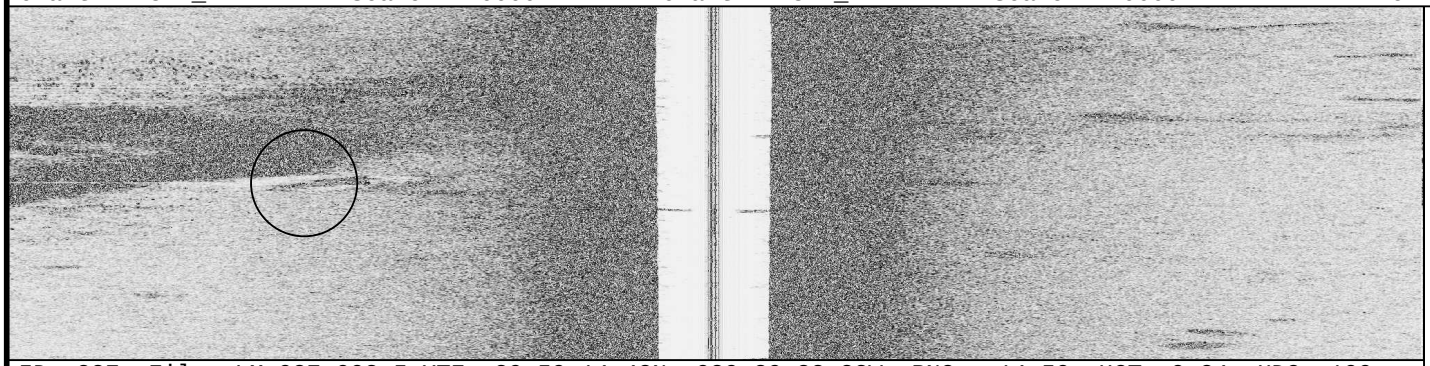


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 227 File: LM_087_002_5.XTF 29 59 14.48N 089 39 32.22W RNG: -14.50 HGT: 0.84 HDG: 100

COMMENT:
Plot Platform symbol and lable Platforms see F50 and F51, DTN2

CORRELATED SS CONTACTS:

Contact	Range/Height
087145044	-14.50/0.84

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0048 Least Depth: Lat: 29 56 45.81N Lon: 089 50 04.37W Ping: Beam:

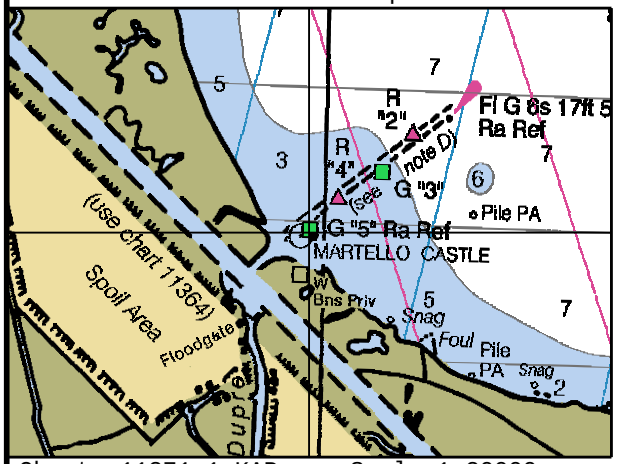


Chart: 11371_1.KAP Scale 1:20000

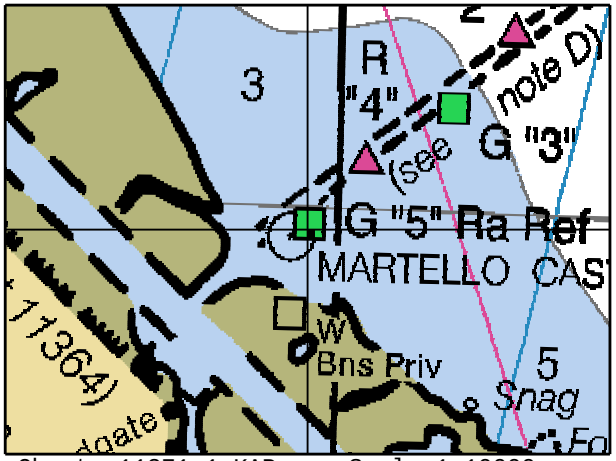
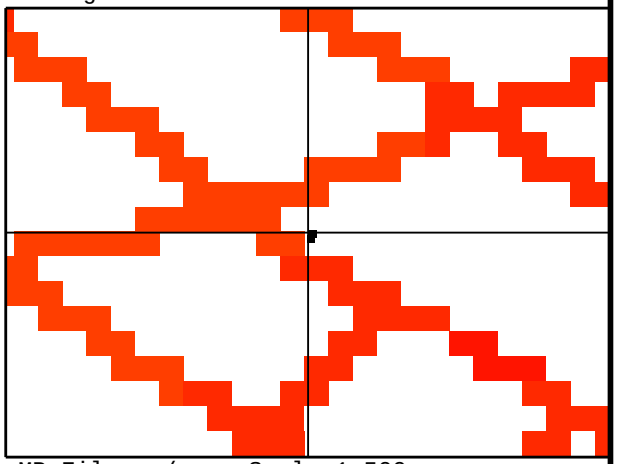
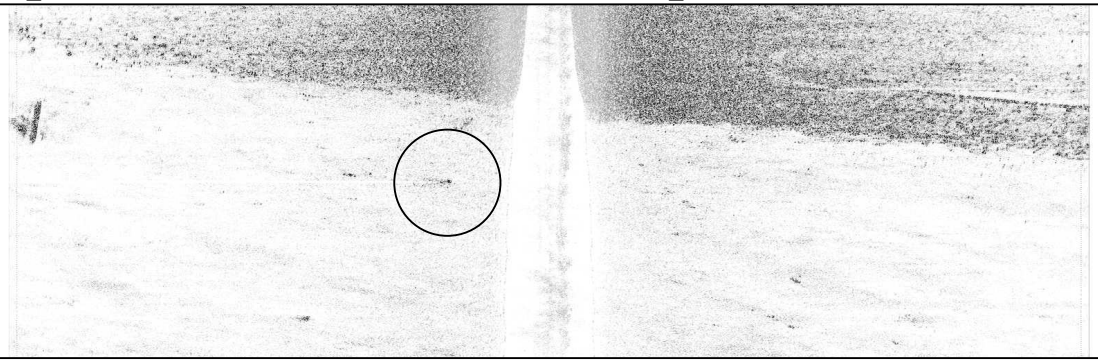


Chart: 11371_1.KAP Scale 1:10000

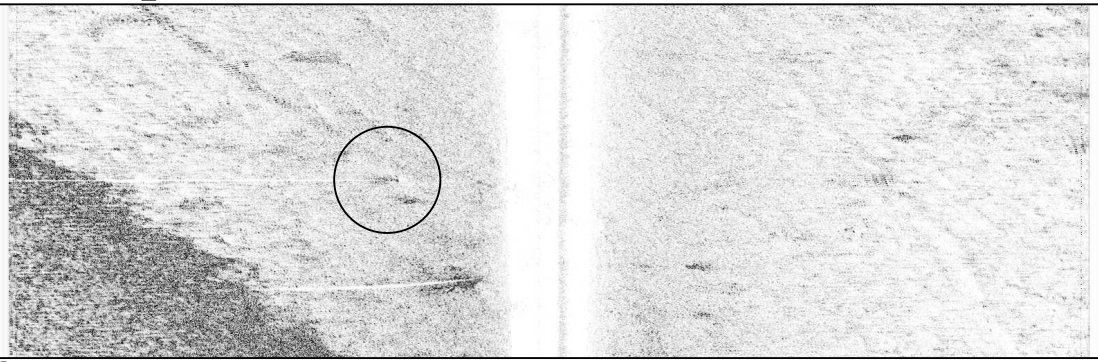


MB File: n/a Scale 1:500



ID: 4 File: TD07044_070213182100.XTF 29 56 45.83N 089 50 04.36W RNG: -4.66 HGT: 1.36 HDG: 126

COMMENT:
Plot Daybeacon and label G "5" Ra Ref



ID: 44 File: TD07074_070315125100.XTF 29 56 45.80N 089 50 04.38W RNG: -7.38 HGT: 1.34 HDG: 253

CORRELATED SS CONTACTS:

Contact	Range/Height
044182504	-4.66/1.36
074125425	-7.38/1.34

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0047 Least Depth: Lat: 30 01 10.50N Lon: 089 43 11.82W Ping: Beam:

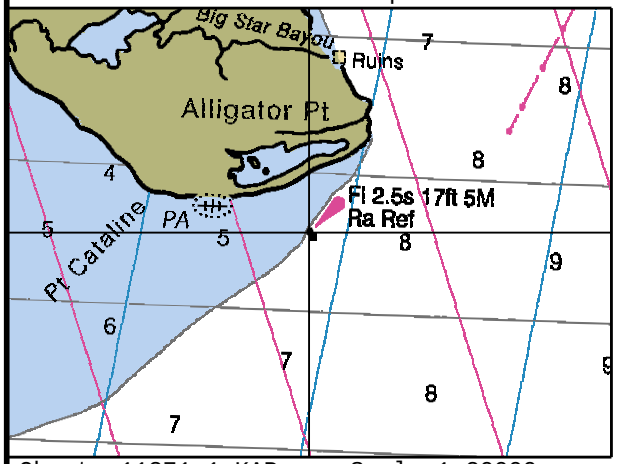


Chart: 11371_1.KAP Scale 1:20000

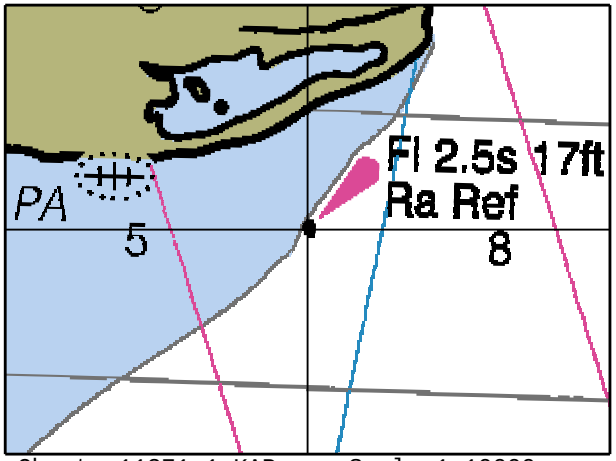
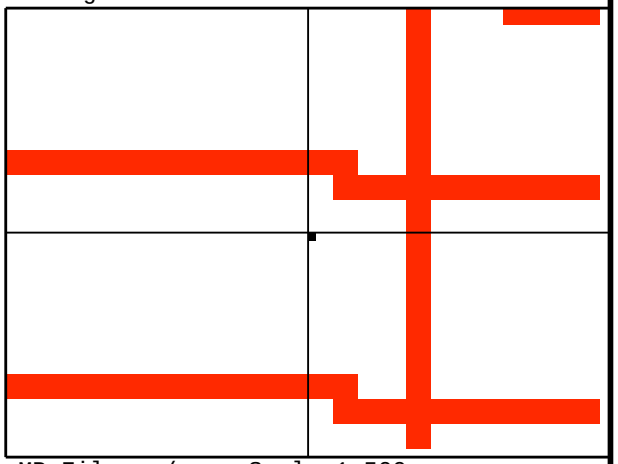
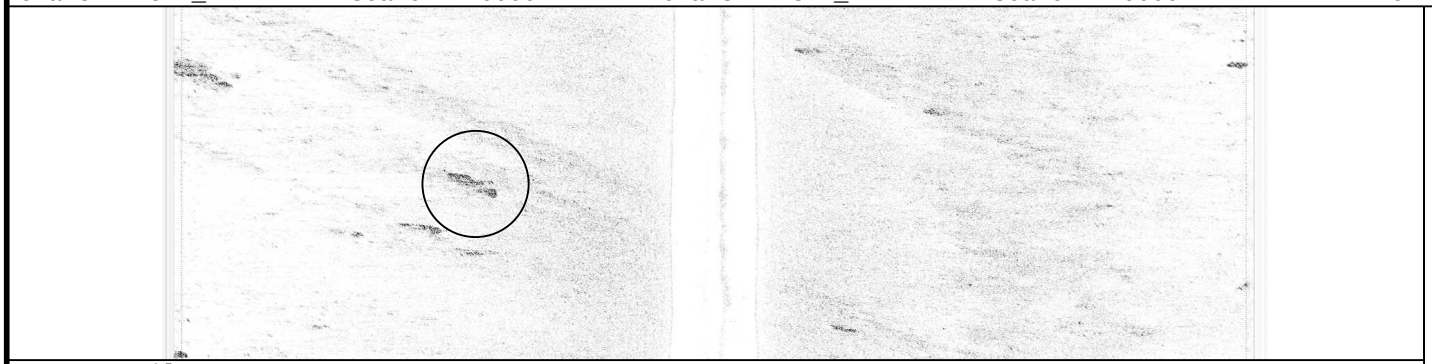


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 40 File: TD07062_070303191900.XTF 30 01 10.50N 089 43 11.82W RNG: -10.84 HGT: 0.96 HDG: 271

COMMENT:
Plot Beacon symbol and label
Fl 2.5s 17ft 5M Ra Ref

CORRELATED SS CONTACTS:

Contact	Range/Height
062192136	-10.84/0.96

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0046 Least Depth: Lat: 30 02 13.22N Lon: 089 45 49.56W Ping: Beam:

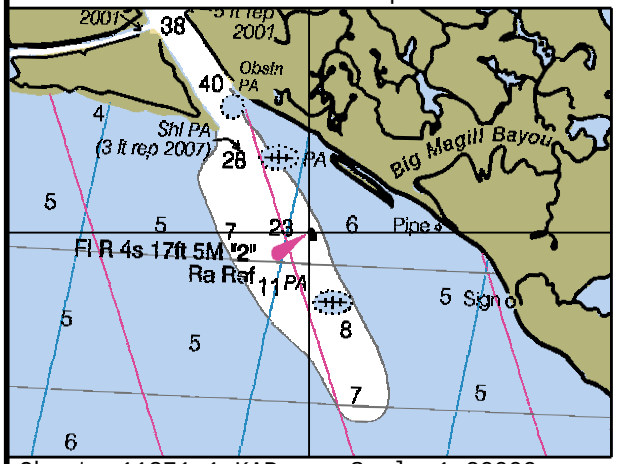


Chart: 11371_1.KAP Scale 1:20000

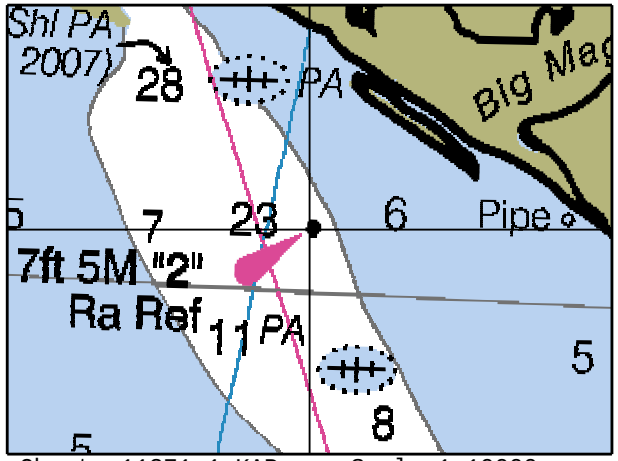
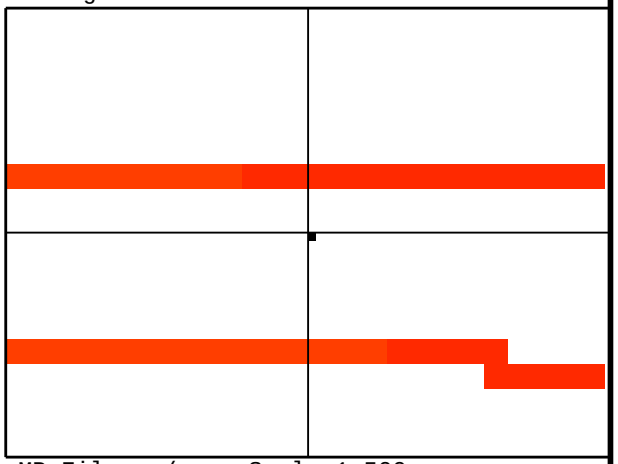
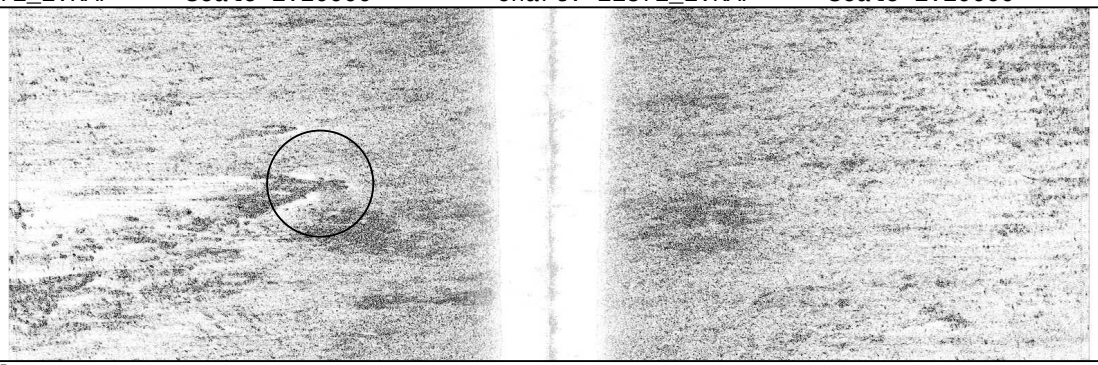


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 36 File: TD07061_070302183700.XTF 30 02 13.22N 089 45 49.56W RNG: -10.41 HGT: 0.88 HDG: 271

COMMENT:
Plot Beacon symbol and label
R 4s 17ft 5M "2" Ra Ref

CORRELATED SS CONTACTS:

Contact	Range/Height
061183946	-10.41/0.88

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0045 Least Depth: Lat: 29 57 01.71N Lon: 089 49 42.59W Ping: Beam:

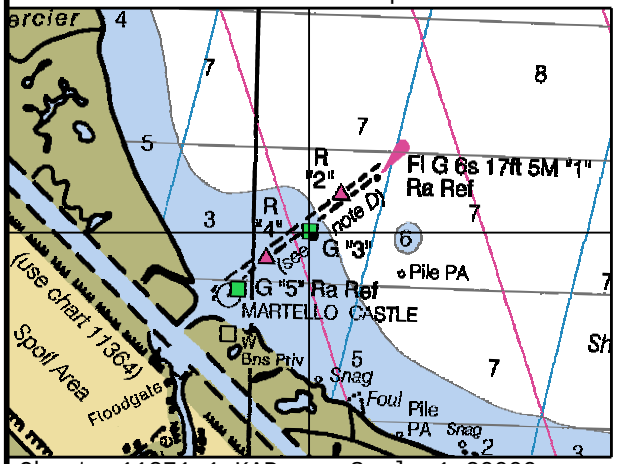


Chart: 11371_1.KAP Scale 1:20000

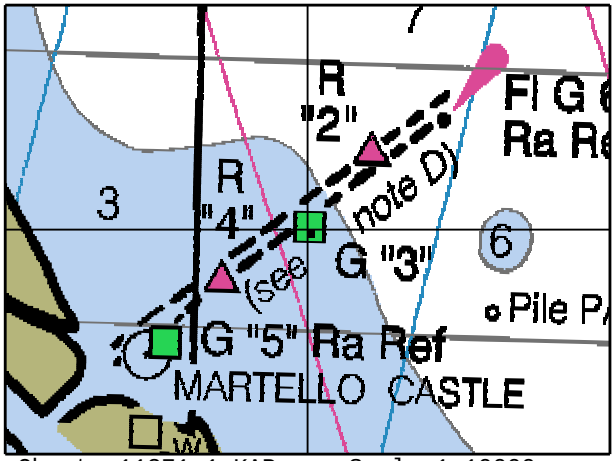
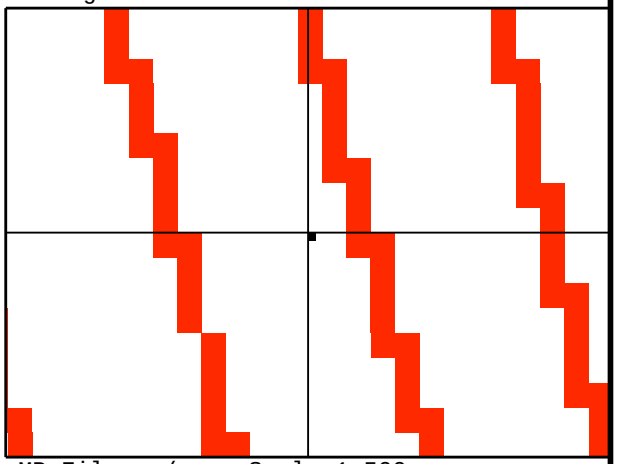
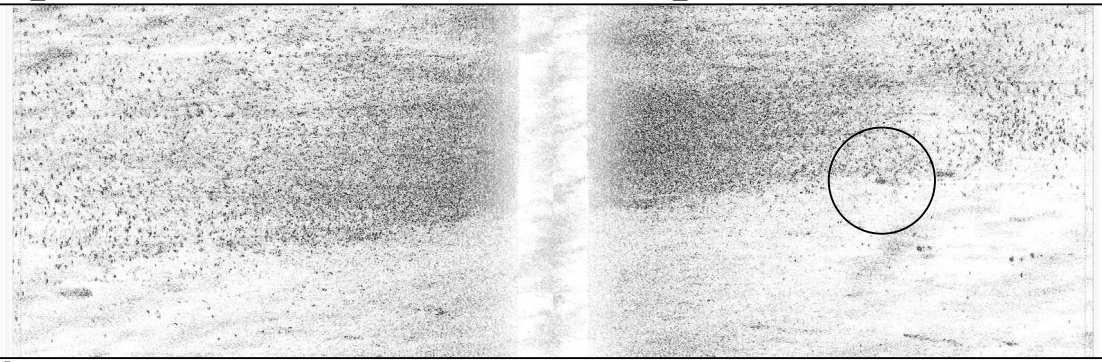


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 29 File: TD07060_070301154000.XTF 29 57 01.71N 089 49 42.59W RNG: 14.81 HGT: 0.58 HDG: 163

COMMENT:
Plot Daybeacon and label G "3"

CORRELATED SS CONTACTS:

Contact	Range/Height
060154254	14.81/0.58

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0044 Least Depth: Lat: 29 56 54.70N Lon: 089 49 55.92W Ping: Beam:

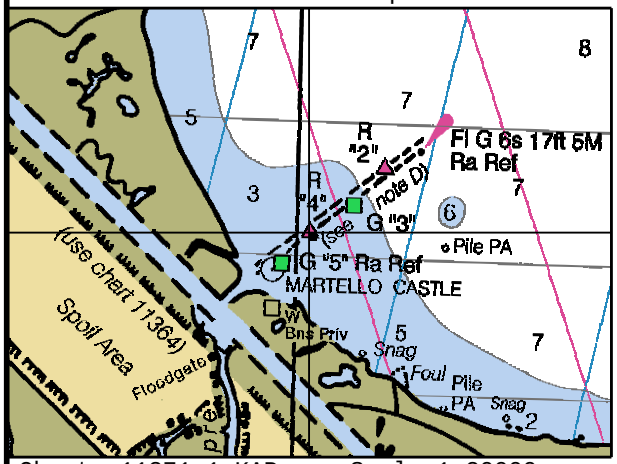


Chart: 11371_1.KAP Scale 1:20000

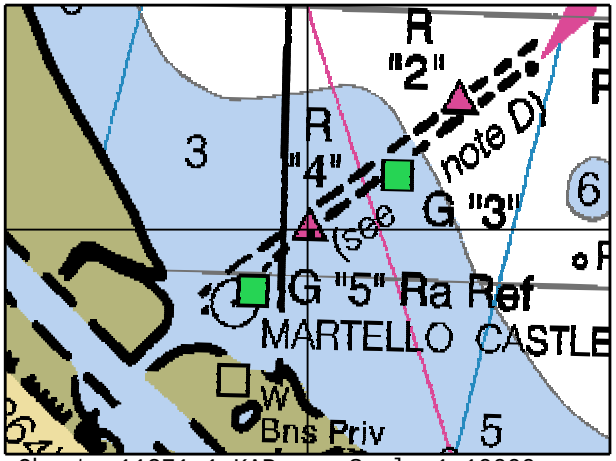
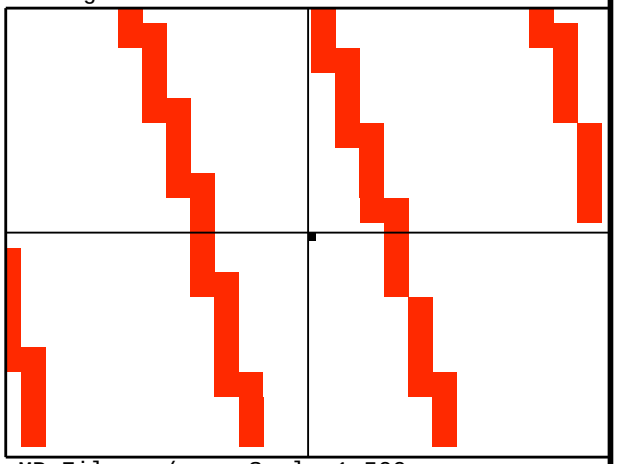
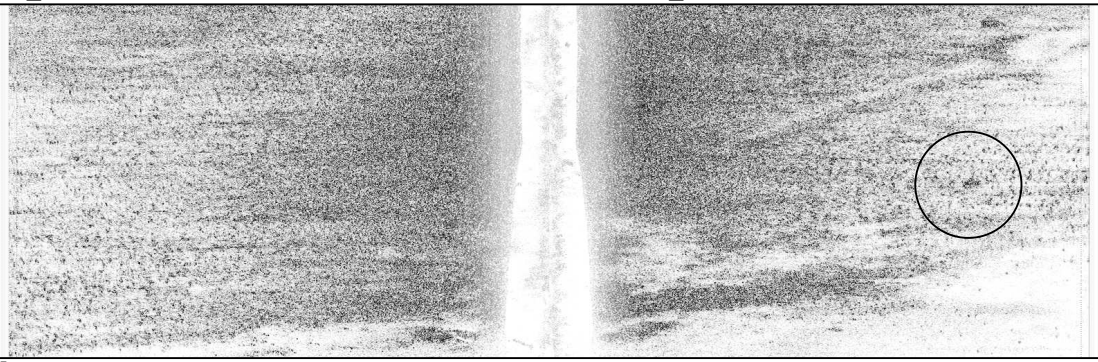


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 26 File: TD07060_070301142000.XTF 29 56 54.70N 089 49 55.92W RNG: 18.91 HGT: 0.31 HDG: 345

COMMENT:
Plot Daybeacon and label R "4"

CORRELATED SS CONTACTS:

Contact	Range/Height
060142303	18.91/0.31

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0043 Least Depth: Lat: 30 02 13.83N Lon: 089 41 23.79W Ping: Beam:

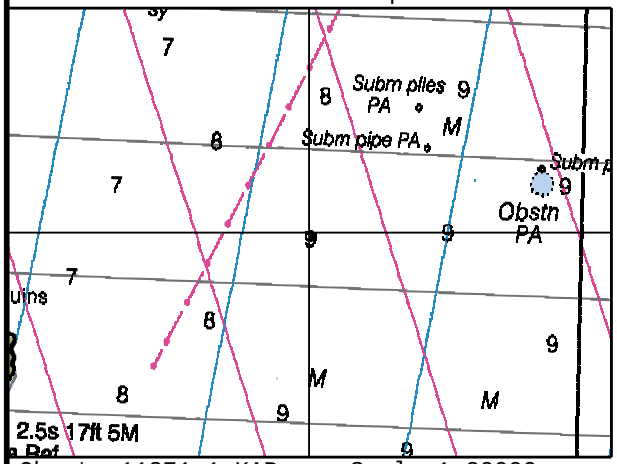


Chart: 11371_1.KAP Scale 1:20000

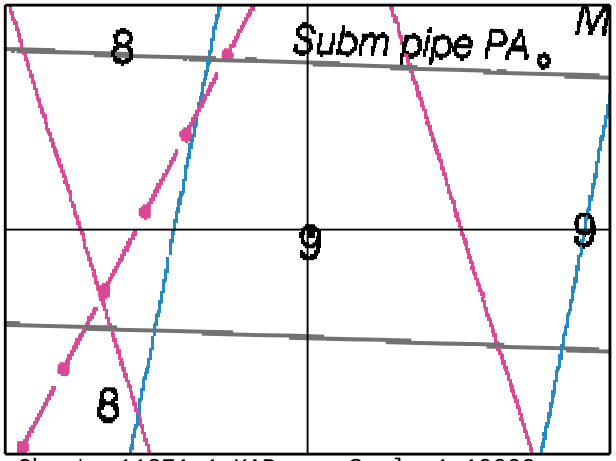
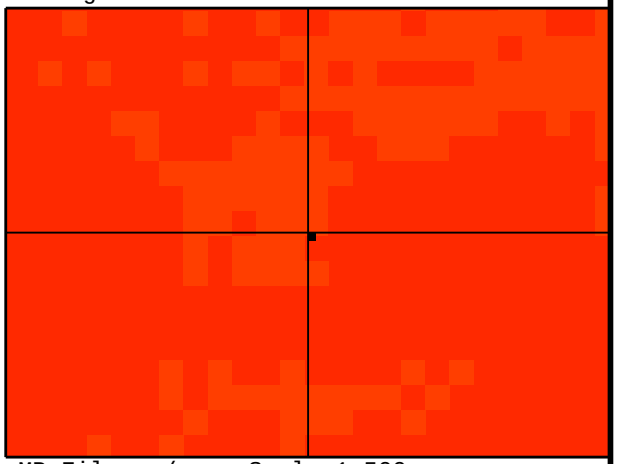
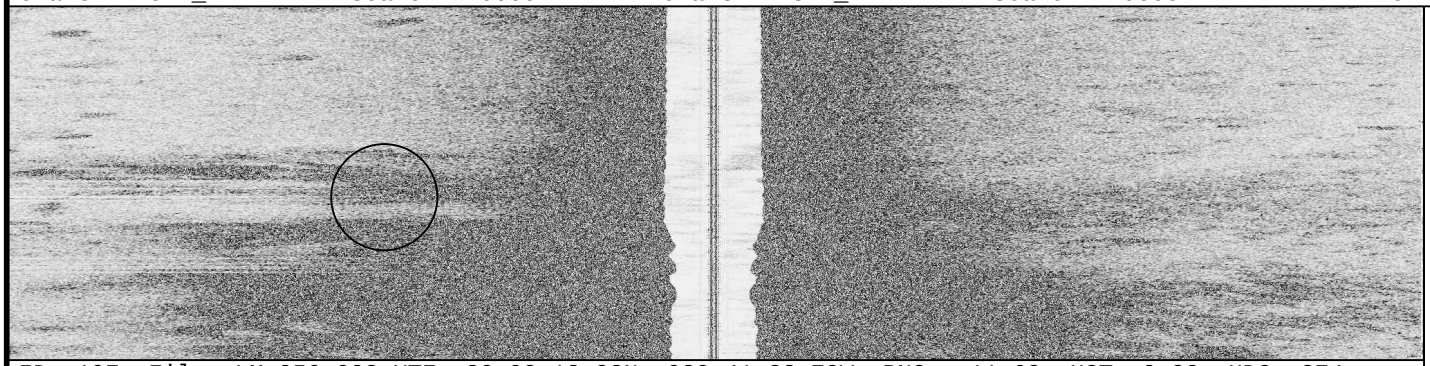


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 197 File: LM_056_008.XTF 30 02 13.83N 089 41 23.79W RNG: -11.68 HGT: 0.89 HDG: 274

COMMENT:
No Plot - See F42

CORRELATED SS CONTACTS:

Contact	Range/Height
056173822	-11.68/0.89

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0042 Least Depth: Lat: 30 02 13.86N Lon: 089 41 22.66W Ping: Beam:

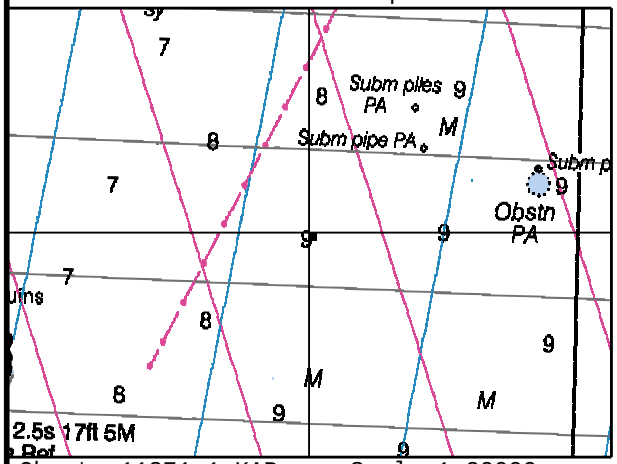


Chart: 11371_1.KAP Scale 1:20000

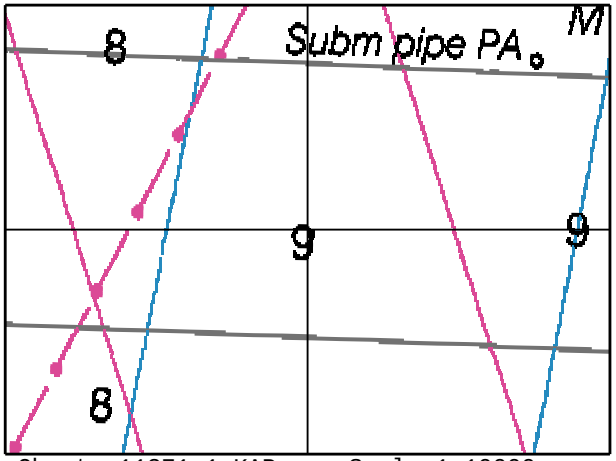
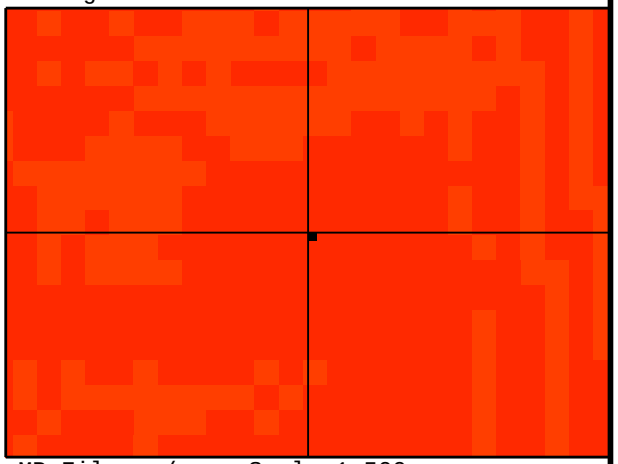
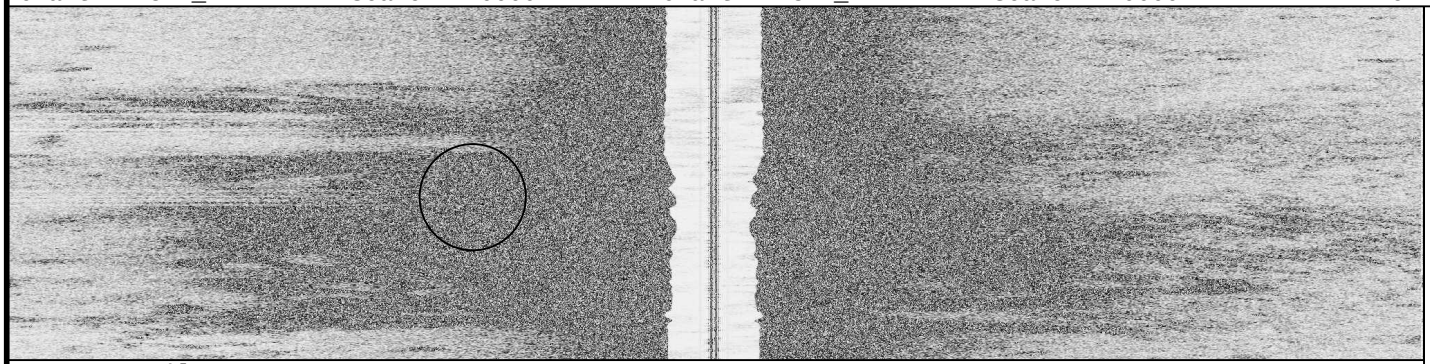


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 196 File: LM_056_008.XTF 30 02 13.85N 089 41 22.65W RNG: -8.56 HGT: 1.04 HDG: 275

COMMENT:
Plot Platform symbol and label Platforms see F43

CORRELATED SS CONTACTS:

Contact	Range/Height
056173814	-8.56/1.04

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0041 Least Depth: Lat: 30 02 42.71N Lon: 089 41 10.82W Ping: Beam:

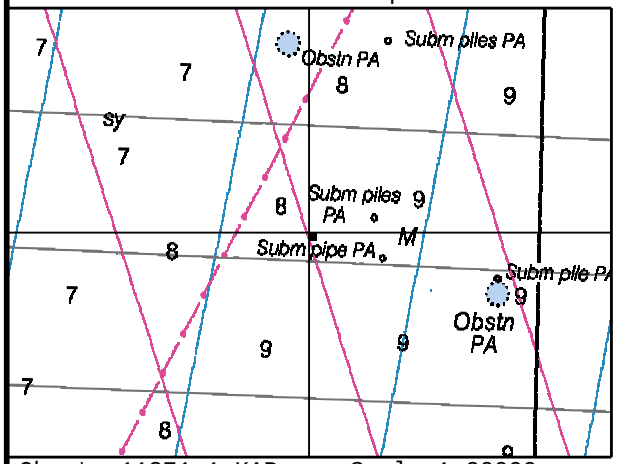


Chart: 11371_1.KAP Scale 1:20000

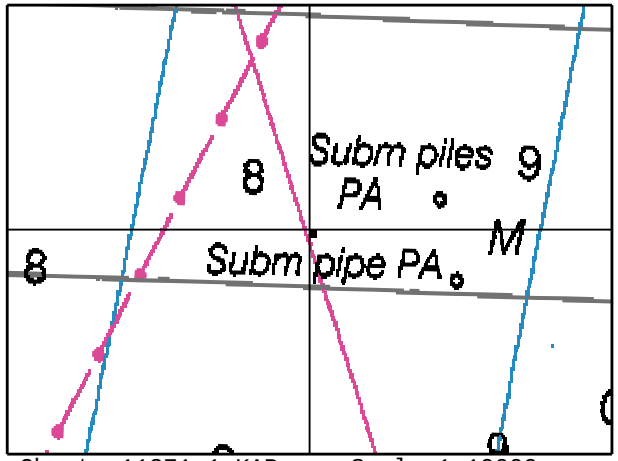
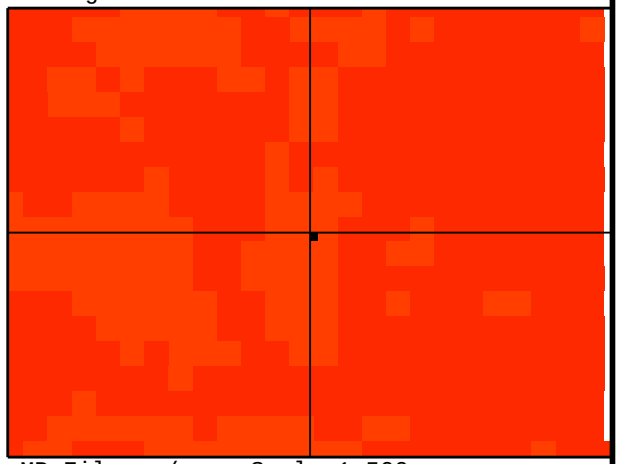
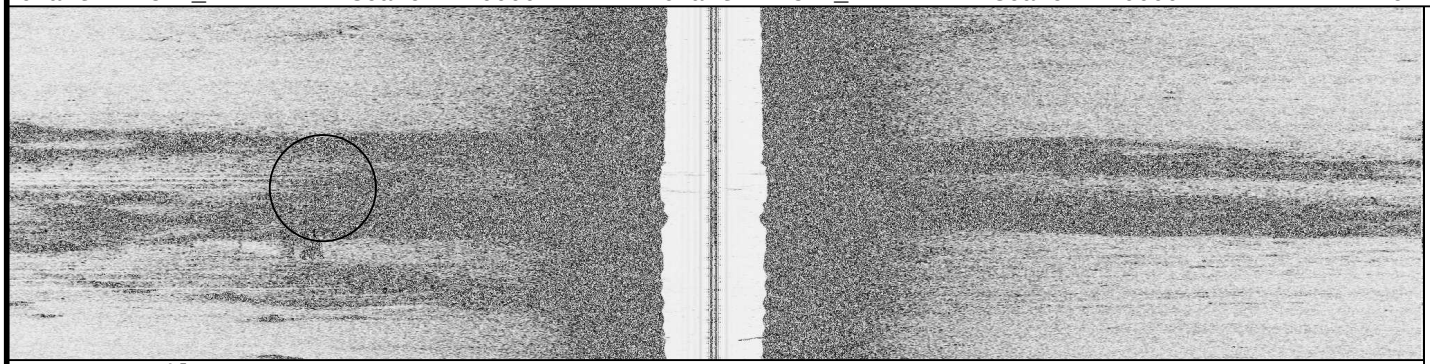


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 186 File: LM_051_030.XTF 30 02 42.71N 089 41 10.82W RNG: -13.84 HGT: 0.87 HDG: 086

COMMENT:
No Plot - see F38

CORRELATED SS CONTACTS:

Contact	Range/Height
051194729	-13.84/0.87

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0040 Least Depth: Lat: 30 02 42.73N Lon: 089 41 12.40W Ping: Beam:

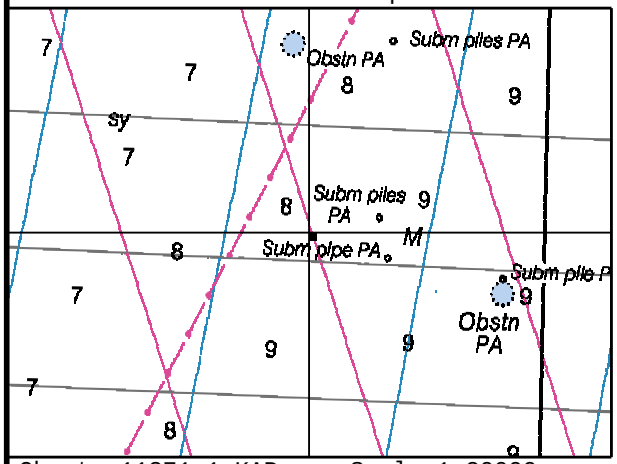


Chart: 11371_1.KAP Scale 1:20000

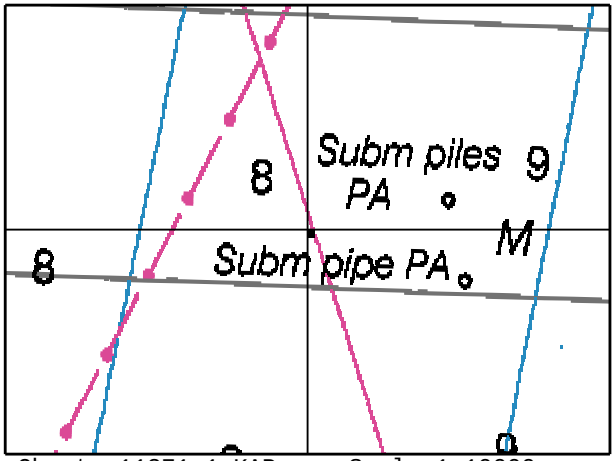
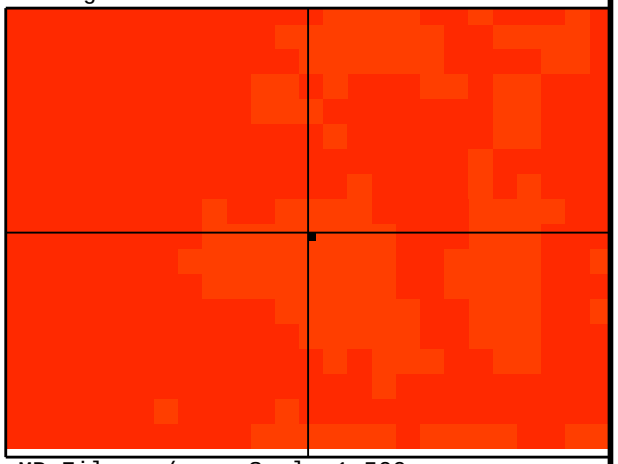
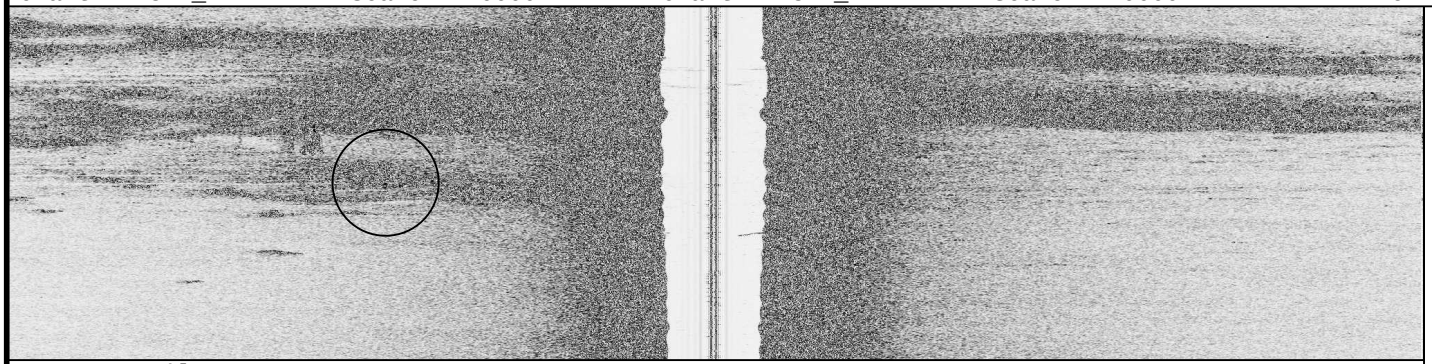


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 185 File: LM_051_030.XTF 30 02 42.73N 089 41 12.40W RNG: -11.62 HGT: 0.98 HDG: 093

COMMENT:
No Plot - see F38

CORRELATED SS CONTACTS:

Contact	Range/Height
051194717	-11.62/0.98

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0039 Least Depth: Lat: 30 02 43.24N Lon: 089 41 12.33W Ping: Beam:

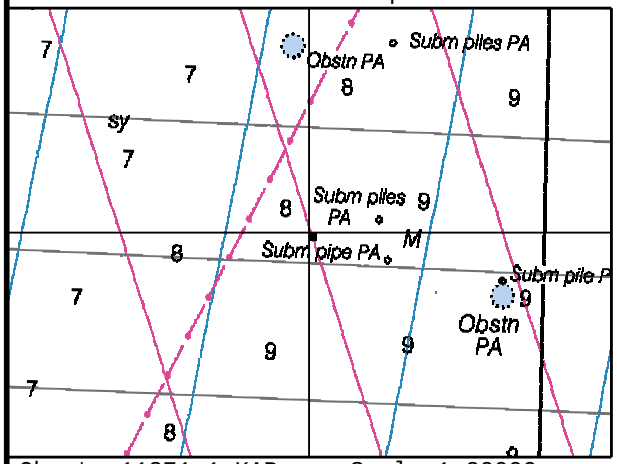


Chart: 11371_1.KAP Scale 1:20000

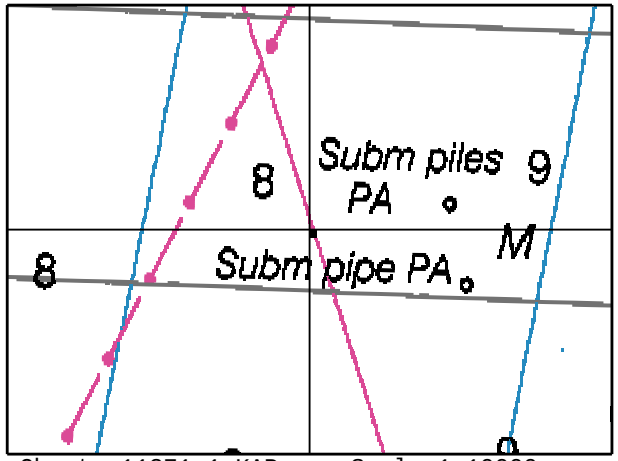
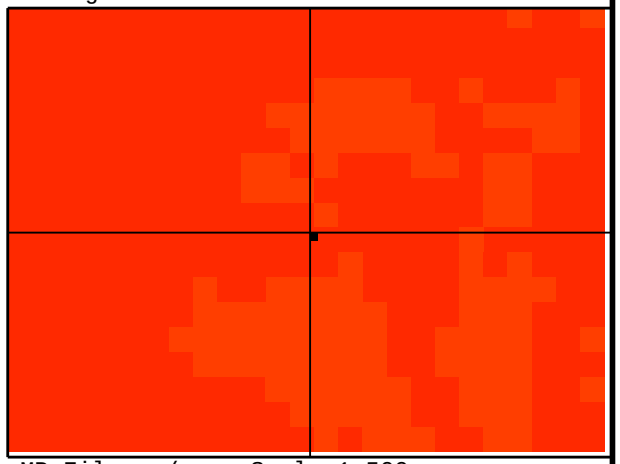
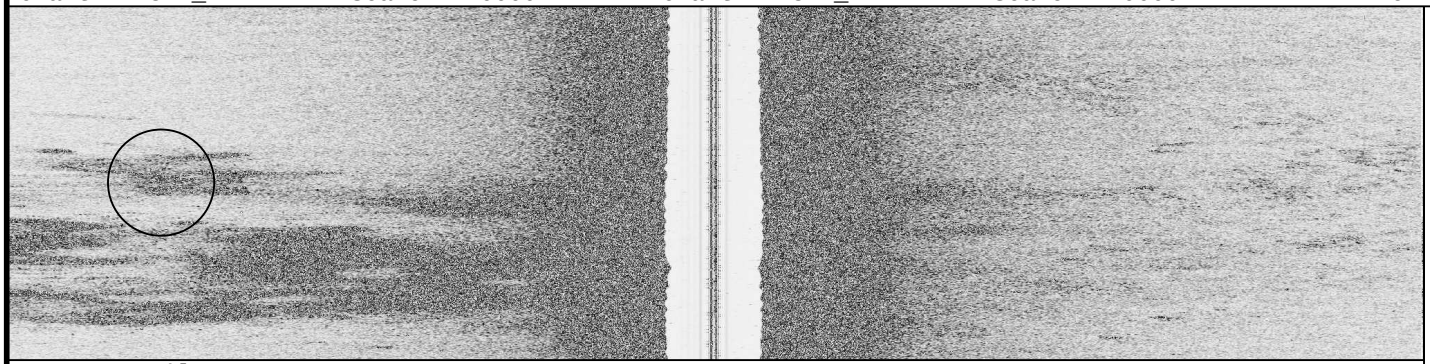


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 184 File: LM_051_029_2.XTF 30 02 43.24N 089 41 12.33W RNG: -19.54 HGT: 0.36 HDG: 270

COMMENT:
No Plot - see F38

CORRELATED SS CONTACTS:

Contact	Range/Height
051191238	-19.54/0.36

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0038 Least Depth: Lat: 30 02 43.33N Lon: 089 41 10.91W Ping: Beam:

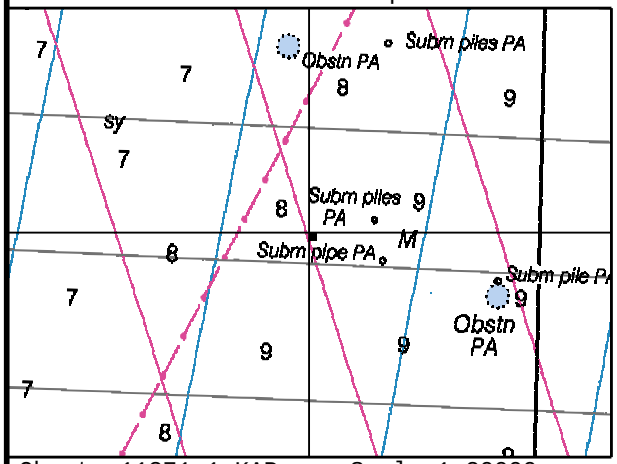


Chart: 11371_1.KAP Scale 1:20000

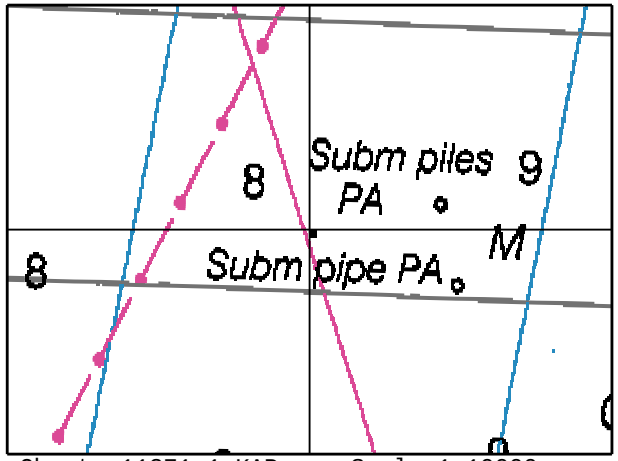
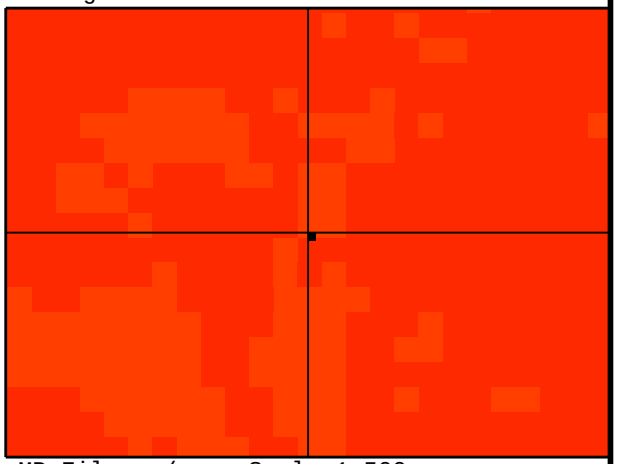
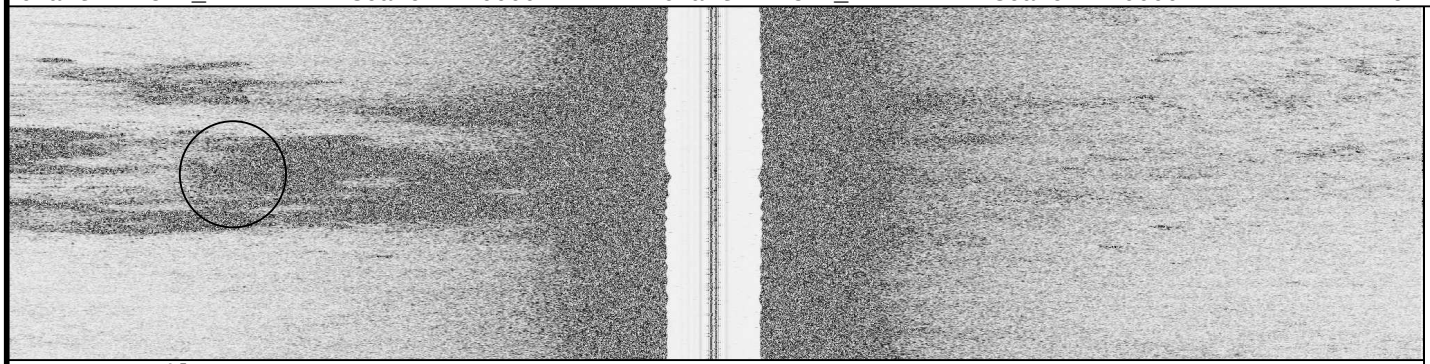


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 183 File: LM_051_029_2.XTF 30 02 43.33N 089 41 10.91W RNG: -17.01 HGT: 0.49 HDG: 270

COMMENT:
Plot Platform symbol and label Platforms See F39 F40 and F41

CORRELATED SS CONTACTS:

Contact	Range/Height
051191227	-17.01/0.49

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0037 Least Depth: Lat: 29 56 06.36N Lon: 089 38 36.48W Ping: Beam:

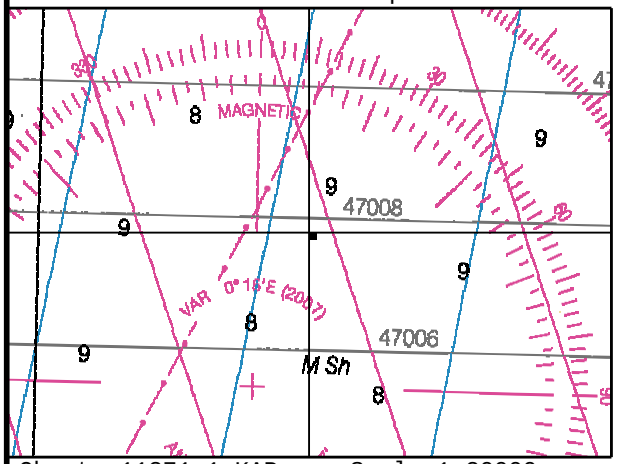


Chart: 11371_1.KAP Scale 1:20000

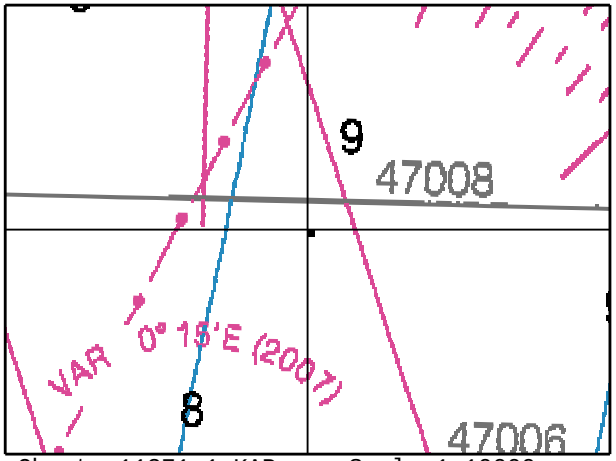
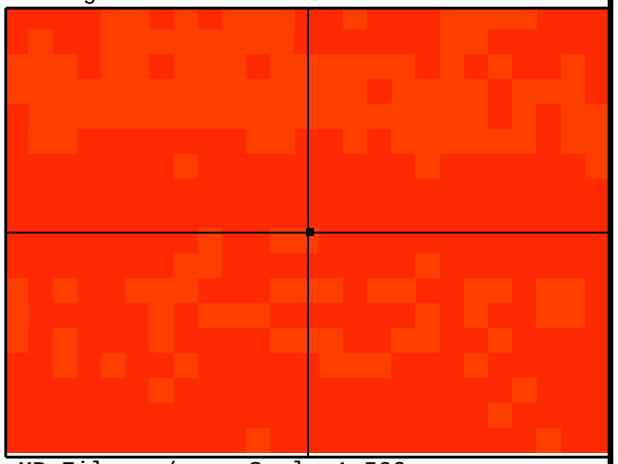
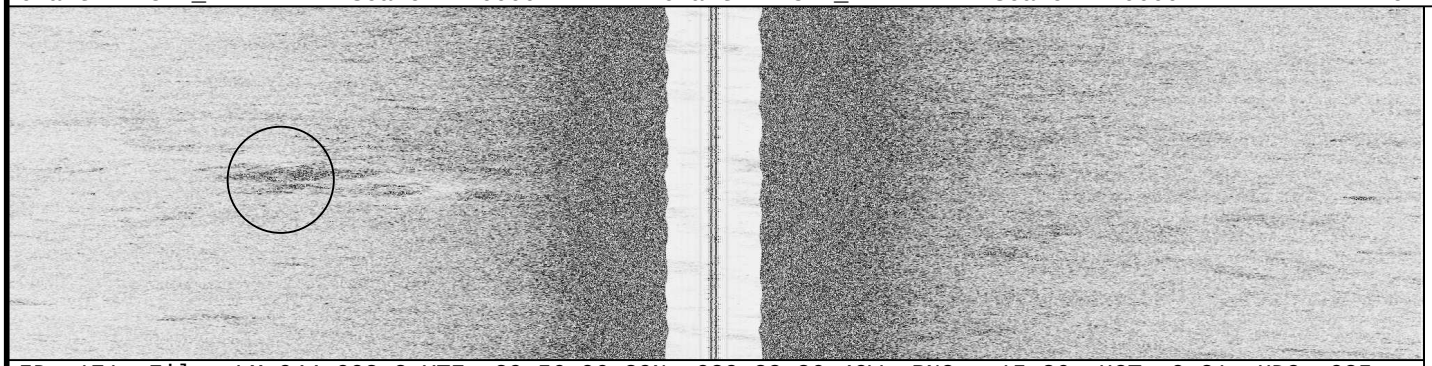


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 171 File: LM_044_002_2.XTF 29 56 06.39N 089 38 36.49W RNG: -15.36 HGT: 0.21 HDG: 085

COMMENT:
Plot special purpose buoy symbol and label Y Priv

CORRELATED SS CONTACTS:

Contact	Range/Height
044153927	-15.36/0.21

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0036 Least Depth: Lat: 30 01 38.01N Lon: 089 42 11.36W Ping: Beam:

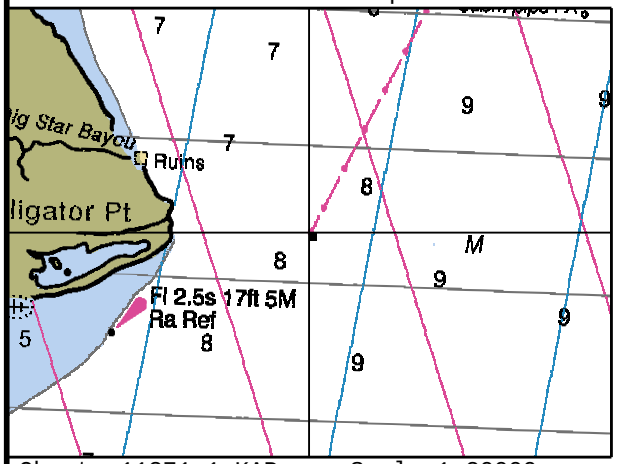


Chart: 11371_1.KAP Scale 1:20000

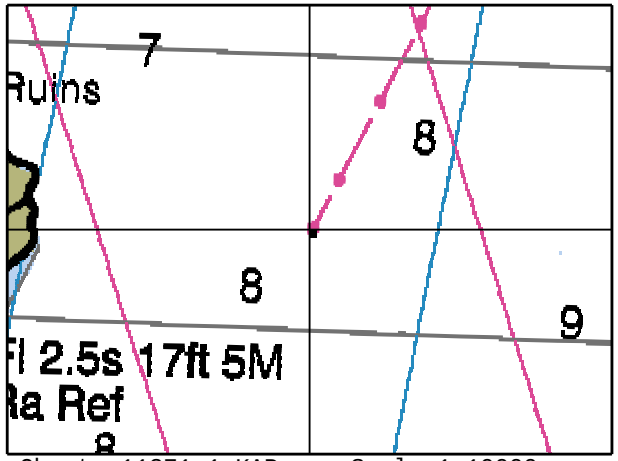
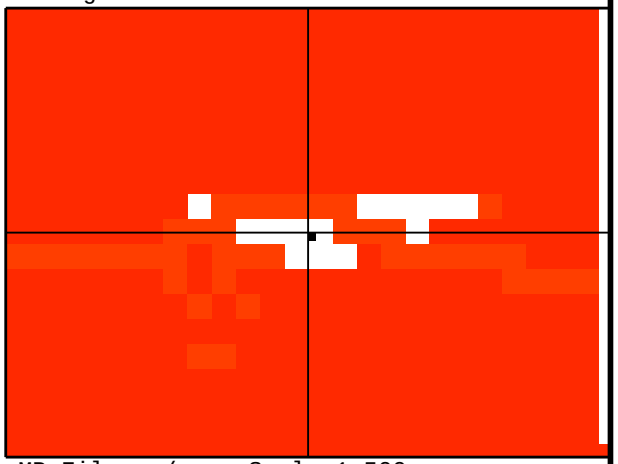
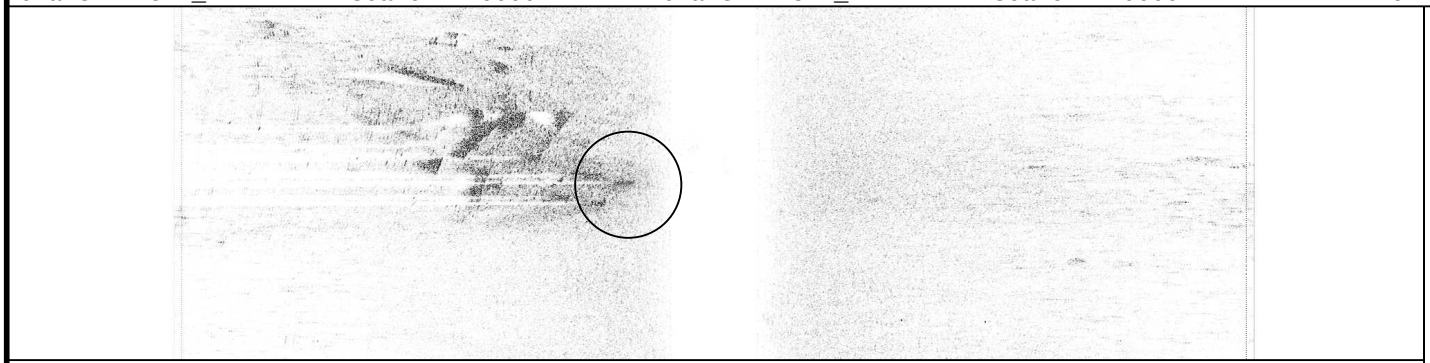


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 111 File: TD07129_070509160300.XTF 30 01 38.01N 089 42 11.36W RNG: -3.94 HGT: 1.34 HDG: 276

COMMENT:
No plot - See F35

CORRELATED SS CONTACTS:

Contact	Range/Height
129160659	-3.94/1.34

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0035 Least Depth: Lat: 30 01 37.69N Lon: 089 42 11.80W Ping: Beam:

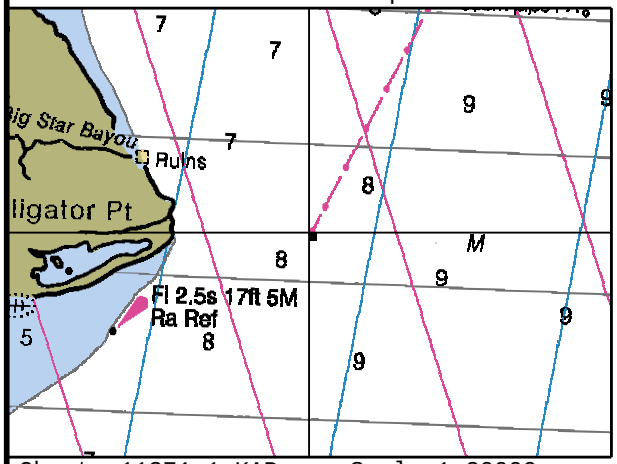


Chart: 11371_1.KAP Scale 1:20000

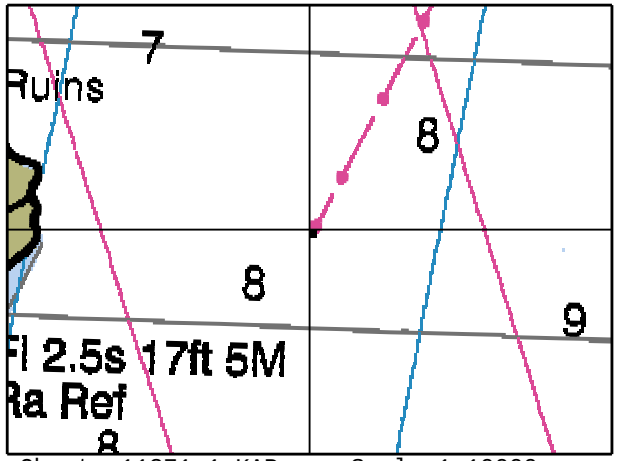
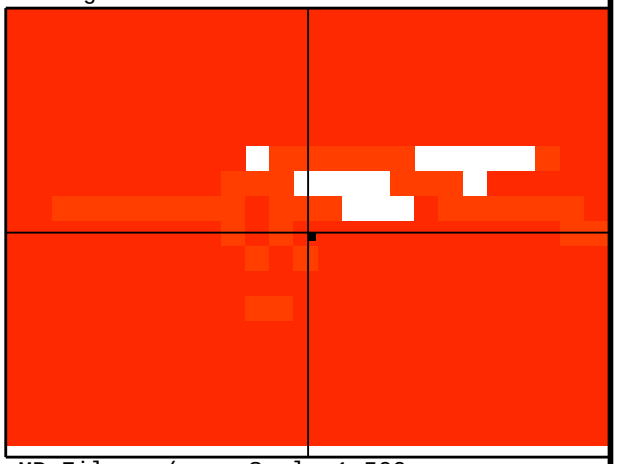
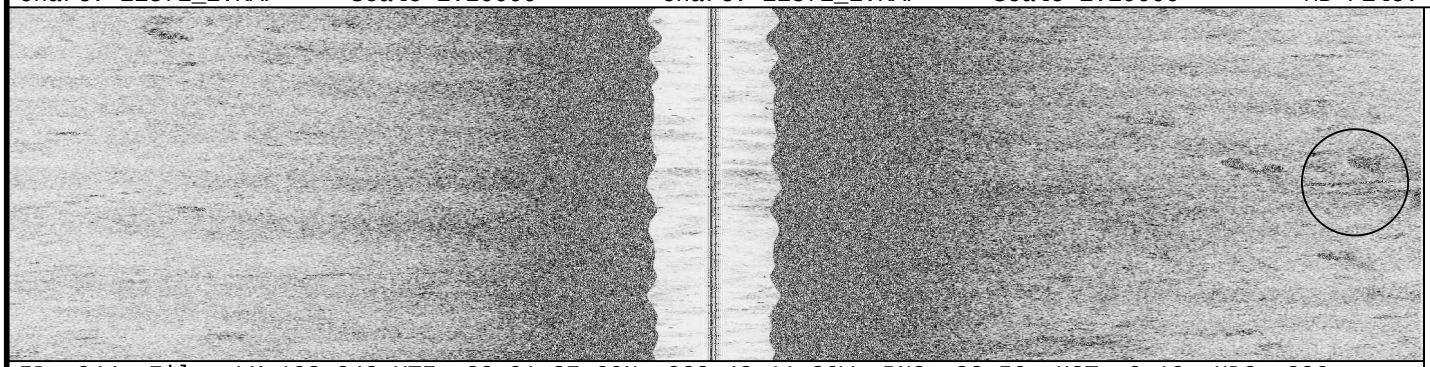


Chart: 11371_1.KAP Scale 1:10000



MB File: n/a Scale 1:500



ID: 244 File: LM_103_043.XTF 30 01 37.69N 089 42 11.80W RNG: 22.56 HGT: 0.10 HDG: 286

COMMENT:
Plot Platform symbol and label Platforms See F36

CORRELATED SS CONTACTS:

Contact	Range/Height
103202810	22.56/0.10

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0034 Least Depth: 7(ft), 2.32(m) Lat: 30 02 13.92N Lon: 089 41 24.00W Ping: 683 Beam: 581

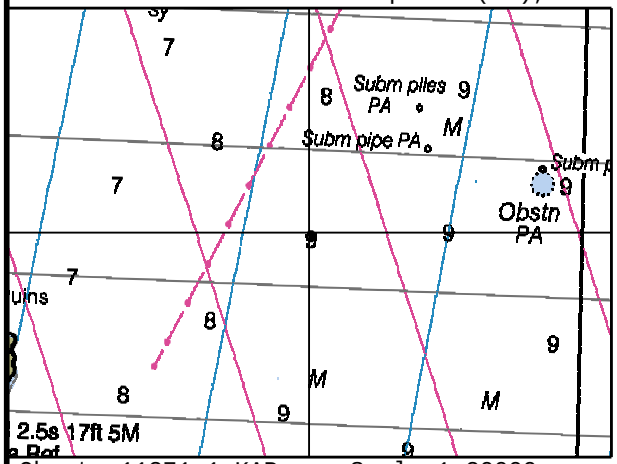


Chart: 11371_1.KAP Scale 1:20000

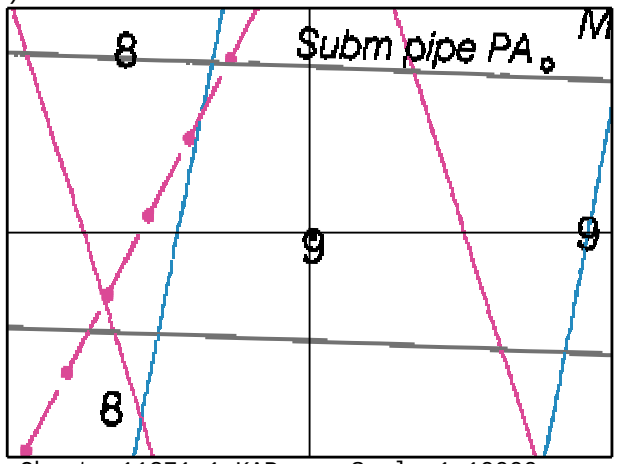
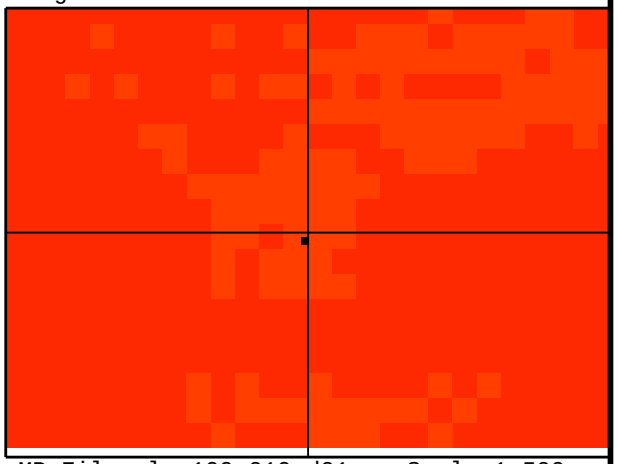
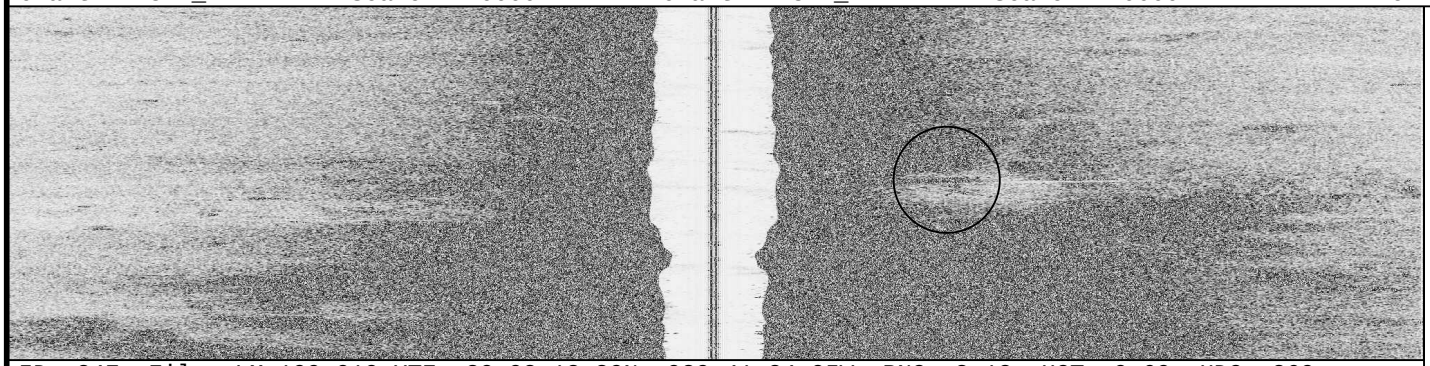


Chart: 11371_1.KAP Scale 1:10000



MB File: lm_109_010.d01 Scale 1:500



ID: 247 File: LM_109_010.XTF 30 02 13.89N 089 41 24.05W RNG: 8.18 HGT: 0.60 HDG: 269

COMMENT:
No Plot - Adjacent to Platform

CORRELATED SS CONTACTS:

Contact	Range/Height
109134550	8.18/0.60

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0033 Least Depth: 7(ft), 2.09(m) Lat: 29 57 28.99N Lon: 089 43 33.24W Ping: 3277 Beam: 366

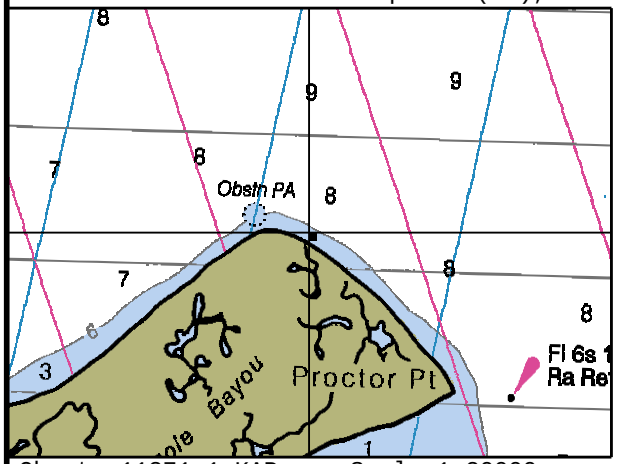


Chart: 11371_1.KAP Scale 1:20000

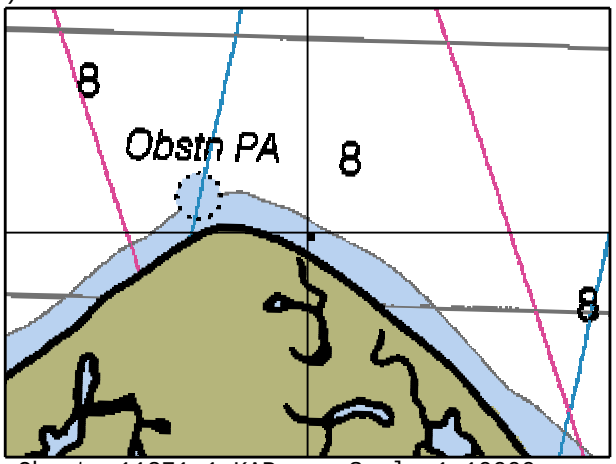
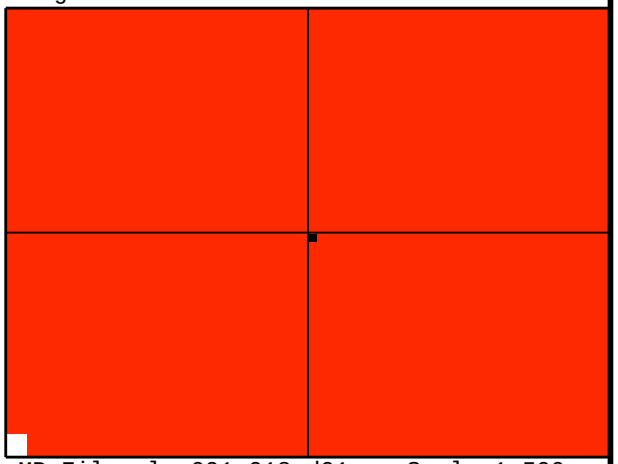
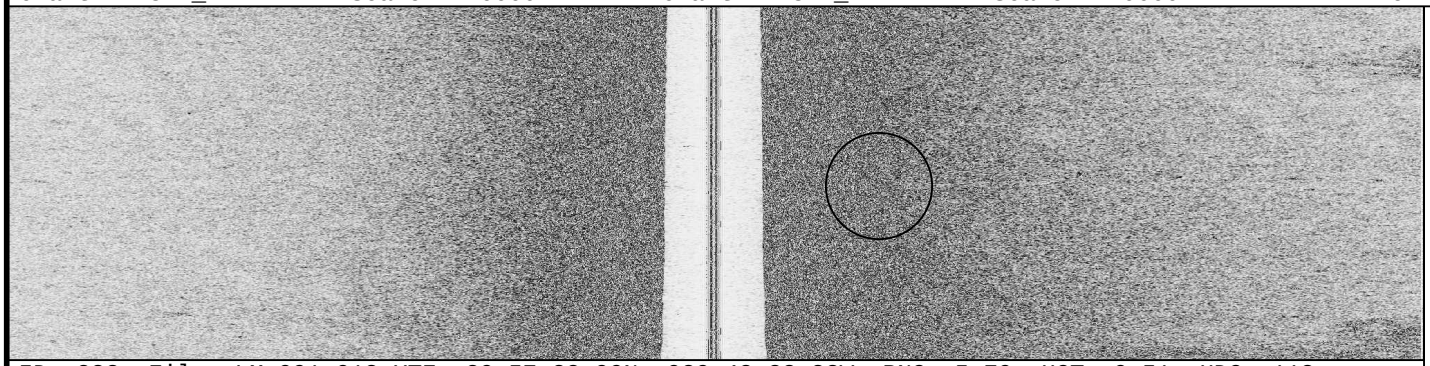


Chart: 11371_1.KAP Scale 1:10000



MB File: lm_091_018.d01 Scale 1:500



ID: 233 File: LM_091_018.XTF 29 57 28.99N 089 43 33.23W RNG: 5.79 HGT: 0.51 HDG: 118

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn

CORRELATED SS CONTACTS:

Contact	Range/Height
091191249	5.79/0.51

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0032 Least Depth: 5(ft), 1.68(m) Lat: 29 59 01.37N Lon: 089 41 59.53W Ping: 24139 Beam: 433

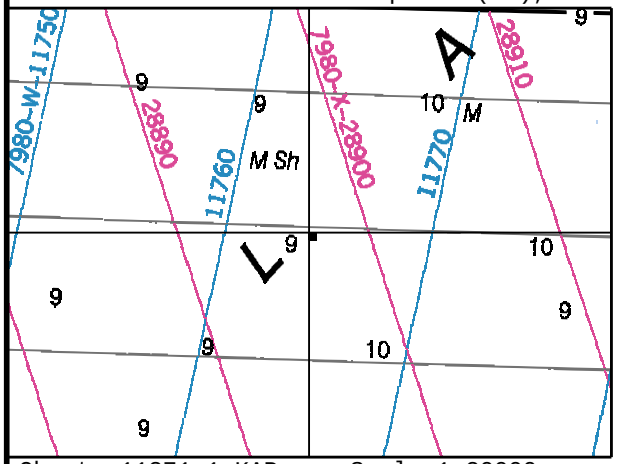


Chart: 11371_1.KAP Scale 1:20000

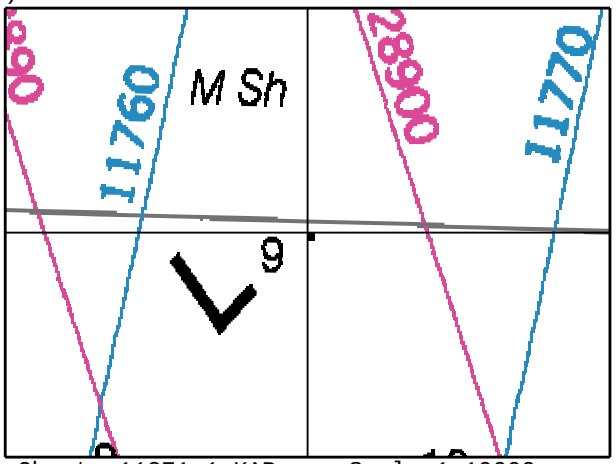
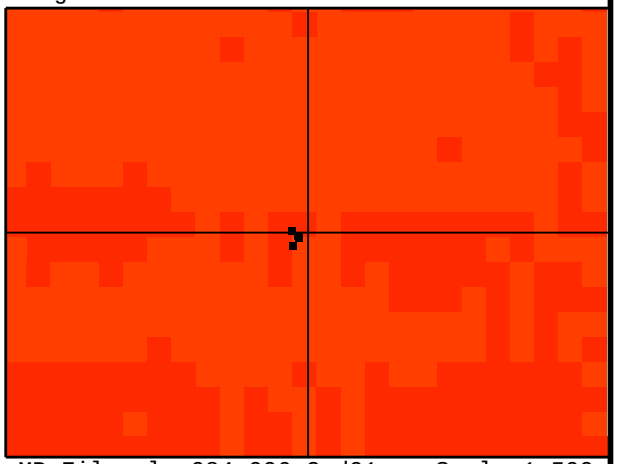
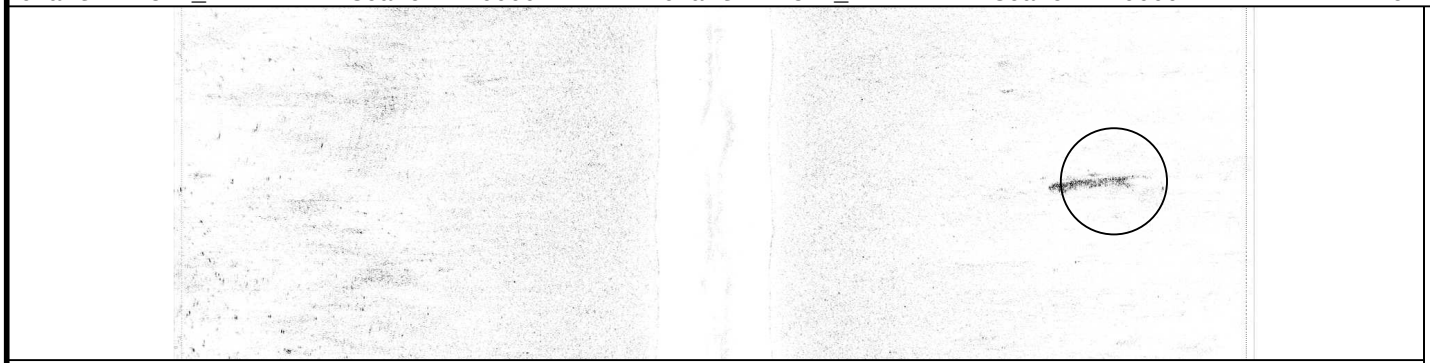


Chart: 11371_1.KAP Scale 1:10000

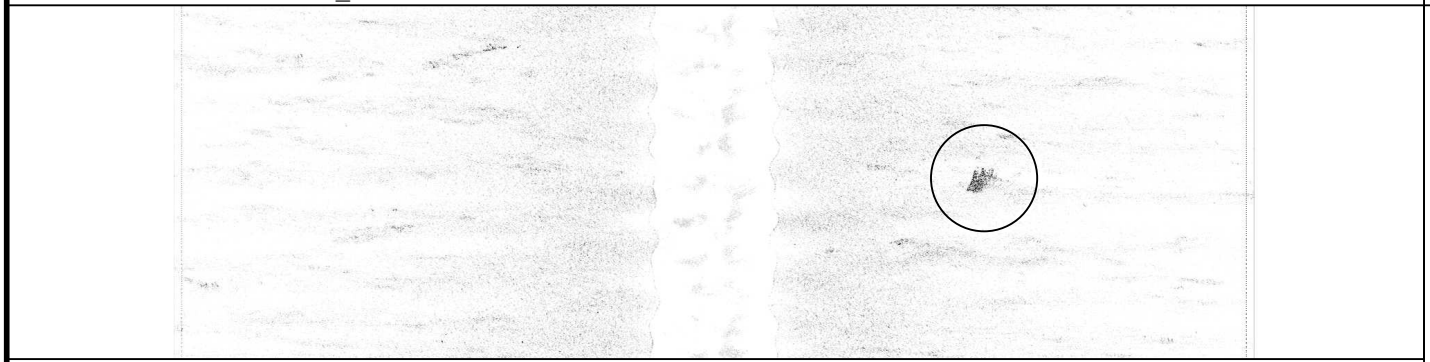


MB File: lm_084_006_2.d01 Scale 1:500



ID: 133 File: TD07133_070513202900.XTF 29 59 01.38N 089 41 59.64W RNG: 18.03 HGT: 0.51 HDG: 096

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn.
Dtn 6



ID: 154 File: TD07151_070531144700.XTF 29 59 01.36N 089 41 59.63W RNG: 12.16 HGT: 1.15 HDG: 168

CORRELATED SS CONTACTS:

Contact	Range/Height
133203312	18.03/0.51
151144825	12.16/1.15
151145124	12.50/1.28
151145428	-3.91/1.36

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0031 Least Depth: 4(ft), 1.31(m) Lat: 29 57 29.16N Lon: 089 44 18.92W Ping: 4133 Beam: 489

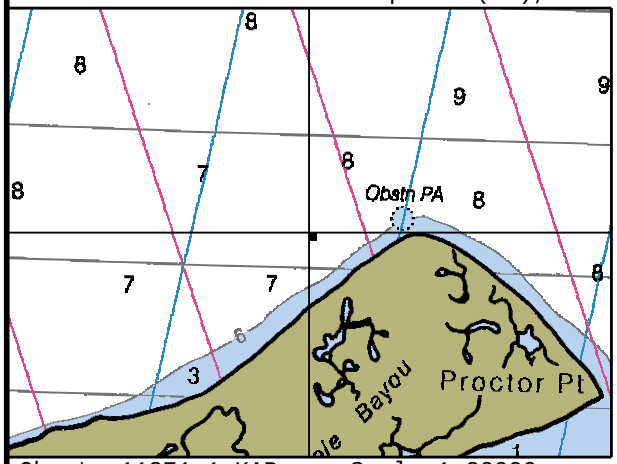


Chart: 11371_1.KAP Scale 1:20000

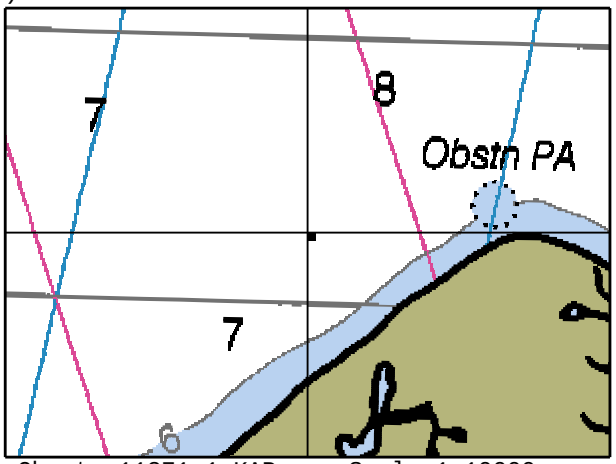
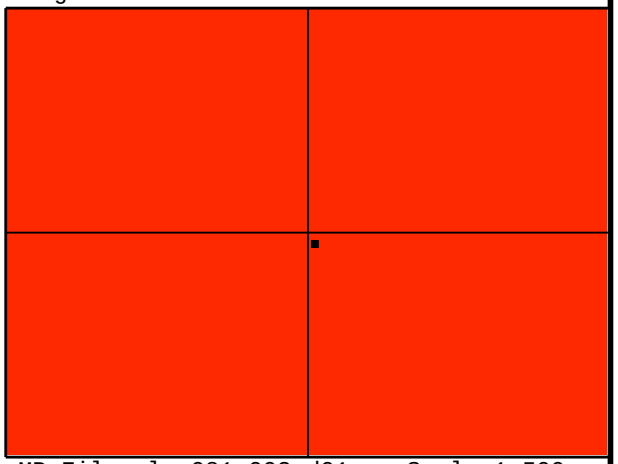
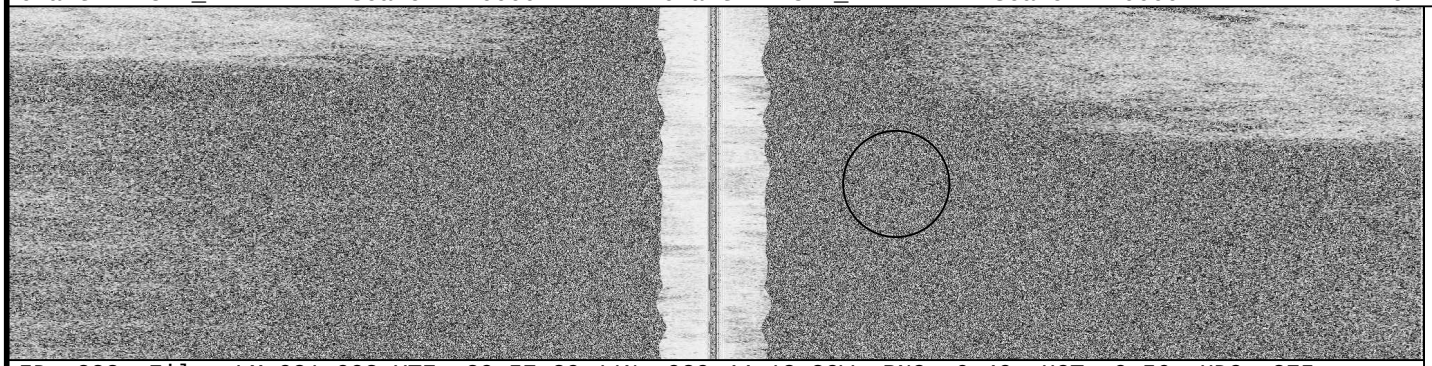


Chart: 11371_1.KAP Scale 1:10000



MB File: lm_081_003.d01 Scale 1:500



ID: 223 File: LM_081_003.XTF 29 57 29.11N 089 44 18.89W RNG: 6.40 HGT: 0.56 HDG: 275

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn

CORRELATED SS CONTACTS:

Contact	Range/Height
081140203	6.40/0.56

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0030 Least Depth: 6(ft), 2.03(m) Lat: 29 56 14.78N Lon: 089 47 51.20W Ping: 822 Beam: 554

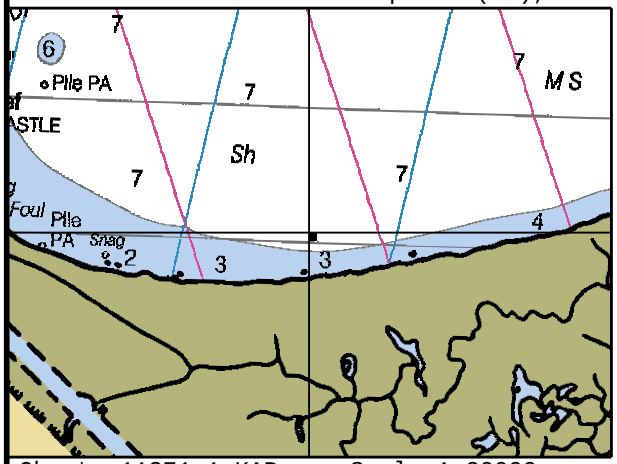


Chart: 11371_1.KAP Scale 1:20000

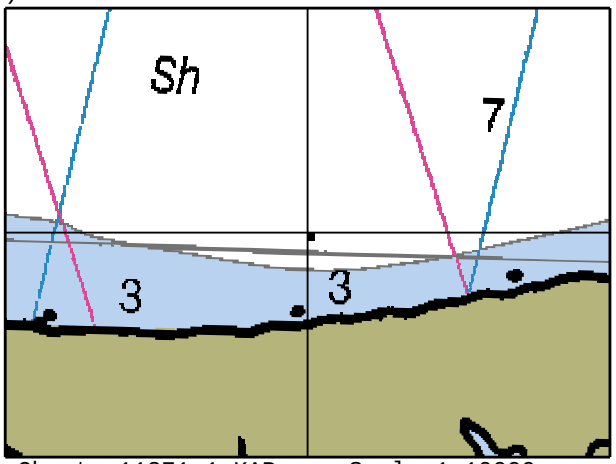
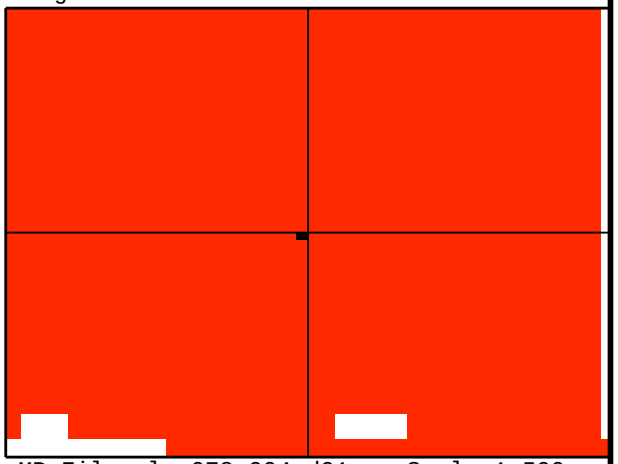
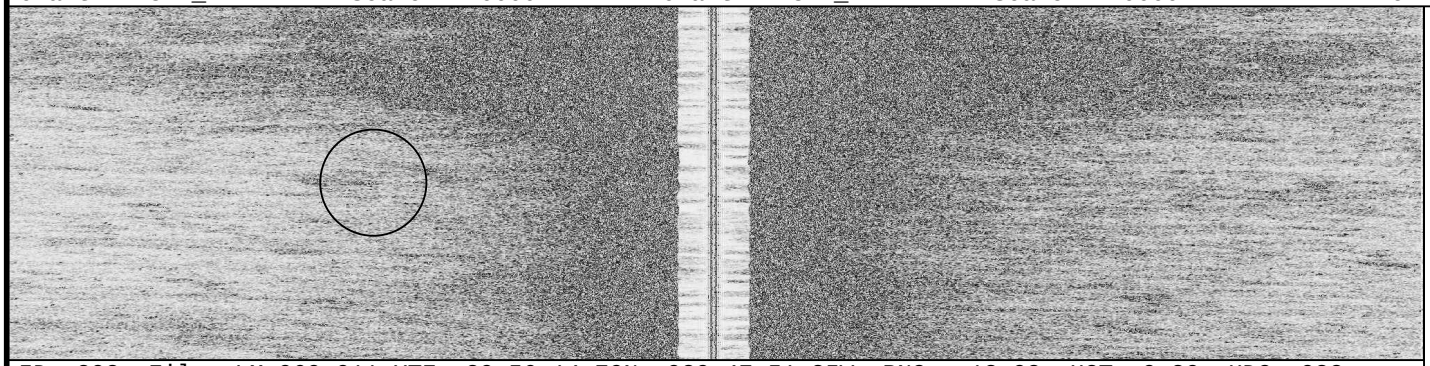


Chart: 11371_1.KAP Scale 1:10000

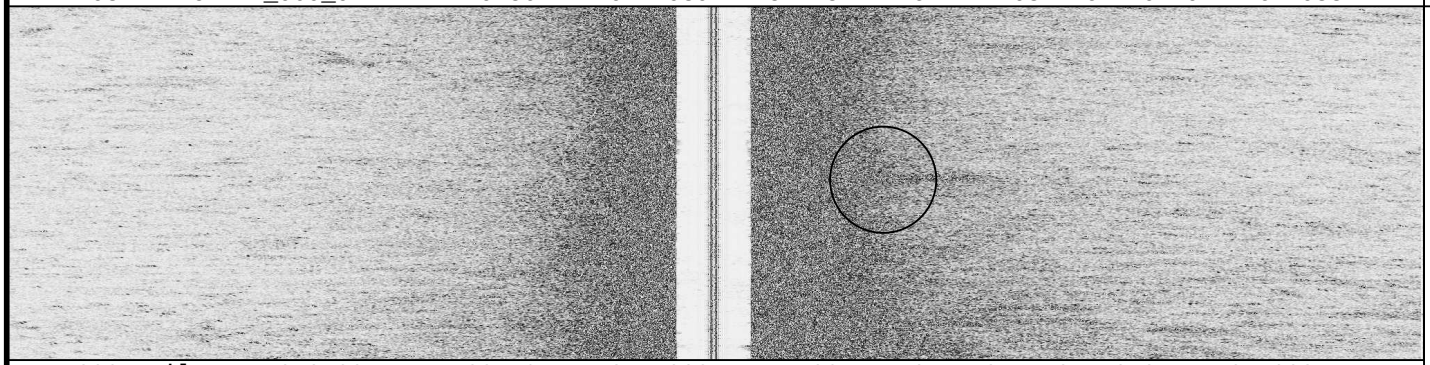


MB File: lm_078_004.d01 Scale 1:500



ID: 208 File: LM_060_011.XTF 29 56 14.79N 089 47 51.25W RNG: -12.08 HGT: 0.20 HDG: 088

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn



ID: 220 File: LM_078_004.XTF 29 56 14.78N 089 47 51.29W RNG: 5.91 HGT: 0.35 HDG: 003

CORRELATED SS CONTACTS:

Contact	Range/Height
060163832	-12.08/0.20
078142915	5.91/0.35

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0029 Least Depth: 5(ft), 1.48(m) Lat: 29 59 52.17N Lon: 089 46 52.26W Ping: 9546 Beam: 81

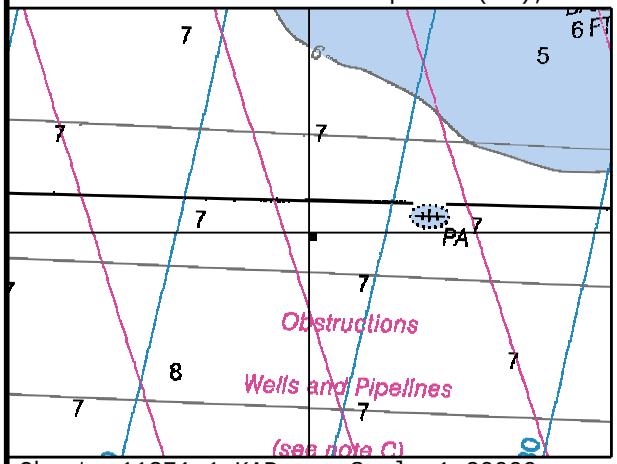


Chart: 11371_1.KAP Scale 1:20000

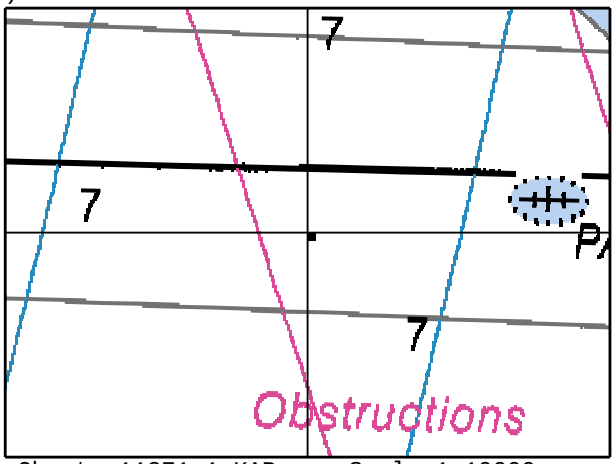
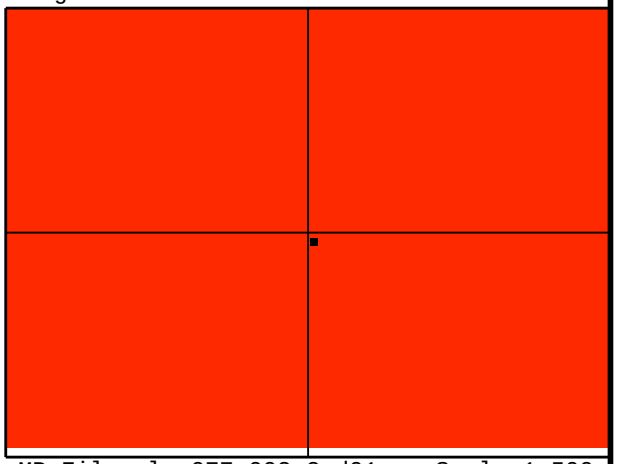
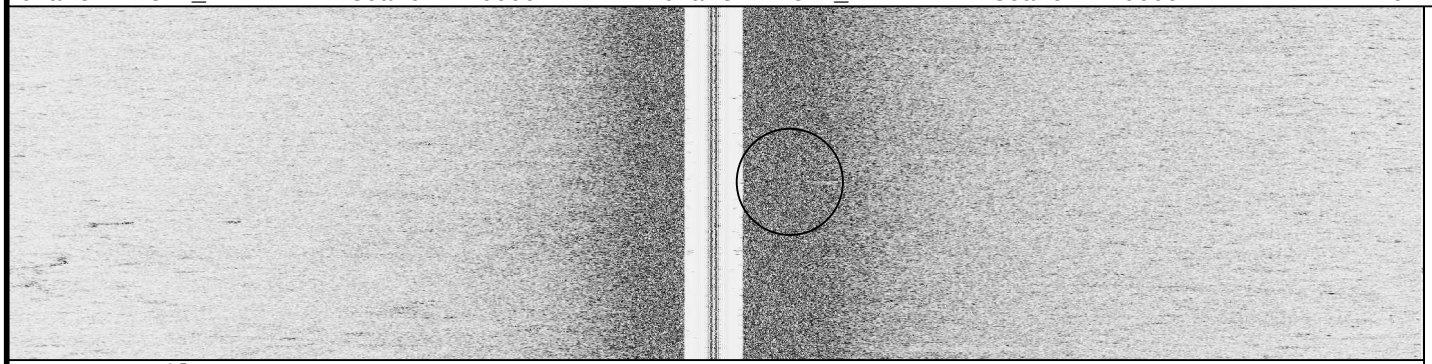


Chart: 11371_1.KAP Scale 1:10000



MB File: lm_077_002_2.d01 Scale 1:500



ID: 218 File: LM_077_002_2.XTF 29 59 52.14N 089 46 52.24W RNG: 2.64 HGT: 0.45 HDG: 090

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn

CORRELATED SS CONTACTS:

Contact	Range/Height
077143217	2.64/0.45

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0028 Least Depth: 6(ft), 1.85(m) Lat: 29 57 39.92N Lon: 089 44 50.30W Ping: 6466 Beam: 1409

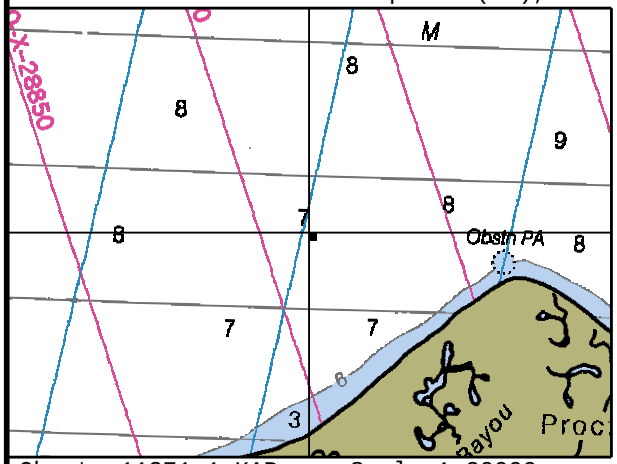


Chart: 11371_1.KAP Scale 1:20000

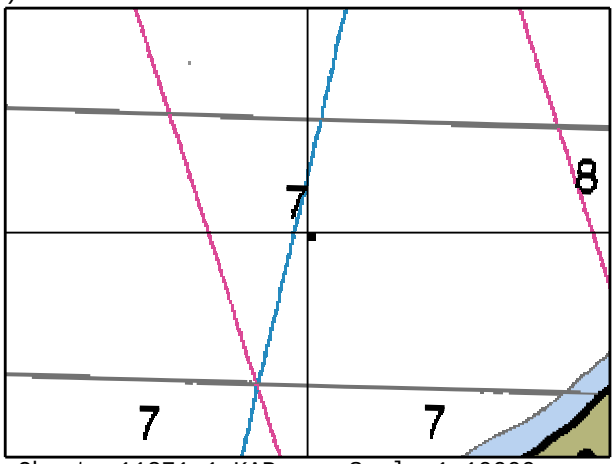
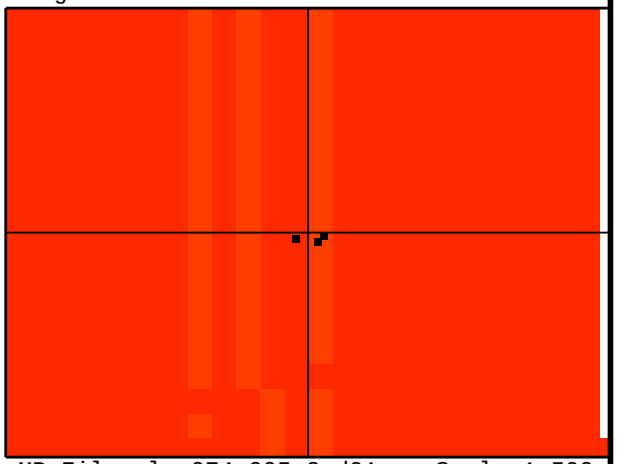
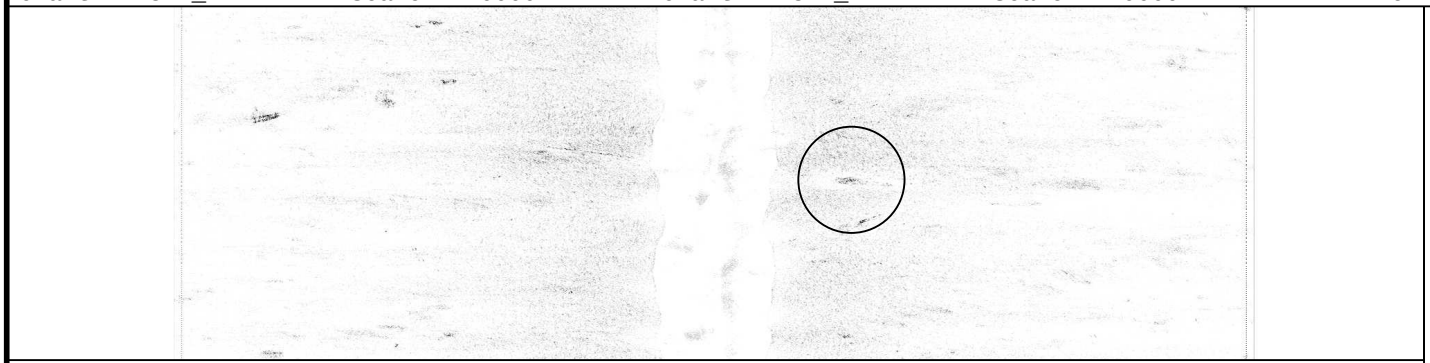


Chart: 11371_1.KAP Scale 1:10000

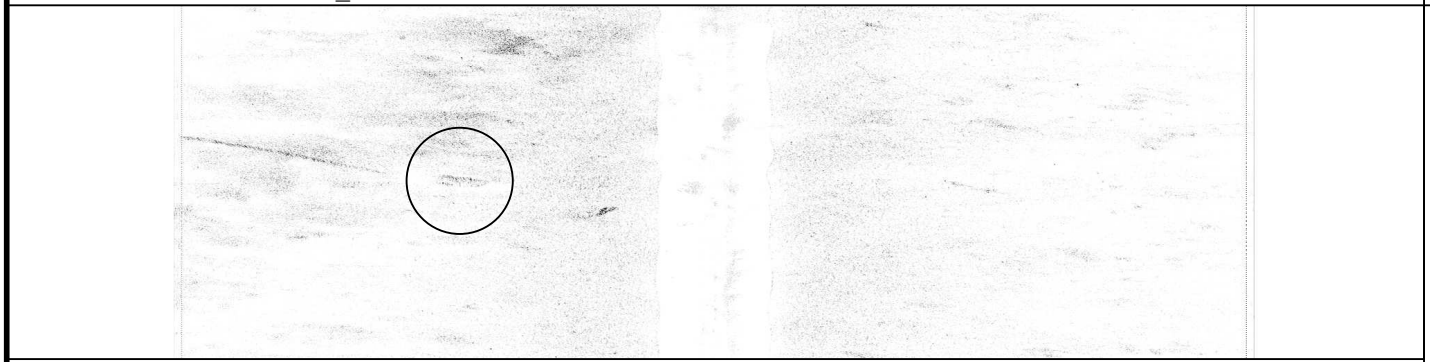


MB File: lm_074_005_3.d01 Scale 1:500



ID: 165 File: TD07151_070531184600.XTF 29 57 39.93N 089 44 50.20W RNG: 6.16 HGT: 0.63 HDG: 182

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn



ID: 166 File: TD07151_070531185300.XTF 29 57 39.89N 089 44 50.25W RNG: -11.56 HGT: 0.53 HDG: 176

CORRELATED SS CONTACTS:

Contact	Range/Height
151184802	6.16/0.63
151185626	-11.56/0.53
074160735	21.14/0.19

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0027 Least Depth: 9(ft), 2.77(m) Lat: 29 58 42.68N Lon: 089 38 15.80W Ping: 1009 Beam: 252

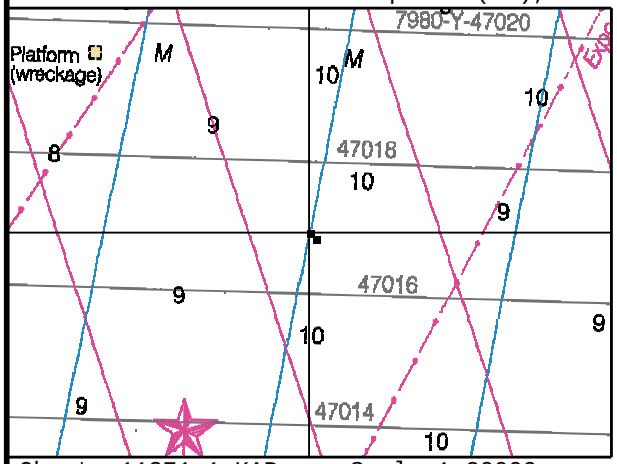


Chart: 11371_1.KAP Scale 1:20000

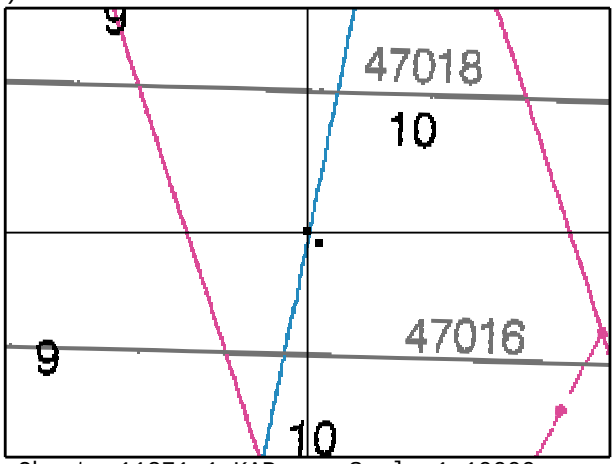
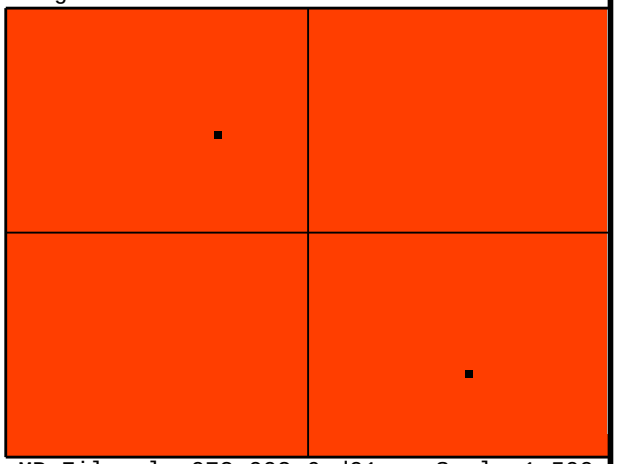
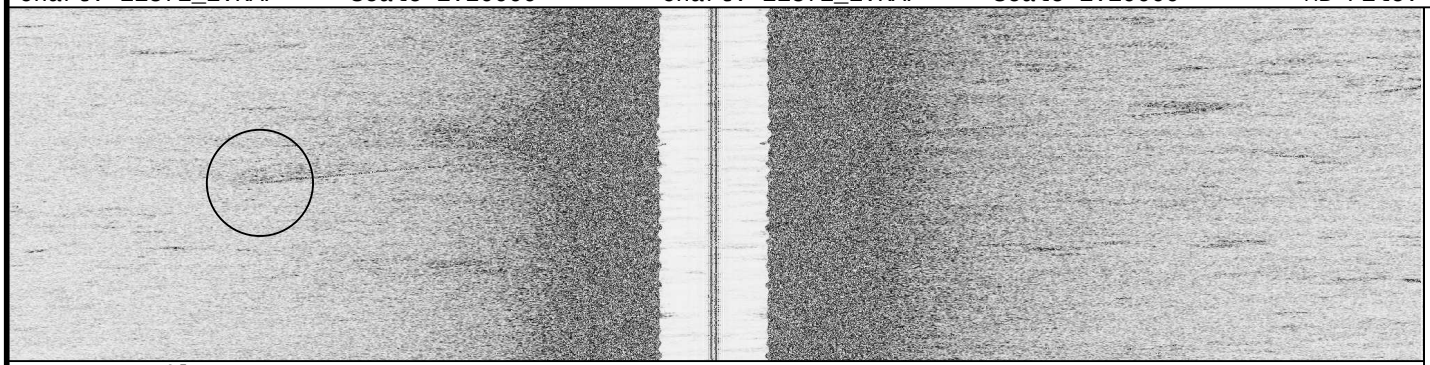


Chart: 11371_1.KAP Scale 1:10000

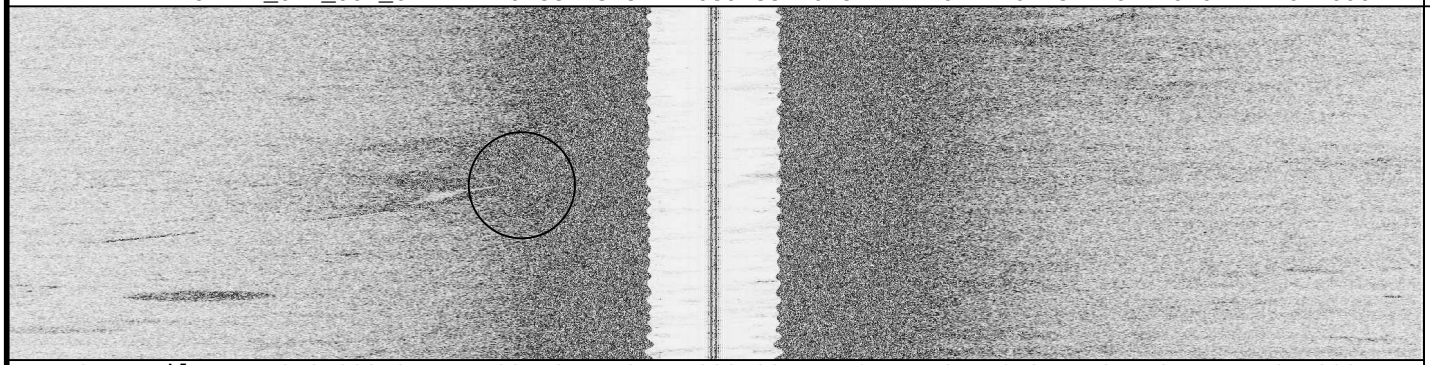


MB File: lm_072_002_6.d01 Scale 1:500



ID: 214 File: LM_072_002_6.XTF 29 58 43.32N 089 38 16.54W RNG: -16.13 HGT: 0.01 HDG: 090

COMMENT:
Plot sounding and label Obstn. Pipeline suspended above the bottom. Pipeline Connect F85 F26 F27 F52



ID: 215 File: LM_072_008_3.XTF 29 58 41.81N 089 38 14.56W RNG: -6.84 HGT: 0.51 HDG: 093

CORRELATED SS CONTACTS:

Contact	Range/Height
072155145	-16.13/0.01
072215624	-6.84/0.51

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0026 Least Depth: 6(ft), 1.87(m) Lat: 29 58 36.36N Lon: 089 38 01.91W Ping: 8873 Beam: 1618

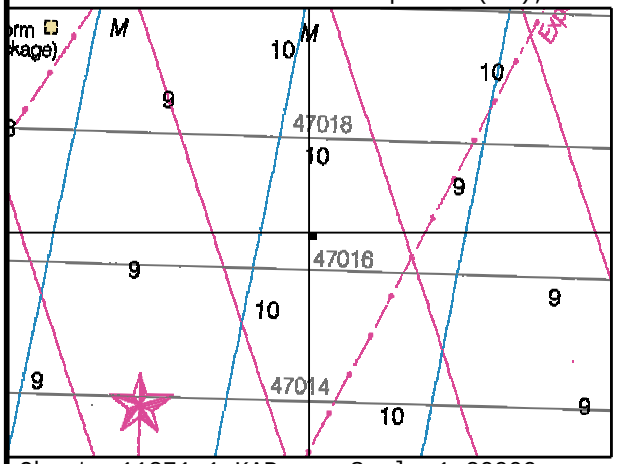


Chart: 11371_1.KAP Scale 1:20000

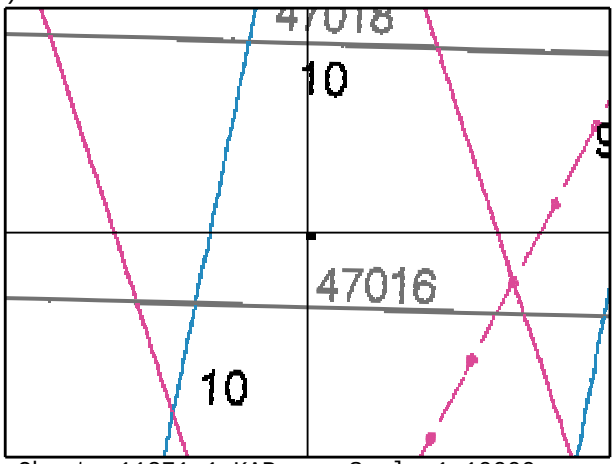
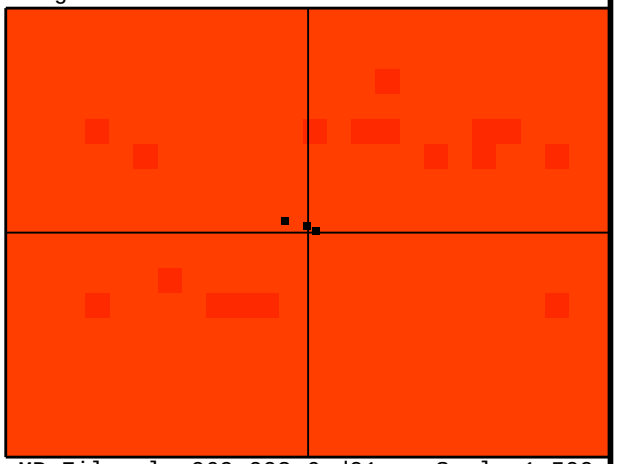


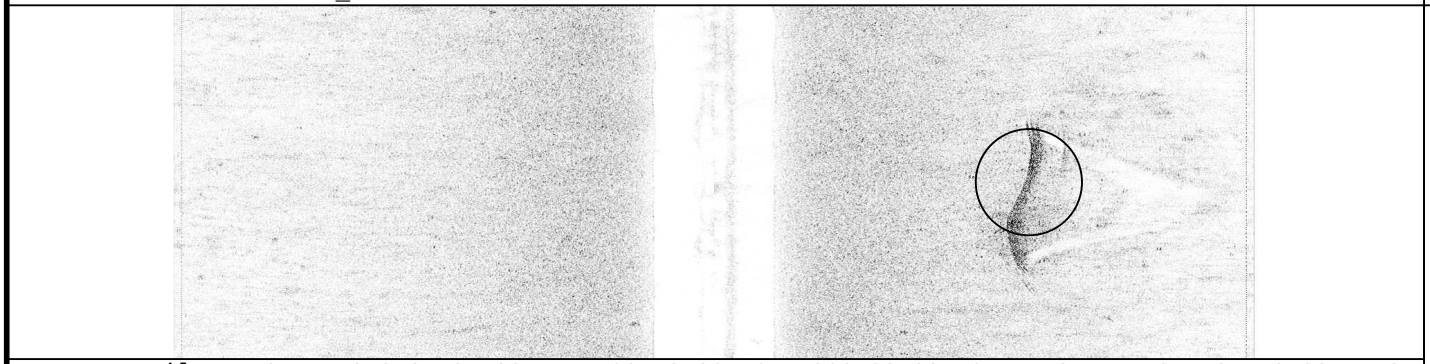
Chart: 11371_1.KAP Scale 1:10000



MB File: lm_069_003_6.d01 Scale 1:500

ID: 150 File: TD07151_070531130800.XTF 29 58 36.42N 089 38 01.95W RNG: 12.75 HGT: 0.96 HDG: 114

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn. Pipeline suspended above the bottom. Connect F85 F26 F27 F51. DTN 6



ID: 151 File: TD07151_070531131100.XTF 29 58 36.46N 089 38 02.13W RNG: 14.19 HGT: 0.98 HDG: 294

CORRELATED SS CONTACTS:

Contact	Range/Height
151131012	12.75/0.96
151131328	14.19/0.98
069174823	-2.67/0.98

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0025 Least Depth: 5(ft), 1.50(m) Lat: 29 57 51.14N Lon: 089 43 53.62W Ping: 18772 Beam: 1348

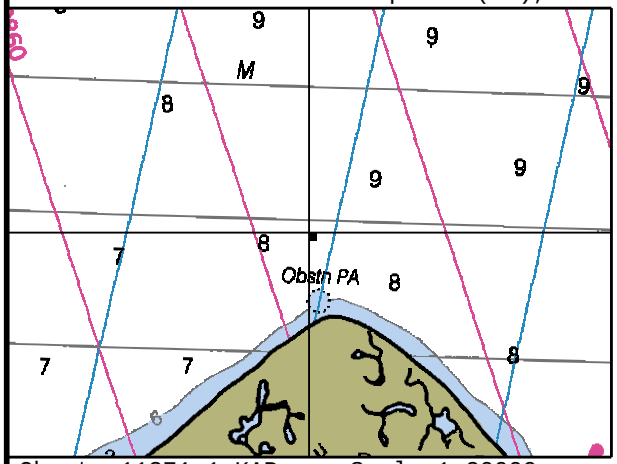


Chart: 11371_1.KAP Scale 1:20000

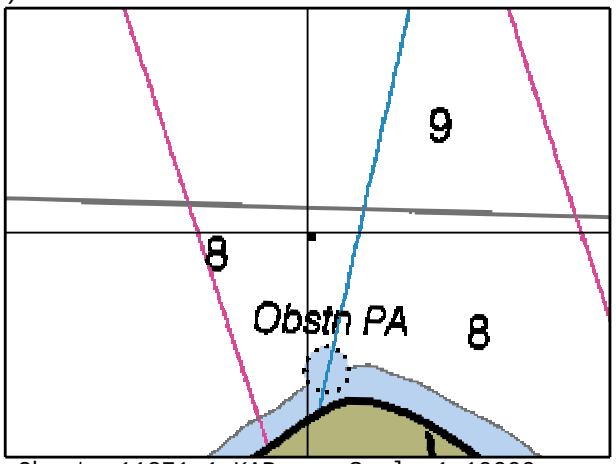
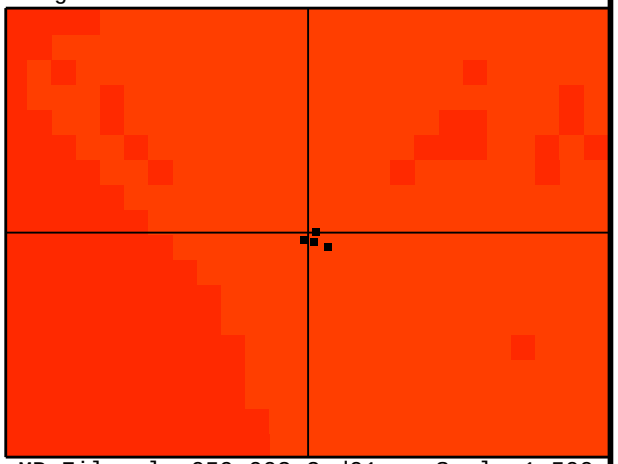


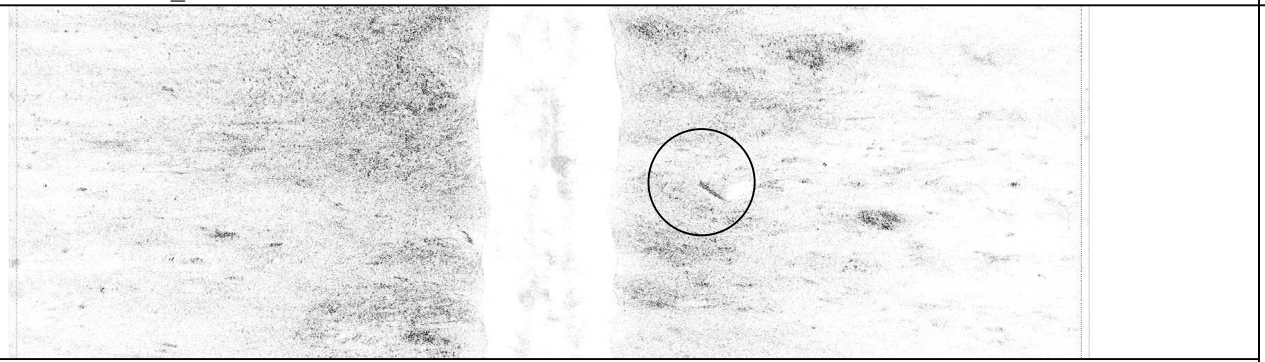
Chart: 11371_1.KAP Scale 1:10000



MB File: lm_059_003_3.d01 Scale 1:500

ID: 161 File: TD07151_070531182700.XTF 29 57 51.11N 089 43 53.60W RNG: -5.00 HGT: 1.03 HDG: 327

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstns see F24



ID: 164 File: TD07151_070531183500.XTF 29 57 51.12N 089 43 53.68W RNG: 6.84 HGT: 0.80 HDG: 314

CORRELATED SS CONTACTS:

Contact	Range/Height
151182831	-5.00/1.03
151183854	6.84/0.80
059162511	-6.44/0.52
059162512	-3.71/1.07

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0024 Least Depth: 6(ft), 2.02(m) Lat: 29 57 49.77N Lon: 089 43 52.67W Ping: 21223 Beam: 352

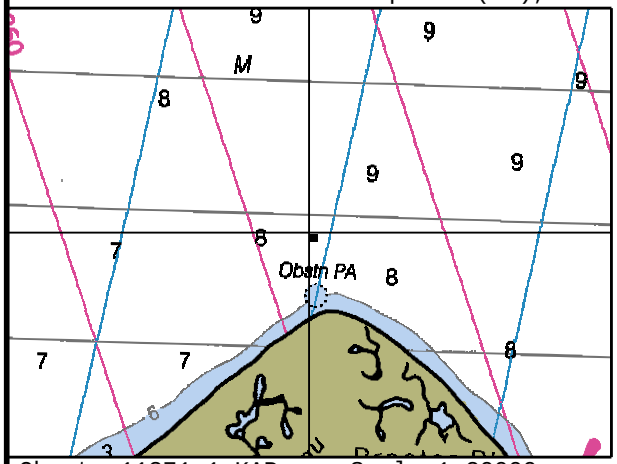


Chart: 11371_1.KAP Scale 1:20000

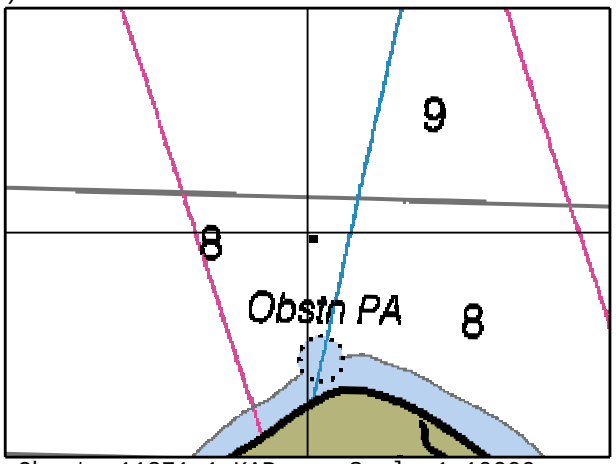
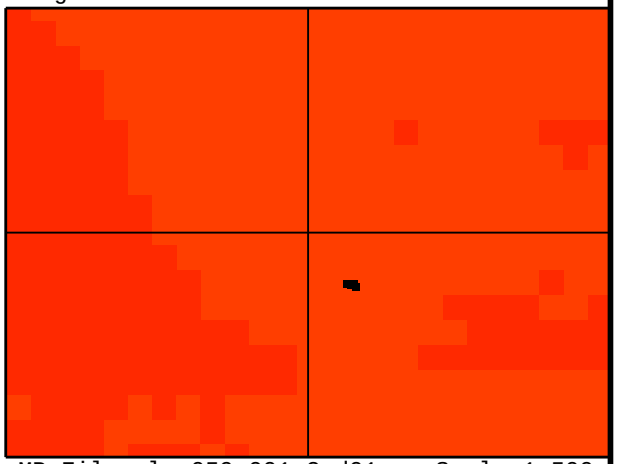
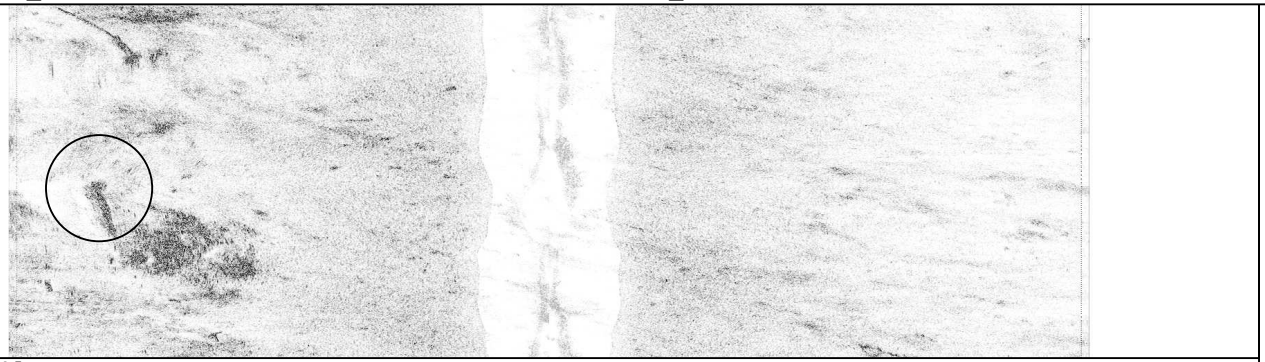


Chart: 11371_1.KAP Scale 1:10000

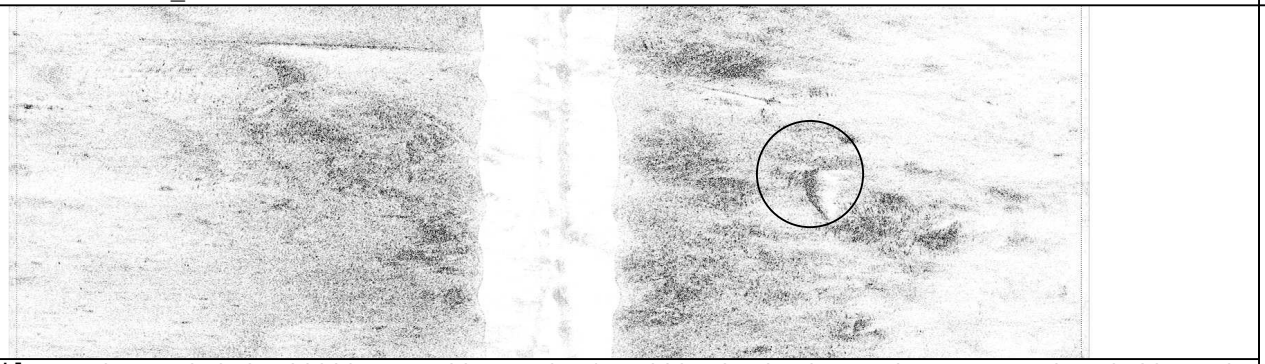


MB File: lm_059_001_2.d01 Scale 1:500



ID: 160 File: TD07151_070531182700.XTF 29 57 49.46N 089 43 52.34W RNG: -20.41 HGT: 0.36 HDG: 322

COMMENT:
No Plot see F25



ID: 162 File: TD07151_070531182900.XTF 29 57 49.46N 089 43 52.40W RNG: 11.75 HGT: 0.39 HDG: 322

CORRELATED SS CONTACTS:

Contact	Range/Height
151182813	-20.41/0.36
151183415	11.75/0.39
151183837	-3.56/0.58
059134429	-4.67/1.06

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0023 Least Depth: 4(ft), 1.20(m) Lat: 30 00 20.75N Lon: 089 47 10.47W Ping: 3110 Beam: 1235

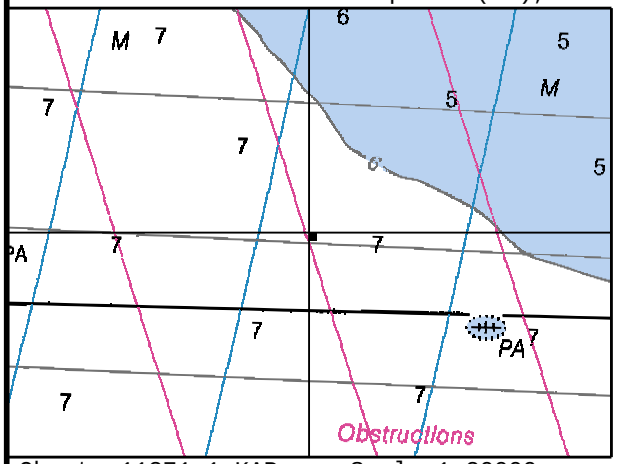


Chart: 11371_1.KAP Scale 1:20000

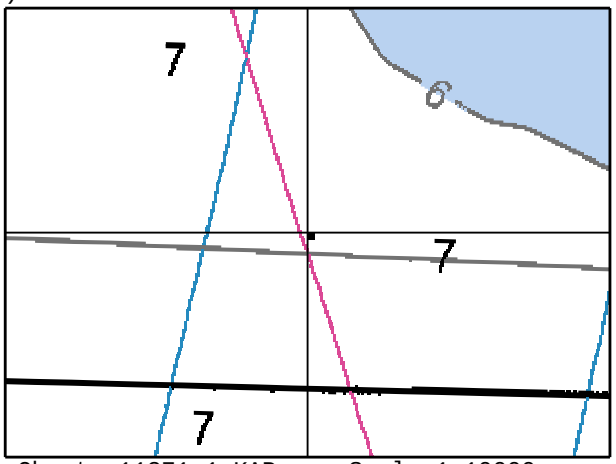
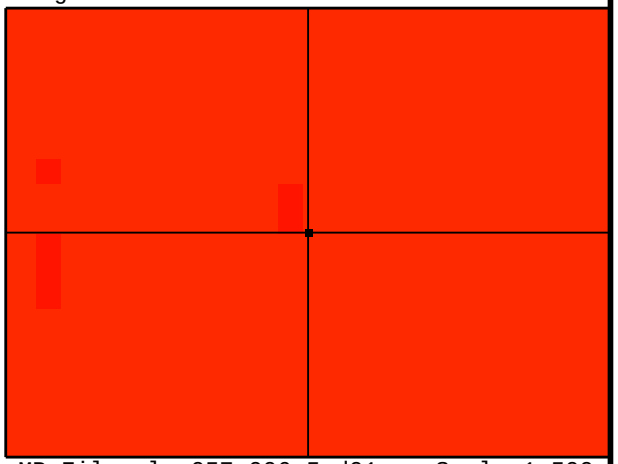
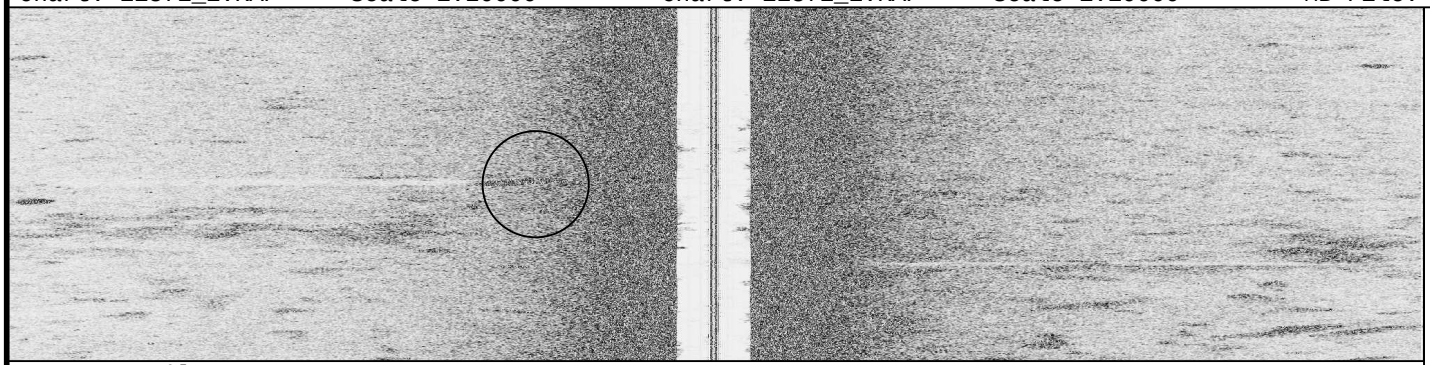


Chart: 11371_1.KAP Scale 1:10000



MB File: lm_057_006_5.d01 Scale 1:500



ID: 201 File: LM_057_006_5.XTF 30 00 20.78N 089 47 10.49W RNG: -6.34 HGT: 0.63 HDG: 273

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstn

CORRELATED SS CONTACTS:

Contact	Range/Height
057192929	-6.34/0.63

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0022 Least Depth: 5(ft), 1.61(m) Lat: 30 02 35.34N Lon: 089 43 04.96W Ping: 3297 Beam: 1162

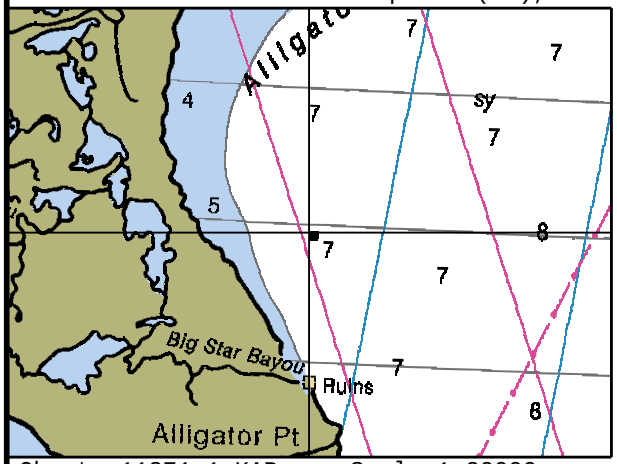


Chart: 11371_1.KAP Scale 1:20000

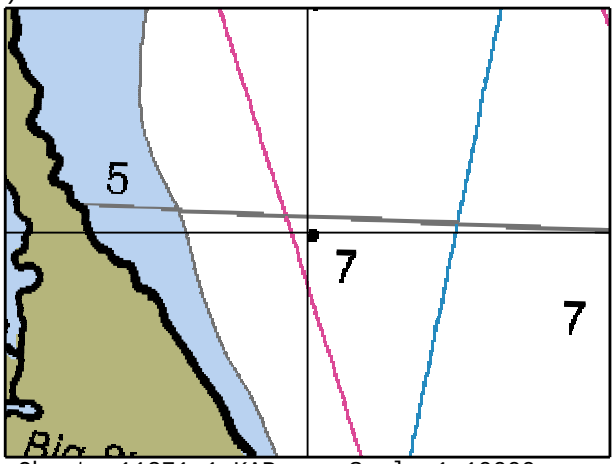
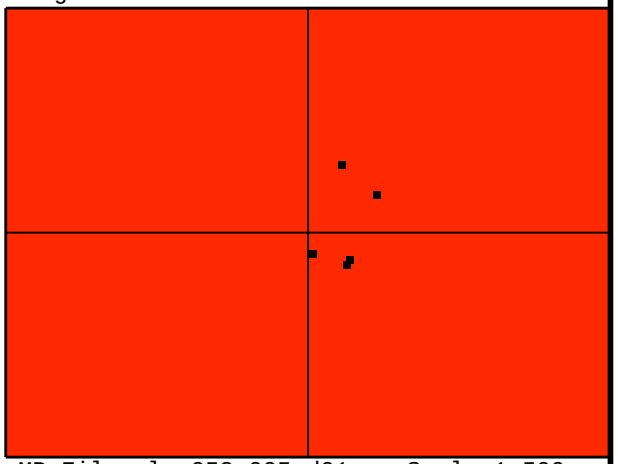


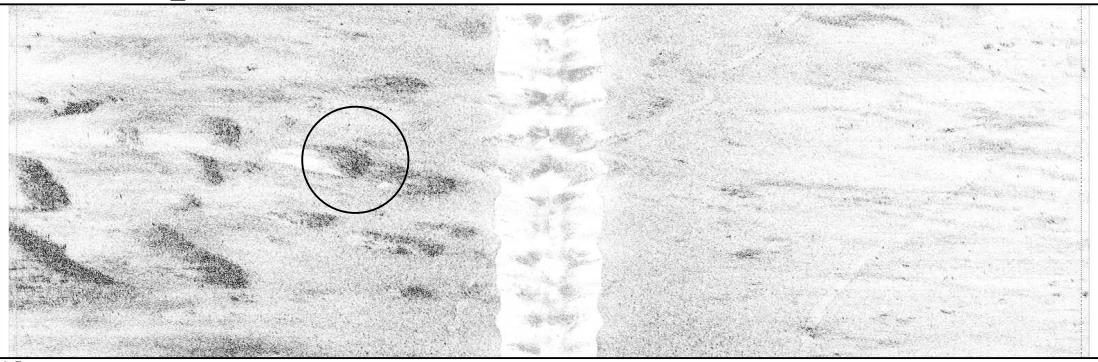
Chart: 11371_1.KAP Scale 1:10000



MB File: lm_052_005.d01 Scale 1:500

ID: 157 File: TD07151_070531170200.XTF 30 02 35.19N 089 43 04.66W RNG: -11.88 HGT: 0.44 HDG: 358

COMMENT:
Plot sounding, danger circle, blue tint, and label Obstns



ID: 158 File: TD07151_070531170400.XTF 30 02 35.23N 089 43 04.95W RNG: -8.81 HGT: 0.45 HDG: 173

CORRELATED SS CONTACTS:

Contact	Range/Height
151170348	-11.88/0.44
151170652	-8.81/0.45
151170951	7.81/0.66
052155532	-17.88/0.21
052160054	-2.91/0.56

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0021 Least Depth: 8(ft), 2.39(m) Lat: 30 02 56.88N Lon: 089 40 59.47W Ping: 12928 Beam: 293

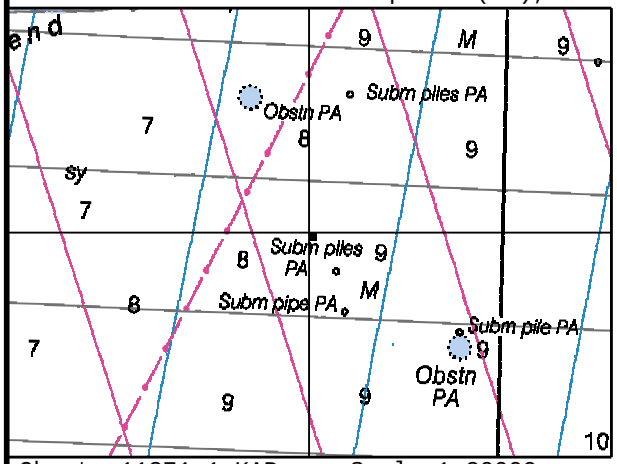


Chart: 11371_1.KAP Scale 1:20000

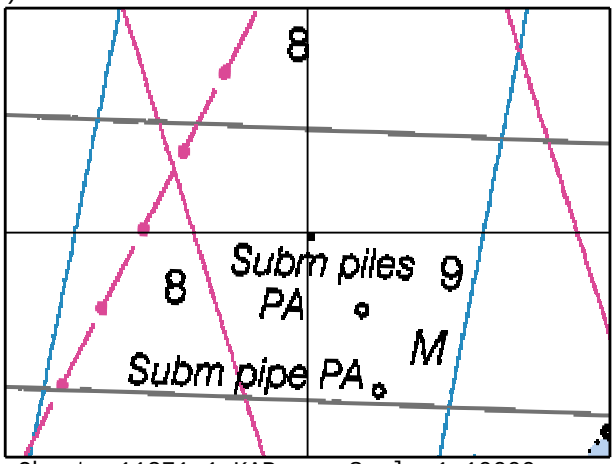
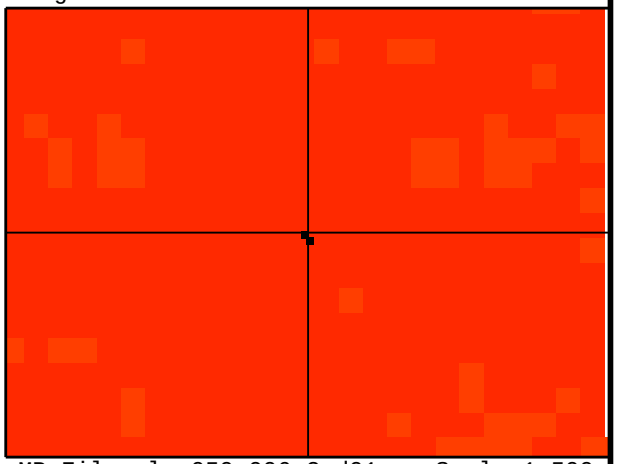
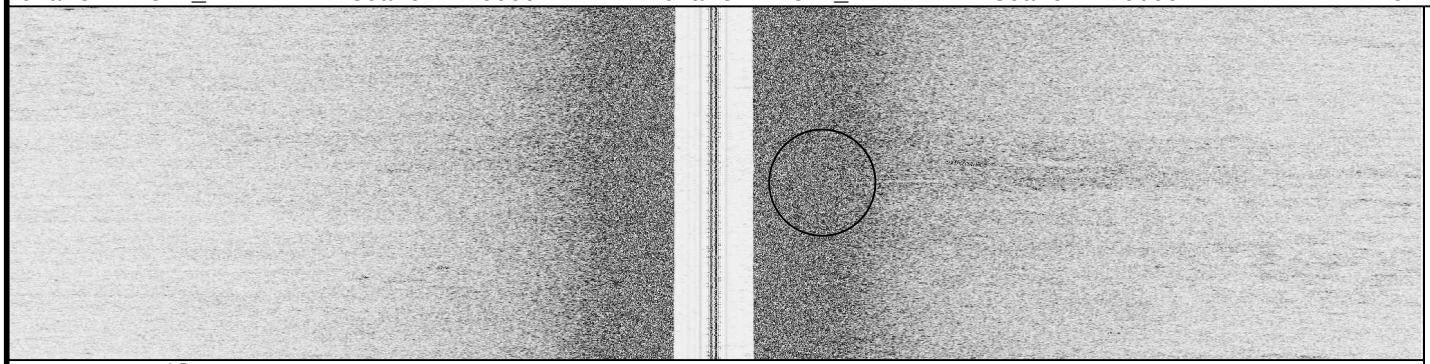


Chart: 11371_1.KAP Scale 1:10000

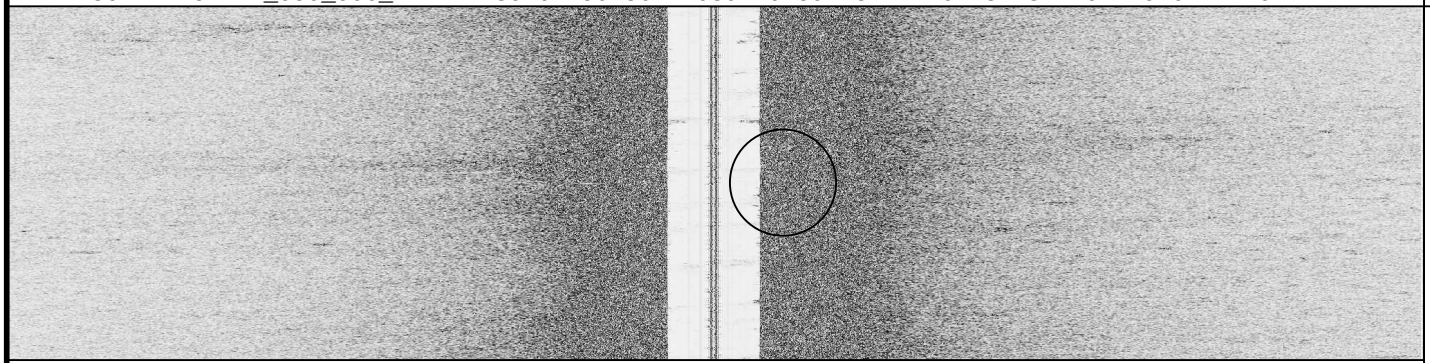


MB File: lm_050_006_2.d01 Scale 1:500



ID: 180 File: LM_050_006_2.XTF 30 02 56.86N 089 40 59.48W RNG: 3.78 HGT: 0.67 HDG: 272

COMMENT:
Plot sounding and label
Obstn



ID: 194 File: LM_056_001_4.XTF 30 02 56.89N 089 40 59.52W RNG: 2.40 HGT: 0.50 HDG: 001

CORRELATED SS CONTACTS:

Contact	Range/Height
050174849	3.78/0.67
056135944	2.40/0.50

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0020 Least Depth: 11(ft), 3.46(m) Lat: 29 59 28.19N Lon: 089 39 22.95W Ping: 15641 Beam: 1

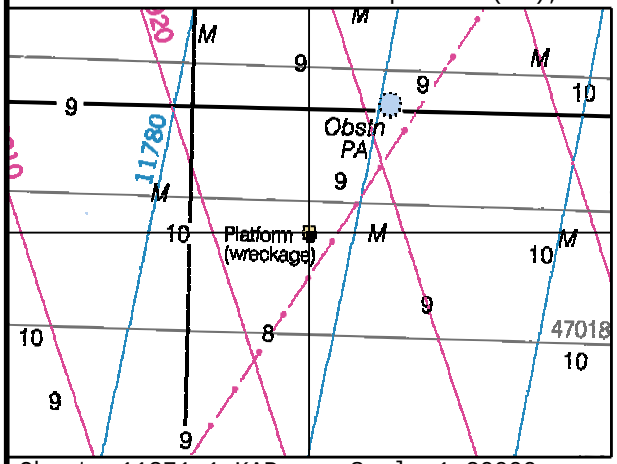


Chart: 11371_1.KAP Scale 1:20000

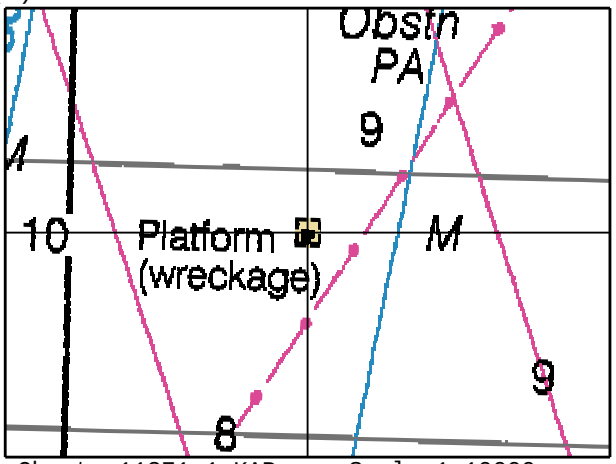
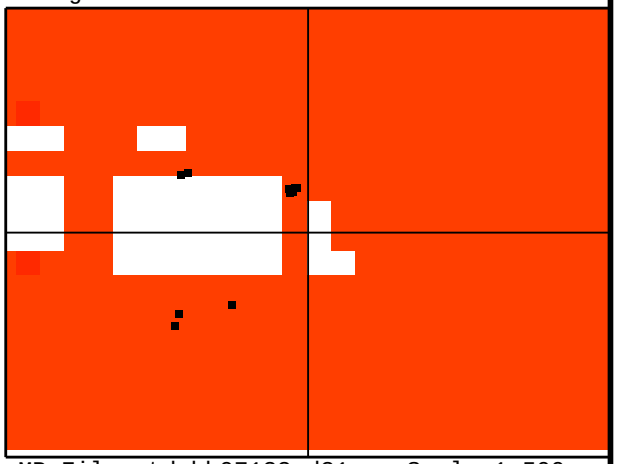
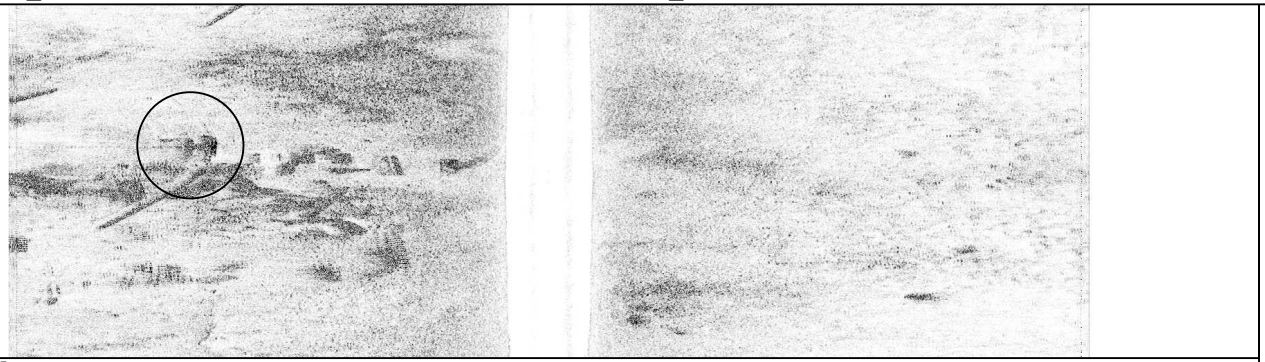


Chart: 11371_1.KAP Scale 1:10000

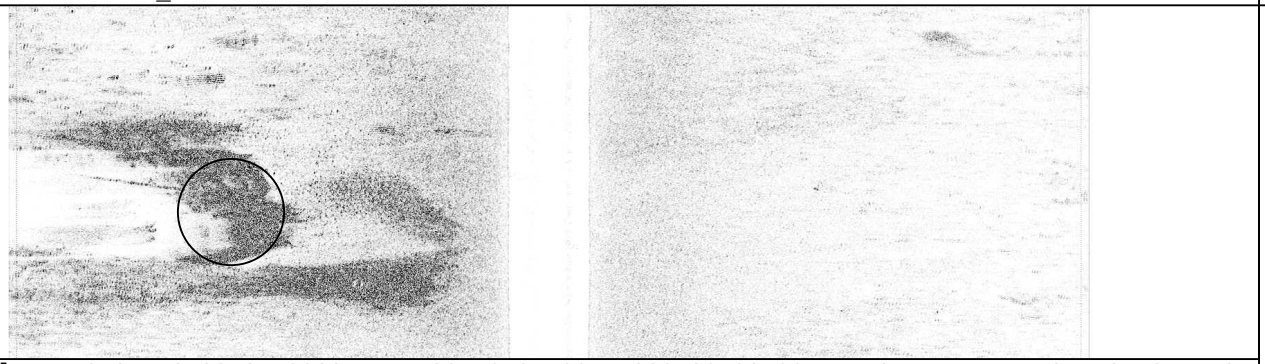


MB File: tdsbh07133.d31 Scale 1:500



ID: 47 File: TD07077_070318145500.XTF 29 59 28.49N 089 39 23.14W RNG: -16.28 HGT: 0.51 HDG: 354

COMMENT:
No Plot Ruined platform. DTN 1. Removed



ID: 48 File: TD07077_070318150200.XTF 29 59 27.66N 089 39 23.96W RNG: -14.44 HGT: 0.58 HDG: 091

CORRELATED SS CONTACTS:

Contact	Range/Height
077145710	-16.28/0.51
077150332	-14.44/0.58
077151258	-9.19/0.99
077152049	-11.62/0.89
077152506	-10.84/0.88
133163434	3.59/1.38
133164047	-12.31/1.17
151133803	10.69/1.41
151134819	4.38/1.84
088151212	-23.67/0.01

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0019 Least Depth: 6(ft), 1.76(m) Lat: 29 56 42.94N Lon: 089 50 05.68W Ping: 6790 Beam: 1

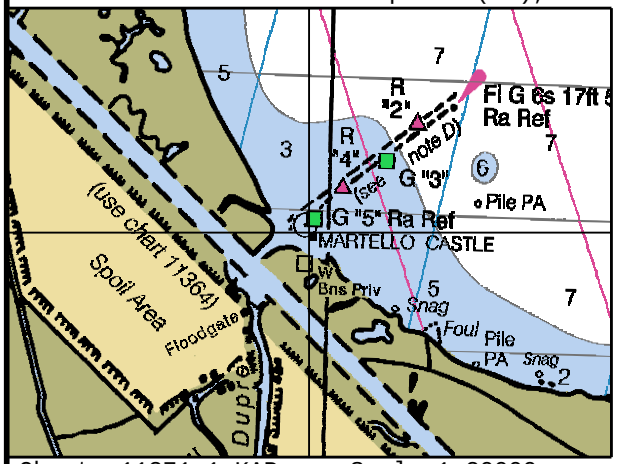


Chart: 11371_1.KAP Scale 1:20000

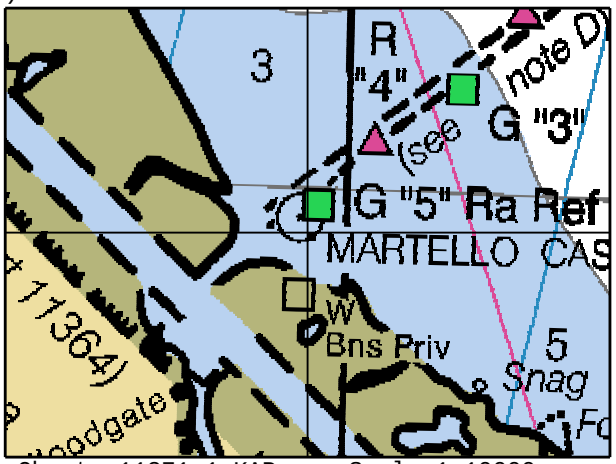
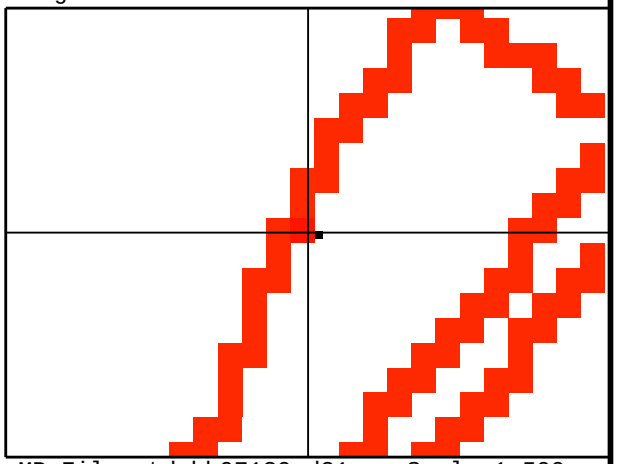
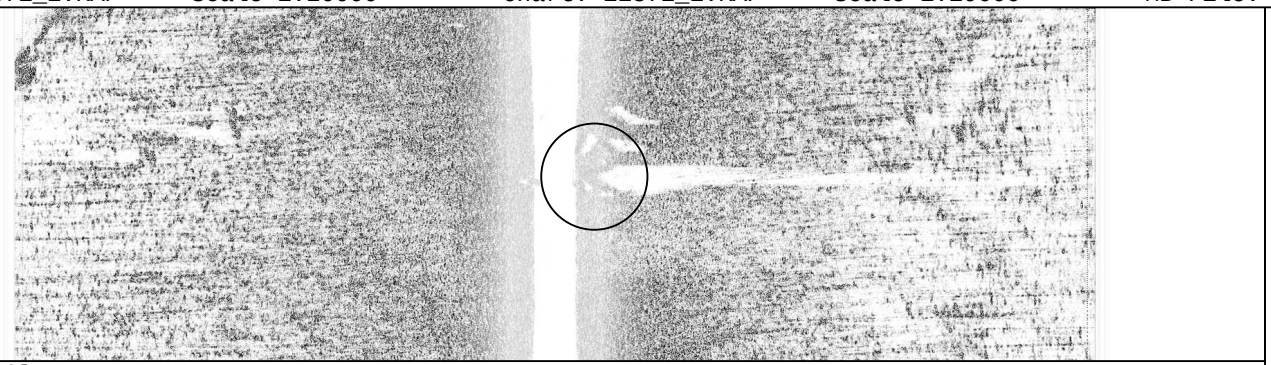


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07130.d21 Scale 1:500



ID: 119 File: TD07130_070510161900.XTF 29 56 42.95N 089 50 05.63W RNG: 1.72 HGT: 0.64 HDG: 021

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height
130162308	1.72/0.64

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0018 Least Depth: 7(ft), 2.08(m) Lat: 29 56 41.54N Lon: 089 50 08.30W Ping: 4431 Beam: 1

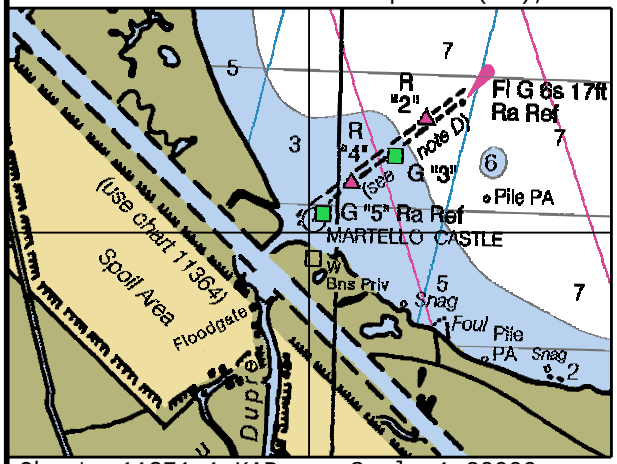


Chart: 11371_1.KAP Scale 1:20000

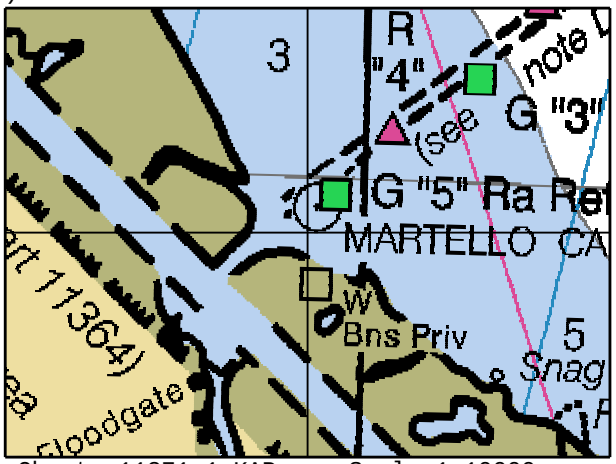
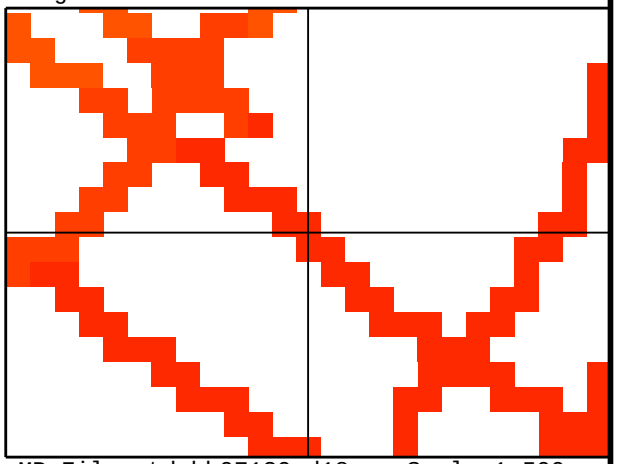


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07130.d18 Scale 1:500

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0017 Least Depth: 6(ft), 1.83(m) Lat: 30 02 38.69N Lon: 089 46 02.82W Ping: 1632 Beam: 1

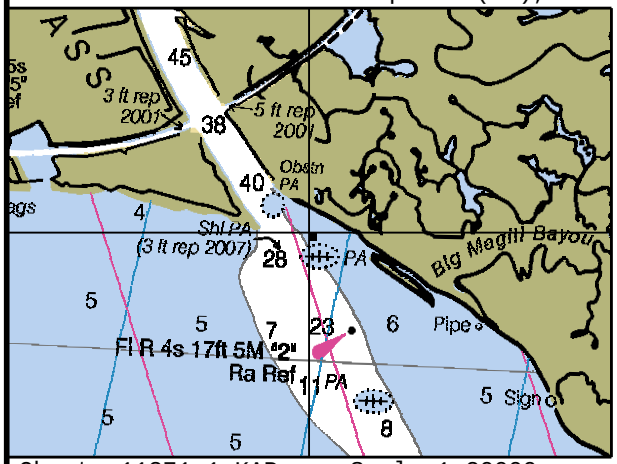


Chart: 11371_1.KAP Scale 1:20000

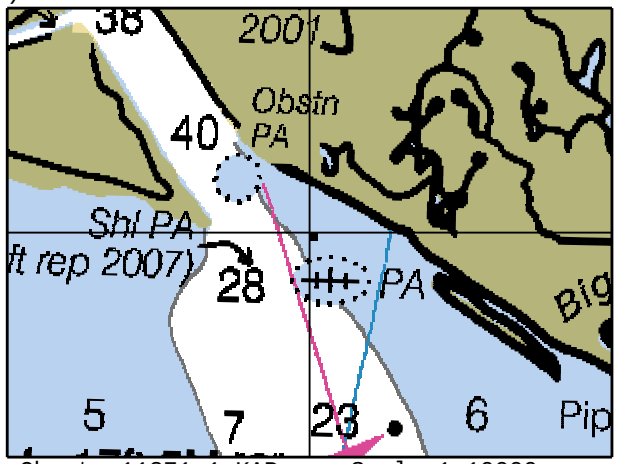
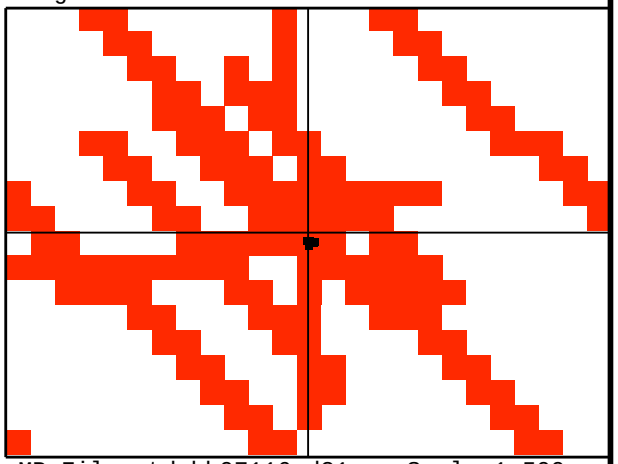
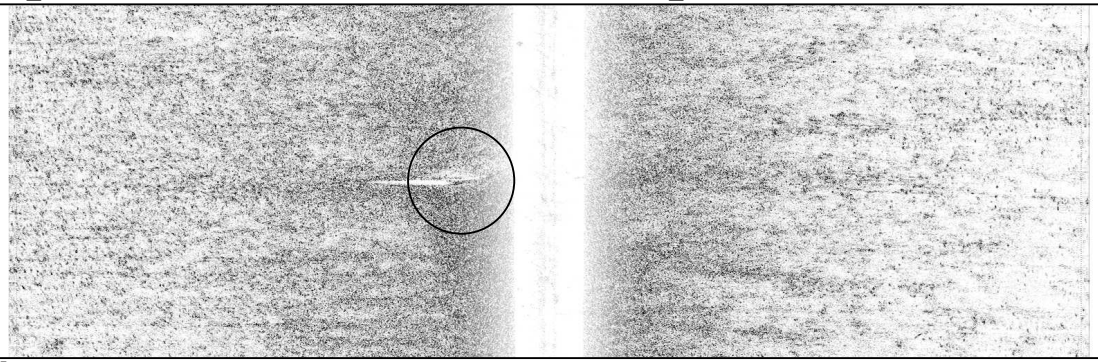


Chart: 11371_1.KAP Scale 1:10000

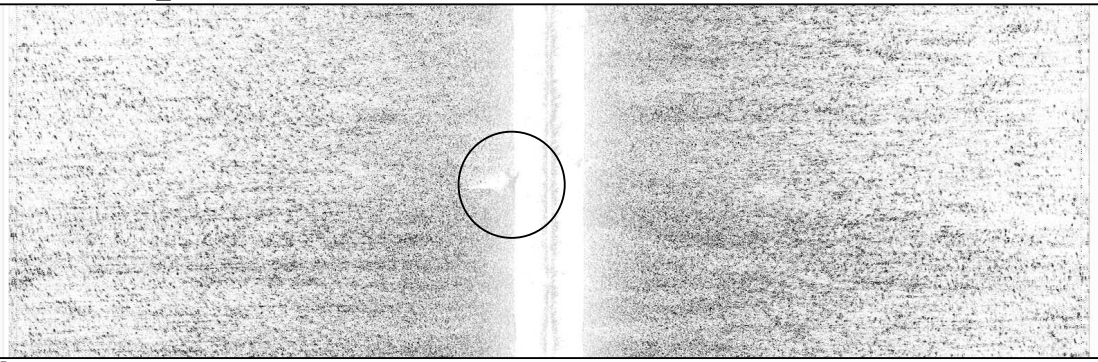


MB File: tdsbh07116.d21 Scale 1:500



ID: 64 File: TD07079_070320183800.XTF 30 02 38.65N 089 46 02.82W RNG: -4.03 HGT: 0.64 HDG: 312

COMMENT:
No Plot - foul area



ID: 99 File: TD07116_070426125701.XTF 30 02 38.66N 089 46 02.80W RNG: -1.75 HGT: 0.55 HDG: 358

CORRELATED SS CONTACTS:

Contact	Range/Height
079185541	-4.03/0.64
116130133	-1.75/0.55
116130337	13.75/0.65
116130550	15.31/0.54
116130806	2.00/0.68
116131033	-1.22/0.52

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0016 Least Depth: 9(ft), 2.69(m) Lat: 30 02 36.39N Lon: 089 46 30.42W Ping: 1523 Beam: 1

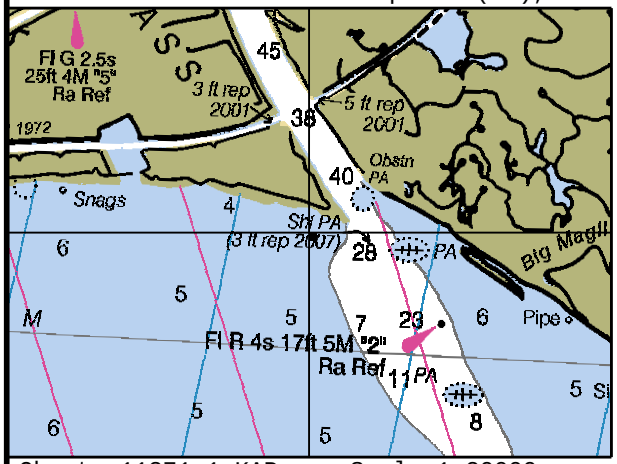


Chart: 11371_1.KAP Scale 1:20000

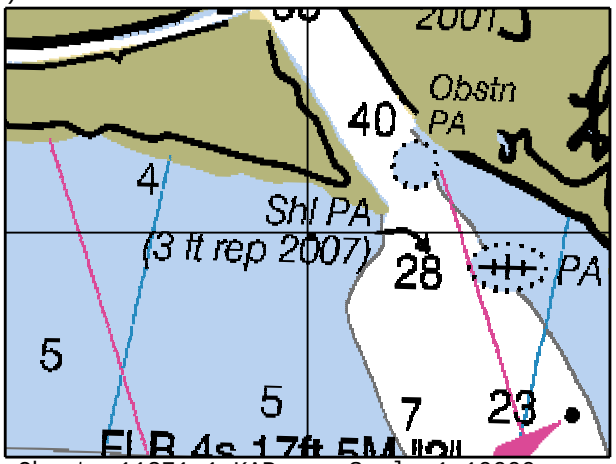
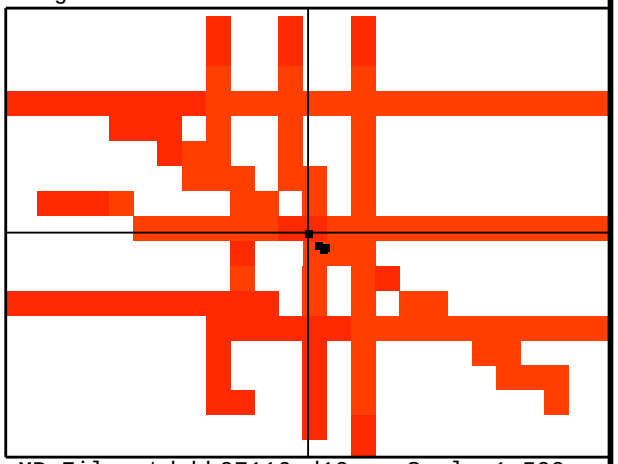
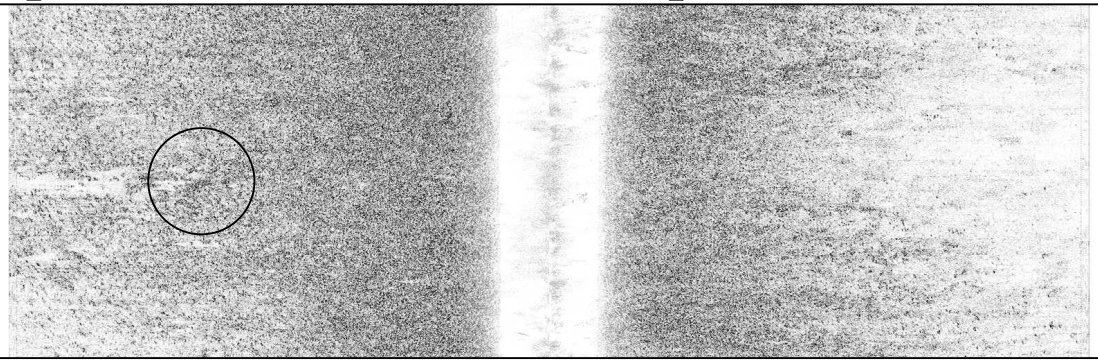


Chart: 11371_1.KAP Scale 1:10000

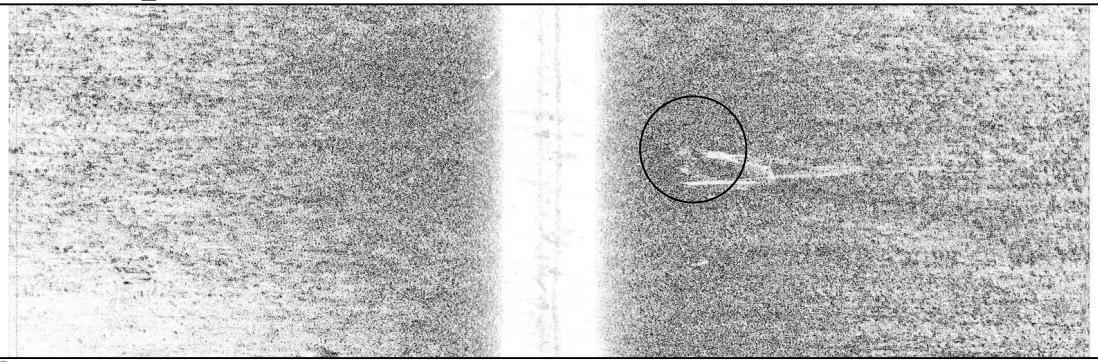


MB File: tdsbh07116.d10 Scale 1:500



ID: 1 File: TD07043_070212201800.XTF 30 02 36.32N 089 46 30.31W RNG: -15.78 HGT: 0.75 HDG: 089

COMMENT:
Plot sounding and label
Obstn



ID: 67 File: TD07098_070408182000.XTF 30 02 36.41N 089 46 30.44W RNG: 6.47 HGT: 1.06 HDG: 315

CORRELATED SS CONTACTS:

Contact	Range/Height
043203609	-15.78/0.75
098182212	6.47/1.06
116123051	14.34/0.86
116123225	14.06/0.91
116123433	2.38/1.02

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0015 Least Depth: 4(ft), 1.30(m) Lat: 30 01 37.00N Lon: 089 43 02.54W Ping: 6416 Beam: 1

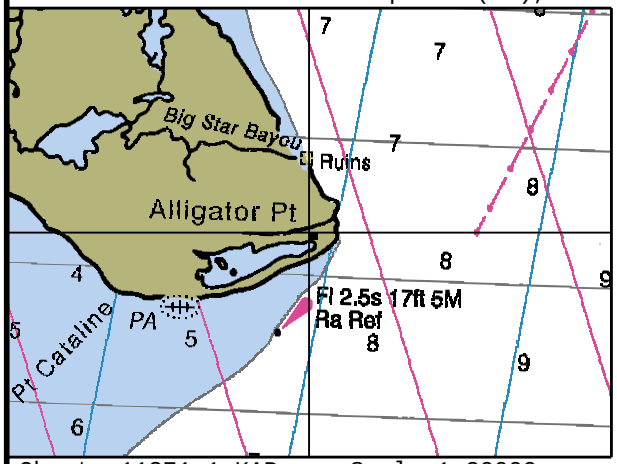


Chart: 11371_1.KAP Scale 1:20000

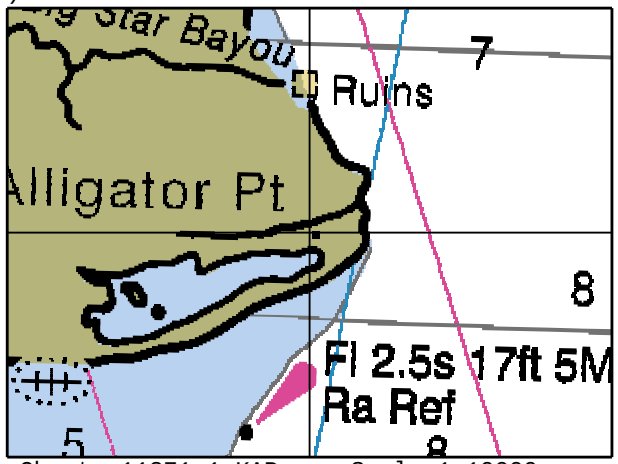
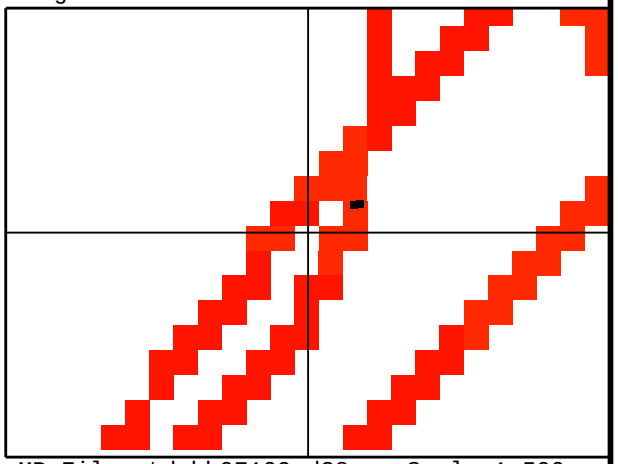
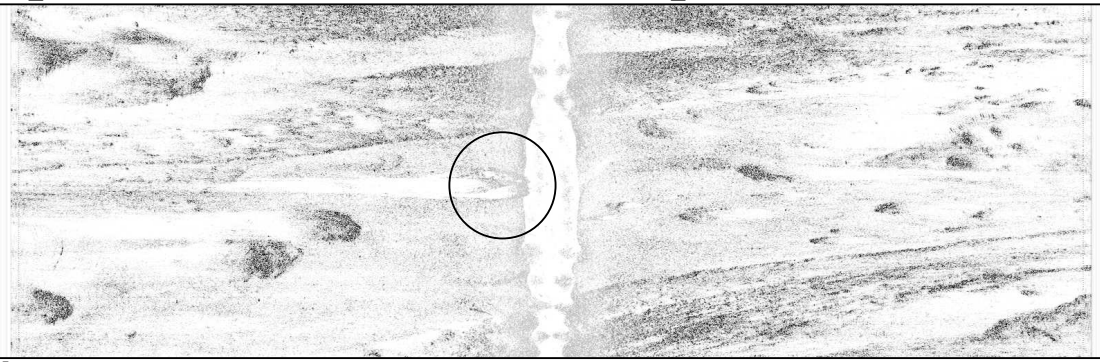


Chart: 11371_1.KAP Scale 1:10000

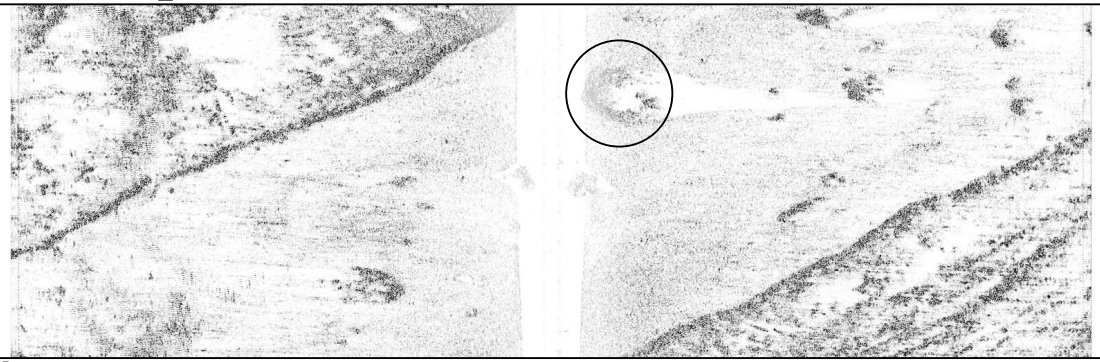


MB File: tdsbh07109.d38 Scale 1:500



ID: 52 File: TD07079_070320142400.XTF 30 01 37.21N 089 43 02.17W RNG: -2.25 HGT: 1.35 HDG: 008

COMMENT:
Plot sounding and label
Obstn



ID: 86 File: TD07109_070419193600.XTF 30 01 37.21N 089 43 02.22W RNG: 3.03 HGT: 1.42 HDG: 039

CORRELATED SS CONTACTS:

Contact	Range/Height
079143205	-2.25/1.35
109194138	3.03/1.42

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0014 Least Depth: 4(ft), 1.44(m) Lat: 29 59 50.97N Lon: 089 51 24.92W Ping: 6449 Beam: 1

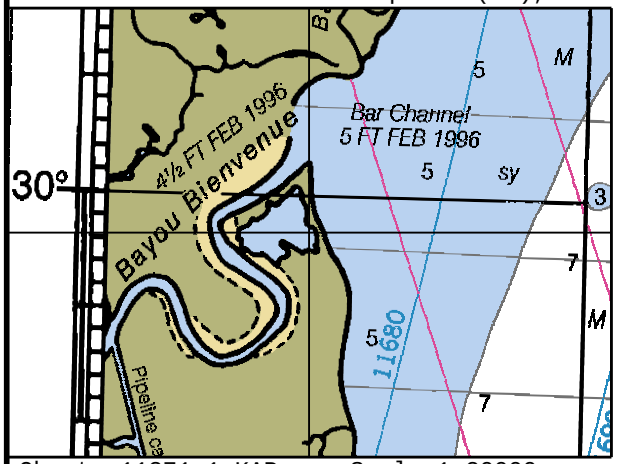


Chart: 11371_1.KAP Scale 1:20000

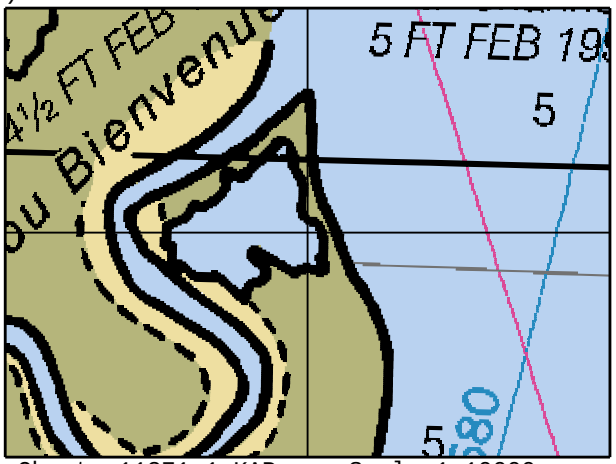
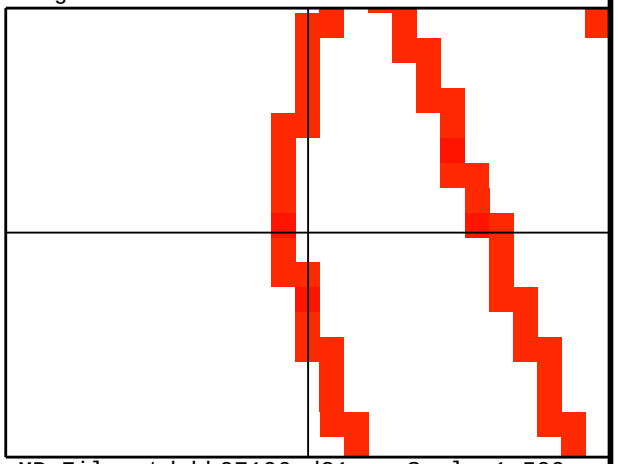


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07106.d21 Scale 1:500

COMMENT:
Plot sounding and label
Obstn

CORRELATED SS CONTACTS:
Contact Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0013 Least Depth: 5(ft), 1.51(m) Lat: 29 57 16.47N Lon: 089 44 06.35W Ping: 12390 Beam: 1

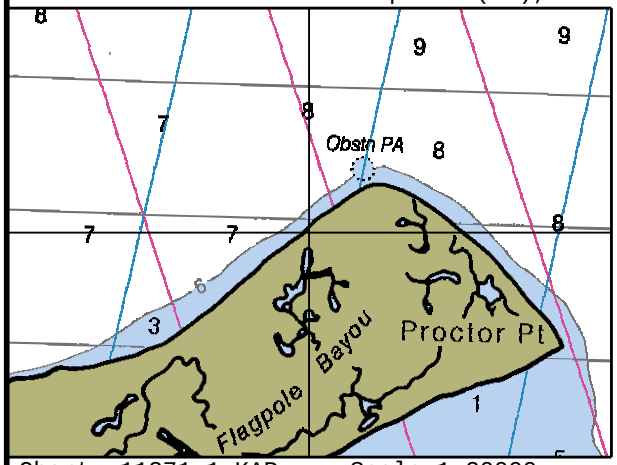


Chart: 11371_1.KAP Scale 1:20000

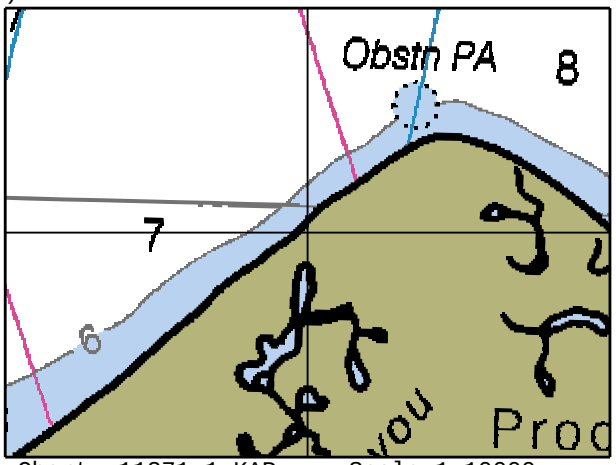
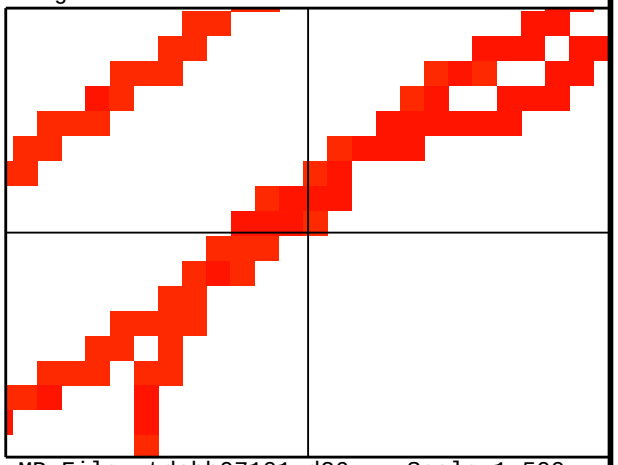


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07101.d26 Scale 1:500

COMMENT:
No Plot - nonsignificant

CORRELATED SS CONTACTS:
Contact Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0012 Least Depth: 6(ft), 1.79(m) Lat: 30 01 48.25N Lon: 089 48 53.14W Ping: 33223 Beam: 1

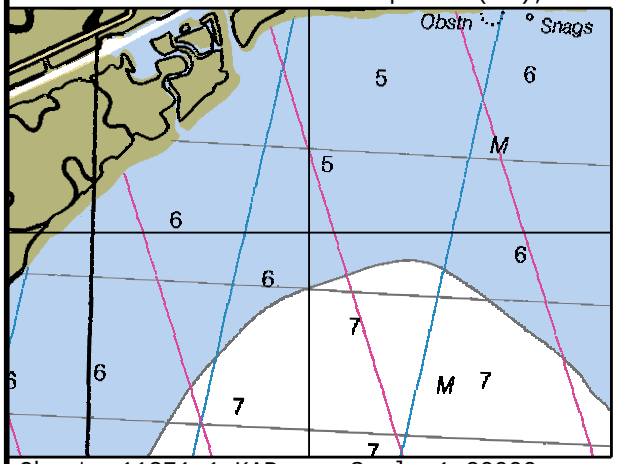


Chart: 11371_1.KAP Scale 1:20000

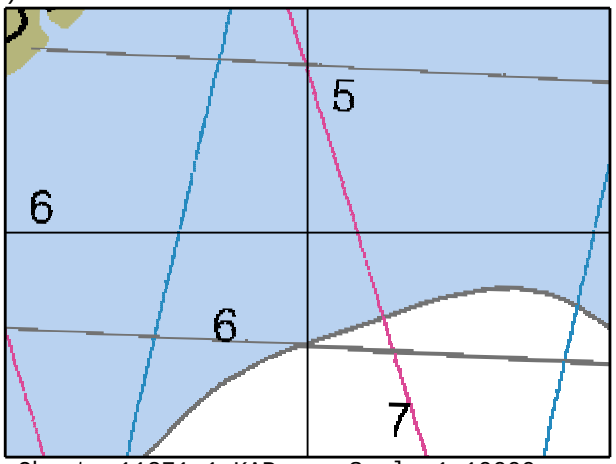
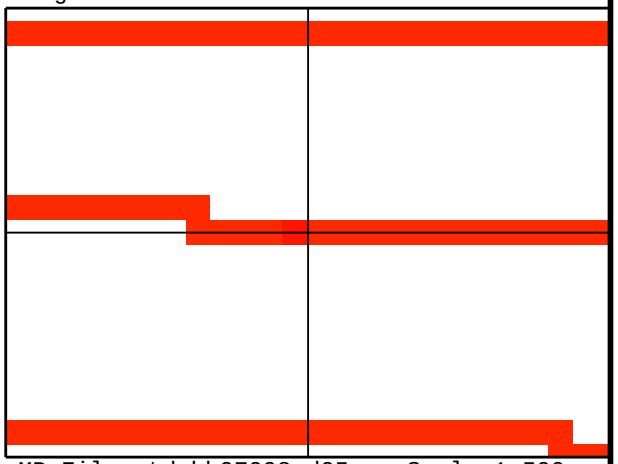


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07098.d05 Scale 1:500

COMMENT:
Plot sounding and label
Obstn

CORRELATED SS CONTACTS:
Contact Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0011 Least Depth: 9(ft), 2.88(m) Lat: 30 01 50.37N Lon: 089 45 56.65W Ping: 8481 Beam: 1

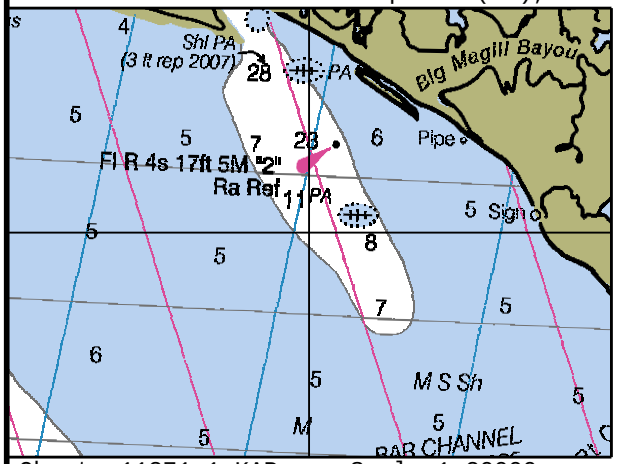


Chart: 11371_1.KAP Scale 1:20000

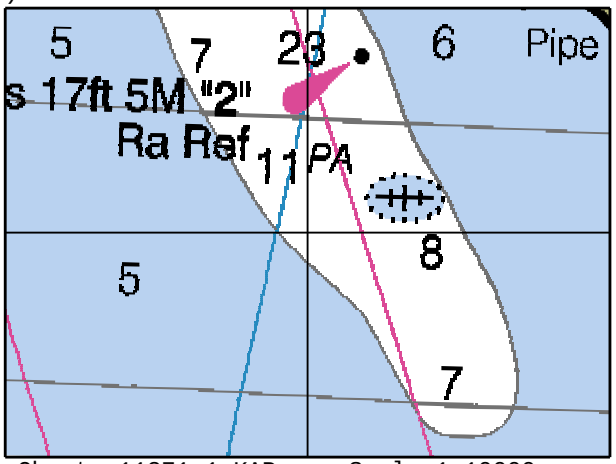
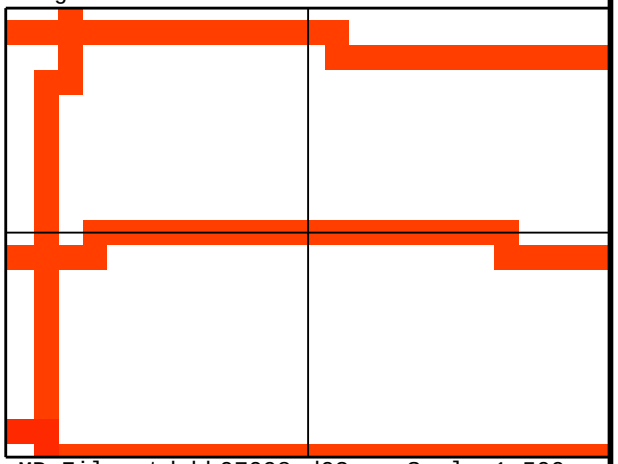


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07098.d03 Scale 1:500

COMMENT:
Plot sounding and label
Obstn

CORRELATED SS CONTACTS:
Contact Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0010 Least Depth: 3(ft), 0.91(m) Lat: 29 56 26.55N Lon: 089 49 45.46W Ping: 8897 Beam: 1

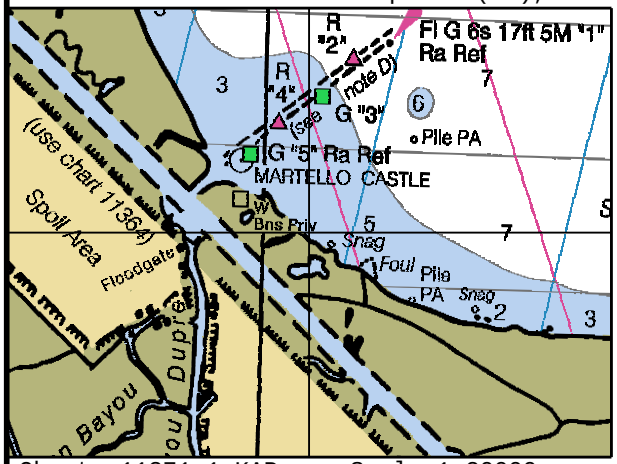


Chart: 11371_1.KAP Scale 1:20000

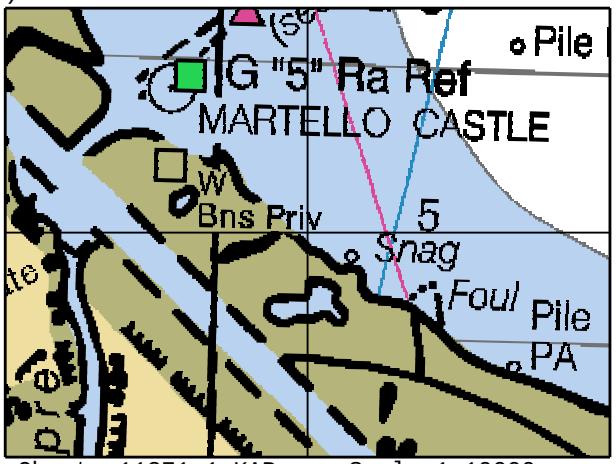
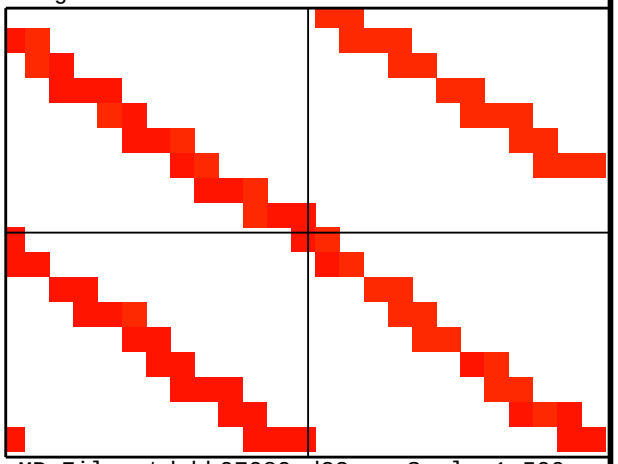


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07080.d23 Scale 1:500

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0009 Least Depth: 4(ft), 1.35(m) Lat: 29 57 58.72N Lon: 089 50 54.75W Ping: 32840 Beam: 1

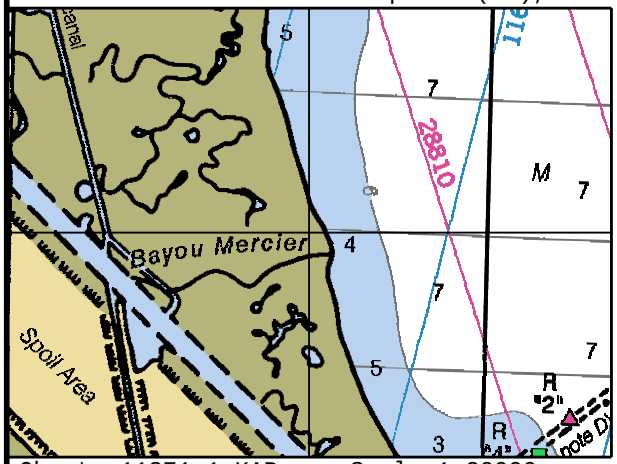


Chart: 11371_1.KAP Scale 1:20000

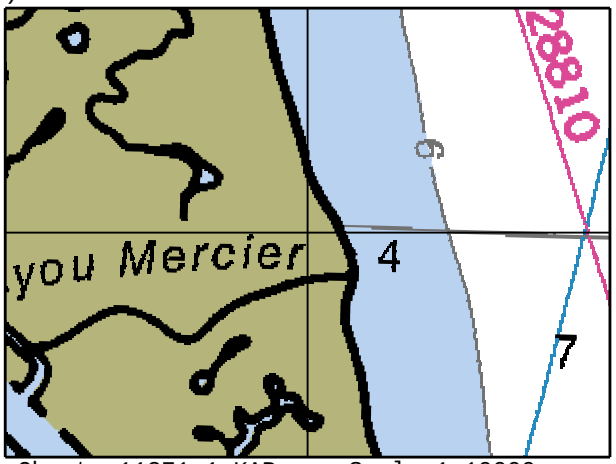
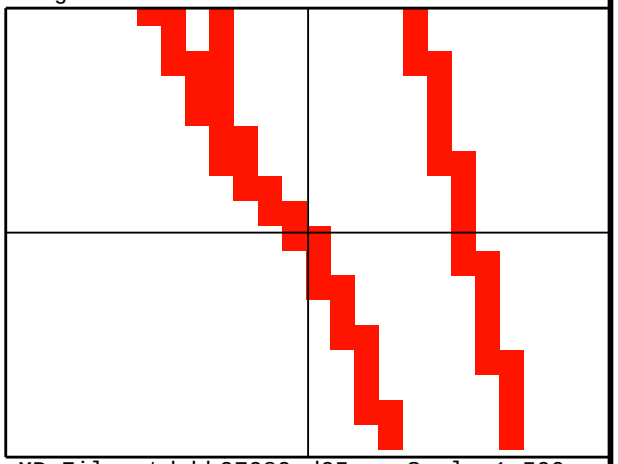


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07080.d05 Scale 1:500

COMMENT:
No Plot - nonsignificant

CORRELATED SS CONTACTS:
Contact Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0008 Least Depth: 4(ft), 1.21(m) Lat: 30 02 43.50N Lon: 089 46 02.02W Ping: 606 Beam: 1

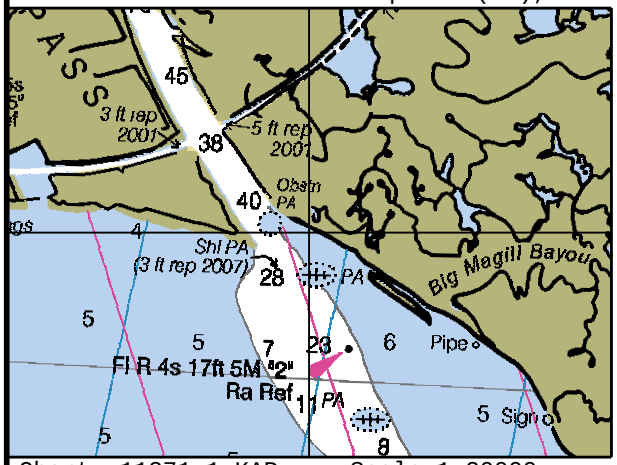


Chart: 11371_1.KAP Scale 1:20000

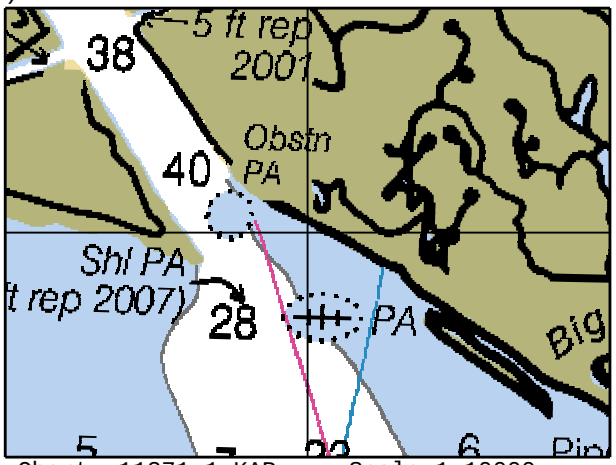
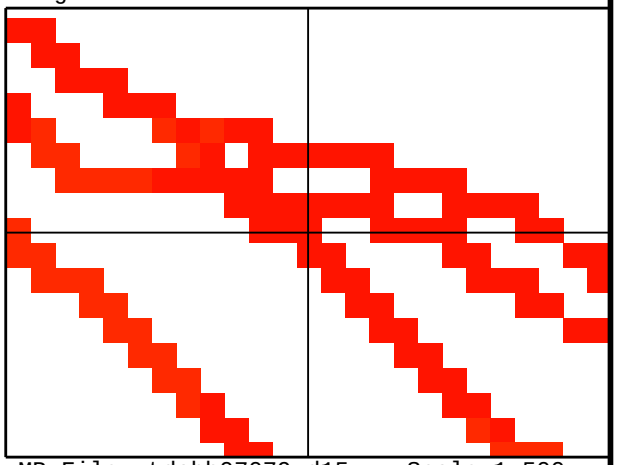


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07079.d15 Scale 1:500

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0007 Least Depth: 4(ft), 1.24(m) Lat: 30 01 36.61N Lon: 089 44 22.81W Ping: 11733 Beam: 1

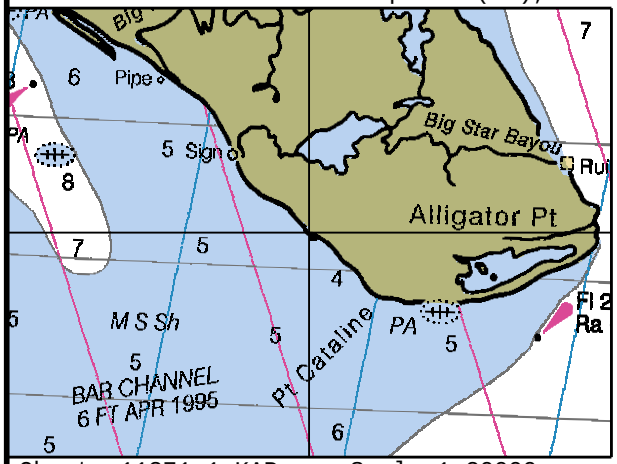


Chart: 11371_1.KAP Scale 1:20000

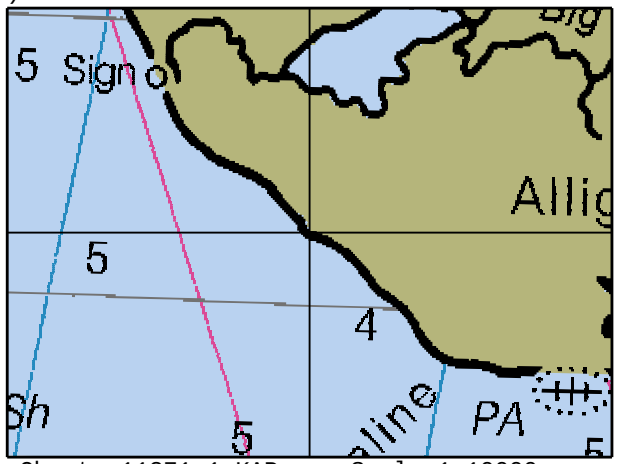
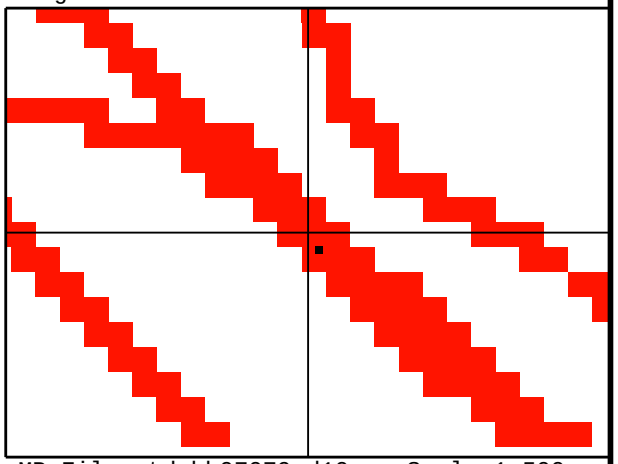
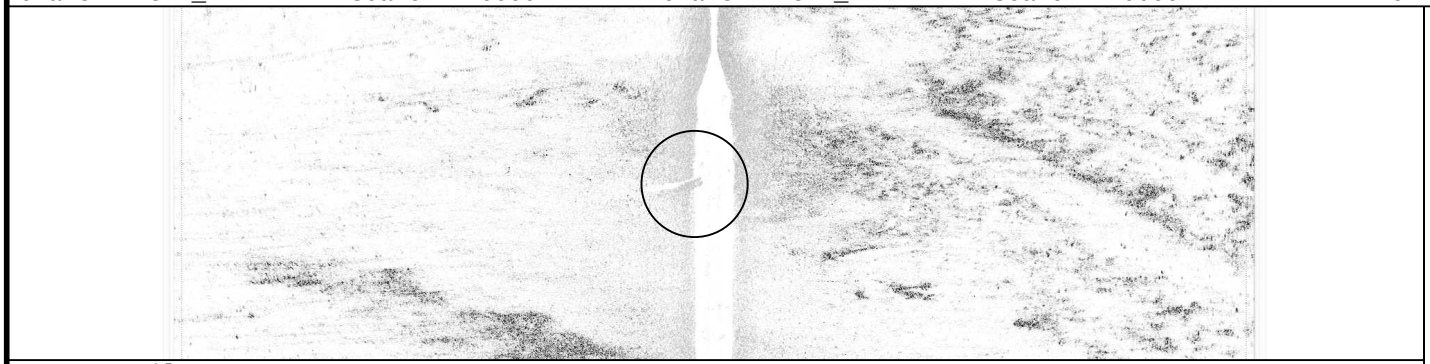


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07079.d10 Scale 1:500



ID: 55 File: TD07079_070320160200.XTF 30 01 36.52N 089 44 22.75W RNG: -0.94 HGT: 0.29 HDG: 312

COMMENT:
No Plot - nonsignificant

CORRELATED SS CONTACTS:

Contact	Range/Height
079160556	-0.94/0.29

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0006 Least Depth: 3(ft), 1.09(m) Lat: 30 02 18.58N Lon: 089 45 11.81W Ping: 603 Beam: 1

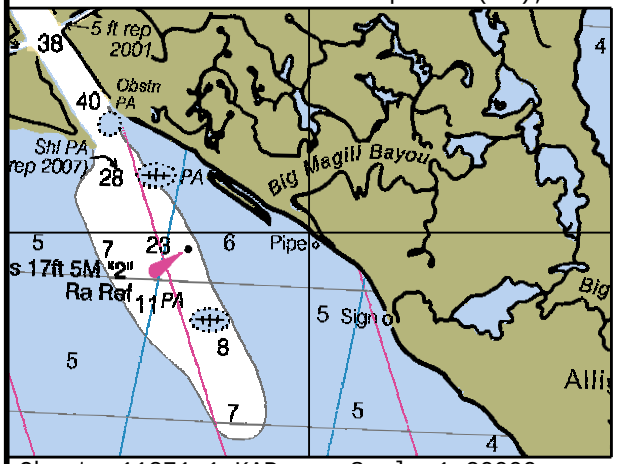


Chart: 11371_1.KAP Scale 1:20000

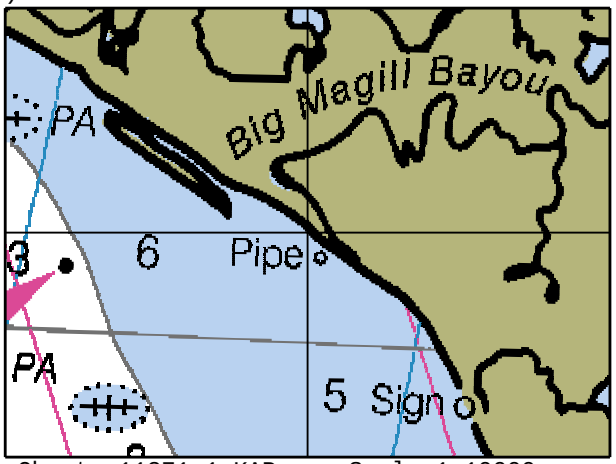
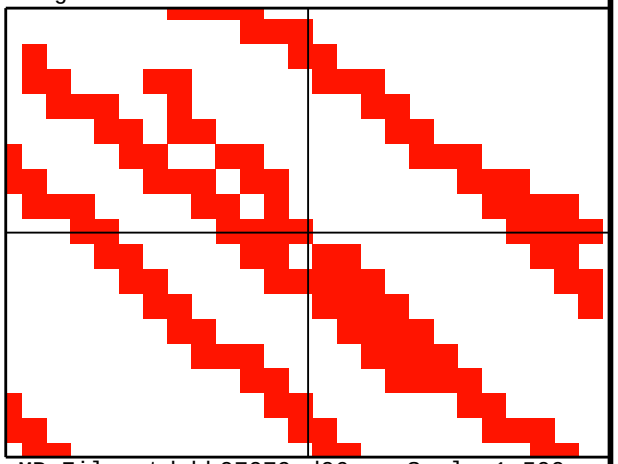


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07079.d06 Scale 1:500

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0005 Least Depth: 5(ft), 1.54(m) Lat: 30 02 11.01N Lon: 089 44 59.99W Ping: 46016 Beam: 1

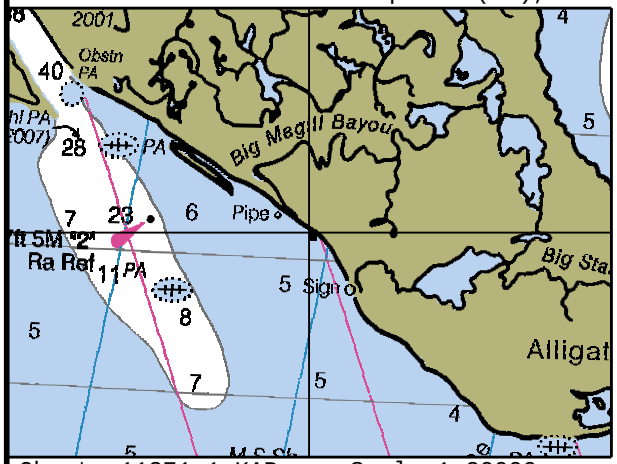


Chart: 11371_1.KAP Scale 1:20000

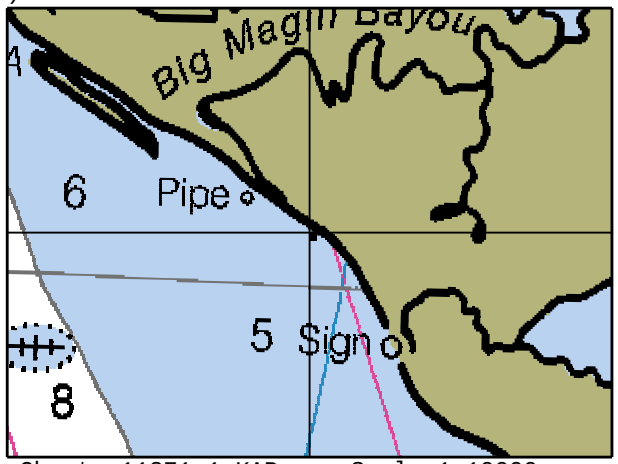
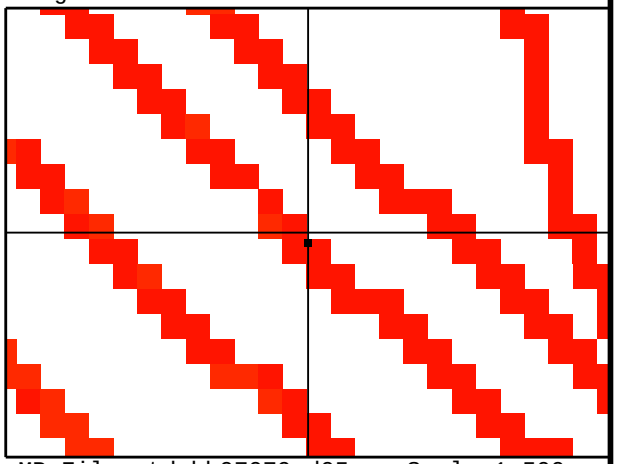


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07079.d05 Scale 1:500

ID: 53 File: TD07079_070320150000.XTF 30 02 10.96N 089 45 00.02W RNG: -1.56 HGT: 0.21 HDG: 315

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height
079150313	-1.56/0.21

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0004 Least Depth: 7(ft), 2.21(m) Lat: 29 56 22.48N Lon: 089 49 17.43W Ping: 462 Beam: 1

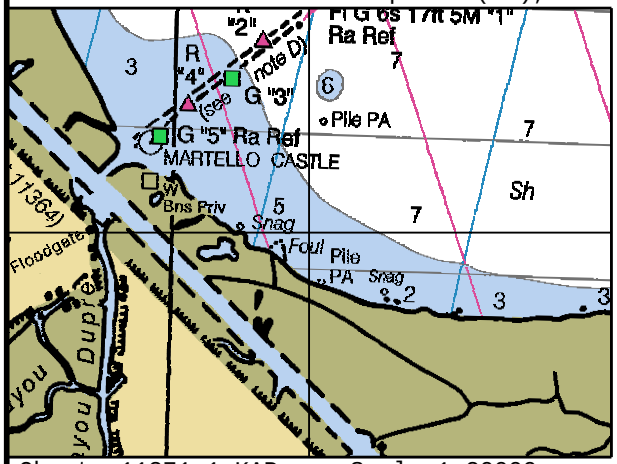


Chart: 11371_1.KAP Scale 1:20000

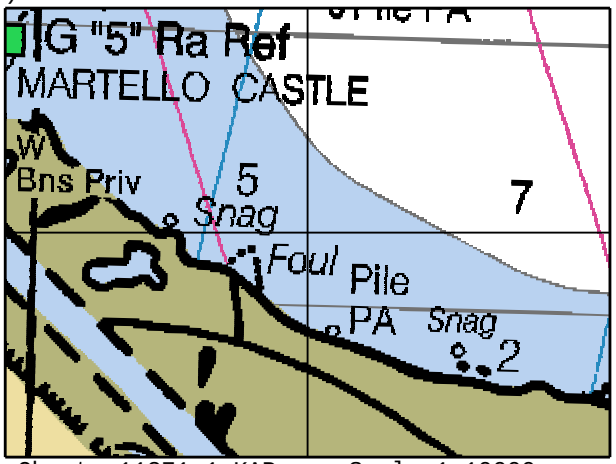
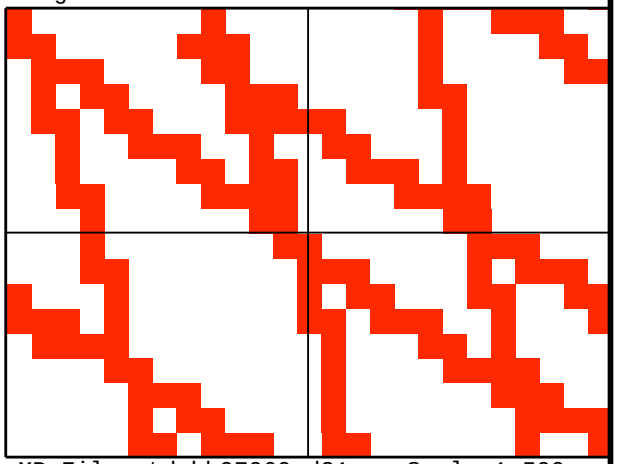


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07060.d21 Scale 1:500

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0003 Least Depth: 7(ft), 2.08(m) Lat: 29 56 18.06N Lon: 089 49 13.90W Ping: 11072 Beam: 1

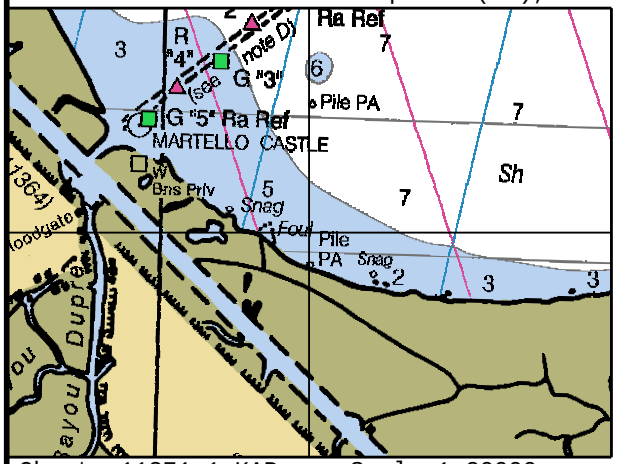


Chart: 11371_1.KAP Scale 1:20000

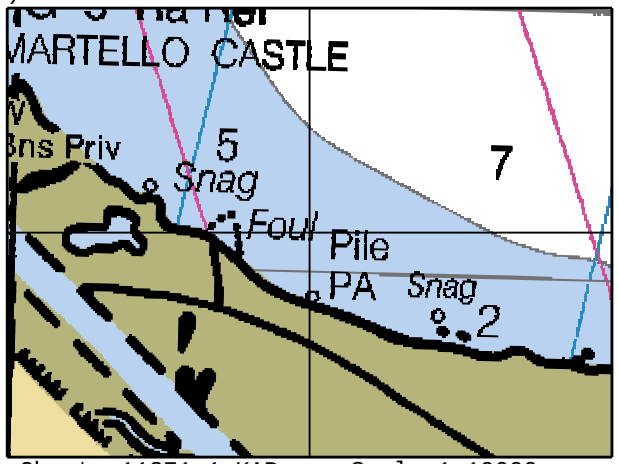
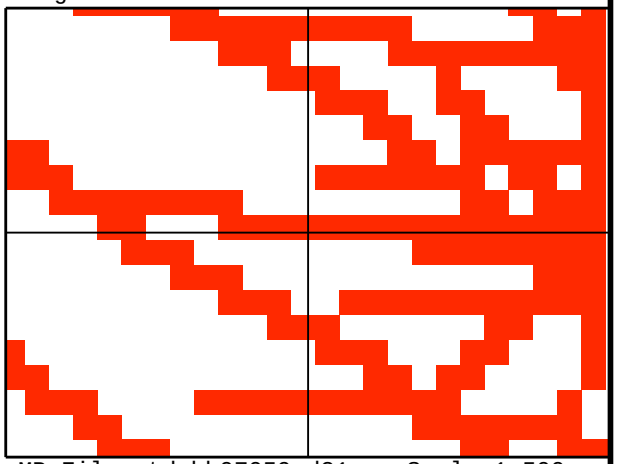


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07059.d21 Scale 1:500

COMMENT:
No Plot - foul area

CORRELATED SS CONTACTS:

Contact	Range/Height

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0002 Least Depth: 7(ft), 2.28(m) Lat: 30 02 26.37N Lon: 089 49 04.29W Ping: 15411 Beam: 1

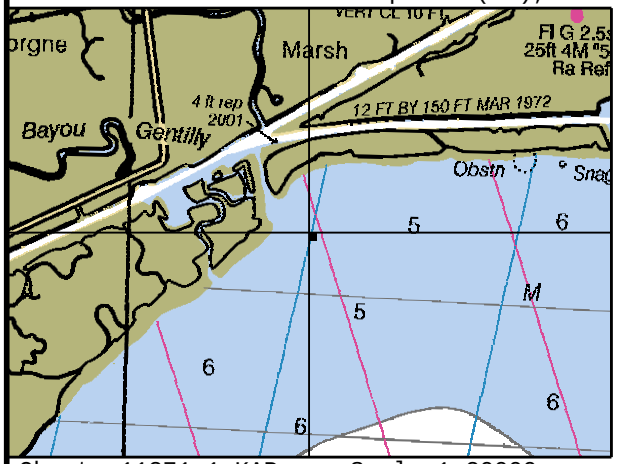


Chart: 11371_1.KAP Scale 1:20000

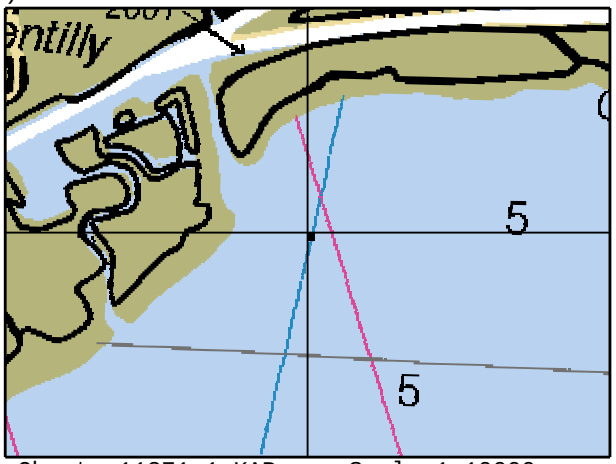
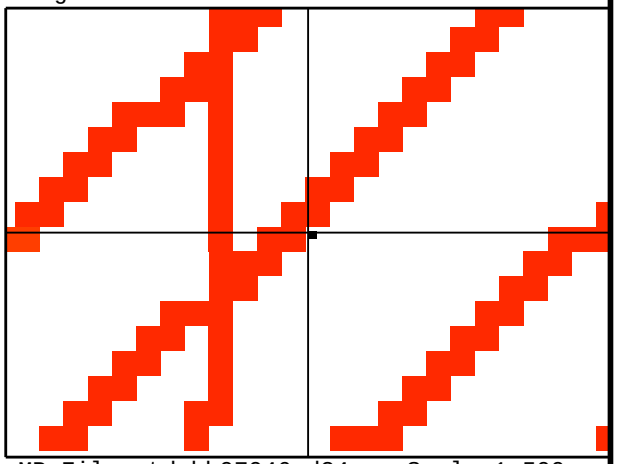
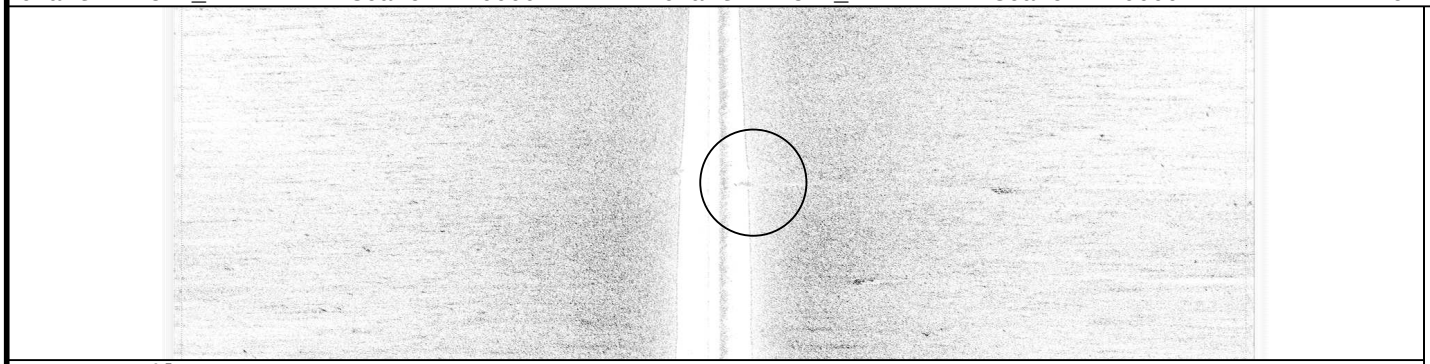


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07046.d24 Scale 1:500



ID: 13 File: TD07046_070215171100.XTF 30 02 26.38N 089 49 04.28W RNG: 1.72 HGT: 0.82 HDG: 045

COMMENT:
No Plot - nonsignificant

CORRELATED SS CONTACTS:

Contact	Range/Height
046172532	1.72/0.82

FEATURE CORRELATOR SHEET Job: H11615

Feature #: 0001 Least Depth: 6(ft), 1.93(m) Lat: 30 02 29.53N Lon: 089 47 22.96W Ping: 11888 Beam: 1

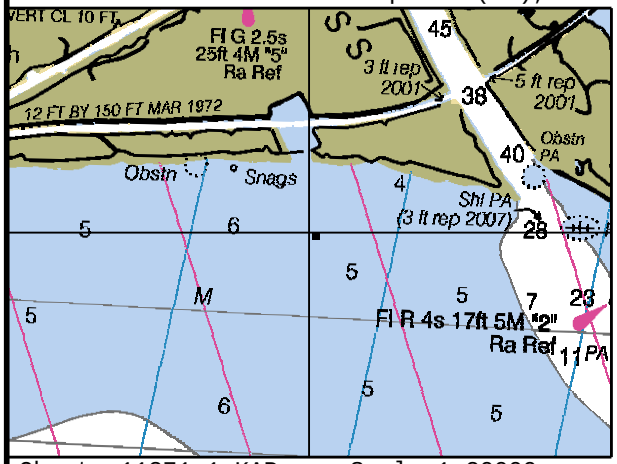


Chart: 11371_1.KAP Scale 1:20000

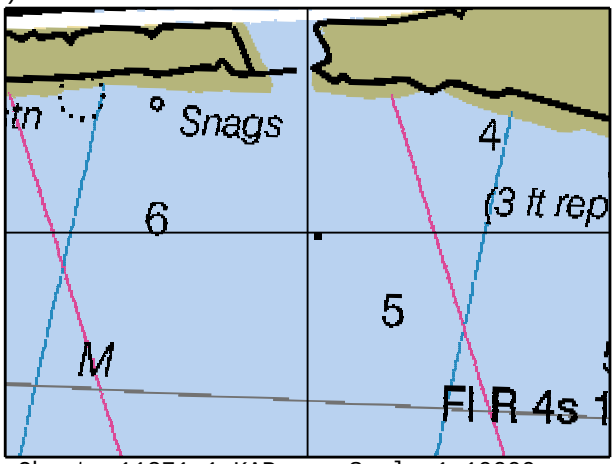
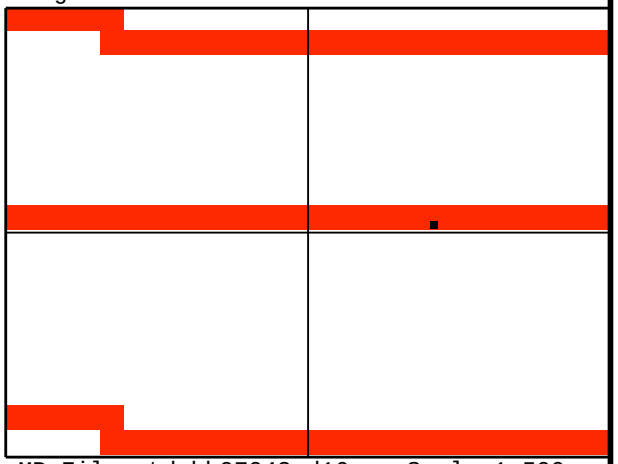
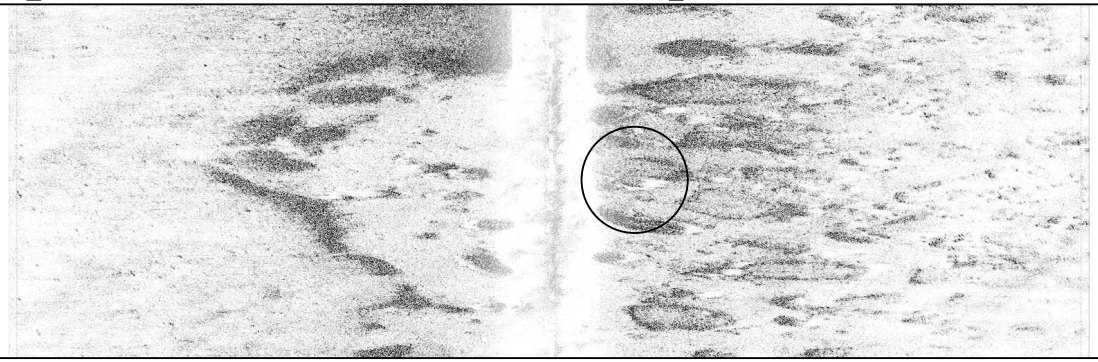


Chart: 11371_1.KAP Scale 1:10000



MB File: tdsbh07043.d16 Scale 1:500



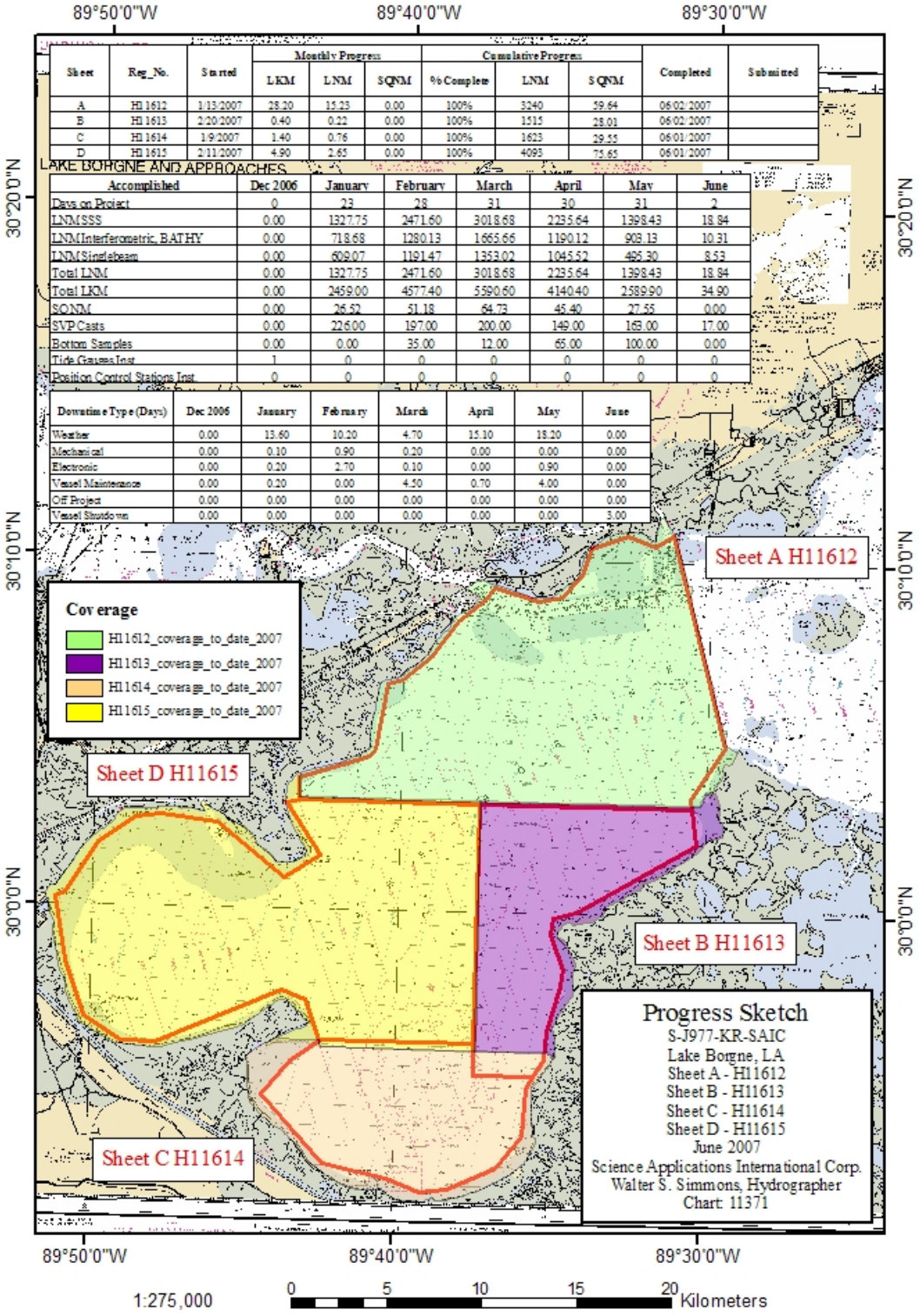
ID: 3 File: TD07043_070212220400.XTF 30 02 29.62N 089 47 22.02W RNG: 3.81 HGT: 0.55 HDG: 269

COMMENT:
Chart sounding and label
Obstn

CORRELATED SS CONTACTS:

Contact	Range/Height
043221512	3.81/0.55

APPENDIX III. FINAL PROGRESS SKETCH AND SURVEY OUTLINE



LAKE BORGNE AND APPROACHES

Sheet	Reg_No.	Started	Monthly Progress LKM	LNM	SQNM	Cumulative Progress % Complete	LNM	SQNM	Completed	Submitted
A	H11612	1/13/2007	28.20	15.23	0.00	100%	3240	59.64	06/02/2007	
B	H11613	2/20/2007	0.40	0.22	0.00	100%	1515	28.01	06/02/2007	
C	H11614	1/9/2007	1.40	0.76	0.00	100%	1623	29.55	06/01/2007	
D	H11615	2/11/2007	4.90	2.65	0.00	100%	4093	75.65	06/01/2007	

Accomplished	Dec 2006	January	February	March	April	May	June
Days on Project	0	23	28	31	30	31	2
LNM SSS	0.00	1327.75	2471.60	3018.68	2235.64	1398.43	18.84
LNM Interferometric, BATHY	0.00	718.68	1280.13	1665.66	1190.12	908.13	10.31
LNM Singlebeam	0.00	609.07	1191.47	1353.02	1045.52	486.30	8.53
Total LNM	0.00	1327.75	2471.60	3018.68	2235.64	1398.43	18.84
Total LKM	0.00	2459.00	4577.40	5590.60	4140.40	2589.90	34.90
SQNM	0.00	26.52	51.18	64.73	45.40	27.55	0.00
SVP Casts	0.00	226.00	197.00	200.00	149.00	163.00	17.00
Bottom Samples	0.00	0.00	35.00	12.00	65.00	100.00	0.00
Tide Gauges Inst	1	0	0	0	0	0	0
Position Control Stations Inst	0	0	0	0	0	0	0

Downtime Type (Days)	Dec 2006	January	February	March	April	May	June
Weather	0.00	13.60	10.20	4.70	15.10	18.20	0.00
Mechanical	0.00	0.10	0.90	0.20	0.00	0.00	0.00
Electronic	0.00	0.20	2.70	0.10	0.00	0.90	0.00
Vessel Maintenance	0.00	0.20	0.00	4.50	0.70	4.00	0.00
Off Project	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vessel Shutdown	0.00	0.00	0.00	0.00	0.00	0.00	3.00

Figure App. III-1. Final Progress Sketch

The Survey Outline for H11615 was delivered to the COTR, on 13 June 2007 in file H11612_H11613_H11614_H11615_Survey_outline.zip. The WinZip file contained a DXF format survey outline in lat/lon format for import into MapInfo for each sheet surveyed. The survey outline file for Sheet D (H11615_Survey_Outline_lat_long.dxf) is also part of this delivery. Figure App. III-2 demonstrates the graphical depiction of the DXF.

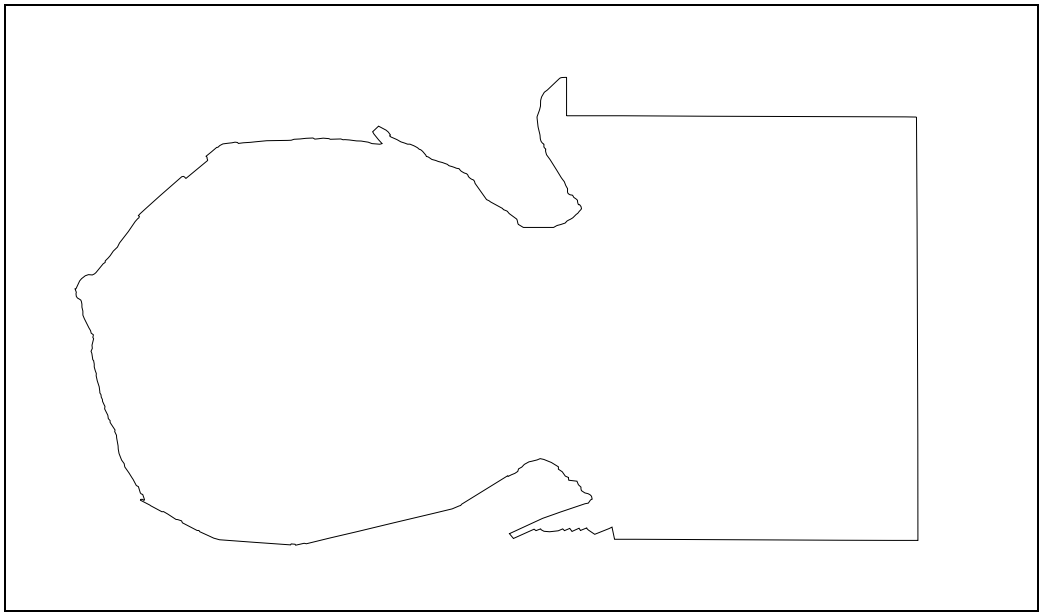


Figure App. III-2. Survey Outline for H11615

APPENDIX IV. TIDES AND WATER LEVELS

The on-line times for acquisition of valid hydrographic data for this sheet are presented in Table App. IV-1, H11615 Abstract Times of Hydrography.

Project: S-J977-KR-SAIC
Registry No.: H11615
Contractor Name: Science Applications International Corporation
Date: 01 June 2007
Sheet Letter: D
Inclusive Dates: 11 February 2007 – 01 June 2007

Field work is complete.

Table App. IV-1. H11615 Abstract Times of Hydrography

Begin Julian Day	Begin Date	Begin Time	End Time
042	11-February-2007	15:42:56	23:05:07
043	12-February-2007	14:17:53	23:34:21
044	13-February-2007	14:27:51	19:01:02
046	15-February-2007	13:41:58	23:17:11
048	17-February-2007	13:13:53	19:26:41
049	18-February-2007	19:49:23	23:50:59
050	19-February-2007	12:51:12	23:16:17
051	20-February-2007	12:54:21	23:31:24
052	21-February-2007	12:53:17	23:17:04
053	22-February-2007	13:09:12	22:42:46
054	23-February-2007	12:58:53	23:45:46
055	24-February-2007	17:03:13	17:59:33
056	25-February-2007	13:00:37	23:25:34
057	26-February-2007	13:12:54	23:08:16
059	28-February-2007	13:14:24	22:58:36
060	1-March-2007	13:10:28	20:01:10
061	2-March-2007	14:00:14	23:20:25
062	3-March-2007	13:38:55	23:23:50
064	5-March-2007	13:12:30	23:34:40
065	6-March-2007	13:10:00	23:21:15
066	7-March-2007	13:01:53	23:21:38
067	8-March-2007	14:04:56	23:18:46
068	9-March-2007	13:14:37	23:26:37
069	10-March-2007	13:07:42	23:13:11
070	11-March-2007	13:14:31	22:44:49
071	12-March-2007	11:52:43	22:16:02
072	13-March-2007	12:28:53	22:35:27
073	14-March-2007	12:12:13	22:16:22
074	15-March-2007	11:46:54	22:25:20
075	16-March-2007	12:17:33	22:15:05
077	18-March-2007	12:23:06	22:37:04

Begin Julian Day	Begin Date	Begin Time	End Time
078	19-March-2007	12:03:00	21:56:27
079	20-March-2007	11:58:19	22:26:33
080	21-March-2007	12:35:11	22:20:02
081	22-March-2007	12:18:04	16:34:55
082	23-March-2007	12:09:52	22:07:34
083	24-March-2007	12:15:29	21:47:36
084	25-March-2007	12:01:09	22:33:13
085	26-March-2007	12:03:29	22:00:20
086	27-March-2007	11:58:12	18:43:08
087	28-March-2007	11:50:55	22:29:27
088	29-March-2007	12:08:00	21:57:10
089	30-March-2007	12:07:05	16:09:49
090	31-March-2007	11:47:52	21:59:05
091	1-April-2007	12:17:10	22:28:40
092	2-April-2007	12:12:13	22:21:48
093	3-April-2007	11:52:22	22:08:34
094	4-April-2007	12:02:12	21:56:31
098	8-April-2007	12:25:25	22:34:53
099	9-April-2007	11:47:54	22:28:44
100	10-April-2007	11:52:44	19:15:04
101	11-April-2007	11:54:09	22:17:12
102	12-April-2007	12:03:25	22:28:35
103	13-April-2007	11:56:00	20:31:56
106	16-April-2007	11:52:10	22:26:10
107	17-April-2007	12:24:17	21:49:45
108	18-April-2007	11:46:25	22:25:46
109	19-April-2007	11:50:55	21:59:21
110	20-April-2007	12:35:06	22:06:24
114	24-April-2007	13:07:55	17:15:49
116	26-April-2007	12:17:05	21:13:06
117	27-April-2007	15:28:41	21:17:19
120	30-April-2007	13:14:28	13:32:42
129	9- May-2007	13:00:31	22:13:54
130	10-May-2007	12:33:43	18:28:54
131	11-May-2007	17:38:48	17:39:46
133	13-May-2007	12:24:26	22:11:55
134	14-May-2007	15:08:52	17:31:44
135	15-May-2007	19:34:51	20:12:06
136	16-May-2007	16:14:01	19:48:08
139	19-May-2007	16:42:16	20:46:28
148	28-May-2007	12:14:18	18:16:05
151	31-May-2007	13:09:48	21:45:24
152	1-June-2007	14:01:12	18:08:03

Final Tide Note

Subordinate tide station 8761529 (Martello Castle, LA) was the source of verified water level heights for corrections to soundings. 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.

APPENDIX V. SUPPLEMENTAL SURVEY RECORDS & CORRESPONDENCE

This appendix contains four sections. The first section contains the Danger to Navigation Reports as originally delivered by SAIC to NOAA. The second section contains project email correspondences, the third section contains the bottom composition results, and the fourth section contains text files (along with corresponding PDF files), which list the nodes from the six Bathymetric Attributed Grid files that exceed uncertainties for IHO Order 1 uncertainty.

Danger to Navigation Report 1

Hydrographic Survey Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sublocality: West

Project Number: S-J977-KR-SAIC

Survey Date: 27 February 2007

The following items were found during hydrographic survey operations:

Collapsed Platform (exposed 12 feet)

Chart Number	Edition		Exposed Height (HW)	Charted Horiz. Datum	Geographic Position	
	No	Date			Latitude	Longitude
11364	41	12/01/2005	12 feet	NAD 83	29° 59’ 27.664”N	089° 39’ 23.155”W
11371	37	1/10/2004				

Two legs of the platform are exposed approximately 12 feet above datum. A pipe is also exposed approximately 10 feet above datum and has a white light and solar panels. Light characteristics and operational condition was not verified.

RECOMMENDATIONS:
Chart an exposed wreck (K25) in 29° 59’ 27.664”N 089° 39’ 23.155”W (NAD 83) and label “Masts (12ft)”.

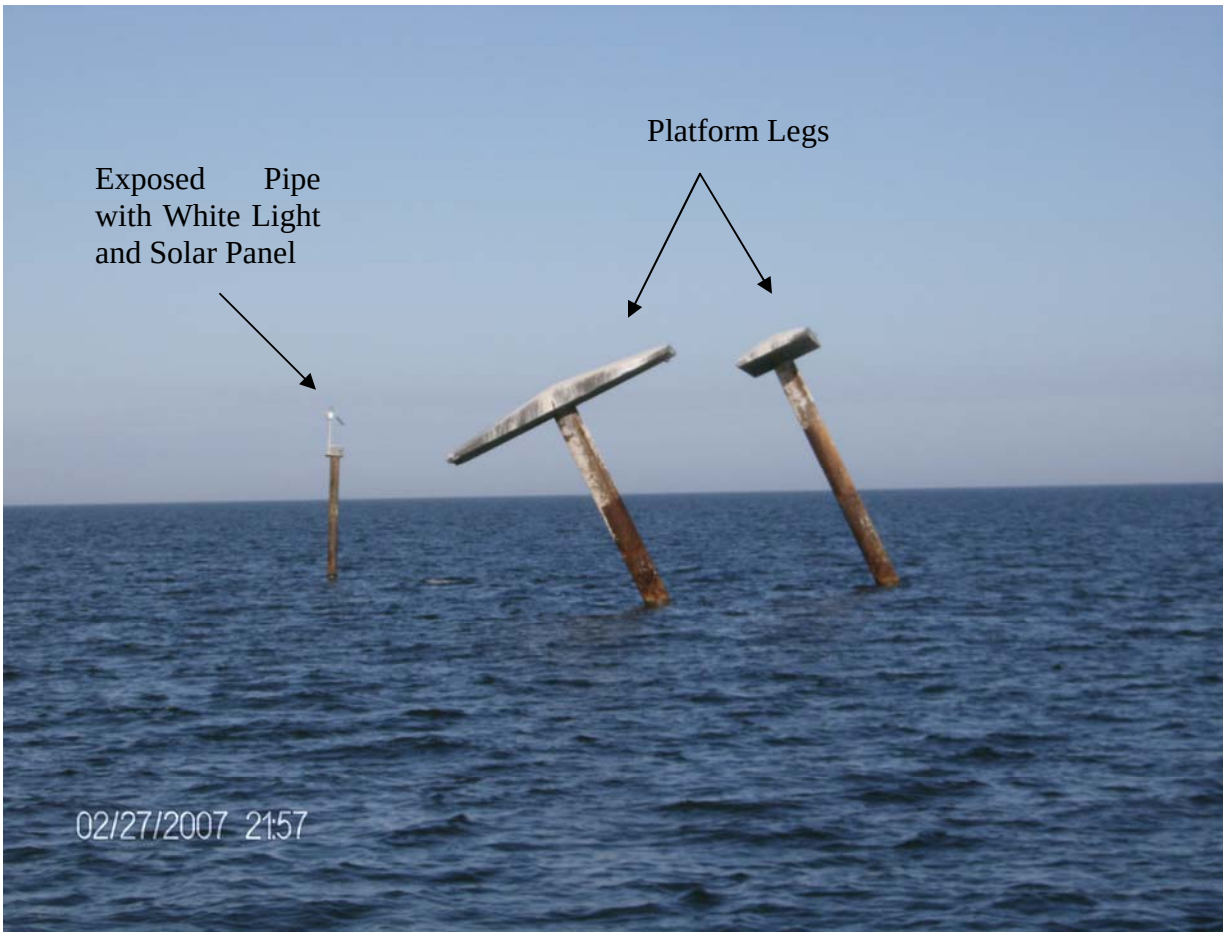


Figure V-1 Photograph of collapsed platform within H11615.

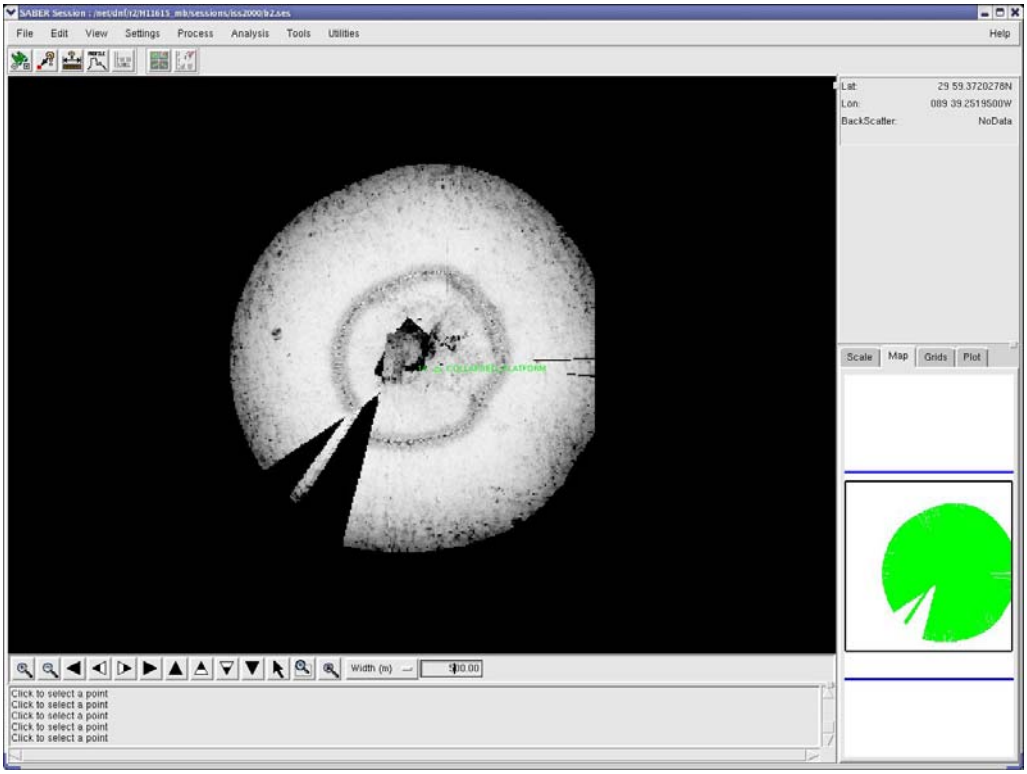


Figure V-2 Side Scan Image of collapsed platform within H11615.

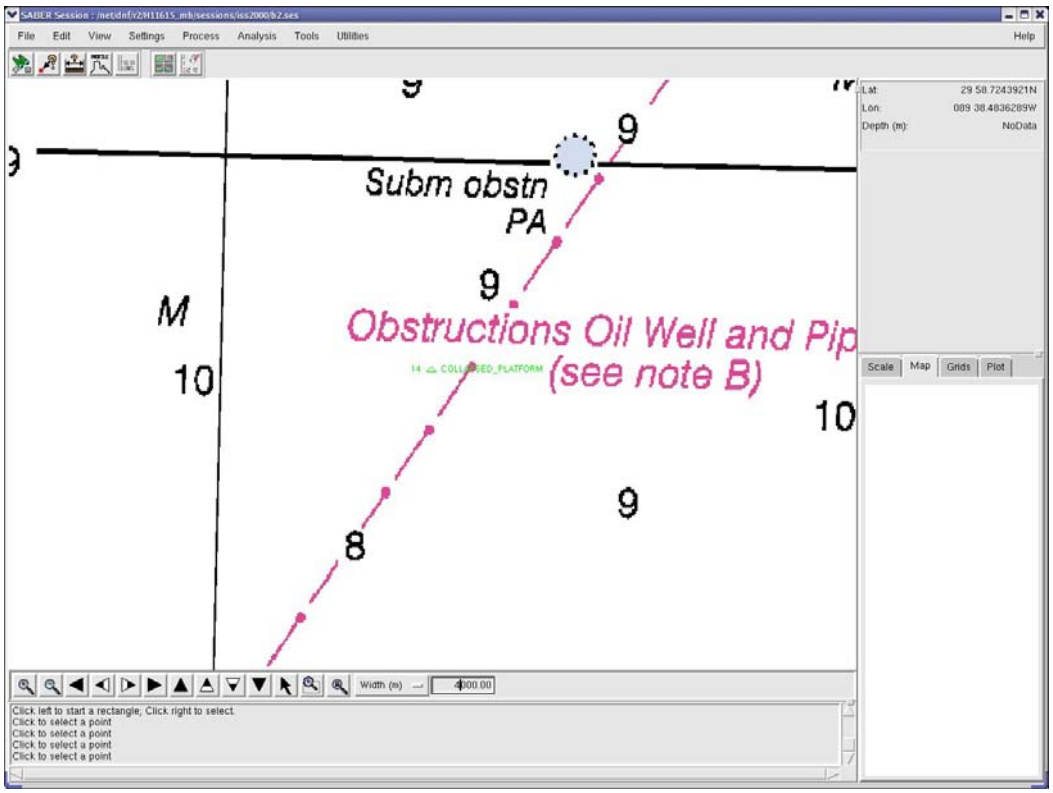


Figure V-3 Chart 11364 showing location of collapsed platform within H11615.

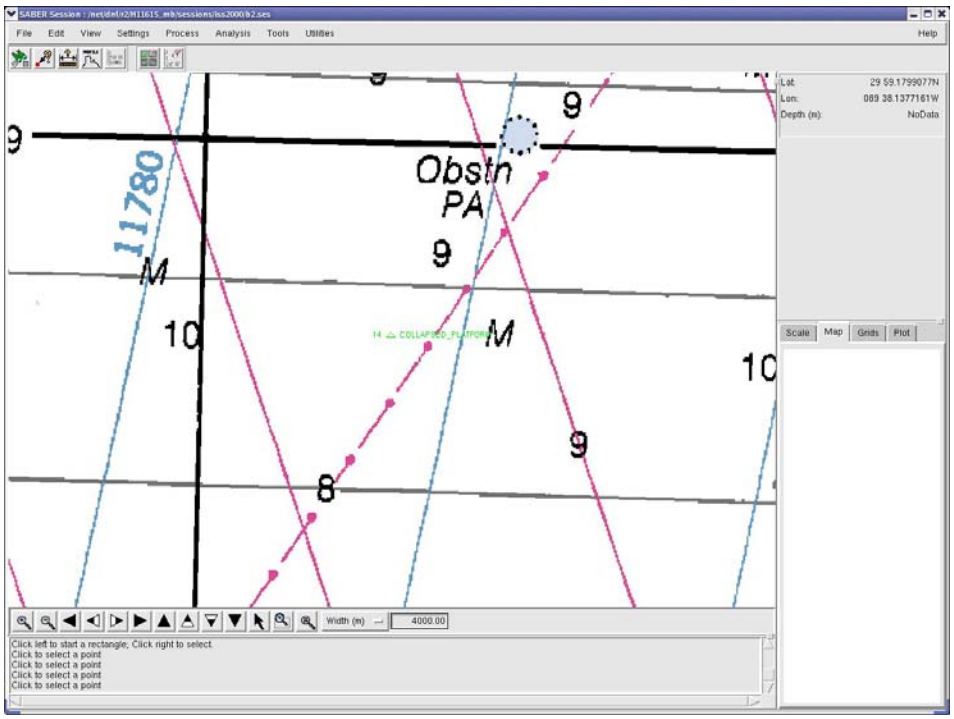


Figure V-4 Chart 11371 showing location of collapsed platform within H11615.

Danger to Navigation Report 2

Hydrographic Survey Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sublocality: West

Project Number: S-J977-KR-SAIC

Survey Date: 28 March 2007

The following items were found during hydrographic survey operations:

Jack-up rig

Chart Number	Edition		Charted Horiz. Datum	Geographic Position	
	No.	Date		Latitude	Longitude
11364	41	12/01/05	NAD 83	29° 59’ 14.400”N	089° 39’ 32.220”W
11371	37	10/01/04			

Platform

Chart Number	Edition		Charted Horiz. Datum	Geographic Position	
	No.	Date		Latitude	Longitude
11364	41	12/01/05	NAD 83	29° 59’ 15.000”N	089° 39’ 31.800”W
11371	37	10/01/04			

Platform

Chart Number	Edition		Charted Horiz. Datum	Geographic Position	
	No.	Date		Latitude	Longitude
11364	41	12/01/05	NAD 83	29° 59’ 14.160”N	089° 39’ 30.780”W
11371	37	10/01/04			

Two uncharted platforms were noted during survey operations. There are 2 platforms located within 25 meters of one another.

RECOMMENDATIONS:

Chart a platform (L10) in 29° 59’ 14.160”N 089° 39’ 30.780”W (NAD 83) and label “Platforms”.

Figure V-5. Photograph of platform within H11615.

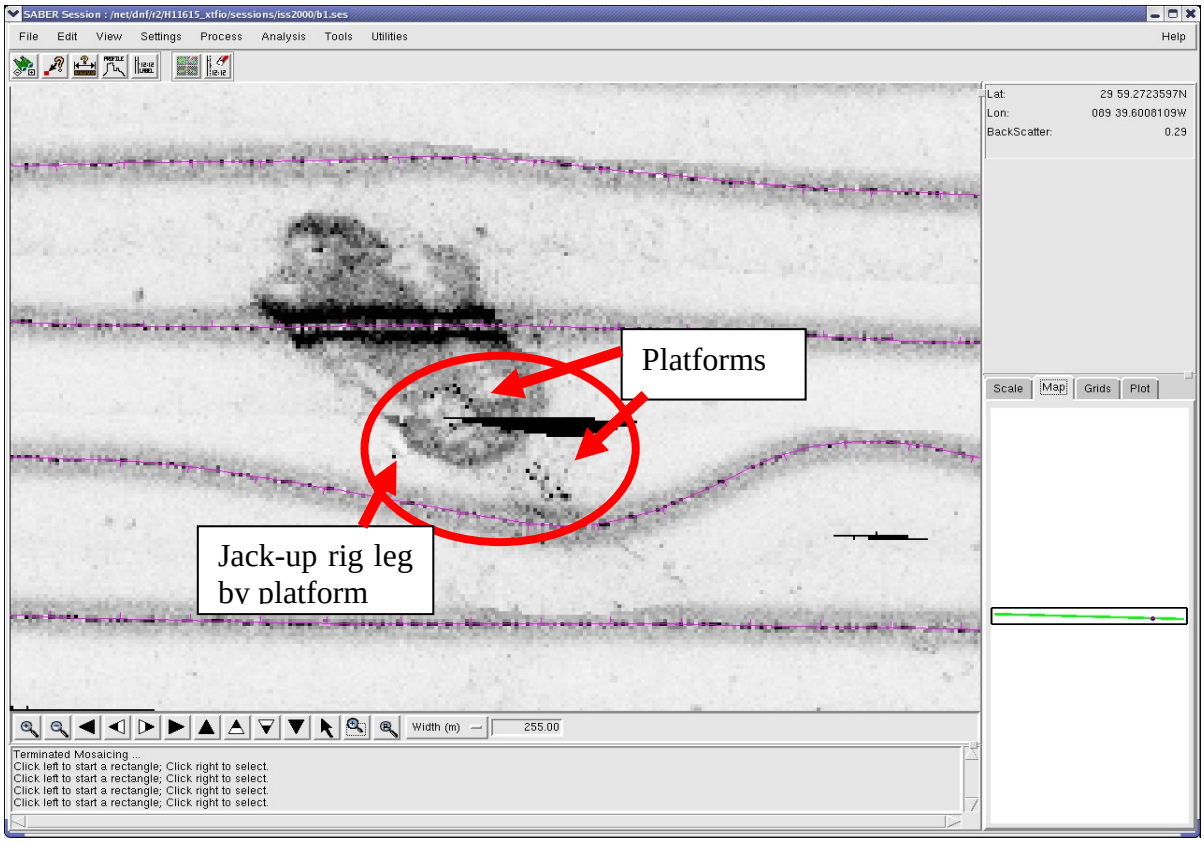


Figure V-6. Side scan mosaic of platform located within H11615.

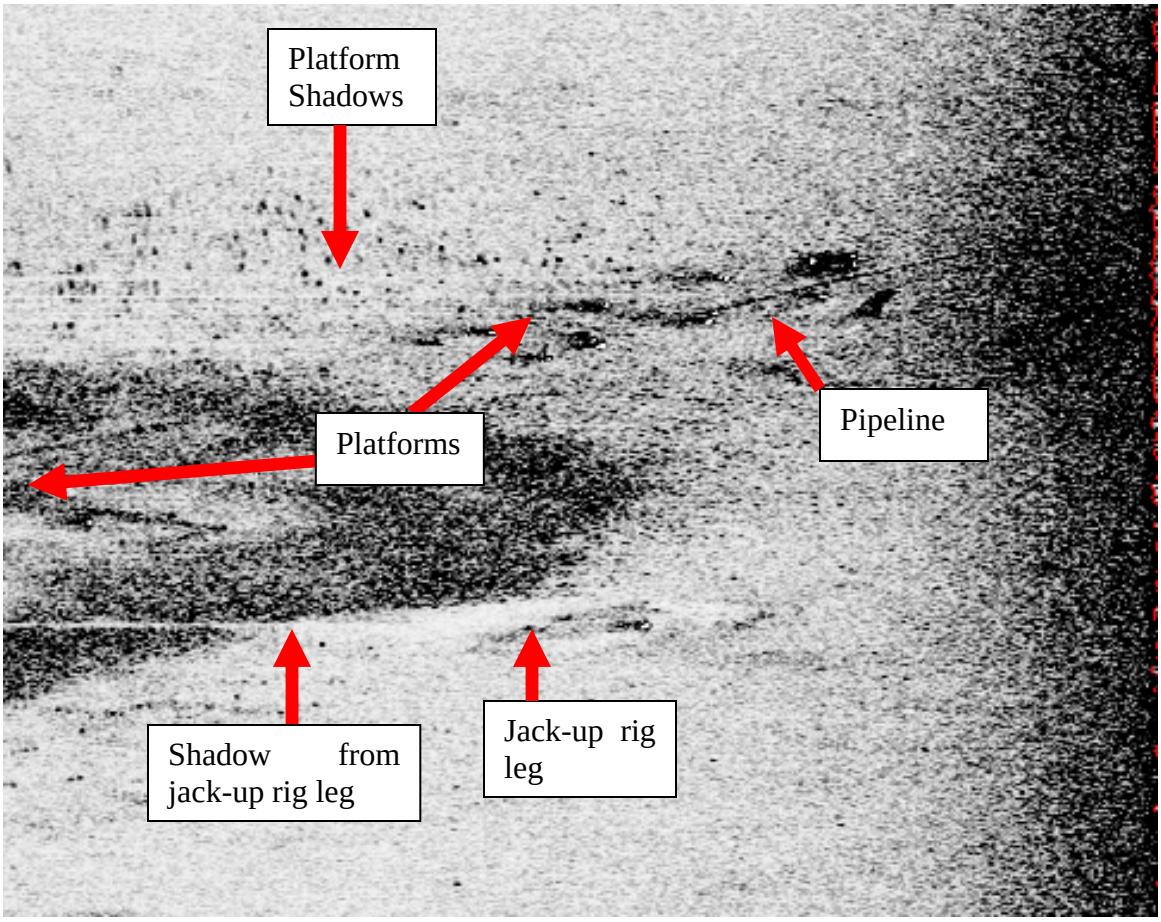


Figure V-7. Side scan image of platform located within H11615.

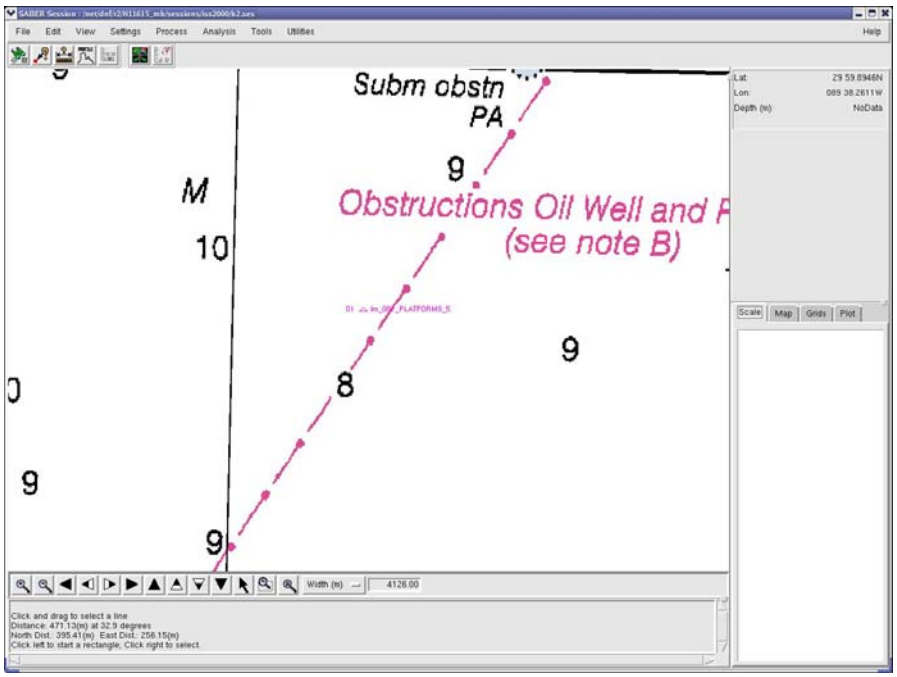


Figure V-8. Chart 11364 showing location of platforms within H11615.

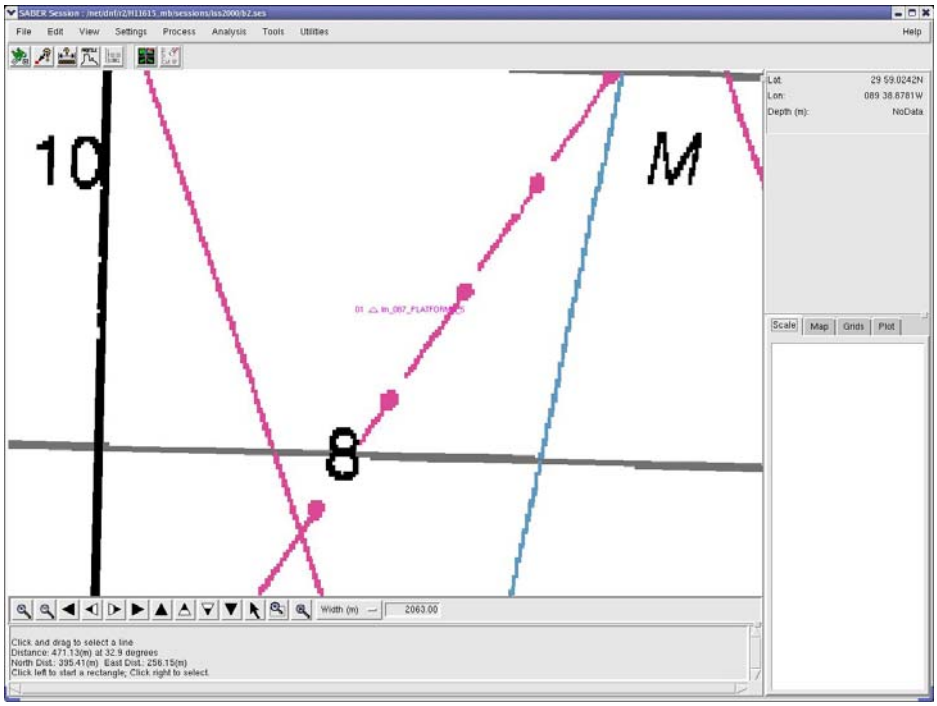


Figure V-9. Chart 11371 showing location of platforms within H11615.

Danger to Navigation Report 3

Hydrographic Survey Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sublocality: West

Project Number: S-J977-KR-SAIC

Survey Date: 2 April 2007

The following items were found during hydrographic survey operations:

Platform (MANTI A and B, SL 17073)

Chart Number	Edition		Charted Horiz. Datum	Geographic Position	
	No.	Date		Latitude	Longitude
11371	37	10/01/04	NAD 83	30° 00’ 41.640”N	089° 43’ 03.960”W

Platform

Chart Number	Edition		Charted Horiz. Datum	Geographic Position	
	No.	Date		Latitude	Longitude
11371	37	10/01/04	NAD 83	30° 00’ 42.480”N	089° 43’ 03.240”W

Two uncharted platforms were noted during survey operations. There are 2 platforms located within 40 meters of one another. One platform, MANTI A and B, had a barge moored along side with piles present on the outer parameter of the barge (**Error! Reference source not found.** Figure 11 and Figure 13 **Error! Reference source not found.**).

RECOMMENDATIONS:

Chart a platform (L10) in 30° 00’ 41.640”N 089° 43’ 03.960”W (NAD 83) and label “Platforms”.

Figure V-10 Photograph of platform (MANTI A and B with barge) within H11615.

Figure V-11 Photograph of barge moored to piles by MANTI A and B within H11615.

Figure V-12 Photograph of platform within H11615.

Figure V-13 Photograph of platforms and piles within H11615.

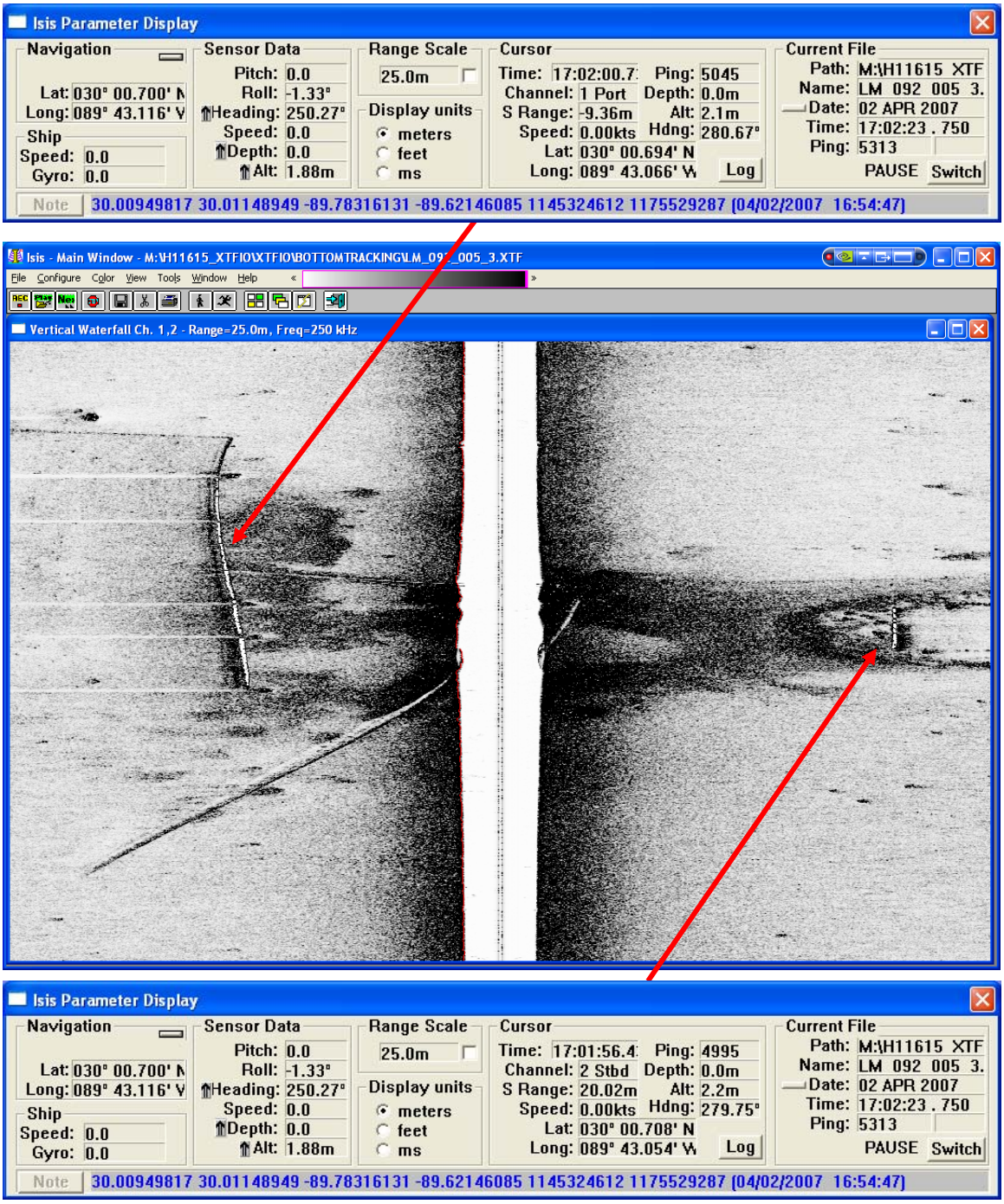


Figure V-14 Side scan image showing location of platforms within H11615. Barge and MANTI A and B in port channel with the 2nd platform in starboard channel.

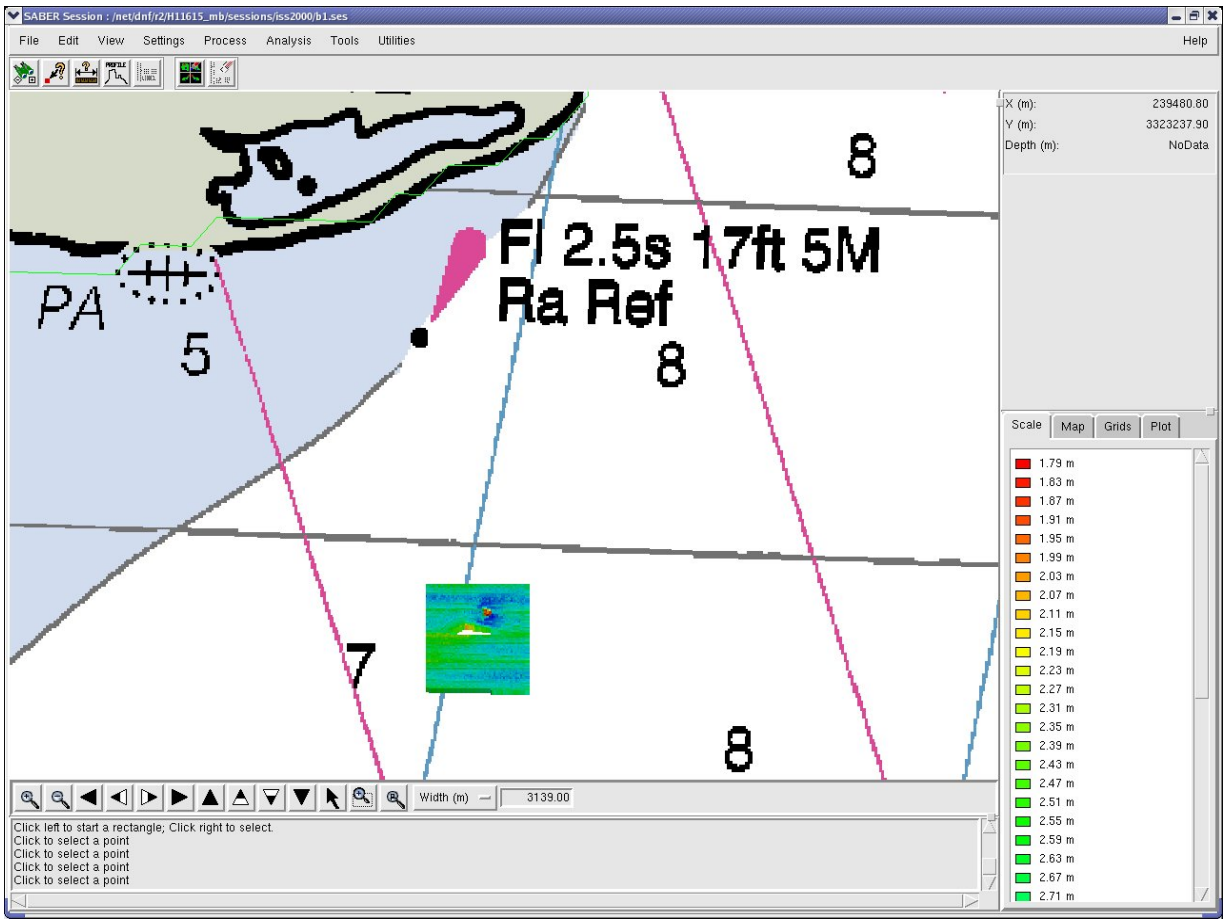


Figure V-15 Chart 11371 showing location of platforms within H11615

Danger to Navigation Report 4

Hydrographic Survey Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sublocality: West

Project Number: S-J977-KR-SAIC

Survey Date: 12 April 2007

The following items were found during hydrographic survey operations:

Platforms

Chart Number	Edition		Charted Horiz. Datum	Geographic Position	
	No.	Date		Latitude	Longitude
11371	37	10/01/04	NAD 83	30° 01’ 30.900”N	089° 42’ 12.180”W

Three uncharted platforms were noted during survey operations. The three platforms are located within 50 meters of one another. Each platform is equipped with a light. Characteristics of the light were not determined.

RECOMMENDATIONS:

Chart a platform (L10) in 30° 01’ 30.9000”N 089° 42’ 12.180”W (NAD 83) and label “Platforms”.

Figure V-16 Photograph of Three Platforms within H11615.

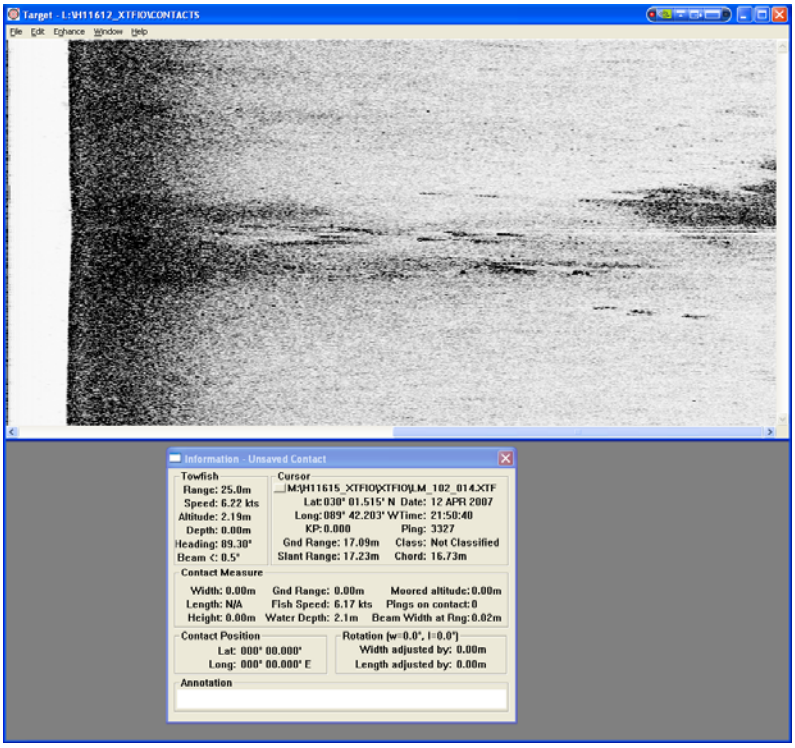


Figure V-17 Side Scan Image Showing Location of Three Platforms within H11615.

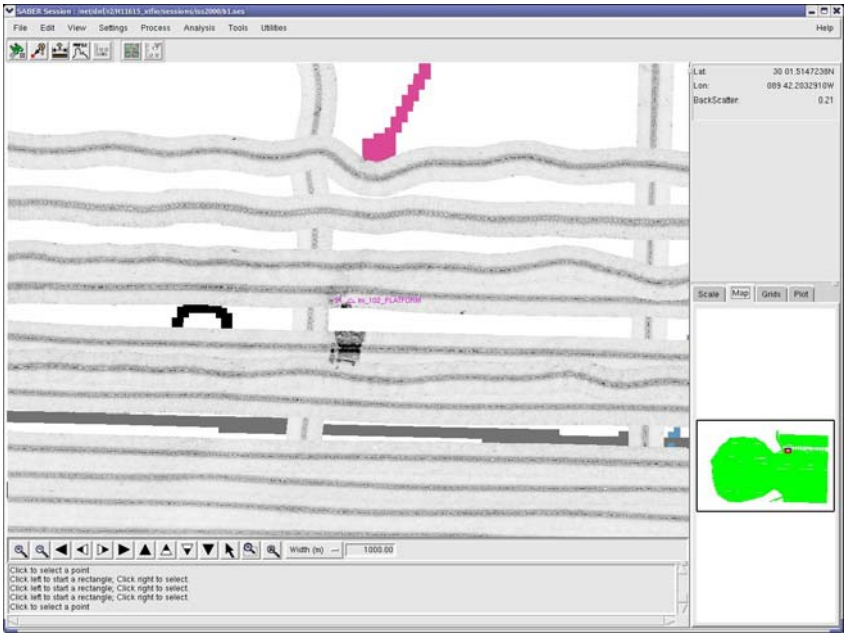


Figure V-18 Chart 11371 with Side Scan Mosaic Showing Location of Three Platforms within H11615

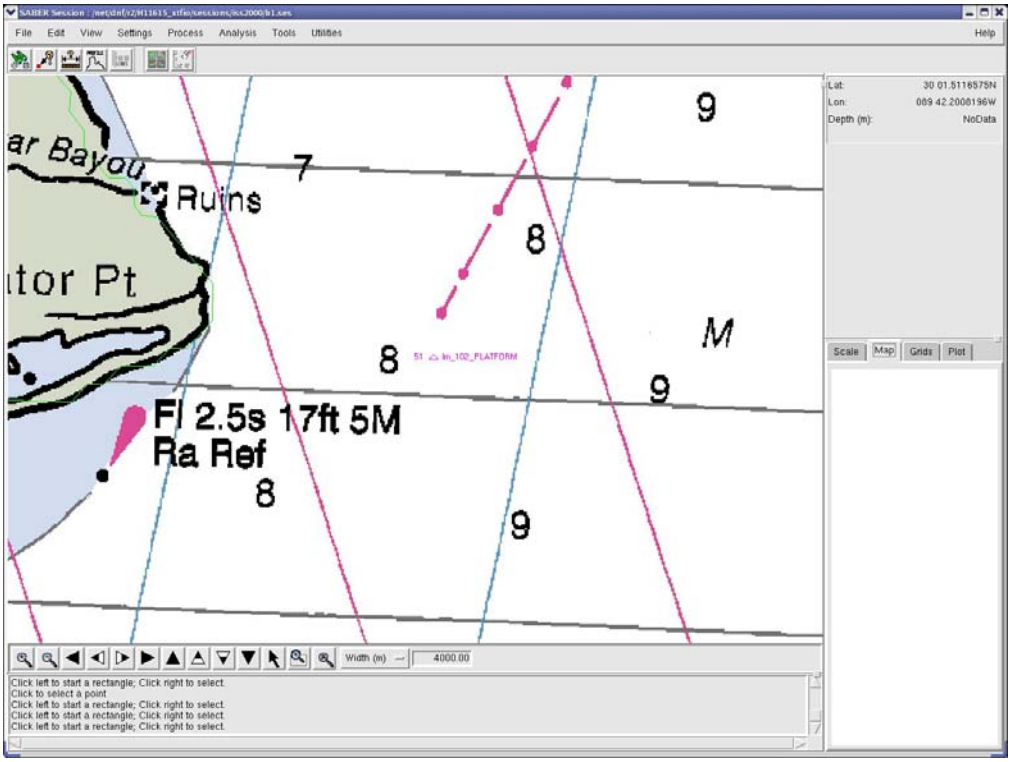


Figure V-19 Chart 11371 Showing Location of Three Platforms within H11615

Danger to Navigation Report 5

Hydrographic Survey Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sublocality: West

Project Number: S-J977-KR-SAIC

Survey Date: 16 March 2007

The following items were found during hydrographic survey operations:

Platform

Chart Number	Edition		Charted Horiz. Datum	Geographic Position	
	No.	Date		Latitude	Longitude
11371	37	10/01/04	NAD 83	30° 00’ 15.060”N	089° 42’ 45.720”W

A single uncharted platform was noted during survey operations. The platform is equipped with a light. Light characteristics were not determined.

RECOMMENDATIONS:

Chart a platform (L10) in 30° 00’ 15.060””N 089° 42’ 45.720”W (NAD 83) and label Platform.

Figure V-20 Photograph of Platform within H11615.

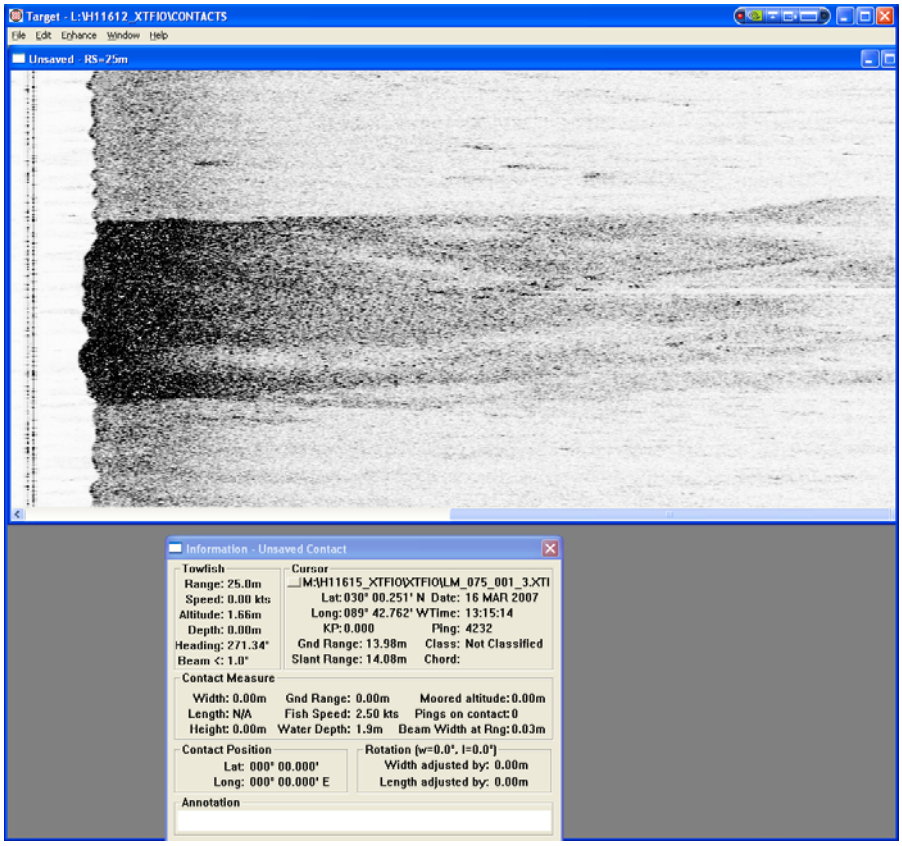


Figure V-21 Side Scan Image Showing Location of Platform within H11615.

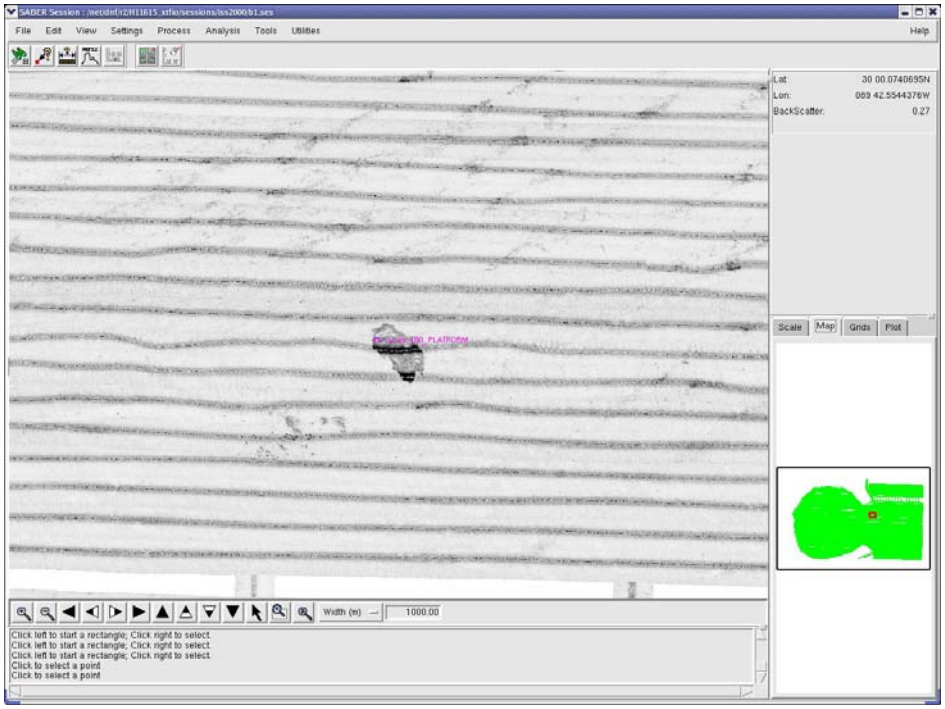


Figure V-22 Chart 11371 with Side Scan Mosaic Showing Location of Platform within H11615

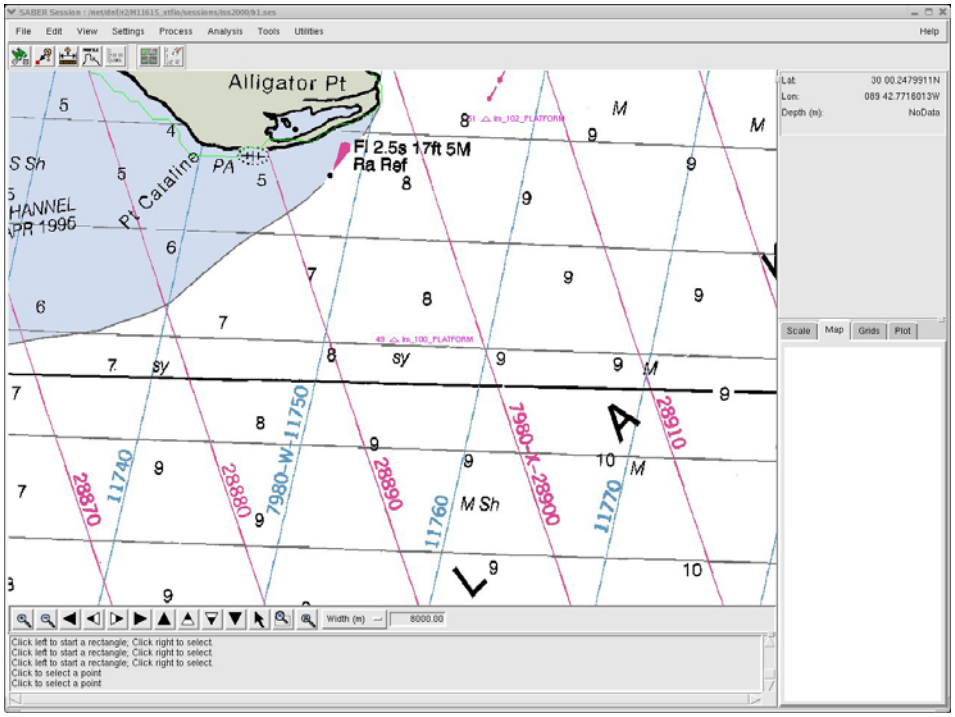


Figure V-23 Chart 11371 Showing Location of Platform within H11615

Danger to Navigation Report 6

Hydrographic Survey Registry Number: H11615

State: Louisiana

Locality: Lake Borgne

Sublocality: West

Project Number: S-J977-KR-SAIC

Survey Date: 31 May 2007

The following items were found during hydrographic survey operations:

Submerged Obstruction with a minimum depth of 6 feet (1.87 meters, 0.329 meter uncertainty)

Chart Number	Edition		Charted Horiz. Datum	Estimated depth feet (MLLW)	Geographic Position	
	No.	Date			Latitude	Longitude
11371	37	10/01/04	NAD 83	6	29° 58’ 36.36”N	089° 38’ 01.91”W

Submerged Obstruction with a minimum depth of 5 feet (1.68 meters, 0.495 meter uncertainty)

Chart Number	Edition		Charted Horiz. Datum	Estimated depth feet (MLLW)	Geographic Position	
	No.	Date			Latitude	Longitude
11371	37	10/01/04	NAD 83	5	29° 59’ 01.37”N	089° 41’ 59.53”W

RECOMMENDATIONS:
Chart 6 foot sounding, danger circle, blue tint (K-41) in 29° 58’ 36.36”N 089° 38’ 01.91”W (NAD 83) and label Obstn.

Chart 5 foot sounding, danger circle, blue tint (K-41) in 29° 59’ 01.37”N 089° 41’ 59.53”W (NAD 83) and label Obstn.

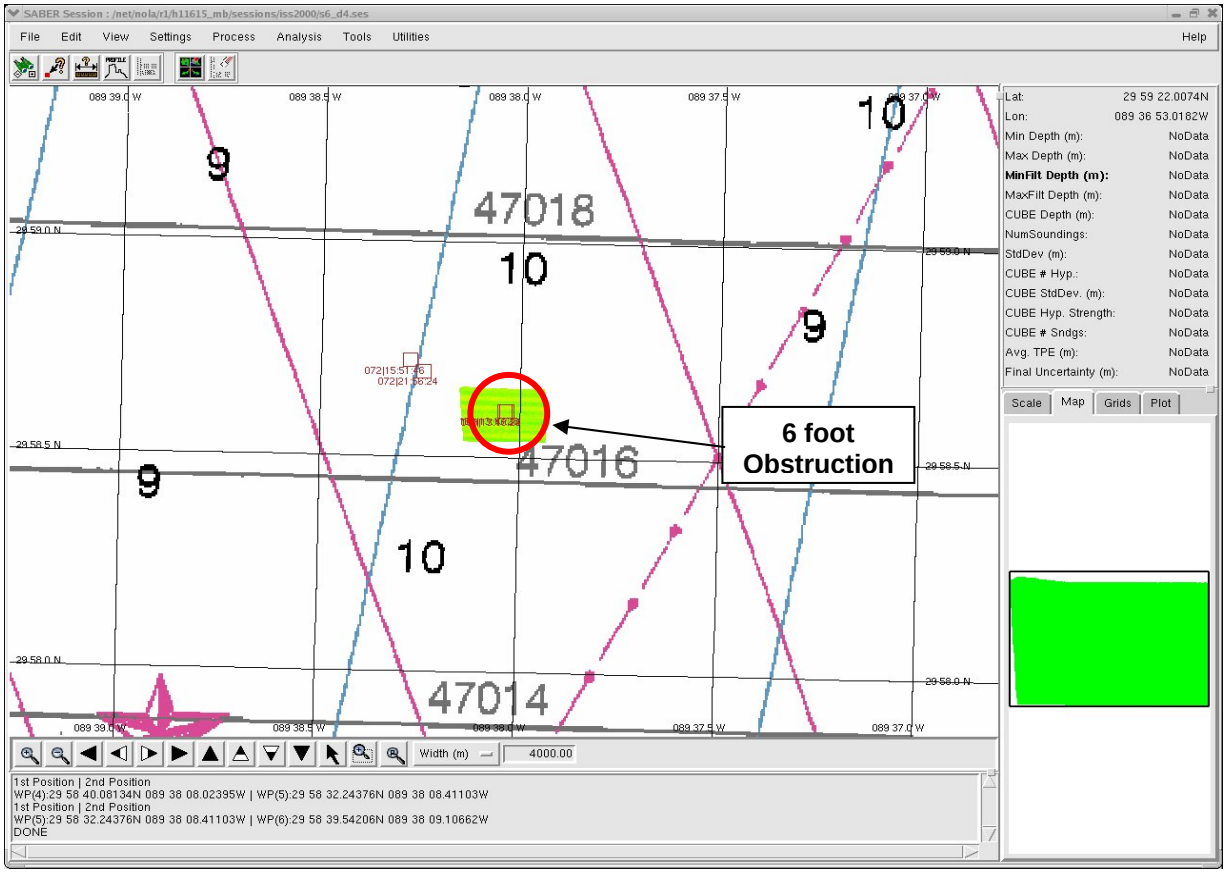


Figure 24 Chart 11371 Showing Location of Obstruction with a Minimum Depth of 6 Feet (MLLW) within H11615.

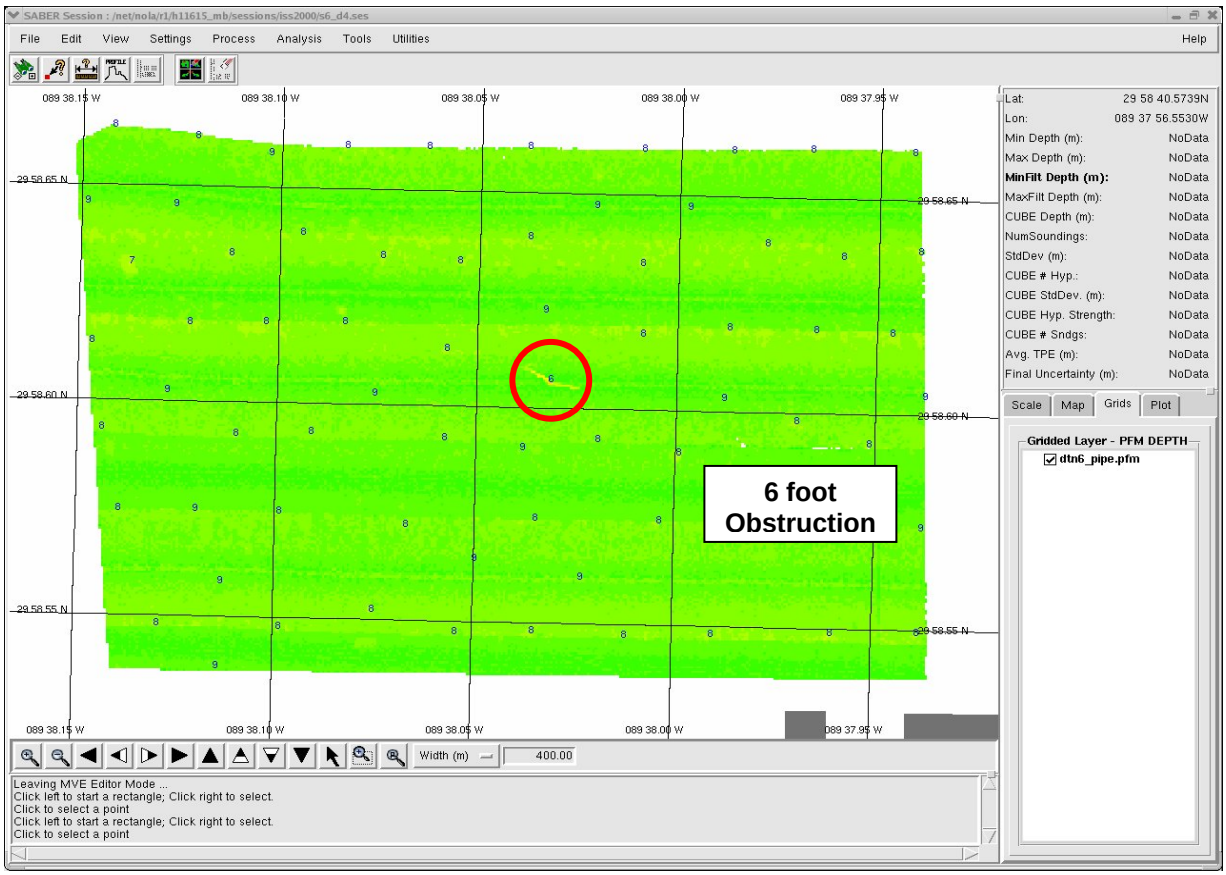


Figure V-245 Color Coded Depth Grid and Selected Soundings in feet Showing Obstruction with a Minimum Depth of 6 Feet (MLLW) within H11615.

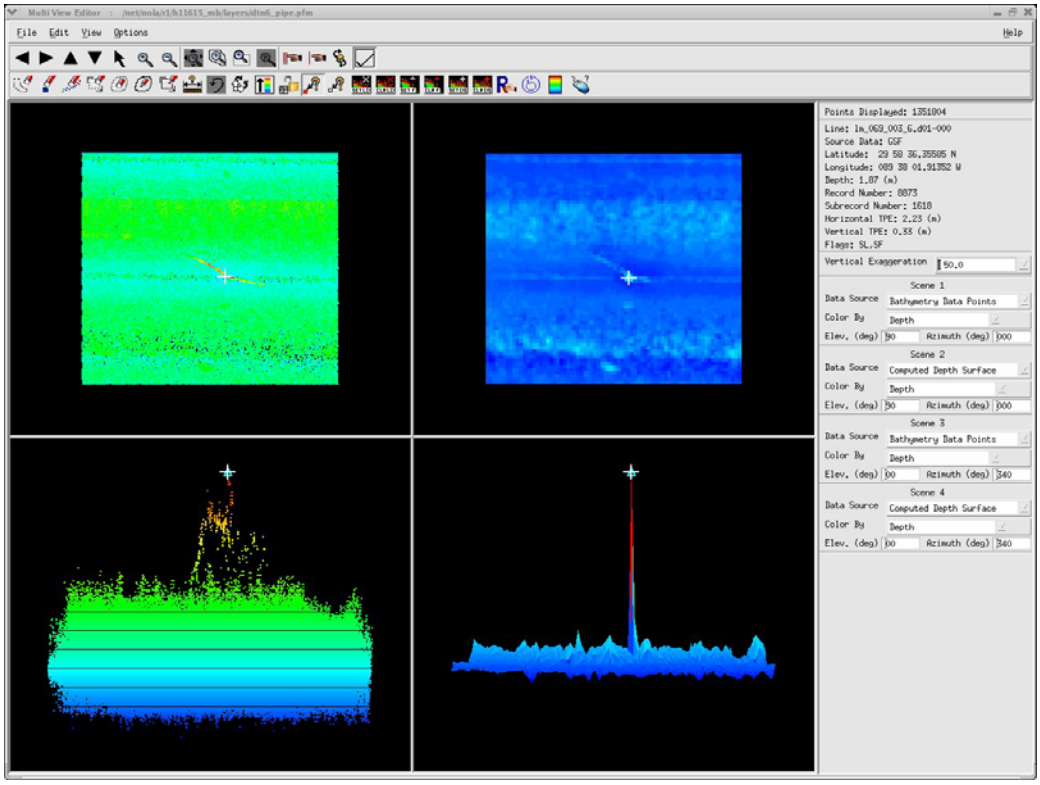


Figure 26 Multiview Editor Showing Obstruction with a Minimum Depth of 6 Feet (MLLW) within H11615.

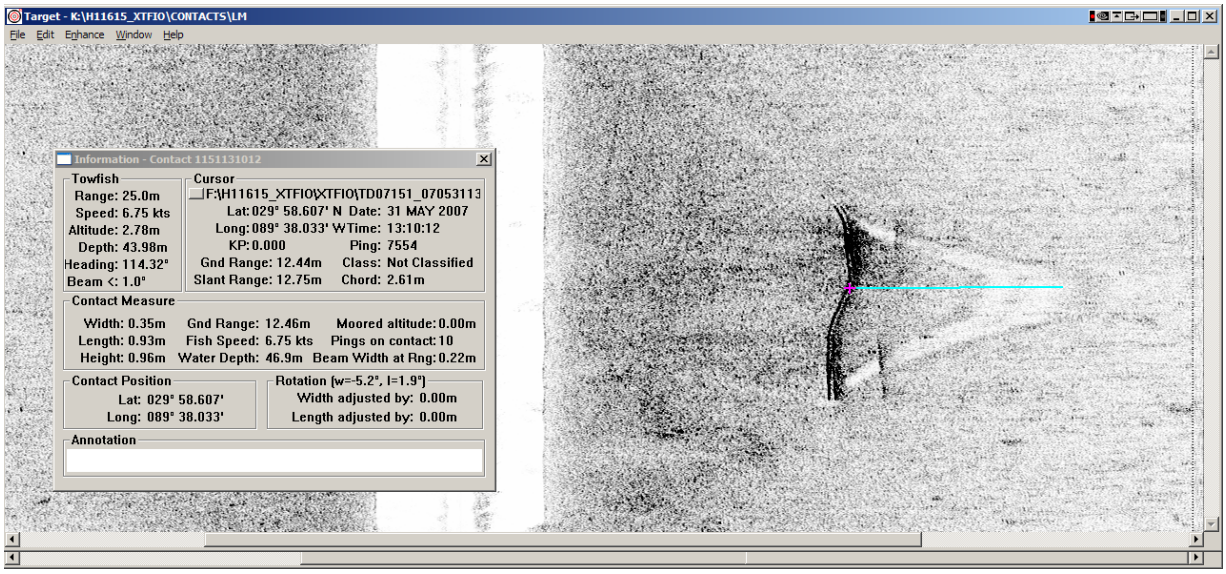


Figure 27 Side Scan Image Showing Obstruction with a Minimum Depth of 6 Feet (MLLW) within H11615.

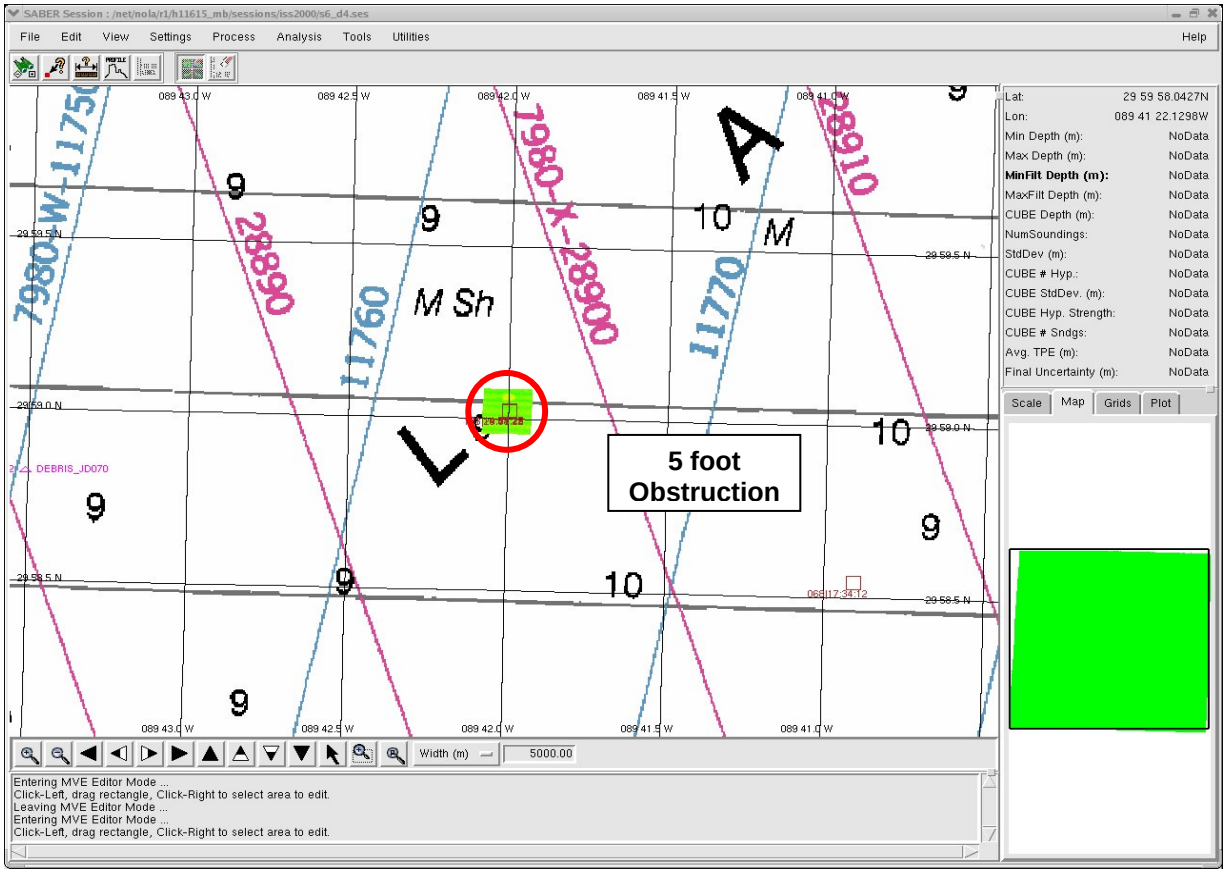


Figure 28 Chart 11371 Showing Location of Obstruction with a Minimum Depth of 5 Feet (MLLW) within H11615.

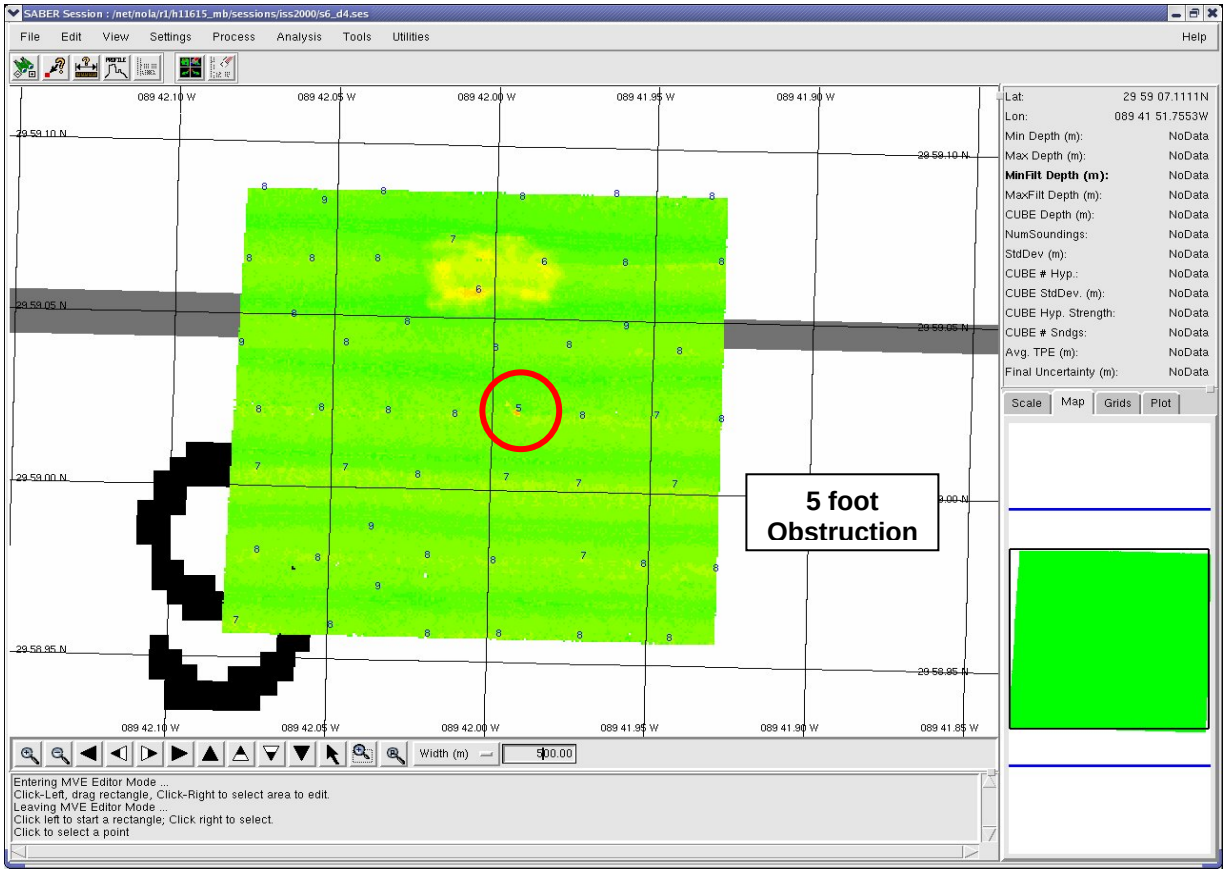


Figure 29 Color Coded Depth Grid and Selected Soundings in feet Showing Obstruction with a Minimum Depth of 5 Feet (MLLW) within H11615.

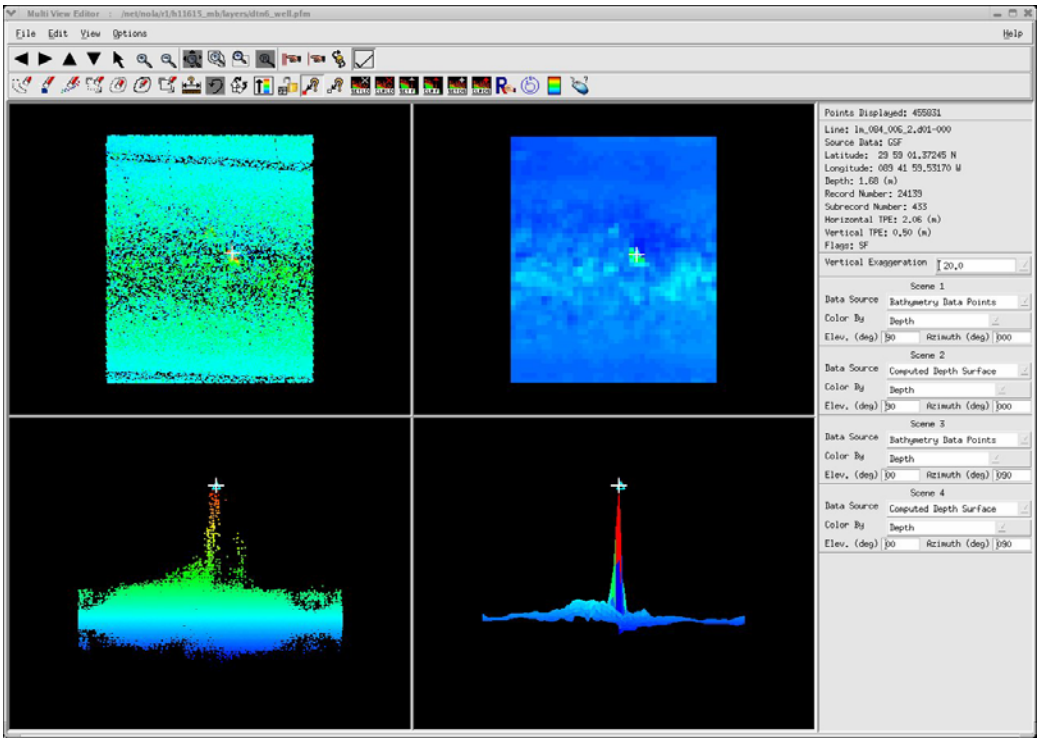


Figure 30 Multiview Editor Showing Obstruction with a Minimum Depth of 5 Feet (MLLW) within H11615.

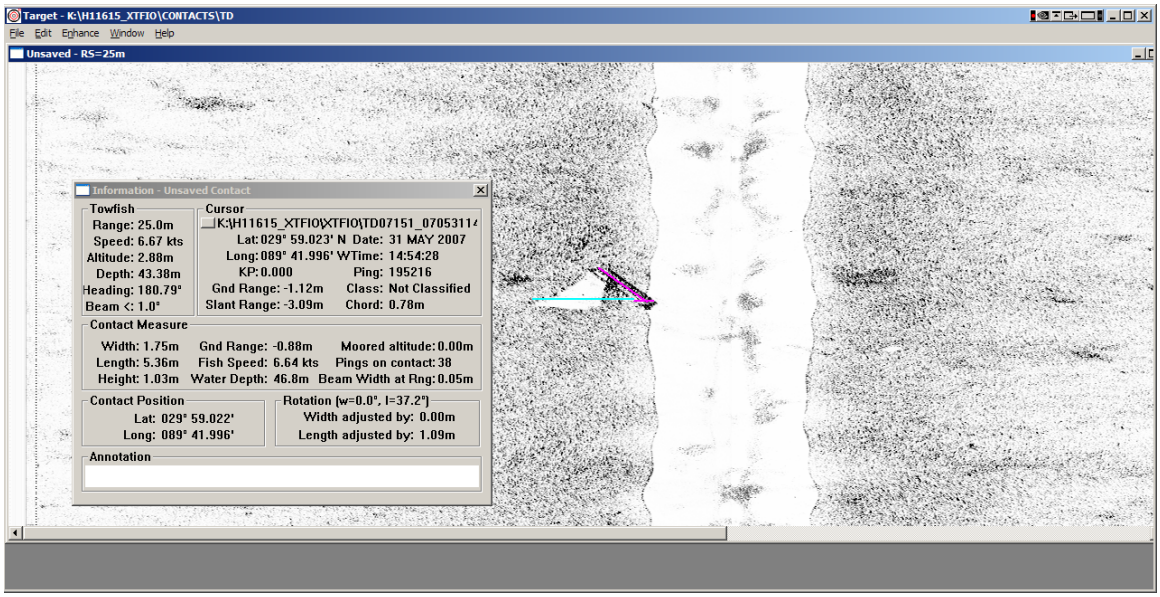


Figure 31 Side Scan Image Showing Obstruction with a Minimum Depth of 5 Feet (MLLW) within H11615.

Correspondence

The email correspondence presented below are: 1) 03 October 2007 Rebecca Quintal to Crescent Moegling and Mark Lathrop regarding SAICs September 2007 visit to AHB and the proposed Lake Borgne deliverables; 2) 30 May 2007 Crescent Moegling to Rod Evans regarding item investigations; 3) 09 January 2007 Crescent Moegling to Rod Evans regarding the format of images in the SOW; 4) 16 November 2006 Crescent Moegling to Rod Evans discussing the SOW and bottom samples; and 5) 25 October 2006 Crescent Moegling to Rebecca Quintal on changes to the SOW. 6) 01 February 2008, email from Tim Osborn regarding the Site Clearance Verification Report 07-0034 for the ruined platform reported by SAIC in H11615 Dangers to Navigation Report # 1. Note that this ruined platform is Feature 20 in this data delivery. The Site Clearance Report (SiteClearance 07-0031 Verf Rpt.pdf) accompanies this correspondence and is located with the H11615 data on drive USB_4_of_4 in the H11615_Descriptive_Report\Appendices.

From: Quintal, Rebecca T.
Sent: Wednesday, October 03, 2007 1:38 PM
To: 'Crescent.Moegling@noaa.gov'; Mark.T.Lathrop@noaa.gov
Cc: 'Evans, Rhodri E.'; PAUL.L.DONALDSON@saic.com; 'gene_parker'; 'Shep.Smith@noaa.gov'
Subject: 25 September 2007 Meeting - AHB and SAIC

Mark and Crescent,

On Tuesday, 25 September 2007, SAIC and AHB had a very productive meeting regarding general data processing flow and specific questions about the Lake Borgne Debris Mapping deliveries and the DELMARVA deliveries. Below is a synopsis of our specific questions / discussions. Please advise if you concur with the conclusions which we collectively came to (AHB and SAIC personnel). If you have any questions or need more information we would be happy to set up a telecom to discuss.

Thank you,
-Rebecca

Lake Borgne Questions/Answers:

1. For contacts with no least depth (i.e. we don't have bathy but are estimating the depth from side scan instead) should use a QUASOU of 9 (Value reported, not confirmed).

2. MCOVR and MQUAL will be made from the outer perimeter of the bathy (GS+ and SB).

3. A single MQUAL will be made for an entire sheet. MQUAL will have a CATZOC of 2 (ZOC A2 - Full seafloor ensonification or sweep. All significant seafloor features detected and depths measured.) We decided on this because we do have full ensonification via the side scan and all features do have depths measured except where noted (see QUASOU of 9 above). Note that the S&D states that we should use a CATZOC of 6 (not assessed), but AHB have started accessing and would like us to as well.

4. The single MQUAL for an entire sheet will also have a TECSOU of 1, 2 and 3 (found by echo sounder, found by side scan and found by multi-beam, respectively).

5. Regarding Section 6.2 of the SOW below:

If an interferometric side scan is used, final depth data from the side scan shall be submitted as a Bathymetric Attributed Grid (BAG). The DR shall discuss the uncertainty and total propagated error (TPE) of the data and describe what portions of the swath (if any) meet IHO Order 1 specifications. The single beam soundings shall be submitted separately as part of the S-57 feature file.

We asked if they really wanted every valid sounding of every singlebeam file to be populated in the S-57 feature file. Shep ended up calling Gerd Glang and Jeff Ferguson about this issue to see what their true intentions were for the data as stated in the SOW. They stated that their intention was to have selected soundings of the SB data at survey scale be in the S-57 feature file. So we came to a conclusion that we would build 5-meter binned minimum grids of the SB data, build selected soundings at survey scale (same as we did for smooth sheets), then deliver the XYZ file from the minimum grid and the selected soundings in the S-57 file. This approach precludes delivering every valid sounding of all SB files to be in the S-57 file.

We discussed Section 5.2.3 (Gridded Data Specifications) in the June 2006 S&D which states:

An example distribution of grid resolution;
- 0 to 15 meter depths; 0.5 meter grid resolution,
- 14 to 30 meter depths; 1.0 meter grid resolution,
- 29 to 60 meter depths; 2.0 meter grid resolution,
- 59 to 150 meter depths; 5.0 meter grid resolution,
- deeper than 149 meter depths; 10.0 meter grid resolution.

The hydrographer may adjust these values based on the bathymetry of the survey area, the type of multibeam sonar used and other factors.

All four Lake Borgne sheets fall in the water depths where the example node spacing is 0.5 meters. This will create very large grids representing a relatively flat seafloor. We discussed possibly delivering the Lake Borgne sheets at 1 meter node spacing due to the “bathymetry of the survey area”.

DELMARVA Questions/Answers:

1. We discussed that depth contours and depth areas had been added into the S-57 feature file in the April 2007 S&D. We asked about contour interval and were given guidelines to make the contours and depth areas based on the depth intervals used in H-Cells (0, 3, 6, 12, 18 feet etc., only the metric equivalent (using the 0.75 rounding rule).

2. We should include the swim buoys encountered in DELMARVA in the S-57 feature file as BOYSPP (Buoy special purpose) and attribute them with CATSPM = 13 (private mark).

3. For the swim buoys we should try to get some images even if they are from Google Earth or something similar. We should also add as much information to the inform field about when they are out (ex: Memorial Day through Labor Day) etc.

General things we should/can change for all submissions:

1. We can just include the AWOIS descriptions in the AWOIS database in Appendix 2 of the DR. In Section D of the DR we will just say “see AWOIS database in Appendix 2”. That way the information is only presented once. We do not need to include the Uncertainty value for the sounding in the AWOIS data base if it is presented elsewhere (in the Excel list of features for example).

2. We should put the DTN reports that AHB submit to MCD in Appendix 1 (Danger to Navigation Reports). We may (should) include our original DTN reports in Appendix 5 (Supplemental survey Records and Correspondence). AHB would like us to do this since they have to add in their submissions if we don’t.

3. We discussed that all four Lake Borgne sheets fall in the water depths where the recommended node spacing is 0.5 meters. This will create very large grids. AHB are OK with us having to break up sheets due to grid file sizes. They stated that we should break our survey areas down to what ever size works for us, and if AHB have to they can break them down even further.

Rebecca Quintal
Data Processing Manager
Science Applications International Corporation
221 Third Street
Newport, RI 02840 USA
401.847.4210
401.849.1585 (fax)

From: Crescent Moegling [Crescent.Moegling@noaa.gov]
Sent: Wednesday, May 30, 2007 5:02 PM
To: Evans, Rhodri E.
Cc: Mark.T.Lathrop@noaa.gov; Davis, Gary R.; Donaldson, Paul L.;
Quintal, Rebecca T.; Jeffrey Ferguson
Subject: Re: Item investigations: Lake Borgne Debris Survey

Hi Rod,

This approach is acceptable. Be sure to address in the Descriptive Report.

Crescent

Evans, Rhodri E. wrote:
Crescent,

On the Lake Borgne debris mapping survey we have the item surveys complied and we have put together a summary of the contacts versus additional item investigations (see attached file please).

In general we have not seen as much debris as we expected that is significant under the definition within the SOW, or what we would consider significant.

The SOW states that the 50 most significant items for the survey be investigated (we assume per sheet). The fewer than expected significant items identified leads to somewhat less than 50 items per sheet in general.

In general we have 58 items (76 contacts) for sheet A, 30 items (30 contacts) for sheet B, 14 items (14 contacts) on sheet C, and 45 items (54 contacts) for sheet D. This is an average of 36.75 items per sheet.

As we are now in the closing few days of survey, please confirm that this methodology is acceptable to you at your earliest convenience.

Regards, RE.

From: Crescent Moegling [Crescent.Moegling@noaa.gov]
Sent: Tuesday, January 09, 2007 9:55 AM
To: Evans, Rhodri E.
Cc: Quintal, Rebecca T.; PARKER, GARY C.

Subject: Re: Request for Proposal

Rod,

Either image format is acceptable. I apologize for the confusion.

Regards,

Crescent Moegling
NOAA Hydrographic Surveys Division
Physical Scientist
301.713.2698 x114

Evans, Rhodri E. wrote:
Crescent,

Please see the attached two files in Word format.

1.. The logistics and contact details for the SAIC operation in Slidell and Shell Beach, LA to aid you in your field visit;
2.. SoW comparison: prior to receipt of yesterday's SoW dated October 18th 2006, the only modified draft SoW SAIC had received was transmitted by you and dated September 25th 2006. Attached is a comparison of the differences between the two SoW's. The latest Oct 18th SOW includes the additional mosaic or survey boundary weekly submission. Also, the image format has changed to state jpeg now when we had discussed tiff images previously in place of geotiff. We can either put in a task to convert each image to jpg or ask you to confirm that tiff images are acceptable. Please advise us ASAP so that we can finalize the proposed costs.

I will try to call you shortly.

Regards, RE

Rod Evans Ph.D.,
Assistant Vice President,
Marine Survey Manager,
SAIC Marine Science and Technology Division,
221 Third Street,
Newport RI 02840
USA.
Tel (401) 848.4783.
Mobile (401) 439.1037.
Email: evansrh@saic.com
http://www.saic.com

From: Crescent Moegling [mailto:Crescent.Moegling@noaa.gov]
Sent: Monday, January 08, 2007 4:40 PM
To: Evans, Rhodri E.
Cc: Quintal, Rebecca T.; Linda D Brainard
Subject: Request for Proposal

Rod,

Please find attached the modified Statement of Work for S-J977-KR-SAIC. The only changes are to section 6.3. Please review and provide a cost estimate for the additional reporting requirements at your earliest convenience. For your information I have also attached the format sample for the weekly submission requirement.

Regards,
Crescent Moegling
NOAA Hydrographic Surveys Division
Physical Scientist
301.713.2698 x114

From: Crescent.Moegling@noaa.gov on behalf of Crescent Moegling [Crescent.Moegling@noaa.gov]
Sent: Thursday, November 16, 2006 5:55 PM
To: Evans, Rhodri E.
Cc: Mark.T.Lathrop@noaa.gov; PARKER, GARY C.; Donaldson, Paul L.; Quintal, Rebecca T.
Subject: Re: Lake Borgne SoW
Rod,

1. We will not require the collection of single-beam during interferometric acquisition.
2. We ask that you keep the bottom samples as other offices within NOAA have requested them for habitat mapping purposes. We are asking they be either refrigerated or frozen prior to shipping. A shipment address will be provided once survey operations begin.

Regards,

Crescent

PS: I trust the request for tide supplies has been addressed by Larry Neeson?

Evans, Rhodri E. wrote:
Crescent,

We have a couple of technical SoW questions in relation to the Lake Borgne survey:

1.. We will mobilize two vessels: One is equipped with a Klein side scan sonar and Odom single-beam echo sounder. The second vessel will deploy the GeoAcoustics interferometer (note that this system is equipped with a single beam transducer. However, we do not intend to log this separately due to the non-disciplined time tagging of the data) The second vessel will have a Klein side scan and Odom single beam available in case the GeoAcoustics system performance is not satisfactory (as described in our Work Plan that accompanied our proposal).

Our question: do we need to acquire time tagged single beam echo sounder data when we are acquiring the copious GeoAcoustics interferometer bathy data (which covers nadir as well)?;

2.. On past Task Orders, we have usually been given relief on storage of the bottom samples, and permitted to dispose of the samples immediately after recovering and describing the samples.

Our question: May we dispose of the bottom samples during the Lake Borgne survey, or should we be making arrangements to store these sample for future inspection by the COTR?

Many thanks, RE,

Regards, RE.
Rod Evans Ph.D.,

Assistant Vice President,
Marine Survey Manager,
SAIC Marine Science and Technology Division,
221 Third Street,
Newport RI 02840

USA.
Tel (401) 848.4783.
Mobile (401) 439.1037.
Email: evansrh@saic.com
http://www.saic.com

From: Crescent.Moegling@noaa.gov on behalf of Crescent Moegling [Crescent.Moegling@noaa.gov]
Sent: Wednesday, October 25, 2006 11:05 AM
To: Quintal, Rebecca T.
Cc: Evans, Rhodri E.; Mark Lathrop
Subject: Re: FW: Updated SOW
Rebecca,

Thank you for your patience in responding on the changes to the SOW for S-J977. I have reviewed your minutes and find them acceptable. Please find my comments and clarifications below:

1. While I have agreed that the Line Name is not required for the weekly feature submission, please include the field in your submission as the formatting of the spreadsheet is set up for a database which will require the column. You can use the entry NA for the column. I concur that the Search Track Number will not be required for the final deliverable.

2. I concur Towfish Layback field will not be required in the final deliverable.

3. I concur Contact Range field will not be required in the final deliverable.

4. I concur that the length and width for SAIC's images will not be the longest and shortest edge but rather the along and across track values.

5. An indication of scale will not be required for each contact image. This is addressed in the SOW. The requirement states that you can either indicate scale or include the center and outer edge of the waterfall so as to give the reviewer some indication of scale.

I would like to reiterate that these changes only apply to this project. Any data submissions outside of project S-J977 will require the submission as outlined in the SOW.

Regards,

Crescent Moegling
NOAA Hydrographic Surveys Division
Physical Scientist
301.713.2698 x114

Quintal, Rebecca T. wrote:
Crescent,

Hello. I am just checking in with you regarding the teleconference we had last week and the email of the minutes reproduced below. Please let me know if you have any questions or comments regarding this meeting summary.

Thanks,
-Rebecca

From: Quintal, Rebecca T.
Sent: Thursday, October 05, 2006 5:12 PM
To: 'Crescent.Moegling@noaa.gov'; 'Mark.T.Lathrop@noaa.gov'

Cc: 'RHODRI.E.EVANS@saic.com'; 'WALTER.S.SIMMONS@saic.com'
Subject: FW: Updated SOW

Crescent,

Thank you for discussing the new SOW and Specifications for the Debris Mapping work with us yesterday. Please find below minutes to the teleconference. Please make changes and/or additions if you feel I have missed something or stated it incorrectly.

A teleconference was held between NOAA and SAIC on Wednesday, 4 October 2006 at 5:00 PM Eastern time. In attendance were:

Crescent Moegling (NOAA)
Rod Evans (SAIC)
Walter Simmons (SAIC)
Rebecca Quintal (SAIC)

The topic of discussion was the string of emails reproduced below regarding the updated SOW for S-J977 Lake Borgne and, in addition, the Side Scan Sonar Contact file required for final delivery in the June 2006 Specifications and Deliverables.

Regarding Item #1 in the below email from Rebecca Quintal to Crescent Moegling (Monday, October 02, 2006 10:56 AM)

1. In both the FeatureFileFormat weekly submission and the Side Scan Sonar Contact List final deliverable, SAIC request that the Line Name (FeatureFileFormat) and the Search Track Number (Side Scan Sonar Contact List) column not be required. The contact number is annotated by Julian Day and time so a reviewer can always correlate a contact to a certain survey line, corresponding bathymetry file, etc.

It was discussed that SAIC do not name their data files after the search track number (line name). SAIC discussed that since all data files and contact files are named after Julian Day and time and the line names are not, that this column does not seem necessary. Crescent discussed that the assumption was that the search track (survey line name) and the data file names are the same. Crescent took the action item to decide whether this field in both the FeatureFileFormat weekly submission and the Side Scan Sonar Contact List final deliverable is indeed required for SAIC's deliverables.

To provide more clarification than was possible over the telephone, we have provided more information regarding our logs below.

SAIC name their bathymetry files with a 2 digit vessel ID, 3 digit sensor ID, 2 digit year and 3 digit Julian Day. For example in the example Navigation Log below the vessel was the: Atlantic Surveyor (AS), the sensor was: multibeam a (for single beam files this would be sba, etc.), the year was 2006 and the Julian Day was 105. SAIC typically name the side scan files (exact naming convention depends upon the acquisition system) with vessel ID, year, JD and 6 digit time or as in the case below vessel ID, year, JD, year, date and 6 digit time.

UTC TIME
LB/LE
SURVEY LINE
MB FILE
RPM
SS FILE
SURVEY LINE AZ.
NOTES

23:19:16

LB
K-205
ASMBA06105.D12
319.2
AS06105_060415231700
186.7
MAIN: FORCE ACQUIRED: PICKING UP PARTIAL LINE GOING SOUTH.

23:50:29
LE
K-205

23:54:55
LB
K_ITEM_06-26
ASMBA06105.D14
319.2
AS06105_060415235400
0.6
ITEM

23:55:20
LE
K_ITEM_06-26

Regarding Item #2 in the below email from Rebecca Quintal to Crescent Moegling (Monday, October 02, 2006 10:56 AM)

2. In the Side Scan Sonar Contact List, SAIC request that Towfish Layback column not be required. This seems to be a left over from when the contact positions were calculated by hand. For example, shadow length used to be required as well.

SAIC explained that the ping positions within the side scan files, and therefore the contact positions, are already corrected for layback by the acquisition system and therefore the layback information does not provide useful information. Crescent stated that layback was not required in the Side Scan Sonar Contact List as long as the method of towfish positioning was fully explained the DAPR.

Regarding Item #3 in the below email from Rebecca Quintal to Crescent Moegling (Monday, October 02, 2006 10:56 AM)

3. In the Side Scan Sonar Contact List, SAIC request that Contact Range column not be required. Since this information is not required in the FeatureFileFormat, SAIC would like to not include it for final submission as part of the Side Scan Contact List for simplicity.

Crescent stated that range was still required in the Side Scan Sonar Contact List.

Regarding Item #4 in the below email from Rebecca Quintal to Crescent Moegling (Monday, October 02, 2006 10:56 AM)

4. In the FeatureFileFormat weekly submission, SAIC request that the Target Length not be required to be the longest side and likewise that the Target Width not be required to be the shortest side. SAIC uses Isis to review side scan data. In Isis the length is always the along track dimension and the width is always the across track dimension. Therefore you can have a width measurement that is longer than the length measurement.

Crescent stated that Target Length will not be required to be the longest side, and likewise that the Target Width will not be required to be the shortest side, in the FeatureFileFormat.xls file due to limitations of the Isis sonar processing software as long as this methodology was fully explained in the DAPR. She also stated that the column headers will remain as indicated in the sample FeatureFileFormat.xls she provided on Monday, September 25, 2006.

Regarding the topic of whether the contact images to be delivered as part of the weekly delivery were required to have any geographic information associated with them (i.e. a geotiff or a tiff with a world file), Crescent stated that simple tiff images (containing no geographic information) would be acceptable as long as the image name was exactly the same as the contact name in the FeatureFileFormat.xls file.

Regarding the question of what was really being asked for in the Estimated Clearance columns in the FeatureFileFormat.xls file, Crescent explained that this column is really asking for the same information that is being requested in the Estimated Depth columns. Therefore the Estimated Least Depth and Estimated Clearance should always contain the same information. Crescent also stated that if an echosounder depth was not available "N/A" should be put in the Echosounder Depth columns and both of the Estimated Least Depth and Estimated Clearance columns should then be filled out. If an echosounder depth is available, then all three of the Echosounder Depth, Estimated Least Depth and Estimated Clearance columns should contain the same information.

Crescent also stated that the Associated Image Name column of the FeatureFileFormat.xls file does not have to contain a hotlink to the image as long as the image name is the same as the contact name in the Contact Name column.

One topic that was brought up in the email from Rebecca Quintal to Crescent Moegling (Wednesday, October 04, 2006 12:30 PM) that was not discussed in the teleconference yesterday was the requirement the tiff image have an indication of scale. This was called out in the email from Crescent Moegling (Friday, September 15, 2006 5:45 PM) but was not called out in the email from Crescent Moegling (Monday, September 25, 2006 2:09 PM). Crescent, can you please confirm that the indication of scale on the contact image is indeed not required?

We have attached a new FeatureFileFormat_Contact_List_Comment.xls document which outlines the changes discussed above. Note that the resolutions discussed above are in RED text.

Please let us know if you agree with these minutes or have any changes or additions to make.

Thank you,
-Rebecca

From: Quintal, Rebecca T.
Sent: Wednesday, October 04, 2006 1:32 PM
To: Crescent.Moegling@noaa.gov
Cc: Evans, Rhodri E.
Subject: RE: Updated SOW

Crescent,

We can make that time but may only be able to meet for 30-45 minutes. Hopefully that is plenty of time. We will have Walter Simmons calling in remotely so I will set up a telecon line for us all to call into. I'll email you with that info once it is set up.

Thanks,
-Rebecca

From: Crescent.Moegling@noaa.gov [mailto:Crescent.Moegling@noaa.gov]
Sent: Wednesday, October 04, 2006 12:30 PM

To: Quintal, Rebecca T.
Cc: Evans, Rhodri E.
Subject: Re: Updated SOW

Rebecca,

I know this is short notice but are you available for a telecon this afternoon at 5pm? I agree it would be easier to discuss these matters as you suggested.

Regards,

Crescent Moegling
NOAA Hydrographic Surveys Division
Physical Scientist
301.713.2698 x114

Quintal, Rebecca T. wrote:
Crescent,

Hello. SAIC has reviewed the updated SOW and the new FeatureFileFormat.xls spreadsheet that you sent out on Monday, 25 September. We have several questions. First we note that the FeatureFileFormat.xls spreadsheet differs from the Side Scan Sonar Contact List in section 8.4.2 in the Specifications and Deliverables. We also note that section 8.4.2 in the Specifications and Deliverables states: Suggested column entries are described below, along with a brief discussion of how each is to be derived. Specific entries may vary by hydrographer. The format should be reviewed by the COTR and/or Processing Branch before data collection is conducted. Likewise we note that your email of 25 September states: The Contractor is encouraged to present alternate means of quality assurance and quality control products in lieu of what is presented here. With the new SOW, this seems like a good time to discuss both deliverables. In the attached Excel file and outlined below we have suggestions for what SAIC would like to exclude from submission, or change, in both the weekly FeatureFileFormat and final deliverable Side Scan Sonar Contact List for simplicity. There is also one request for clarification in the FeatureFileFormat.xls file. We are still not exactly sure what is being requested in the Estimated Clearance columns. Is this really the drying height?

a.. In both the FeatureFileFormat weekly submission and the Side Scan Sonar Contact List final deliverable, SAIC request that the Line Name (FeatureFileFormat) and the Search Track Number (Side Scan Sonar Contact List) column not be required. The contact number is annotated by Julian Day and time so a reviewer can always correlate a contact to a certain survey line, corresponding bathymetry file, etc.

b.. In the Side Scan Sonar Contact List, SAIC request that Towfish Layback column not be required. This seems to be a left over from when the contact positions were calculated by hand. For example, shadow length used to be required as well.

c.. In the Side Scan Sonar Contact List, SAIC request that Contact Range column not be required. Since this information is not required in the FeatureFileFormat, SAIC would like to not include it for final submission as part of the Side Scan Contact List for simplicity.

d.. In the FeatureFileFormat weekly submission, SAIC request that the Target Length not be required to be the longest side and likewise that the Target Width not be required to be the shortest side. SAIC uses Isis to review side scan data. In Isis the length is always the along track dimension and the width is always the across track dimension. Therefore you can have a width measurement that is longer than the length measurement.

It is our hope that we can come to an agreeable format for both the weekly FeatureFileFormat submissions and final deliverable Side Scan Sonar Contact List that requires little reworking to go from one to the other. We are suggesting that the final deliverable Side Scan Sonar Contact List look very much like the weekly submissions only with the final bathymetry information and a statement about if the contact is included in the S-57 Feature File.

In addition to questions regarding the deliverable spreadsheets, we have a question regarding the tiff images of the contacts. SAIC does not currently produce geotiff images of the contacts, but rather simple tiff images (with no geographic information). Providing the geographic information would require a software modification. Would it be acceptable to deliver simple tiff images like the one I have attached (note the image is named 3 digit JD and 6 digit time)? Note that this type of tiff image was the agreed upon deliverable on past NOAA contracts such as TimeCharter. If geographic information is required, would a tiff image and associated world file be acceptable? Or is a Geotiff the only acceptable format? Also we note that your email of 25 September did not require the tiff image have an indication of scale. Is this correct?

Please let us know if you would like to discuss any of these topics via a telecom as it might be easier than discussing via email. Thank you for considering these suggested changes to the deliverables. We look forward to working with you on this. Once we have agreed upon deliverables, SAIC can determine if the added scope of the weekly FeatureFileFormat.xls submissions can be achieved under current funding or if additional funding will be necessary.

-Rebecca

From: Crescent.Moegling@noaa.gov [mailto:Crescent.Moegling@noaa.gov]
Sent: Monday, September 25, 2006 2:09 PM
To: Evans, Rhodri E.; Quintal, Rebecca T.; Lepore, Christine A.
Subject: Updated SOW

Hello,

Please find attached an updated SOW for S-J977 Lake Borgne. Note changes to sections 6.3 with an added attachment #14 indicating the required Excel spreadsheet format which I've attached separately to this email. The sharepoint is being set up this week and I will be passing along information as soon as it comes available. In the meantime send all updates to me via email. The person I have listed to be given a login for you is Rod Evans and NOAA will require he perform an online security training prior to being given access to the Sharepoint.

6.3 Interim Deliverables

Interim deliverables are data analysis tools utilized by the COTR to evaluate and monitor the Contractor's field work and processing. These tools may include image files or graphics showing preliminary soundings, swath contours, multibeam and side scan coverage, and/or preliminary contacts. The Contractor shall make these products available to the COTR on a weekly basis. The weekly update shall include an Excel spreadsheet of all features noted the week prior. A sample of this format can be found in Appendix 14 with a key for each required field. In addition, Geotifs (or photos if the feature is above the water line) of these features shall be submitted and each Geotif hotlinked back to the Excel spreadsheet entry. The Geotifs or images shall be the same unique name as the feature in the Excel spreadsheet. The weekly update shall be made each Monday and placed on a web-based NOAA Share Point. The Contractor is encouraged to present alternate means of quality assurance and quality control products in lieu of what is presented here.

A few brief reminders this field season:

<!--[if !supportLists]-->- <!--[endif]-->All DTONs are to be sent to Atlantic Hydrographic Branch as stated in SOW Section 2.4.6.2. The email address is Castle.E.Parker@noaa.gov. Use the guidelines in the Specifications and Deliverables when determining a DTON and submit as soon as possible.
<!--[if !supportLists]-->- <!--[endif]-->Please send all completed survey outlines as stated in SOW Section 6.5. This should be done for all surveys completed under your contract with NOAA.

If you have any questions don't hesitate to contact me. I am out of the office Tuesday and Thursday until December so Monday, Wednesday or Friday is the best day to get in touch.

Regards,
--
Crescent Moegling
NOAA Hydrographic Surveys Division
Physical Scientist
301.713.2698 x114

From: Evans, Rhodri E.
Sent: Friday, February 01, 2008 3:40 PM
To: Donaldson, Paul L.; Davis, Gary R.
Cc: Quintal, Rebecca T.
Subject: FW: [Fwd: Compliance Order No. SC-07-0034; Site Clearance Application No. 07-0031]

In case you were not copied by Tim Osborn. RE.

From: Tim.Osborn [mailto:Tim.Osborn@noaa.gov]
Sent: Friday, February 01, 2008 3:25 PM
To: Patrick.Fink@noaa.gov; Steve Soherr; Crescent Moegling; Ed.Martin@noaa.gov; Neal Parry; Troy.Baker@noaa.gov; Charlie.Henry@noaa.gov; Keel, Kim LCDR; Lee Richardson Lake Catherine Civic Association
Subject: [Fwd: Compliance Order No. SC-07-0034; Site Clearance Application No. 07-0031]

This is the removal report of the collapsed rig that NOAA's survey contractor, SAIC, Inc, found in Lake Borgne (from Hurricane Katrina). The pdf file is from the salvage removal company submitted to the owner of the rig which in turn submitted it to the State

This was a real hazard to commercial and recreational fishing and vessels in the area

-------- Original Message --------
Subject: Compliance Order No. SC-07-0034; Site Clearance Application No. 07-0031
Date: Fri, 01 Feb 2008 10:59:25 -0600
From: Barbara Critchlow <BCritchlow@mantires.com>
To: Tim.Osborn <Tim.Osborn@noaa.gov>
CC: Steven Giambrone <Steven.Giambrone@LA.GOV>, David.P.Ledet@uscg.mil
References: <0DD1C22271FF474D9973EA7813E8A5B2725ED7@emo-exmb-m-402.main.ads.uscg.mil> <055C7512D989C549A9CAE3D7146A84160A81D33F47@MAILMBX02.MAIL.LA.GOV> <415AEF715414C44F8B6BAC8855C3B43935B18D@MANTIIDC-EX01.MantiIDC.com> <47A0DABB.4090103@noaa.gov>

All,
Attached is the completed Site Clearance verification report. The file also contains pictures taken during the lift and during the bottom clean up.

Steve,
Originals are being sent to your attention for delivery Monday morning. If there are any questions or if more information is needed, please contact me. Once again thank you for all your assistance and patience.

Barbara Critchlow

From: Tim.Osborn [mailto:Tim.Osborn@noaa.gov]
Sent: Wednesday, January 30, 2008 2:15 PM
To: Barbara Critchlow
Cc: Steven Giambrone; David.P.Ledet@uscg.mil
Subject: Re: Compliance Order No. SC-07-0034; Site Clearance Application No. 07-0031

Thank you. If you can send this via email as some electronic form (even scanned) would be appreciated
/r Tim

Bottom Composition

There were 85 bottom samples taken to verify the bottom types charted for H11615 (Table App. V-1). It is recommended that the bottom type charted be updated where necessary based on the information collected during the latest survey.

Table App. V-1 H11615 Bottom Sample Characteristics

JD	Sample Number	Latitude (N)	Longitude (W)	Observed Bottom Type	Depth of Bottom Sample (m)	Chart # 11371	Chart # 11367_2	Chart # 11364
055	lm_055_bs_30	29° 56’ 17.2”	089° 41’ 29.9”	M	2.80	x		x
055	lm_055_bs_31	29° 56’ 20.1”	089° 40’ 13.7”	M	2.92	x		x
055	lm_055_bs_32	29° 56’ 21.0”	089° 38’ 59.0”	M	2.90	x		x
055	lm_055_bs_33	29° 56’ 20.5”	089° 37’ 46.3”	M Sh	3.03	x		x
081	lm_081_bs_47	29° 58’ 02.9”	089° 47’ 45.3”	M	2.59	x		x
081	lm_081_bs_48	29° 58’ 01.8”	089° 48’ 58.7”	M Sh	2.59	x		x
081	lm_081_bs_49	29° 57’ 54.8”	089° 50’ 05.0”	M	2.53	x		x
081	lm_081_bs_50	29° 57’ 03.3”	089° 49’ 35.9”	M S Sh	2.45	x		x
081	lm_081_bs_51	29° 57’ 05.4”	089° 48’ 20.2”	M	2.66	x		x
081	lm_081_bs_52	29° 57’ 06.2”	089° 47’ 04.8”	M	2.74	x		x
081	lm_081_bs_53	29° 57’ 08.2”	089° 45’ 50.6”	M	2.68	x		x
081	lm_081_bs_54	29° 57’ 09.6”	089° 44’ 35.6”	M	2.89	x		x
081	lm_081_bs_55	29° 56’ 46.8”	089° 45’ 23.2”	M	2.69	x		x
081	lm_081_bs_56	29° 56’ 30.0”	089° 46’ 27.6”	M	2.82	x		x
081	lm_081_bs_57	29° 56’ 14.5”	089° 47’ 42.3”	Sh M	2.49	x		x
081	lm_081_bs_58	29° 56’ 21.2”	089° 48’ 57.1”	M Sh	2.64	x		x
116	lm_116_bs_39	29° 57’ 15.0”	089° 38’ 20.8”	brstkM	3.02	x		x
116	lm_116_bs_40	29° 57’ 15.0”	089° 39’ 37.4”	brstkM	3.04	x		x
116	lm_116_bs_41	29° 57’ 13.1”	089° 40’ 49.9”	gystkM	2.98	x		x
116	lm_116_bs_42	29° 57’ 12.8”	089° 42’ 06.7”	brstkM	3.07	x		x
116	lm_116_bs_61	29° 58’ 52.2”	089° 48’ 23.2”	gystkM	2.49	x		x
116	lm_116_bs_62	29° 58’ 58.9”	089° 47’ 11.7”	gystkM	2.57	x		x
116	lm_116_bs_64	29° 59’ 01.6”	089° 44’ 38.7”	gystkMbrkSh	2.73	x		x
116	lm_116_bs_65	29° 59’ 03.5”	089° 43’ 25.3”	gystkM	3.02	x		x
116	lm_116_bs_66	29° 59’ 03.5”	089° 42’ 07.5”	gystkMbrkSh	3.06	x		x
116	lm_116_bs_67	29° 58’ 09.8”	089° 41’ 31.1”	brstkM	2.96	x		x
116	lm_116_bs_68	29° 59’ 05.4”	089° 40’ 53.4”	gyM	3.04	x		x
116	lm_116_bs_69	29° 58’ 13.1”	089° 40’ 15.3”	brstkM	2.97	x		x
116	lm_116_bs_70	29° 59’ 08.8”	089° 39’ 39.1”	brstkMbrkSh	2.98	x		x
116	lm_116_bs_71	29° 58’ 12.3”	089° 39’ 04.9”	brstkM	2.97	x		x
116	lm_116_bs_73	29° 58’ 12.4”	089° 37’ 46.7”	gystkMSh	3.18	x		x
129	td_129_bs_101	30° 01’ 40.6”	089° 49’ 06.1”	M	2.23	x	x	
129	td_129_bs_102	30° 00’ 47.9”	089° 49’ 42.0”	M Sh	2.55	x		

JD	Sample Number	Latitude (N)	Longitude (W)	Observed Bottom Type	Depth of Bottom Sample (m)	Chart # 11371	Chart # 11367_2	Chart # 11364
129	td_129_bs_103	30° 00’ 50.2”	089° 48’ 27.2”	M	2.26	x		
129	td_129_bs_104	30° 00’ 51.9”	089° 47’ 12.8”	M	2.14	x		
129	td_129_bs_105	30° 00’ 53.3”	089° 45’ 58.6”	M	2.05	x		
129	td_129_bs_106	30° 00’ 54.5”	089° 44’ 43.9”	M	2.21	x		
129	td_129_bs_107	30° 00’ 55.8”	089° 43’ 29.2”	gn M	2.68	x		
129	td_129_bs_108	30° 00’ 57.2”	089° 42’ 15.0”	M Sh	2.87	x		
129	td_129_bs_123	30° 01’ 58.6”	089° 37’ 55.1”	gn M	3.47	x		
129	td_129_bs_124	30° 01’ 57.3”	089° 39’ 08.3”	gn M	3.44	x		
129	td_129_bs_125	30° 01’ 55.6”	089° 40’ 22.9”	gn M	3.12	x		
129	td_129_bs_126	30° 01’ 54.2”	089° 41’ 37.6”	gn M	2.95	x		
129	td_129_bs_127	30° 01’ 52.7”	089° 42’ 51.8”	M Sh	2.76	x		
130	td_130_bs_39*	29° 57’ 17.6”	089° 38’ 25.4”	M	2.98	x		x
130	td_130_bs_40*	29° 57’ 16.0”	089° 39’ 39.8”	M	3.20	x		x
130	td_130_bs_41*	29° 57’ 14.6”	089° 40’ 53.2”	M	2.91	x		x
130	td_130_bs_42*	29° 57’ 13.1”	089° 42’ 07.9”	M	3.07	x		x
130	td_130_bs_43	29° 58’ 09.1”	089° 42’ 47.0”	M	3.05	x		x
130	td_130_bs_44	29° 58’ 06.9”	089° 44’ 01.6”	M	2.98	x		x
130	td_130_bs_45	29° 58’ 04.4”	089° 45’ 18.4”	M	2.96	x		x
130	td_130_bs_46	29° 58’ 04.0”	089° 46’ 30.2”	M	2.81	x		x
130	td_130_bs_60	29° 58’ 55.6”	089° 49’ 38.3”	M Sh	2.55	x		x
130	td_130_bs_61*	29° 58’ 57.5”	089° 48’ 23.9”	M Sh	2.49	x		x
130	td_130_bs_62*	29° 58’ 59.2”	089° 47’ 09.6”	M	2.57	x		x
130	td_130_bs_63	29° 59’ 01.1”	089° 45’ 55.5”	M	2.62	x		x
130	td_130_bs_85	30° 00’ 02.3”	089° 41’ 38.0”	M	3.05	x		x
130	td_130_bs_86	30° 00’ 00.6”	089° 42’ 52.1”	M Sh	2.91	x		x
130	td_130_bs_87	29° 59’ 59.4”	089° 44’ 05.8”	M Sh	2.53	x		x
130	td_130_bs_88	29° 59’ 57.8”	089° 45’ 19.8”	M	2.18	x		x
130	td_130_bs_89	29° 59’ 56.5”	089° 46’ 34.5”	M	2.30	x		x
130	td_130_bs_90	29° 59’ 55.2”	089° 47’ 48.2”	M	2.45	x		x
130	td_130_bs_91	29° 59’ 53.7”	089° 49’ 03.1”	M Sh	2.47	x		x
130	td_130_bs_92	29° 59’ 52.4”	089° 50’ 17.9”	M	2.70	x		x
130	td_130_bs_93	30° 00’ 45.7”	089° 50’ 55.9”	M Sh	2.08	x	x	
130	td_130_bs_94	30° 01’ 42.9”	089° 50’ 02.0”	M Sh	2.32	x	x	
130	td_130_bs_95	30° 02’ 30.4”	089° 48’ 31.0”	M	2.09	x	x	
130	td_130_bs_96	30° 02’ 34.1”	089° 47’ 16.4”	M	2.22	x	x	
130	td_130_bs_97	30° 02’ 37.1”	089° 46’ 00.5”	M Sh	2.15	x	x	
130	td_130_bs_98	30° 01’ 49.5”	089° 45’ 22.5”	M Sh	2.10	x		
131	td_131_bs_59	29° 58’ 54.4”	089° 50’ 53.1”	M	2.55	x		x
131	td_131_bs_72	29° 59’ 09.9”	089° 38’ 27.6”	M Sh	3.08	x		x
131	td_131_bs_99	30° 01’ 48.8”	089° 46’ 36.8”	M	1.97	x		
131	td_131_bs_100	30° 01’ 46.0”	089° 47’ 51.2”	M	2.38	x		

JD	Sample Number	Latitude (N)	Longitude (W)	Observed Bottom Type	Depth of Bottom Sample (m)	Chart # 11371	Chart # 11367_2	Chart # 11364
131	td_131_bs_109	30° 00’ 58.5”	089° 40’ 59.8”	M	3.07	**x**		
131	td_131_bs_110	30° 01’ 00.4”	089° 39’ 45.4”	M	3.13	**x**		
131	td_131_bs_111	30° 01’ 02.3”	089° 38’ 31.8”	M	2.96	**x**		
131	td_131_bs_128	30° 02’ 48.2”	089° 43’ 32.0”	M	2.44	**x**		
131	td_131_bs_129	30° 02’ 49.3”	089° 42’ 17.8”	M	2.56	**x**		
131	td_131_bs_130	30° 02’ 50.7”	089° 41’ 03.6”	M	3.00	**x**		
131	td_131_bs_131	30° 02’ 52.4”	089° 39’ 48.4”	M	3.05	**x**		
131	td_131_bs_132	30° 02’ 53.9”	089° 38’ 34.2”	M	3.21	**x**		
136	td_136_bs_82	30° 00’ 06.3”	089° 37’ 52.6”	M	3.21	**x**		**x**
136	td_136_bs_83	30° 00’ 06.1”	089° 39’ 07.4”	M	3.17	**x**		**x**
136	td_136_bs_84	30° 00’ 04.0”	089° 40’ 21.9”	M	3.11	**x**		**x**

*This is a duplicate sample. The original samples were taken on JD116 by the *F/V Lacey Marie*. These duplicate samples are not included in the S57 feature file.

Bathymetric Attributed Grid Nodes that Fail IHO Order 1

There were six 1-meter BAG files created for Sheet H11615. Some nodes in these BAG files have uncertainties that exceed IHO Order 1 uncertainty. Information for each of these nodes are presented in text files along with corresponding PDF files (one for each BAG). The text files are:

- H11615_1_of_6_Uncertainty_Exceeds.txt
- H11615_2_of_6_Uncertainty_Exceeds.txt
- H11615_3_of_6_Uncertainty_Exceeds.txt
- H11615_4_of_6_Uncertainty_Exceeds.txt
- H11615_5_of_6_Uncertainty_Exceeds.txt
- H11615_6_of_6_Uncertainty_Exceeds.txt

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to ACCOMPANY
SURVEY H11615 (2007)

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

A. AREA SURVEYED

The area surveyed has not changed yet the area selected for chart compilation is a subset of the area surveyed. See below section B.2.1 for a full summary.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

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

CARIS HIPS/SIPS version 6.1 SP2 HF 1
CARIS Bathy Manager version 2.1 SP1
DKART INSPECTOR, version 5.0 Build 707
CARIS HOM version 3.3 SP3
CARIS S57 Composer version 2.0
FLEDERMAUS version 6.7 Build 285

Much of the processing of the survey was accomplished by the contractor, SAIC, prior to submission to AHB, with the use of GeoAcoustics GeoSwath Plus and SAIC's SABER.

B.2. QUALITY CONTROL

B.2.1. H-Cell

As was decided in previous surveys H11614 and H11612, the interferometric sonar soundings were removed from the chart sounding selection of H11615. This was expected, as it was noted several times in the review and in previously compiled SAIC Lake Borgne surveys that a significant discrepancy existed between the soundings of the GeoSwath interferometric sonar and the single beam sonar, and that this discrepancy must be considered for charting purposes. The interferometric sonar was systematically shoaler than the single beam sonar in these surveys, generally by 2-3 feet, but in some portions of the common coverage areas the magnitude of this difference is greater (3-4 feet). During the pre-compilation phases of this survey, it quickly became clear that the interferometric sonar data could not go to chart. The GeoSwath soundings differed too much from the single beam sonar, in such a significant way that the depth contours

produced from this union would be artificial and unnatural, reflecting the survey line plan of the vessel that was equipped with the interferometric sonar.

The systematic difference between the sonar systems is attributed to the nature of the high energy output of the interferometric sonar and the soft bottom in Lake Borgne. The usage of the interferometric was somewhat experimental. The statement of work specified that "interferometric sonar and other emerging technologies" are highly encouraged for this project, however such usage could not be in lieu of the single beam coverage. There are portions in all of the Lake Borgne surveys where the interferometric sonar is the sole source of coverage, particularly in H11615 (more than 50% of the survey area). This is a deviation from the statement of work, but was deemed acceptable by NOAA (see DR supplemental material and correspondence for more information). AHB could not justify sending such significantly different sounding sets to chart. The single beam data was the primary deliverable in the statement of work, hence it is the single beam data which will be retained for chart compilation. In the area of interferometric sonar coverage, the previous chart soundings will be retained. However, the features located with the aid of the interferometric sonar and side scan sonar will be included in chart compilation. Feature detection was the primary purpose of the surveys, in accordance with the debris mapping efforts, and all the features located in this area, whether found by single beam, interferometric, or side scan sonar, will be included for chart compilation. This is the reason why certain features lie outside of the H-Cell limits.

Two 3-meter resolution surfaces were created from the single beam data and combined at this same resolution. From this combined surface, a product surface was generated with a 10 meter resolution. The sounding selection was generated from this product surface with a 100 meter shoal-biased radius. To aid in the chart sounding selection, first a TIN was made from the sounding selection. Next, a surface was interpolated from this TIN at a 100 meter resolution. This surface was then shifted by a factor of -0.229, to account for NOAA's rounding practices when creating contours. Finally, the contours were generated from this shifted, interpolated surface. The chart soundings were then selected from the sounding selection using AHB best practices and with the aid of the contours.

The pre-compilation components included the sounding selection and chart sounding selection (SOUNDG), features (BOYSPP, DEPARE, DEPCNT, OBSTRN, PILPNT, SBDARE, SLCONS, and WRECKS), cartographic blue notes ($CSYMB, $LINES) and meta objects (M_COVR, M_CSCL, M_QUAL). Meta objects were submitted by the field unit, and they were altered accordingly to exclude the coverage area of the interferometric sonar. The M_CSCL object was created to account for the different compilation scales in this survey area. The largest scale chart (chart 11367, 1:40,000) only covers the northwest portion of the survey area, and the remaining portion of the survey area is encompassed by a smaller scale chart (chart 11371, 1:80,000).

All of the pre-compilation components listed above, with exception of the dense sounding selection, were inserted into one feature layer, and this layer was exported into S-57 format in order to create the H-Cell deliverable. Similarly, the sounding selection was exported into S-57 format separately, and then both S-57 files were processed in CARIS HOM to convert the metric units to feet. The final products are two S-57 files, on that contains the chart soundings, all of the features, meta objects, and blue notes (H11615_CS.000), and one that contains the sounding selection (H11615_SS.000). Finally, quality assurance checks were made utilizing both DKART Inspector version 5.0 and CARIS S-57 Composer version 2.0 validation checks.

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

The H11615 CARIS H-Cell final deliverables include the following products:

H11615_CS.000	**1:40,000 Scale**	**H11615 H-Cell with Chart Scale Selected Soundings**
H11615_SS.000	**1:20,000 Scale**	**H11615 Selected Soundings (Survey Scale)**

B.22. Junctions

Junctions include SAIC Lake Borgne surveys H11612, H11613, and H11614, all conducted in 2007. At least 95% of the data from H11615 falls within 15-20cm of H11612 (North Lake Borgne), within 25-30cm of H11613 (East Lake Borgne), and within 30-35cm of H11614 (South Lake Borgne). See section B.2 of the Descriptive Report for more information regarding junctions.

C. VERTICAL AND HORIZONTAL CONTROL

Final corrections were applied by field unit and no other tidal corrections were required.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

11367 (35th Edition, 10/18/2008)
Corrected through NM 10/18/2008
Corrected through LNM 10/14/2008
Scale 1:40,000

11371 (38th Edition, 4/01/2007)
Corrected through NM 10/18/2008
Corrected through LNM 10/18/2008
Scale 1:80,000

11364 (42nd Edition, 9/01/2007)
Corrected through NM 10/18/2008
Corrected through LNM 10/07/2008
Scale 1:80,000

ENC Comparison

US4MS10M
Lake Borgne and Approaches
Cat Island to Point Aux Herbes
Edition 7
Application Date 2008-04-30
Issue Date 2008-07-14
Chart 11371

US4LA35M
Mississippi River Venice to New Orleans
Edition 20
Application Date 2008-09-23
Issue Date 2008-10-30
Chart 11364

D.1.1 Hydrography

It was noted in the DR and again during the review that the shoreline has changed and the charted shoreline no longer represents the current shoreline. Along the east side of Alligator Point, soundings of 3 to 4 feet were obtained inland of the charted shoreline by as much as 250 meters. From the entrance to Bayou Bienvenue to Proctor Point, soundings of 3 to 7 feet were obtained between 50 and 220 meters inland of the charted shoreline.

Although the interferometric sonar was not considered for the chart sounding selection, it was utilized for feature developments and disprovals. The charted 3 foot shoal at 30º 00' 01.90"N, 089º 49' 55.87"W was disproved with the interferometric sonar, and a spot sounding of 6 feet was imported from the interferometric sounding set to be charted in that location.

See the table of blue notes and features for charting recommendations.

D.2. ADDITIONAL RESULTS

D.2.1. Aids to Navigation

All navigational aids were addressed with H11615. No further considerations or recommendations are required.

D.3. MISCELLANEOUS

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

D.4. ADEQUACY OF SURVEY

The chart soundings derived from the single beam sounding set, and any soundings from the interferometric sounding set associated with feature developments or disprovals, are adequate to supersede the charted bathymetry in the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the blue notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

APPROVAL SHEET
H11615

Initial Approvals:

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

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

Matthew J Wilson

Digitally signed by Matthew J Wilson
DN: cn=Matthew J Wilson, o=NOAA, ou=Atlantic Hydrographic Branch, email=matthew.wilson@noaa.gov, c=US
Date: 2008.11.24 15:45:42 -05'00'

Matthew J. Wilson
Physical Scientist
Atlantic Hydrographic Branch

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

Approved: 

Digitally signed by Shepard Smith
DN: cn=Shepard Smith, o=NOAA, ou=AHB, email=shep.smith@noaa.gov, c=US
Date: 2008.11.25 11:07:34 -05'00'

Shepard Smith
Commander, NOAA
Chief, Atlantic Hydrographic Branch

Mark Lathrop
AWOIS/Surf Check
2008.12.22 13:45:41 -05'00'