

H10663

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE	
DESCRIPTIVE REPORT	
Type of Survey	Hydrographic Side Scan Sonar
Field No.	AHP-10-1-96
Registry No.	H-10663
LOCALITY	
State	Texas
General Locality	Galveston Bay
Sublocality	Spilmans Island to Lynchburg Landing
19 96	
CHIEF OF PARTY LT K. Harbison	
LIBRARY & ARCHIVES	
DATE	JAN 9 1997

NOAA FORM 77-28

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

REGISTER NO. H-10663

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. AHP-10-1-96

State Texas

General Locality ~~Houston Ship Channel~~ GALVESTON Bay

Locality Spilmans Island to Lynchburg Landing

Scale 1:10,000

Date of Survey January 23, 1996 - March 11, 1996

Instructions Dated June 6, 1995

Project No. OPR-K204-AHP

Vessel 770

Chief of Party Lt. Kevin Harbison, NOAA

Surveyed By CEP, SAS, BAL, KH

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

Graphic record scaled by CEP, SAS

Graphic record checked by CEP, SAS

Protracted by

Automated plot by HDAPS/BRUNING ZETA (FIELD)

Verification by ATLANTIC HYDROGRAPHIC BRANCH PERSONNEL

FEET

Soundings in ~~meters~~ at MLLW By Predicted Tides

AUG 12 / SURF 10/10/97 mcr

REMARKS: CEP = Castle E. Parker
SAS = LTJg Scott Shaulis
BAL = Brian A. Link
KH = LT Kevin Harbison

NOTES IN RED WERE MADE DURING OFFICE PROCESSING

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10663
FIELD NO. AHP-10-1-96
SCALE: 1:10,000
1996
ATLANTIC HYDROGRAPHIC PARTY
CHIEF OF PARTY: LT Kevin N. Harbison, NOAA

A. PROJECT

This survey was conducted according to Hydrographic Project Instructions for OPR-K204-AHP, dated September 16, 1994, change No. 1 dated June 6, 1995, change No. 2 dated October 26, and change No. 3 dated April 3, 1996.

This project is in response to requests from the U.S. Coast Guard, Hollywood Marine, Inc., Houston Pilot's Association, Houston/Galveston Navigation Safety Advisory Committee, the Galveston Bay Foundation, and local boating associations, for updated hydrographic and bathymetric data of this area.

The sheet letter is "Y" as specified by the Project Instructions.

B. AREA SURVEYED

The area surveyed for H-10663 covers the Houston Ship Channel from Spilmans Island to the ferry landing at Lynchburg Landing. The approximate survey limits are:

North: 29°46'¹⁵00"N
South: 29°41'30"N
West: 095°05'00"W
East: 095°00'00"W

This survey was conducted from January 23, 1996 to March 11, 1996, (DN 023 - 071).

C. SURVEY VESSELS

NOAA launch 770, a 21-foot MonArk, was used to collect all survey data. Problems that were encountered stemmed from switching to the Hypack hydrographic data acquisition system from PC-DAS. The system is not designed to acquire detached positions, which caused data loss on one occasion. In addition data manipulation (editing) was often required before data conversion was possible for post processing. During sounding data collection the Hypack system worked well.

D. AUTOMATED DATA ACQUISITION AND PROCESSING *SEE ALSO THE EVALUATION REPORT.*

Hypack Version 5.9 was used for on-line data acquisition. A list of all programs and versions used for data processing can be found in the Appendix of this report. The NOS program VELOCITY version 2.10 and WordPerfect for Windows version 6.1, were also used during this survey.

E. SONAR EQUIPMENT

Side Scan Sonar was used on March 11, 1996, DN 071, as required by the Project Instructions. The side scan was an EG&G unit, model 260 recorder, serial number 11443, and towfish model 272-7, serial number 10696. The towfish was deployed on the survey vessels starboard aft quarter using the 25-meter scale. The towfish was lowered in the water column approximately 1.0 meter. Line spacing of 25 meters was used to obtain 200% coverage. The towfish was lowered when working in the middle of the ship channel, to maintain bottom tracking using the 25-meter range scale. All side scan data was designated as Not for Smooth Plot (NSP). A side scan track plot is included with the field sheets and the applicable AWOIS reports.

F. SOUNDING EQUIPMENT

Innerspace depth sounder model 448, serial number 283, was used to collect all echo soundings on this survey.

A standard lead line calibrated in meters, S/N 770, was used during this survey for comparison readings with the echo sounder. The lead line was calibrated using a steel tape on January 25, 1995 for Launch 770. In addition, a five-meter long, wooden sounding pole, constructed according to HSG No. 69, was used to obtain all pole soundings.

No problems were encountered with any of the sounding equipment.

G. CORRECTIONS TO ECHO SOUNDINGS

Corrections for the speed of sound through the water column were computed from data obtained with a Sea-Bird Electronics Seacat Profiler, s/n 192276-287, for velocity casts 18-23. This instrument was calibrated by the manufacturer on January 17, 1996. An Odom Digibar, Model DB-1100, s/n 155, was used for velocity casts 16 and 17. This instrument was calibrated by the

manufacturer on May 22, 1995. Data quality assurance tests were performed prior to each cast. Program VELOCITY was used for computing the speed of sound correctors. Speed of sound corrections were applied to the sounding plot using the HDAPS program REAPPLY. Copies of the tables and support documentation are in the "Survey Separates." *Correctors for the velocity of sound through water were determined from the casts listed below:

Velocity Table No.	Cast No.	Deepest Depth (m)	Applicable DN	Cast Position	Day
17	17	18.2	023-025	29°39'11"N 094°58'16"W	023
18	18	15.6	032-37	29°42'10"N 095°00'56"W	032
19	19	18.4	038-039	29°42'03"N 095°00'25"W	038
20	20	18.6	043-045	29°42'09"N 095°00'47"W	043
21	21	17.6	051-053	29°42'02"N 095°00'15"W	051
22	22	17.7	058	29°42'19"N 095°01'06"W	058
23	23	18.5	064	29°41'35"N 094°59'25"W	064

Lead line comparisons were taken when weather permitted to determine echo sounder error. Innerspace echo sounder s/n 283 did not have any instrument error throughout the duration of the survey. A copy of the calibration form is in the "Survey Separates." *

A static draft of 0.3 meters was applied to the final sounding plot by using the HDAPS program REAPPLY. The draft was measured by subtracting the difference from a punch mark on the side of Launch 770, 0.6 meters above the transducer, to the water surface.

Settlement and squat measurements for Launch 770 were determined on January 9, 1995 (DN 009). These measurements were conducted in Clear Lake, Texas using the level method. Data from this test are included in the "Survey Separates." Settlement and squat correctors were applied offline to the soundings by using the HDAPS program REAPPLY.

Predicted tides for this project were provided on diskette by N/OES231 for the Galveston, Texas Pier 21 reference tide station, No. 877-1450. Zoning correctors designated in the Project Instructions were used for this survey. The correctors are as follows:

* FILED WITH THE ORIGINAL FIELD RECORDS.

	Time Correction		<u>Range Ratio</u>
	<u>High Water</u>	<u>Low Water</u>	
Zone #13	+04:54	+04:42	X 1.04
Zone #16	+04:54	+04:06	X 0.96

All elevations and soundings on survey H-10663 are based on MLLW unless otherwise specified. Bridge clearances are based upon MHW.

Approved tide levels were requested from the Product and Services Branch, Datums Section, N/OES231, in a letter dated May 17, 1996. A copy is appended to this report. *APPROVED TIDES AND ZONING WERE APPLIED DURING OFFICE PROCESSING.*

Opening levels were run on January 31, 1996. No bracketing levels were run at the completion of this survey because closing levels for the project were conducted within an acceptable time frame to acquire smooth tides for processing. Closing levels were performed on March 25, 1996.

H. CONTROL STATIONS

The horizontal control datum for this project is the North American Datum of 1983. The Galveston, Texas DGPS Beacon was used for control throughout this survey. The geographic position for the beacon is listed on the Control Station List included in "Survey Separates."

I. HYDROGRAPHIC POSITION CONTROL

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. An Ashtech sensor serial number 700417B1070 with antenna serial number 700391A0504 was used as the remote station on launch 770. The corrector data link between the reference station receiver and the launch sensor was a Communications Systems International, Inc., MBX-1 Beacon Data Receiver, model 1/02, serial number X-1251.

Daily DGPS performance checks were conducted in accordance with FPM 3.4.4, by comparing the DGPS position of the vessel to calibration point "HYC" (Houston Yacht Club) daily. To obtain a performance check, the launch was brought alongside the checkpoint. The easting and northing values, number of SVs, HDOP, and time of observation were noted on the echogram. These values were then entered into a Lotus spreadsheet table which computes the acceptable error margin based on the HDOP and also the observed difference between our known and observed position.

The table of these comparisons is included in the "Survey Separates." All of our observed differences fell well within the allowable limit.

J. SHORELINE *SEE ALSO THE EVALUATION REPORT.*

Shoreline shown on the final sounding plot in black ink was applied via the Bruning Zeta plotter. Digital shoreline data was provided by the HDAPS office. A compressed disk of CM9210.228 and CM9210.229 was decompressed and translated through the Shoreline Translator program. Once survey limits were entered and output format designated, the translator program output was loaded on the HDAPS. Shoreline shown on the final sounding plot was inspected for changes by comparing it with the hydrographic data and by visual inspection. Survey limits were minimized to 100 meters on either side of the ship channel limits. The area in the vicinity of Baytown Exxon included shore to shore hydrography. No shoreline changes were noted.

Feature reference numbers, descriptions, field notes, and explanations of new shoreline features are located on the graphic record and on the boat sheet. Photographs are included with the survey data as well.

K. CROSSLINES

A total of 25.2 linear nautical miles of crossline soundings were acquired, which represents approximately 18% of the main scheme hydrography. Crossline soundings agree with the main scheme soundings within 0.1 to 0.4 meters, with the exception of areas where the bottom is very irregular. The crosslines also serve as channel lines designated as center line, left and right channel edge lines.

L. JUNCTIONS *SEE ALSO THE EVALUATION REPORT,*

This survey junctions with H-106~~88~~⁸⁶ to the south. The junction area included 400 meters of sounding overlap. This survey junctions with H-10619 to the north. No sounding overlap was necessary the same survey vessel (770) and equipment was used to conducted H-10619 and H-10663. Soundings agree within 0.2m to 0.4m with the exception where the bottom profile was irregular.

M. COMPARISON WITH PRIOR SURVEYS *SEE ALSO THE EVALUATION REPORT.*

See the Atlantic Hydrographic Branch's Evaluation Report for H-10663, for a discussion of the comparison with prior surveys.

N. ITEM INVESTIGATION REPORTS *SEE ALSO THE EVALUATION REPORT.*

All AWOIS reports are appended to this report. There were a total of 17 AWOIS items addressed on this survey.

O. COMPARISON WITH THE CHART *SEE ALSO THE EVALUATION REPORT*

No dangers to navigation were field reported on this survey. Depths shallower than charted were found in the Upper San Jacinto Bay channel. These shallower depths may constitute dangers to navigation and will be evaluated by the Atlantic Hydrographic Branch when the application of smooth tides is complete.

Comparisons were made between survey H-10663 and charts 11328 and 11329, both 1:10,000 scale. The inset on chart 11326 was also compared with this survey. No chart enlargements were used for comparison.

The following are new features found on this survey:

DN	PN	N Latitude	W Longitude	Item Description
058	6817	29°43'56.22"	095°01'30.94"	File
058	6818	29°43'56.13"	095°01'31.25"	File
058	6819	29°43'56.33"	095°01'31.51"	File
058	6820	29°43'56.58"	095°01'32.42"	File
058	6824	29°43'41.67"	095°01'55.45"	File
058	6825	29°43'40.89"	095°01'53.02"	File
064	7541	29°43'37.24"	095°01'18.78"	Turning DOL CHARTED, RETAIN
058	6794	29°43'40.03"	095°01'23.02"	Turning DOL CHARTED, RETAIN
058	6795	29°43'42.76"	095°01'21.45"	Dol - SEE AWOIS #9642
058	6796	29°43'47.73"	095°01'17.33"	Dol - SEE AWOIS #9644
053	6529	29°45'43.69"	095°01'49.21"	Dol
053	6530	29°45'44.02"	095°04'50.15"	Dol
053	6522	29°45'24.67"	095°03'58.56"	File
058	6782	29°43'22.25"	095°01'10.41"	Dol - SEE SECTION M.5 OF THE EVAL. REPORT.
058	6789	29°43'41.96"	095°01'11.20"	Dol
058	6790	29°43'42.30"	095°01'11.11"	Dol
058	6791	29°43'42.78"	095°01'11.01"	Dol

058 6801	29°43'48.07"	095°01'07.84"	Dol
058 6808	29°43'58.90"	095°01'15.93"	Dol - CHARTED, RETAIN
058 6809	29°43'58.88"	095°01'16.38"	Boat House CHARTED, RETAIN
058 6810	29°43'52.01"	095°01'25.88"	Dol
058 6811	29°43'54.16"	095°01'23.62"	Dol
058 6812	29°43'56.22"	095°01'21.50"	Dol
058 6813	29°43'57.30"	095°01'20.47"	Dol
058 6814	29°43'58.34"	095°01'19.33"	Dol
058 6817	29°43'56.22"	095°01'30.94"	Pile
058 6818	29°43'56.13"	095°01'31.25"	Pile
058 6819	29°43'56.33"	095°01'31.51"	Pile
058 6820	29°43'56.58"	095°01'32.42"	Pile
058 6824	29°43'41.67"	095°01'55.45"	Pile
058 6825	29°43'40.89"	095°01'53.02"	Pile

SEE AWOIS #9650

LISTED ON PRECEDING PAGE - 1ST SIX ITEMS

The hydrographer recommends the above features be charted. *CONCUR*

The charted submerged piles in Mitchell Bay located at 29°43'⁸'N, 095°01.5'W were not investigated. Chain drag was prohibited because the items lie in a pipeline crossing area. The general depths in the immediate vicinity were too shallow to conduct a side scan sonar investigation. The hydrographer chose not to dive on the item because of unsafe diving conditions caused by oil spills at the Baytown Exxon plant which occurred during the survey. Main scheme sounding data showed a 1.8^m sounding at 29°43'50.42"N, 095°01'31.97"W, and a 1.6^m sounding at 29°43'49.51"N, 095°01'32.47"W. The hydrographer recommends retaining the submerged piles and showing the shoal soundings found as cartographic license allows. *CONCUR. SEE ALSO SECTION M.A.6. OF THE EVALUATION REPORT*

The controlling depth of the Houston Ship Channel between the Baytown Exxon Company and Lynchburg Landing was found to be 12.2m (40.0ft) corrected to MLLW by predicted tides with a width of 130m (426 ft). The chart lists this section of the channel as 40 feet (12.2m) controlling depth with 400-525 feet (122-160m) width. Soundings from this survey range from 12.2m to 16.4m (40.0ft to 54.0ft). *CONCUR. NO CONFLICTS.*

The controlling depth of the Houston Ship Channel between the Fred Hartman Bridge and Baytown Exxon Company was found to be 12.2m (40.0ft) corrected to MLLW by predicted tides with a width of 150m-250m (492 ft-820 ft) in the vicinity of Baytown Exxon. The chart lists this channel as 40 feet (12.2m) controlling depth with 400-525 feet (122-160m) width. Soundings from this survey range from 12.2m to 16.7m (40-55ft).

The controlling depth of the Houston Ship Channel between Spilmans Island and the Fred Hartman Bridge was found to be 12.2m (40.0ft) corrected to MLLW by predicted tides with a channel width of 150m (492 ft). The chart lists this channel as 40 feet (12.2m) controlling depth with 400-525 feet (122-160m) width. Soundings from this survey range from 12.2m to 16.7m (40-55ft).
CONCUR. NO CONFLICTS

The inbound ranges were used as navigation aids when steering the inbound center line of the channel. Soundings on average are deeper than the listed controlling depth of 40 ft. The bottom profile is irregular within the channel limits. Soundings in the center of the channel range between 12.8m to 16.9m (42ft - 55ft).

The controlling depth of the Upper San Jacinto Barge Channel Approach was found to be 3.2m (10.5ft) corrected to MLLW by ^{APPROVED} predicted tides with an approach width of 50m (164ft). The chart lists this channel as 13 feet controlling depth with 100 feet (30.5m) width. Soundings from this survey range from 3.0m to 4.3m (9.8ft to 14.1ft). Once in the channel and past the approach, the controlling depth is 3.0m (9.8ft) with a width of 30m (98.4ft). Soundings from this survey should supersede the prior survey soundings for compilation of the next chart edition. *CONCUR*
SEE ALSO AID 015 # 9636 APPENDED TO THIS REPORT.

The controlling depth of the approach to DuPont Chemical Plant in the Upper San Jacinto Barge Channel was found to be 2.9m (9.5ft) corrected to MLLW by ^{APPROVED} predicted tides with a width of 60m (196.8ft). The chart lists this channel with controlling depth of 12 feet with 30 meters width. Soundings from this survey range from 3.0m to 4.0m (9.8ft to 13.1ft). Soundings from this survey should supersede the prior survey soundings for compilation of the next chart edition. *AWOIS 9637, SEE SECTION N.2. OF THE EVALUATION REPORT.*

The controlling depth of the approach to Quantum Chemical Plant in the Upper San Jacinto Barge Channel was found to be 4.3m (14.1ft) corrected to MLLW by ^{APPROVED} predicted tides with an approach width of 50m (164ft). The chart lists this channel as 12 feet controlling depth. Soundings from this survey range from 3.8m to 5.4m (12ft to 17.7ft). Soundings from this survey should supersede the prior survey soundings for compilation of the next chart edition. *CONCUR. SEE ALSO AWOIS 9638 APPENDED TO THIS REPORT.*

The controlling depth of the approach to U.S. Industrial Chemical Company in the Upper San Jacinto Barge Channel was found to be 3.0m (9.8ft) corrected to MLLW by ^{APPROVED} predicted tides with an approach width of 50m (164ft). The area just east of the dock covering a 100m by 100m area has a controlling depth of 3.9m (12ft). The chart lists this channel with a controlling depth of 13 feet. Soundings from this survey range from 2.6m on the
(8ft)

channel edge to 4.8m (8.²ft to 15.⁴ft) in the vicinity of the dock. Soundings from this survey should supersede the prior survey soundings for compilation of the next chart edition. *Concur*
SEE AIDS 9639 APPENDED TO THIS REPORT.

P. ADEQUACY OF SURVEY

This survey is a complete basic hydrographic survey and is adequate to supersede the prior survey within the common area.

Q. AIDS TO NAVIGATION *SEE ALSO THE EVALUATION REPORT.*

The following aids to navigation are maintained by the U.S. Coast Guard and lie within the survey area. All of the aids serve their intended purpose. Aids to navigation were positioned by DGPS during hydrographic operations. Resources were not available for 3rd order positions of all the non-floating navigational aids. *Concur*

FIXED AIDS:

PN	Name/USCGLL#	LL Position	Survey Position
6780	Light 103/23855	29°42.2'N 095°01.1'W	29°42'15.193"N 095°01'09.454"W
6426	Light 104/23985	29°42.4'N 095°01.0'W	29°42'22.038"N 095°01'02.252"W
6477	Light 106/23990	29°42.5'N 095°01.1'W	29°42'31.027"N 095°01'07.469"W
6479	Light 107/23995	N/A	29°42'43.508"N 095°01'18.541"W
6478	Light 108/24000	29°42.6'N 095°01.2'W	29°42'42.720"N 095°01.09.900"W
6480	Light 109/24025	29°43.0'N 095°01.3'W	29°42'59.210"N 095°01'19.219"W
6481	Light 111/24035	29°43.3'N 095°01.3'W	29°43'17.533"N 095°01'20.802"W

6482 Light 113/24040	29°43.5'N 095°01.4'W	29°43'28.308"N 095°01'26.356"W
6499 Light 116/24140	N/A	29°44'05.622"N 095°03'01.727"W
6507 Light 118/24170	N/A	29°44'16.711"N 095°03'20.992"W
6509 Light 120/24195	N/A	29°44' ^{26.778} 25.201 "N 095°03' 28.033 "W <i>41.041</i>
6512 Light 122/24205	N/A	29°44'41.634"N 095°03'40.744"W
6532 Light 125/24260	N/A	29°45'19.498"N 095°04'08.386"W
6524 Light 126/24270	N/A	29°45'30.687"N 095°04'06.530"W

The following list is a comparison of the range markers Light List and survey positions:

FIXED AIDS:

USCGLL# and Name	LL Position	Survey Position	PN
23825/Low. Rd. Lt. Bend Inbound Rng Front Lt.	29°42.2'N 095°01.2'W	29°42'12.56"N 095°01'14.67"W	6476
23830/Low. Rd. Lt. Bend Inbound Rng. Rear Lt.	None	29°42'13.78"N 095°01'23.14"W	643 ⁴ 8
24005/Up. Rd. Lt. Bend Inbound Rng. Front Lt.	29°43.9'N 095°01.2'W	29°43'52.93"N 095°01'12.86"W	6806
24015/Up. Rd. Lt. Bend Outbound Rng. Front Lt.	29°42.3'N 095°01.2'W	29°42'19.08"N 095°01'14.58"W	6430
24020/Up. Rd. Lt. Bend Outbound Rng. Rear Lt.	Note: same as LL No. 23825	29°42'12.56"N 095°01'14.67"W	6476
24055/Baytown Bend Rng. Front Lt.	29°43.8'N 095°01.8'W	29°43'54.43"N 095°01'51.70"W	6488
<i>24060/BAYTOWN BEND RNG REAR LT.</i>	<i>NONE</i>	<i>29°43'57.92"N 95°01'56.73"W</i>	<i>6489</i>

24075/Low. Peggy's Lake Inbound Rng. Front Lt.	29°43.9'N 095°03.0'W	29°43'54.76"N 095°03'00.68"W	6500
24080/Low. Peggy's Lake Inbound Rng. Rear Lt.	None	29°43'55.58"N 095°03'12.58"W	6502
24085/Low. Peggy's Lake Outbound Rng. Front Lt.	29°43.8'N 095°01.5'W	29°43'46.69"N 095°01'29.74"W	6485
24110/Peggy's Lake Inbound Rng. Front Lt.	29°44.2'N 095°03.5'W	29°44'09.82"N 095°03'26.97"W	6504
24115/Peggy's Lake Inbound Rng. Rear Lt.	None	29°44'13.12"N 095°03'36.30"W	6505
24120/Peggy's Lake Outbound Rng. Front Lt.	29°43.7'N 095°02.2'W	29°43'43.52"N 095°02'12.47"W	6491
24125/Peggy's Lake Outbound Rng. Rear Lt.	None	29°43'41.56"N 095°02'06.73"W	6490
24145/Upper Peggy's Lake Inbound Rng. Front Lt.	29°44.4'N 095°03.7'W	29°44'26.78"N 095°03'41.04"W	6509
24150/Upper Peggy's Lake Inbound Rng. Rear Lt.	None	29°44'32.37"N 095°03'49.445"W	6510
24155/Upper Peggy's Lake Outbound Rng. Front Lt.	29°43.8'N 095°02.8'W	29°43'48.69"N 095°02'46.63"W	6496
24160/Upper Peggy's Lake Outbound Rng. Rear Lt.	None	29°43'44.56"N 095°02'40.00"W	6495
24175/Lower Crossover Inbound Rng. Front Lt.	29°45.1'N 095°04.1'W	29°45'07.34"N 095°04'04.37"W	6534
24180/Lower Crossover Inbound Rng. Rear Lt.	None	29°45'16.06"N 095°04'10.69"W	6533
24185/Lower Crossover Outbound Rng Front Lt.	29°44.0'N 095°03.3'W	29°44'01.71"N 095°03'17.25"W	6503
24190/Lower Crossover Outbound Rng. Rear Lt.	None	29°43'55.58"N 095°03'12.58"W	6502

24210/Crossover Inbound Rng. Front Lt.	29°45.3'N 095°03.9'W	29°45'19.54"N 095°03'56.85"W	6520
24215/Crossover Inbound Rng. Rear Lt.	None	29°45'24.68"N 095°03'58.48"W	6521
24220/Crossover Outbound Rng. Front Lt.	29°44.4'N 095°03.7'W	29°44'26.78"N 095°03'41.04"W	6509
24225/Crossover Outbound Rng. Rear Lt	None	29°44'13.12"N 095°03'36.30"W	6505
24240/Upper Crossover Inbound Rng. Front Lt.	29°45.7'N 095°04.4'W	29°45'41.35"N 095°04'21.98"W	6525
24245/Upper Crossover Inbound Rng. Rear Lt.	None	29°45'46.51"N 095°04'26.56"W	6526
24250/Upper Crossover Outbound Rng. Front Lt.	29°44.9'N 095°03.7'W	29°44'56.63"N 095°03'44.12"W	6514
24255/Upper Crossover Outboard Rng. Rear Lt.	None	29°44'51.31"N 095°03'39.58"W	⁵ 6 13
24285/Lynchburg Outboard Rng. Front Lt.	29°45.3'N 095°03.9'W	29°45'19.54"W 095°03'56.85"W	6520
24290/Lynchburg Outbound Rng. Rear Lt.	None	29°45'15.59"N 095°03'50.35"W	6519

The following aids to navigation are privately maintained and located near the Houston Ship Channel:

PN	Name	UCGLL#	LL Position	Survey Position
6527	CIW A Pipeline Light A	24295	29°45.6'N 095°04.6'W	29°45'38.988"N 095°04'37.518"W
6528	CIW A Pipeline Light B	24300	None	29°45' ^{39.761} 43.687 "N 095°04'38.749"W

The following aids to navigation are privately maintained and located on the Upper San Jacinto Barge Channel:

PN	Name	UCGLL#	LL Position	Survey Position
	Grn Dbn #1	23865	29°42.2'N 095°01.2'W	Not Existing
6475	Grn Dbn #3	23870	None	29°42'10.993"N 095°01'20.987"W
6435	Red Dbn #4	23875	None	29°42'13.544"N 095°01'22.128"W
6436	Red Dbn #4	None	None	29°42'12.824"N 095°01'29.425"W
6437	Red Dbn #6	23885	None	29°42'15.283"N 095°01'38.658"W
6438	Red Dbn #8	23890	None	29°42'17.759"N 095°01'47.203"W
6439	Red Dbn #10	23895	None	29°42'20.339"N 095°01'57.251"W
6440	Red Dbn #12	23900	None	29°42'22.675"N 095°02'05.765"W
6441	Red Dbn #14	23905	None	29°42'25.163"N 095°02'15.006"W
6442	Red Dbn #16	23915	None	29°42'27.582"N 095°02'24.228"W
6443	Red Dbn #18	23920	None	29°42'30.671"N 095°02'35.495"W
6444	Red Dbn #20	23925	None	29°42'33.230"N 095°02'44.680"W
6445	Red Dbn #22	23930	None	29°42'35.941"N 095°02'55.247"W

6446	Red Dbn #24	23940	None	29°42'39.209"N 095°03'02.083"W
6447	Red Dbn #26	23950	None	29°42'46.146"N 095°03'14.694"W
	Red Dbn #28	23960	None	Not Existing
6452	Grn Dbn #27	23955	None	29°42'43.235"N 095°03'18.231"W
6457	Grn Dbn #25	23945	None	29°42'39.758"N 095°03'11.977"W
6458	Grn Dbn #23	23935	None	29°42'35.460"N 095°03'03.958"W
6459	Grn Dbn #21	None	None	29°42'33.529"N 095°02'57.312"W
6460	Grn Dbn #19	None	None	29°42'30.660 N 095°02'46.496"W
6461	Grn Dbn #17	None	None	29°42'24.570"N 095°02'23.118"W
6468	Grn Dbn #15	None <i>23910</i>	None	29°42'22.399"N 095°02'15.047"W
6469	Grn Dbn #13	None	None	29°42'20.244"N 095°02'06.763"W
6470	Grn Dbn #11	None	None	29°42'17.886"N 095°01'57.690"W
6471	Grn Dbn #9	None	None	29°42'15.389"N 095°01'48.163"W
6472	Grn Dbn #7	None	None	29°42'13.105"N 095°01'39.396"W
6474	Grn Dbn #5	None <i>23880</i>	None	29°42'10.324"N 095°01'33.856"W

San Jacinto Turning Basin Buoys A (LL#23965), B (LL#23970), C (LL#23975), and D (LL#23980) shown in the U.S.C.G. Light List, Vol. 4, 1996 and on Chart 11326 and Chart 11329, do not exist in the San Jacinto Bay Turning Basin. The turning area has deep water for barge maneuvering, however it has no marked limits.

DELETE FROM CHART UNLESS OTHER INFORMATION INDICATES OTHERWISE

FLOATING AIDS:

PN	Name and USCGLL#	Survey Position	
		Latitude N	Longitude W
6423	RLt 100/23845	29°42'10.42"	095°00'45. ⁶ 78 "
	GC 101/23850	Not Present	
6484	RN 110/24030	29°43'45.74"	095°01'29.81"
6486	RN 112/24095	29°43'49.78"	095°01'39.62"
6487	RN 112A/24100	29°43'51.37"	095°01'43.72"
6493	RLt 114/24105	29°43'54.30"	095°02'33.52"
6494	GC 115/24130	29°43'48.47"	095°02'36.21"
6501	GC 115A/24135	29°43'56.78"	095°03'05.07"
6506	GC 117/ 1 24165	29°44'13.00"	095°03'29.28"
6511	GC 121/24200	29°44'39.67"	095°03'50.48"
6518	RN 124/ ^H 2 235	29°45'11.23"	095°03'51.90"
6531	GC 125A/24265	29°45'27.08"	095°04'15.84"
6532	GC 123/24230	29°45' ^{19.49} 04.64 "	095°0 ^{4 08 39} 3 '58.95"

All cable and pipeline crossing areas shown on the chart were verified and referenced on this survey. All pipeline crossings were located by means of positioning the pipeline crossing signs on both sides of the channel. All pipeline crossings were found to lie within the charted pipeline crossing limits. Two overhead power cables were referenced in the Baytown Exxon vicinity. Reference annotations are on the boat sheet and on the graphic record.

The following is a list of the pipeline crossings found by this survey: *CHART AS SHOWN ON THE PRESENT SURVEY*

PN-E/PN-W	East Position	West position
6815/6828	29/43'58.950"N 095/01'24.697"W	29/43'38.978"N 095/01'36.726"W
6816/6827	29/43'57.860"N 095/01'29.202"W	29/43'39.908"N 095/01'42.418"W
6821/6826	29/43'58.592"N 095/01'34.860"W	29/43'40.932"N 095/01'49.469"W
6822/6823	29/44'05.130"N 095/01'40.493"W	29/43'42.497"N 095/02'01.652"W
6498/6497	29/43'59.784"N 095/02'39.497"W	29/43'45.752"N 095/02'46.091"W
6515/6539	29/44'59.221"N 095/03'45.618"W	29/44'48.972"N 095/03'55.051"W
6516/6538	29/45'07.272"N 095/03'47.422"W	29/44'52.817"N 095/03'59.280"W
6517/6536	29/45'08.447"N 095/03'47.478"W	29/45'01.297"N 095/04'04.543"W

6537
29-44-59.81N
95-04-04.91W

One bridge was identified within the survey limits. The Fred Hartman Bridge has a vertical clearance of 175 feet (53.35m) at Mean High Water (MHW), with a horizontal clearance of 400 ft (122m). This information was acquired from the U.S. Coast Guard Vessel Traffic Service. The VTS office is located in Galena Park, Texas (713-674-8488).

R. STATISTICS

<u>Description</u>	<u>Quantity</u>
Total Number of Positions	7238
Total Lineal Nautical Miles of Hydrography	164.47
Square Nautical Miles of Hydrography	8.89
Days of Production	14
Detached Positions	150
Bottom Samples	0
Tide Stations	2
Velocity Casts	7

S. MISCELLANEOUS

No bottom samples were taken on this survey. No tidal anomalies were observed during this survey. The hydrographer noticed that wind impacts the water levels as much or more than tides in the survey area. This factor was dependent upon the fetch, duration, and velocity of the wind.

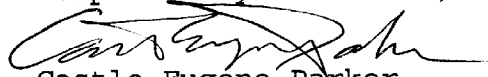
T. RECOMMENDATIONS

No additional field work was identified after field processing was completed. Specific recommendations are made on the Item Investigation Reports appended, and in sections J and Q of this report.

U. REFERRAL TO REPORTS

<u>Title</u>	<u>Transmittal Information</u>
Descriptive Report to Accompany Survey H-10619	Atlantic Hydrographic Branch N/CS33, Norfolk, VA (1995)
Descriptive Report to Accompany Survey H-10688	Atlantic Hydrographic Branch N/CS33, Norfolk, VA (1996)

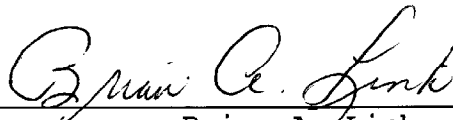
Respectfully Submitted,


Castle Eugene Parker
Launch Hydrographer-In-Charge
Atlantic Hydrographic Party

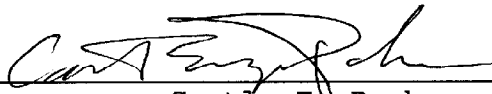
APPROVAL SHEET
Basic Hydrographic Survey
OPR-K204-AHP
AHP-10-1-96
H-10663
1996

This basic hydrographic survey was conducted in accordance with the Project Instructions for OPR-K204-AHP, the Hydrographic Manual, the Hydrographic Survey Guidelines, and the Field Procedures Manual. All reports, records, and survey sheets were reviewed by Mr. Castle E. Parker, hydrographer in charge of daily operations. The descriptive report was reviewed and approved by Mr. Brian A. Link, Assistant Chief of Party. The survey sheets and records were also periodically reviewed during the course of acquisition by Brian Link. The chief of party did not directly supervise any part of this survey. LT Kevin N. Harbison was chief of party at the time this survey was conducted, but transferred before the survey was submitted.

This survey is a complete basic hydrographic survey for the area described in Section B of this report.



Brian A. Link
Assistant Chief, Atlantic Hydrographic Party



Castle E. Parker
Hydrographer-in-charge of daily operations

STATE OF CALIFORNIA

IN SENATE
January 11, 1961

Author	Title	Author	Title	Author	Title
Sen.	Sen.	Sen.
Sen.	Sen.	Sen.

VI. SUPPLEMENTAL CORRESPONDENCE

Salvage documentation concerning AWOIS items located in the Baytown Exxon Marine Terminal included a conversation with Mr. Donald Knutson on March 7, 1996. Mr. Knutson can be contacted at the following telephone number and address:

713-425-3460
P.O. Box 3950
Baytown, Tx 77522-3950

Mr. Knutson is in charge of construction and dredging at the Baytown Marine Terminal. During a telephone interview Mr. Knutson stated Exxon's goals and methods of dolphin and pile removal. A primary point of interest was the statement that Baytown Exxon would not leave a dolphin, pile, or any other obstruction in an area where liquid petroleum bulk carriers navigate and moor. Also included was a statement regarding the method of dredging survey markers. Mr. Knutson stated that the current method of dredge limits were acquired by means of using a theodolite to turn angles and not placing survey markers (stakes) in the sediment, thus creating an obstruction.

AWOIS NO: 9635

Item Description: OBSTRUCTION/ SOUNDING

Source: CL1092/79

AWOIS Position: Lat - 29/42/17.50N Lon - 095/01/12.00W

Required Investigation: ES

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 02/08/96 (DN 039); 2/12/96 (DN 043); 02/27/96 (DN 058)

Position Numbers: 4511-4565; 4566-4645; 6626; 6776 Launch Number: 770

Investigation Used: ES

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: Soundings at 25-meter line spacing were acquired on days 039, 043, and 058. The target position for this item is located on the western slope of the Houston Ship Channel. A 4.3m sounding at 29°42'17.50"N, 095°01'11.58"W, was found nearest the AWOIS position. The shallowest sounding found is 2.7m at 29°42'14.28"N, 095°01'14.82"W (PN 4616). This sounding is located on the south side of the San Jacinto Bay Channel entrance, which bears 322°36'48.72" at a range of 125 meters from the AWOIS target. The following list shows soundings that are near the target location:

<u>SOUNDING</u>	<u>PN</u>	<u>GEOGRAPHIC LOCATION</u>
3.2m ³ / 11 FT	4605	29°42'15.48"N 095°01'12.94"W
3.2m / 10 FT	6776	29°42'14.65"N 095°01'12.98"W
4.3m / 15 FT	6626	29°42'17.50"N 095°01'11.58"W
4.2m	4601	29°42'17.20"N 095°01'11.78"W
2.7m 8 FT	4616 +1	29°42'14.28"N 095°01'14.82"W

CHARTING RECOMMENDATION

The hydrographer recommends that the charted "Shoaling rep 1979" at the entrance to the San Jacinto Bay Channel be revised to the smooth tide corrected depth found by this survey. *Concur*

Recommended Position: Lat - 29°42'14.65"N Lon - 095°01'12.98"W

Recommended Least Depth: 10.5 ft (3.2m) MLLW (Predicted Tides)

COMPILATION NOTES

*SEE SECTION N. 1. OF THE
EVALUATION REPORT.*

AWOIS NO: 9636

Item Description: SOUNDING

Source: CL475/81

AWOIS Position: Lat - 29°42'15.00N Lon - 095°01'43.00W

Required Investigation: ES

Charts Affected: 11326,11328,11329

INVESTIGATION

Date(s)/DN(s): 2/12/96 (DN 043), 2/27/96 (DN 058)

Position Numbers: 4866, 4883, 4884, 4896, 6645 Launch Number: 770

Investigation Used: ES Water Visibility: <0.5m Position Determined By: DGPS

Investigation Summary: Soundings at 25-meter line spacing were acquired on DN 043 and 058. Depths ranged from 2.4m to 3.7m within a 70-meter radius of the AWOIS target position. The controlling depth was determined to be 3.0m (9.8ft), located at 29°42'14.21"N, 095°01'40.77"W (position 4859). This sounding was selected as being the shallowest sounding located in the mid channel area. The following list shows soundings in the immediate vicinity:

DN	PN	DEPTH M	GEOGRAPHIC POSITION		
043	4859	3.01	29°42'14.21"N	095°01'40.77"W	10.2 FT
043	4866	2.36	29°42'13.54"N	095°01'41.60"W	8.5 FT
043	4883	2.72.8	29°42'15.35"N	095°01'43.17"W	9.2 FT
043	4884	2.78	29°42'15.98"N	095°01'43.21"W	9.2 FT
043	4896	3.78	29°42'15.54"N	095°01'44.32"W	12.5 FT
058	6645	2.1	29°42'16.05"N	095°01'41.67"W	7.0 FT

Note that all of the shallower depths are positioned on or near the sloping channel edge.

CHARTING RECOMMENDATION

The hydrographer recommends that the charted note "13 feet reported for a width of 100 feet Mar 1981" be revised to the depth found on H-10663 corrected for actual tidal heights during AHB processing. *CONCUR. REVISE NOTE TO 10FT REPORTED FOR A WIDTH OF 100FT MAR. 1996 UNLESS OTHER INFORMATION INDICATES OTHERWISE*

Recommended Position: Lat- 29°42'14.21"N Lon- 095°01'40.77"W

Recommended Least Depth: 3.0m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9637

Item Description: SOUNDING

Source: CL2174/77

AWOIS Position: Lat - 29/42/23.00N Lon - 095/02/25.00W

Required Investigation: ES

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/12/96 (DN:043)

Position Numbers: 5221, 5227, 5229, 5230, 5239, 5248 Launch Number: 770

Investigation Used: ES Water Visibility: <0.5m Position Determined By: DGPS

Investigation Summary: Soundings at 25-meter line spacing were acquired on DN 043. Depths ranged from 2.6m to 3.4m within a 100-meter wide approach to the dock at DuPont Chemical. The controlling depth was determined to be 2.9m located at 29°42'23.66"N, 095°02'24.52"W (position 5230). This sounding was selected as being the shallowest sounding located in the mid-channel approach into the dock. The following list shows soundings in the immediate vicinity:

<u>DN</u>	<u>PN</u>	<u>DEPTH(m)</u>	<u>GEOGRAPHIC POSITION</u>
043	5221	2.6	29°42'23.45"N 095°02'23.56"W
043	5227	2.7	29°42'19.69"N 095°02'24.33"W
043	5229	3.3	29°42'22.11"N 095°02'24.56"W
043	5230	2.9	29°42'23.66"N 095°02'24.52"W
043	5239	3.4	29°42'22.82"N 095°02'25.64"W
043	5248	3.3	29°42'23.46"N 095°02'26.02"W

CHARTING RECOMMENDATION

The hydrographer recommends that the charted note "12 ft rep 1977" be revised to the depth found on H-10663 corrected for actual tidal heights during AHB processing. *SEE SECTION N. 2, OF THE EVALUATION REPORT.*

Recommended Position: Lat- 29°42'23.66"N Lon- 095°02'24.52"W

Recommended Least Depth: 2.9m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9638

Item Description: SOUNDING

Source: CL226/80

AWOIS Position: Lat - 29/42/33.00N Lon - 095/03/13.00W

Required Investigation: ES

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/14/96 (DN:045)

Position Numbers: 5698, 5717, 5727, 5729, 5749, 5758

Launch Number: 770

Investigation Used: ES Water Visibility: <0.5m Position Determined By: DGPS

Investigation Summary: Soundings at 25-meter line spacing were acquired on DN 045. Depths ranged from 3.4m to 5.2m within a 100-meter radius of the AWOIS target. The mid-channel approach to the Quantum Chemical dock showed soundings in the range from 4.5m to 5.0m. The controlling depth was determined to be 4.5m (14.8ft) at 29°42'35.76"N, 095°03'10.13"W (position 5698). This sounding was selected as being the shallowest sounding in the mid-channel approach area. The following list shows soundings in the immediate vicinity:

<u>DN</u>	<u>PN</u>	<u>DEPTH m</u>	<u>GEOGRAPHIC POSITION</u>
045	5698	4.5	29°42'35.76"N 095°03'10.13"W
045	5717	3.4	29°42'33.14"N 095°03'11.06"W
045	5727	3.6	29°42'32.69"N 095°03'11.88"W
045	5729	3.5	29°42'35.02"N 095°03'11.87"W
045	5749	4.9	29°42'33.18"N 095°03'12.90"W
045	5758	3.7	29°42'33.82"N 095°03'13.78"W

Note that all of the shallower depths are positioned on the sloping channel edge.

CHARTING RECOMMENDATION

The hydrographer recommends that the charted note "12 ft rep 1979" be revised to the depth found on H-10663 corrected for actual tidal heights during AHB processing. *CONCUR, REVISE NOTE TO 14 FT REP 1996 UNLESS OTHER INFORMATION INDICATES OTHERWISE*

Recommended Position: Lat- 29°42' 35.76"N Lon- 095°03'10.13"W

Recommended Least Depth: 4.5m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9639

Item Description: SOUNDING

Source: CL590/81

AWOIS Position: Lat - 29/42/55.00N Lon - 095/03/20.00W

Required Investigation: ES

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/14/95 (DN:045)

Position Numbers: 5705-5898

Launch Number: 770

Investigation Used: ES

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: Soundings at 25-meter line spacing were acquired in the AWOIS target area. The main channel, not including the sloping edges, was determined to be 50m (164ft) wide with a controlling depth of 3.0m (9.8 ft) at 29°42'55.75"N, 095°03'19.69"W (position 5853). Mid-channel depths showed were in the range of 2.6m to 3.1m. Note that there are no docks or barge piers in the vicinity of AWOIS 9639. The following list shows soundings in the immediate area of this AWOIS item:

DN	PN	DEPTH	GEOGRAPHIC POSITION
045	5878	2.7	29°42'53.24"N 095°03'21.30"W
045	5852	2.9	29°42'54.09"N 095°03'19.45"W
045	5864	3.0	29°42'55.82"N 095°03'20.38"W
045	5853	3.0	29°42'55.75"N 095°03'19.69"W
045	5865	3.1	29°42'54.21"N 095°03'20.35"W

It should be noted that all of the shallower depths are located on the sloping channel edge.

CHARTING RECOMMENDATION

The hydrographer recommends that the charted note "13 ft rep Apr 1981" be revised to the depth found on H-10663 corrected for actual tidal heights during AHB processing. *CONCUR. REVISE NOTE TO 8 FT REP MAR 1996 UNLESS OTHER INFORMATION INDICATES OTHERWISE.*

Recommended Position: Lat- 29°42'55.75"N Lon- 095°03'19.69"W

Recommended Least Depth: 3.0m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9640

Item Description: SOUNDING

Source: CL739/93

AWOIS Position: Lat - 29/43/37.00N Lon - 095/01/21.50W

Required Investigation: ES

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/7/96 (DN:038)

Position Numbers: 3595-3694

Launch Number: 770

Investigation Used: ES

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: Main scheme sounding lines at 25-meter line spacing were acquired in the AWOIS target area. The main channel, not including the sloping edges, was determined to be 150m (492ft) wide with a controlling depth of 13.5m (44.3ft) at 29°43'38.06"N, 095°01'19.75"W. Mid-channel depths were in the range of 12.6m - 16.4m (41.33ft - 53.792ft). The controlling depth within a 150m radius of AWOIS target was determined to be 13.5m (44.3ft) at 29°43'38.06"N, 095°01'19.75"W

CHARTING RECOMMENDATION

The hydrographer recommends that charted soundings be revised with soundings from survey H-10663 and revising the charted note "40 feet rep Jul 1990" with the depth found on H-10663 corrected for actual tidal heights during AHB processing. *SEE SECTION N.3. OF THE EVALUATION REPORT.*

Recommended Position: Lat- 29°43'38.06"N Lon- 095°01'19.75"W

Recommended Least Depth: 13.5m (44.3ft) MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9641

Item Description: OBSTRUCTION/DOL

Source: CL1120/75; CL739/93

AWOIS Position: Lat - 29/43/42.50N Lon - 095/01/20.40W

Required Investigation: SD, DI

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/6/96 (DN:037); 2/27/96 (DN:058); 3/4/96 (DN:064); 3/7/96 (DN:067)

Position Numbers: 6795, 7248-7265

Launch Number: 770

Investigation Used: SD

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: A photograph taken on DN 037 shows a large tanker berthed alongside of the pier where the AWOIS target is located. Sounding data collected on DN 064 indicates depths of 12.8m to 13.8m along the pier face. Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) dated 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states that "all old dolphins are removed from the site by means of extracting the dolphin or breaking/cutting of the dolphin at the mud line." Mr. Knutson said that some of the old dolphins were used in the construction or renovation of the existing pier. He also stated "we will not leave an obstruction in an area where large tanker ships or barges navigate or moor." Detached position 6795 was taken on a dolphin on DN 058 at 29°43'42.76"N, 095°01'21.45"W. This dolphin is located 29.4m at an azimuth of 74°09'37" from the AWOIS target.

CHARTING RECOMMENDATION

The hydrographer recommends that the ~~charted~~ obstruction (dolphin) be ~~retained at the~~ ^{CHARTED} ~~recommended position listed below:~~ ^{OK} CONCUR. ALSO DELETE 3 500m DOL'S

Recommended Position: Lat- 29°43'42.76"N Lon- 095°01'21.45"W

Recommended Least Depth: -6.0m MLLW (Predicted Tides)

COMPILATION NOTES

SAME AS THE DOLPHIN NOTED AS AWOIS #9640

AWOIS NO: 9642

Item Description: OBSTRUCTION/Dolphins

Source: CL411/74

AWOIS Position: Lat - 29/43/43.30N Lon - 095/01/21.40W

Required Investigation: VS, SD, DI, S2, ES

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/6/96 (DN:037); 2/27/96 (DN:058); 3/4/96 (DN:064); 3/7/96 (DN:067)

Position Numbers: 6795, 7248-7265

Launch Number: 770

Investigation Used: VS, SD, ES

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: A photograph taken on DN 037 shows a large tanker berthed alongside of the pier where the AWOIS target is located. Sounding data collected on DN 064 indicates depths of 12.8m to 13.8m along the pier face. Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) dated 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states that "all old dolphins are removed from the site by means of extracting the dolphin or breaking/cutting of the dolphin at the mud line." Mr. Knutson said that some of the old dolphins were used in the construction or renovation of the existing pier. He also stated "we will not leave an obstruction in an area where large tanker ships or barges navigate or moor." Detached position 6795 was taken on a dolphin on DN 058 at 29°43'42.76"N, 095°01'21.45"W. This dolphin is located 16.7m at an azimuth of 175°00'10" from the AWOIS target.

CHARTING RECOMMENDATION

The hydrographer recommends that the ~~charted~~ obstruction (dolphin) be ^{CHARTED} retained at the position ~~of~~ listed below. *Concur. DELETE THE CHARTED DOLPHIN.*

Recommended Position: Lat- 29°43'42.76"N Lon- 095°01'21.45"W

Recommended Least Depth: -6.0m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9643

Item Description: OBSTRUCTION/DOL

Source: CL411/74; CL739/93

AWOIS Position: Lat - 29/43/45.10N Lon - 095/01/20.00W

Required Investigation: VS, SD, DI, S2, ES

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s) / DN(s): 2/6/96 (DN:037); 2/27/96 (DN:058); 3/4/96 (DN:064); 3/7/96 (DN:067)

Position Numbers: 6795, 7248-7265

Launch Number: 770

Investigation Used: SD, VS, ES

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: A photograph taken on DN 037 shows a large tanker berthed alongside of the pier where the AWOIS target is located. Sounding data collected on DN 064 indicates depths of 12.8m to 13.8m along the pier face. Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) dated 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states that "all old dolphins are removed from the site by means of extracting the dolphin or breaking/cutting of the dolphin at the mud line." Mr. Knutson said that some of the old dolphins were used in the construction or renovation of the existing pier. He also stated "we will not leave an obstruction in an area where large tanker ships or barges navigate or moor." Detached position 6795 was taken on a dolphin on DN 058 at 29°43'42.76"N, 095°01'21.45"W. This dolphin is located 81.9m at an azimuth of 151°31'02.95" from the AWOIS target.

CHARTING RECOMMENDATION

The hydrographer recommends that the ^{DOLPHIN CHARTED} ~~charted~~ obstruction be retained at the position listed ^{OR} below. *CONCUR. DELETE THE TWO SUBM DOLS*

Recommended Position: Lat- 29°43'42.76"N Lon- 095°01'21.45"W - *POSITION FOR AWOIS #9643*

Recommended Least Depth: -6.0m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9644

Item Description: OBSTRUCTION/DOL

Source: CL941/81

AWOIS Position: Lat - 29/43/45.10N Lon - 095/01/18.20W

Required Investigation: VS, SD, DI, S2, ES, ##

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/27/96 (DN:058); 3/4/96 (DN:064); 3/7/96 (DN:067)

Position Numbers: 6796; 7248-7265

Launch Number: 770

Investigation Used: VS, SD, ES

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: A photograph taken on DN 037 shows a large tanker berthed alongside of the pier where the AWOIS target is located. Sounding data collected on DN 064 indicates depths of 12.8m to 13.8m along the pier face. Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) dated 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states that "all old dolphins are removed from the site by means of extracting the dolphin or breaking/cutting of the dolphin at the mud line." Mr. Knutson said that some of the old dolphins were used in the construction or renovation of the existing pier. He also stated "we will not leave an obstruction in an area where large tanker ships or barges navigate or moor." Detached position 6796 was taken on a dolphin on DN 058 at 29°43'47.72"N, 095°01'17.33"W. This dolphin is located 23.6m at an azimuth of 279°22'48.11" from the AWOIS target.

CHARTING RECOMMENDATION

The hydrographer recommends that the charted obstruction/dolphin be retained at the position listed below. *DO NOT CONCUR. CHART THE DOLPHIN LOCATED BY THE PRESENT SURVEY. DELETE THE FOUR DOLPHINS (AWOIS 9644)*

Recommended Position: Lat- 29°43'47.72"N Lon- 095°01'17.333"W

~~**Recommended Least Depth:** -6.0m MLLW (Predicted Tides)~~

COMPILATION NOTES

AWOIS NO: 9645

Item Description: OBSTRUCTION/ DOL

Source: CL1266/65; DM10228; CM9210

AWOIS Position: Lat - 29/43'48.5"N Lon - 095/01'14.1"W

Required Investigation: VS, SD, DI, BD

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/27/96 (DN:058)

Position Numbers: 6797, 6798, 6799, 6800

Launch Number: 770

Investigation Used: VS, SD Water Visibility: ,0.5m Position Determined By: DGPS

Investigation Summary: Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) on 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states that "all old dolphins are removed from the site by means of extracting the dolphin or breaking/cutting of the dolphin at the mud line." Mr. Knutson said that some of the old dolphins were used in the construction or renovation of the existing pier. He also said "we will not leave an obstruction in an area where large tanker ships and barges navigate or moor. Dolphins were visually identified and positioned on day number 058. The following list shows the geographic position and the range and azimuth to the DPs from the AWOIS target:

PN	GEOGRAPHIC POSITION	RANGE (m)	AZIMUTH
6797	29°43'48.43"N 095°01'14.62"W	14.0	279°20'56.28"
6798	29°43'48.35"N 095°01'13.65"W	12.9	249°03'16.83"
6799	29°43'47.97"N 095°01'12.40"W	48.6	250°21'05.32"
6800	29°43.48.15"N 095°01'12.85"W	35.0	252°11'59.5"

CHARTING RECOMMENDATION

The hydrographer recommends that the charted dolphins be retained at the positions listed above.

Recommended Least Depth: PN 6797 -4.0m MLLW (Predicted Tides)
PN 6798, 6799, 6800 -5.0m MLLW (Predicted Tides)

COMPILATION NOTES

REVISE THE CHARTED DOLPHINS TO REFLECT THE PRESENT SURVEY

AWOIS NO: 9646

Item Description: OBSTRUCTION/ DOL

Source: CL1266/65

AWOIS Position: Lat - 29/43/47.50N Lon - 095/01/10.80W

Required Investigation: VS, SD, DI, BD

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/27/96 (DN:058)

Position Numbers: 6799, 6800

Launch Number: 770

Investigation Used: VS, SD

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) on 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states that "all old dolphins are removed from the site by means of extracting the dolphin or breaking/cutting of the dolphin at the mud line." Mr. Knutson said that some of the old dolphins were used in the construction or renovation of the existing pier. He also said "we will not leave an obstruction in an area where large tanker ships and barges navigate or moor. Dolphins were visually identified and positioned on day number 058. The following list shows the geographic position and the range and azimuth to the DPs from the AWOIS target:

<u>PN</u>	<u>GEOGRAPHIC POSITION</u>	<u>RANGE (m)</u>	<u>AZIMUTH</u>
6799	29°43'47.97"N 095°01'12.40"W	48.625	250°21'05.32"
6800	29°43.48.15"N 095°01'12.85"W	35.0	252°11'59.5"

CHARTING RECOMMENDATION

The hydrographer recommends that the charted dolphins be retained at the positions listed above.

Do NOT COMPILE. SEE SECTION N. 4. OF THE EVALUATION REPORT.

Recommended Least Depth: PN 6799, 6800 -5.0m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9647

Item Description: SOUNDING

Source: CL739/93, BP1429238

AWOIS Position: Lat - 29/43/50.00N Lon - 095/01/15.00W

Required Investigation: ES

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/6/96 (DN:037), 2/7/96 (DN:038)

Position Numbers: 3303-3477, 3494-3507

Launch Number: 770

Investigation Used: ES

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: Main scheme sounding lines at 25-meter line spacing were conducted in the Baytown Exxon marine terminal. Sounding lines included pier facing lines (keel lines) and center lines between the fuel berths. A controlling depth of 5.7m (18.7ft) was located at 29°43'50.38"N, 095°01'14.79"W, closest to the AWOIS target. The following list shows soundings in the immediate area of the AWOIS target:

DN	PN	DEPTH m	GEOGRAPHIC POSITION
038	3497	5.7	29°43'50.38"N 095°01'14.79"W
038	3504+	4.4	29°43'48.46"N 095°01'14.02"W (Inside DOL area)
038	3503	5.1	29°43'50.64"N 095°01'13.66"W (Inside DOL area)
038	3504	5.9	29°43'49.38"N 095°01'13.74"W
038	3492	6.1	29°43'50.22"N 095°01'16.02"W
037	3447	6.7	29°43'50.64"N 095°01'17.64"W
037	3418	6.5	29°43'50.60"N 095°01'21.60"W

CHARTING RECOMMENDATION

The hydrographer recommends that the charted notes be revised to the depths found on H-10663 corrected for actual tidal heights during AHB processing. *CONCUR. SEE ALSO SECTION N.5. OF THE EVALUATION REPORT.*

Recommended Position:		Recommended Least Depth:
Lat- 29°43'50.38"N	Lon- 095°01'14.79"W	5.7m (18.696ft) PN 3497
29°43'50.64"N	095°01'17.64"W	6.7m (21.97ft) PN 3447
29°43'50.60"N	095°01'21.60" W	6.5m (21.32ft) PN 3418

COMPILATION NOTES

AWOIS NO: 9648

Item Description: OBSTRUCTION/ DOL

Source: CL38/70; DM102228/92; CM9210

AWOIS Position: Lat - 29/43/50.60N Lon - 095/01/13.60W

Required Investigation: VS, SD, DI

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/27/96 (DN:058)

Position Numbers: 6802-6805

Launch Number: 770

Investigation Used: VS, SD Water Visibility: <0.5m Position Determined By: DGPS

Investigation Summary: Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) on 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states "all old dolphins are removed from the site by means of extracting the dolphin or breaking/cutting of the dolphin at the mud line." Mr. Knutson said that some of the old dolphins were used in the construction or renovation of the existing pier. Mr. Knutson also stated "we will not leave an obstruction in an area where large tanker ships and barges navigate or moor. Dolphins were visually identified and positioned on Day Number 058. The following lists indicates the geographic position and range and azimuth to the detached positions from the AWOIS target:

PN	GEOGRAPHIC POSITION	RANGE (m)	AZIMUTH
6802	29°43'50.00"N 095°01'11.17"W	67.9	254°04'43.4"
6803	29°43'50.09"N 095°01'11.97"W	46.6	250°10'15.0"
6804	29°43'50.57"N 095°01'13.70"W	2.7	106°54'29.3"
6805	29°43'50.34"N 095°01'11.04"W	69.3	263°20'14.6"

CHARTING RECOMMENDATION

The hydrographer recommends that the ~~charted~~ obstruction/dolphins be ^{CHARTED} returned at the positions listed above. *CONCUR*

REVISE THE CHARTED DOLPHINS TO REFLECT THE PRESENT SURVEY

Recommended Least Depth: PN 6802 -6.0m MLLW (Predicted Tides)
PN 6803, 6804, 6805, -5.0m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9649

Item Description: OBSTRUCTION/STAKES

Source: CL1223/74; CL739/93

AWOIS Position: Lat - 29/43/54.50N Lon - 095/01/18.10W

Required Investigation: SD, BD, S2, DI

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 3/7/96 (DN:067)

Position Numbers: N/A

Launch Number: 770

Investigation Used: SD

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) on 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states that all old dolphins/obstructions are removed from the site by means of extracting the item or breaking/cutting of the obstruction at the mud line. Mr. Knutson said "we will not leave an obstruction in an area where large tanker ships and barges navigate or moor." Mr. Knutson indicated that all dredge limits are determined by measuring azimuths to the dredging limits. Wood stakes are no longer used as dredging markers.

CHARTING RECOMMENDATION

The hydrographer recommends that the charted obstruction, 4x4 inch stakes, be deleted from the chart. *CONCUR. DELETE THE CHARTED STAKE REE.*

Recommended Position:

Lat-

Lon-

Recommended Least Depth:

COMPILATION NOTES

AWOIS NO: 9650

Item Description: OBSTRUCTION/ DOL

Source: CL172/78

AWOIS Position: Lat - 29/43/56.90N Lon - 095/01/18.10W

Required Investigation: VS, SD, DI, BD

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 2/27/96 (DN 058), 3/07/96 (DN 067)

Position Numbers: 6812, 6813, 6814

Launch Number: 770

Investigation Used: SD, VS Water Visibility: <0.5m Position Determined By: DGPS

Investigation Summary: A visual search identified and a row of steel dolphins were located on the NW side of moored barges. The AWOIS target was located beneath the moored fuel barges limiting search area access. Salvage documentation includes verbal statements from Baytown Exxon contact Donald Knutson (713-425-3460, P.O. Box 3950, Baytown, TX 77522-3950) on 3/7/96 (DN 067). Mr. Knutson is in charge of construction and dredging at the Baytown Exxon marine terminal. Mr. Knutson states that "all old dolphins are removed from the site by means of extracting the dolphin or breaking/cutting of the dolphin at the mud line." Mr. Knutson said that some of the old dolphins were used in the construction or renovation of the existing pier. Mr. Knutson also stated that "we will not leave an obstruction in an area where large tanker ships or barges navigate or moor." Dolphins were located at the following positions:

PN	GEOGRAPHIC POSITION	RANGE (m)	AZIMUTH (from AWOIS pos.)
6812	29°43'56.22"N 095°01'21.50"W	83.2	104°35'17.95"
6813	29°43'57.30"N 095°01'20.42"W	68.1	076°36'28.43"
6814	29°43'58.34"N 095°01'19.33"W	49.5	026°39'12.04"

CHARTING RECOMMENDATION

The hydrographer recommends that the ~~charted~~^{CHARTED} dolphins be ~~retained~~ at the positions listed above.

CONCUR. SEE ALSO SECTION N.6. OF THE EVALUATION REPORT

Recommended Least Depth: -4.0m MLLW (Predicted Tides)

COMPILATION NOTES

AWOIS NO: 9651

AWOIS NO: 9651

Item Description: OBSTRUCTION

Source: LNM32/86

AWOIS Position: Lat - 29/43/48.81N Lon - 095/01/42.74W

Required Investigation: S2, BD

Charts Affected: 11326, 11328, 11329

INVESTIGATION

Date(s)/DN(s): 03/11/96 (DN 071)

Position Numbers: 7612-7738

Launch Number: 770

Investigation Used: S2

Water Visibility: <0.5m

Position Determined By: DGPS

Investigation Summary: A side scan sonar investigation was conducted on DN 071. Line spacing was 20-meters using the 25-meter range scale, which yielded 200 per cent bottom coverage. The sonagram indicated two contacts, Red Nun Buoy 112 and Red Nun Buoy 112A. No other contacts were found.

CHARTING RECOMMENDATION

The hydrographer recommends that the charted Obstruction PA be deleted from the chart.

Recommended Position:

Cancel

Recommended Least Depth:

COMPILATION NOTES



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Rockville, Maryland 20852

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: July 26, 1996

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-K204EXT-AHP

HYDROGRAPHIC SHEET: H-10663

LOCALITY: Galveston Bay, Texas, Spilmans Island to Lynchburg
Landing

TIME PERIOD: January 23 - March 11, 1996

TIDE STATION USED: 877-0613 Morgan Point, Tx.
Lat. 29° 40.9'N Lon. 94° 59.1'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 4.71 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.2 ft.

TIDE STATION USED: 877-0733 Lynchburg Landing, Tx.
Lat. 29° 45.9'N Lon. 95° 04.7'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 4.03 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.3 ft.



REMARKS: RECOMMENDED ZONING

Galveston Bay Zone GB146 - bounded by the MapInfo polygon points:

-95.005764	29.66289	29° 39' 46"	95° 34' 35"	
-95.033819	29.688195	29 41 18	95 20 17"	1
-94.980989	29.739753	29 44 23	94 58 52	2
-94.900324	29.71379	29 42 50	94 54 12	
-94.918321	29.666686	29 40 07	94 56 00	3
-94.982082	29.677124	29 40 38	94 58 35	
-95.005764	29.66289			

Times and heights are direct using Morgan Point, Tx. (877-0613).

Galveston Bay Zone GB147 - bounded by the MapInfo polygon points:

-95.077176	29.732162	29° 43' 56"	95° 46' 18"	3
-95.06078	29.707173	29 42 26	95 36 28"	
-95.033819	29.688195	29 41 18	95 20 17"	1
-94.980989	29.739753	29 44 23	94 58 52	2
-95.035528	29.75693	29 45 25	95 21 19	4
-95.077176	29.732162			

Apply a +6 minute high water, a +12 minute low water, (average +6 minute time correction), and a X1.05 range ratio to heights using Morgan Point, Tx. (877-0613).

Galveston Bay Zone GB148 - bounded by the MapInfo polygon points:

-95.077176	29.732162	29 43' 56"	95° 46' 18"	3
-95.089806	29.75687	29 45 31	95 53 53	
-95.105595	29.764742	29 45 53	95 58 21	
-95.104502	29.784985	29 47 59	95 57 42	
-95.068067	29.79574	29 47 45	95 40 50	
-95.056773	29.790995	29 47 28	95 34 38	
-95.047375	29.791949	29 47 31	95 28 26	
-95.035528	29.75693	29 45 25	95 21 19	4
-95.077176	29.732162			

Times and heights are direct using Lynchburg Landing, Tx. (877-0733).

Note: Relative sea level trends show that the Galveston Bay, Texas area is undergoing substantial land subsidence. The relative sea level trend observed at Galveston, Pier 21 for the time period 1950 through 1993 is 0.025 ft./yr. with a standard error of 0.002 ft./yr. As a result of high rate of sea change, the 1960 to 78 Tidal Epoch value of Mean Lower Low Water (MLLW) used as chart datum and reference datum for NOS tidal predictions does not reflect present conditions. The data are under review to determine an updated value of MLLW. Even though the 1960-78 Epoch value of MLLW is not the most current, the change is in the direction that is safe for navigation purposes.

Note: Times are tabulated in Greenwich Mean Time.

Note: Tidal phase progressions are inconsistent in this tidal regime. The best available time corrections are provided for both high and low water times. An average of the high and low water time corrections are provided for each zone for survey applications.

William M. Gibson
CHIEF, DATUMS SECTION

NOAA FORM 76-155 (11-72)		U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION					SURVEY NUMBER H-10663			
GEOGRAPHIC NAMES										
Name on Survey										
Page 1 of 2										
		A	B	C	D	E	F	G	H	K
		<small> ON CHART NO. 11320, 11328, 11326 OR PREVIOUS SURVEY CON U.S. QUADRANGLE MAPS FROM LOCAL INFORMATION ON LOCAL MAPS P.O. GUIDE OR MAP GRAND MCNALLY ATLAS U.S. LIGHT LIST </small>								
ALEXANDER ISLAND	X		X							1
BARNES ISLAND	X		X							2
BAYTOWN	X		X							3
BAYTOWN BEND	X		X							4
BAYTOWN TUNNEL	X		X							5
BLACK DUCK BAY	X		X							6
BLACKWELL PENINSULA	X		X							7
BRINSON POINT	X		X							8
BROWNWOOD	X		X							9
BURNETT BAY	X									10
CRYSTAL BAY	X		X							11
GALVESTON BAY (title)	X		X							12
GOAT ISLAND	X		X							13
HOUSTON SHIP CHANNEL	X		X							14
LOWER SAN JACINTO BAY	X		X							15
LYNCHBURG	X		X							16
LYNCHBURG LANDING	X		X							17
MITCHELL BAY	X		X							18
PEGGY LAKE	X		X							19
SAN JACINTO RIVER	X		X							20
SAN JACINTO STATE PARK	X		X							21
SANTA ANNA BAYOU	X									22
SCOTT BAY	X		X							23
SPILMANS ISLAND	X		X							24
TEXAS (title)	X		X							25

GEOGRAPHIC NAMES

H-10663

Name on Survey

Page 2 of 2

A ON CHART NO. 11320, 11328, 11326
B ON PREVIOUS SURVEY NO.
C ON U.S. QUADRANGLE MAPS
D FROM LOCAL INFORMATION
E ON LOCAL MAPS
F P.O. GUIDE OR MAP
G RAND McNALLY ATLAS
H U.S. LIGHT LIST
K

Name on Survey	A	B	C	D	E	F	G	H	K
UPPER SAN JACINTO BAY	X		X						1
									2
									3
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Approved:

Christo C. Loy
Chief Geographer

JAN 15 1997

09/25/97

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: H-10663

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	7238
NUMBER OF SOUNDINGS	39013

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	26	10/18/96
VERIFICATION OF FIELD DATA	300	04/11/97
QUALITY CONTROL CHECKS	12	
EVALUATION AND ANALYSIS	96	
FINAL INSPECTION	57	05/09/97
COMPILATION	157	09/24/97
TOTAL TIME	648	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		06/12/97

N/CS33-57-97

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU
BY (Check):

- ORDINARY MAIL
- AIR MAIL
- REGISTERED MAIL
- EXPRESS
- GBL (Give number) _____

TO:

NOAA/National Ocean Service
 Chief, Data Control Group, N/CS3x1
 SSMC3, Station 6815
 1315 East-West Highway
 Silver Spring, MD 20910-3282

DATE FORWARDED

September 30, 1997

NUMBER OF PACKAGES

1 Box, 1 Tube

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

H-10663

Texas, Galveston Bay, Spilmans Island to Lynchaburg Landing

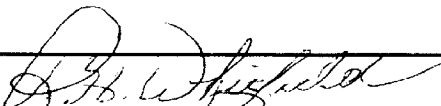
1 Box Containing:

- 1 Original Descriptive Report for H-10663
- 1 Envelope with 2 HISTORY OF CARTOGRAPHIC WORK (NOAA form 76-71) for H-10663 for charts 11328 and 11329

1 Tube Containing:

- 1 Original Smooth Sheet for H-10663
- 1 Paper Composite plot of survey H-10663 for NOS chart 11238
- 1 Paper Composite plot of Survey H-10663 for NOS chart 11239
- 1 Mylar H-Drawing of H-10663 for NOS chart 11238
- 1 Mylar H-Drawing of H-10663 for NOS chart 11239

FROM: (Signature)


 Richard H. Whitfield

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Atlantic Hydrographic Branch N/CS331
 439 W. York Street
 Norfolk, VA 23510-1114

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H-10663 (1996)

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.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

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

Hydrographic Processing System (HPS)
NADCON, version 2.10
AutoCAD, Release 12
SITE WORKS 02.01.02.00
MicroStation 95, version 5.05
I/RAS B, version 5.01

The smooth sheet was plotted using an ENCAD NovaJet III plotter.

H. CONTROL STATIONS

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 datum move the projection lines 0.397 seconds (12.249 meters or 1.22 mm at the scale of the survey) north in latitude, and 01.14 seconds (27.401 meters or 2.74 mm at the scale of the survey) west in longitude.

J. SHORELINE

Shoreline originates with unreviewed digital shoreline manuscript CM-10228 of 1993.

The following two shoreline features not shown on the shoreline manuscript were located by the hydrographer and are shown in red on the present survey: a boathouse in Latitude 29°43'58.9"N, Longitude 95°01'16.4"W, and a T-pier in Latitude 29°42'47.5"N, Longitude 95°03'23.3"W, named Industrial Chemical Corporation Fuel Pier. These features are presently charted on the latest edition of National Ocean Service (NOS) chart 11329. No change in charting is recommended.

A pier originating with the shoreline manuscript in Latitude 29°42'16.5"N, Longitude 95°02'45.0"W is shown as pier

ruins on chart 11329. It is recommended that the pier ruins be deleted from the chart and chart a pier as shown on the present survey.

An uncharted obstruction originating with the shoreline manuscript in Latitude 29°43'57.7"N, Longitude 95°02'31.2"W was neither verified nor disproved by the present survey. It is recommended that an obstruction be charted as shown on the present survey.

Four uncharted dolphins originate with the shoreline manuscript in the vicinity of Latitude 29°43'56.4"N, Longitude 95°01'12.8"W. It is recommended that these four dolphins be charted as shown on the present survey.

Three piles originating with the shoreline manuscript in the vicinity of Latitude 29°43'46"N, Longitude 95°02'48"W are in agreement with four of six charted obstructions. The obstructions were not investigated by the hydrographer. It is recommended that the six obstructions be retained as charted

L. JUNCTIONS

H-10619 (1995) 1:10,000 to the northwest
H-10666 (1996) 1:10,000 to the southeast

A standard junction was effected between the present survey and surveys H-10619 (1995) and H-10666 (1996).

M. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

H-5124 (1931) 1:5,000
 H-5125 (1931) 1:5,000
H-8741 (1963-1965) 1:10,000

Prior surveys H-5124 (1931) and H-5125 (1931) cover the northwest part of the present survey. The prior survey was conducted prior to changes resulting from extensive dredging construction, and subsidence due to the withdrawal of gas and oil from the area. Numerous drastic changes preclude a meaningful comparison with the present survey.

Prior survey H-8741 (1963-1965) is in good agreement with the present survey. Present survey depths are generally 0 to 5 feet (0 to 2¹ m) deeper than the prior survey depths. In the vicinity of Latitude 29°43'45"N, Longitude 95°01'15"W, in

Mitchell Bay, present survey depths are 0 to 20 feet (1⁵ to 9¹ m) deeper than the prior survey depths. These differences may be attributed to dredging in the area to accommodate larger draft vessels visiting the Exxon Company piers. Attention is directed to the following:

1. The following charted features originate with prior survey H-8741 (1963-1965):

<u>DEPTHS/FEATURES</u>	<u>LATITUDE (N)</u>	<u>LONGITUDE (W)</u>
Platform (ruins)	29°42'17.7"	95°01'18.3"
subm pile	29°42'21.2"	95°01'16.7"
subm stakes	29°42'42.6"	95°03'01.1"
subm pile	29°42'39.8"	95°01'23.0"
subm pipe	29°42'50.7"	95°01'22.2"
subm pile	29°43'48.2"	95°01'24.0"
snag	29°43'52.8"	95°01'33.6"

These features were neither verified nor disproved by the present survey. No changes in charting is recommended.

2. Four charted submerged piling ED in the vicinity of Latitude 29°42'11.5"N, Longitude 95°01'52.0"W originate with prior survey H-8741 (1963-65). These piles were neither verified nor disproved by the present survey. No change in charting is recommended.

3. Four charted submerged piling ED in the vicinity of Latitude 29°42'13.0"N, Longitude 95°01'56.0"W originate with prior survey H-8741 (1963-65). These piles were neither verified nor disproved by the present survey. No change in charting is recommended.

4. Two charted submerged dolphins in the vicinity of Latitude 29°42'11.5"N, Longitude 95°01'08.4"W originate with prior survey H-8741 (1963-65) as four dolphins. The dolphins were neither verified nor disproved by the present survey. No change in charting is recommended.

5. The hydrographer located a dolphin in Latitude 29°43'22.25"N, Longitude 95°01'10.41"W. This is in close proximity to a charted submerged dolphin (northernmost of two) originating with the prior survey in Latitude 29°43'22.5"N, Longitude 95°01'09.8"W. It is recommended that the submerged dolphin be deleted from the chart and the dolphin located by the hydrographer be charted as shown on the present survey. It is also recommended that the second submerged dolphin in Latitude 29°43'21.9"N, Longitude 95°01'09.5"W be retained.

6. Six charted submerged piles in the vicinity of Latitude 29°43'49.2"N, Longitude 95°01'33.6"W were neither verified nor disproved by the present survey. No change in charting is recommended.

7. Charted pier ruins in the vicinity of Latitude 29°42'52.0"N, Longitude 95°03'23.0"W originate with the prior survey. Present survey depths in the area are 8 to 9 feet deeper than the chart. No indication of any ruins can be seen on the fathograms. It is recommended that the pier ruins be removed from the chart.

Except as noted above the present survey is considered adequate to supersede the prior surveys within the common area.

N. ITEM INVESTIGATIONS

1. Automated Wreck and Obstruction Information System item #9635 is a charted Shoaling rep 1979 (12-ft sounding), in latitude 29°42'17.5"N, longitude 95°01'12.0"W. This item was investigated by the field unit using a fathometer. A twelve foot sounding was found at latitude 29°42'17.65"N, longitude 95°01'12.90"W. Eleven foot soundings were found to the southwest of the above depth and extend for approximately one thousand feet down the center of the channel to the vicinity of Latitude 29°42'12.38"N, Longitude 95°01'22.90"W. It is recommended that the charted note be revised to 11 ft rep 1996 unless other information indicates otherwise.

2. AWOIS item #9637 is an investigation of the controlling depth of the approach to the DuPont Chemical Plant in Latitude 29°42'23.0"N, Longitude 95°02'25.0"W. There were no sounding lines perpendicular to the channel. All sounding lines were run parallel to the channel and does not adequately portray the controlling depths for the channel. It is recommended that the charted notation 12 ft rep 1977 be retained as charted unless other information or after dredging drawings indicate otherwise.

3. AWOIS item #9640 is a charted note 40 ft rep Jul 1990 shown on chart 11329 in Latitude 29°43'37.0"N, Longitude 95°01'21.5"W. This note does not reflect the depths of the main channel as described by the hydrographer in the Descriptive Report. The note is for the marked area on the chart east of the main channel where the note is located. The note has been revised to 40 ft rep Dec 1990 on the latest edition of NOS chart 11328. It is recommended that the

charted note 40 ft rep Jul 1990 be revised to 40 ft rep Dec 1990.

4. AWOIS item #9646 is five charted dolphins in the vicinity of Latitude 29°43'47.5"N, Longitude 95°01'10.8"W. These dolphins were not adequately verified nor disproved by the hydrographer. It is recommended that the five dolphins be retained as charted.

5. AWOIS item #9647 is comprised of the following three charted notations for reported depths:

16½ ft rep 1990 in Latitude 29°43'50"N, Longitude 95°01'15"W. No shoaler soundings were found within the dredged limits for this area. No change in charting is recommended.

21 ft rep 1990 in Latitude 29°43'51.0"N, Longitude 95°01'17.5"W. The present survey found shoal soundings of 15 to 17 feet in the vicinity of Latitude 29°43'55"N, Longitude 95°01'15"W. It is recommended that the note be revised to show present survey depths unless other information or after dredging drawings indicate otherwise.

16½ ft rep 1990 in Latitude 29°43'51.0"N, Longitude 95°01'20.5"W. The present survey found shoal soundings of 15 feet in Latitude 29°43'56.64"N, Longitude 95°01'13.03"W. It is recommended that the note be revised to show present survey depths unless other information or after dredging drawings indicate otherwise.

6. AWOIS item #9650 is four charted piles in the vicinity of Latitude 29°43'56.90"N, Longitude 95°01'18.10"W. The hydrographer located five steel dolphins in the following positions:

<u>Feature</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
dolphin	29°43'56.22"	95°01'21.50"
dolphin	29°43'57.30"	95°01'20.42"
dolphin	29°43'58.34"	95°01'19.33"
dolphin	29°43'54.16"	95°01'23.62"
dolphin	29°43'52.01"	95°01'21.50"

It is recommended that the four piles be deleted from the chart and five dolphins be charted as shown on the present survey.

O. COMPARISON WITH CHART 11326 (26th Edition, Jan 1/94)
11328 (19th Edition, May 6/95)
11329 (30th Edition, May 13/95)

The charted hydrography originates with the previously discussed prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in Section O. of the Descriptive Report. The following should be noted:

1. A charted notation "40 FEET AUG 1976" in the vicinity of Latitude 29°43'30"N, Longitude 95°01'25"W was not discussed by the hydrographer. Present survey depths are 38 to 41 feet. The same area is noted as "29 FT JUL 1991" on the latest edition of NOS chart 11328. It is recommended that the charted notation 40 FEET AUG 1976 be revised to 29 FT JUL 1991.

2. Two charted submerged dolphins in the vicinity of Latitude 29°42'47.2"N, Longitude 95°03'22.8"W were neither verified nor disproved by the field unit. It is recommended that the two submerged dolphins be retained as charted.

The hydrographer located one charted pile in Latitude 29°42'48.92"N, Longitude 95°03'23.10"W and three uncharted dolphins in Latitude 29°42'47.70"N, Longitude 95°03'23.12"W, Latitude 29°42'47.21"N, Longitude 95°03'23.24"W, and Latitude 29°42'45.83"N, Longitude 95°03'23.33"W. It is recommended that the charted pile be revised to a dolphin. It is also recommended that the three dolphins be charted as shown on the present survey.

3. Four charted submerged dolphins, in Latitude 29°43'16.3"N Longitude 95°01'08.2"W originating with an unknown source were neither verified nor disproved by the present survey. It is recommended that these submerged dolphins be retained as charted.

4. A charted tree shown on chart 11328 in Latitude 29°43'56.22"N, Longitude 95°01'30.94"W was located by the hydrographer and described as a pile. It is recommended that the tree be revised to a pile as shown on the present survey.

5. A charted visible pile shown on chart 11328 in Latitude 29°43'57.0"N, Longitude 95°01'33.5"W is shown as a submerged pile on chart 11329. It is recommended that the charted pile be revised to a submerged pile.

6. Two visible piles in the vicinity of Latitude

29°43'53.4"N, Longitude 95°01'12.3"W are shown on NOS chart 11328. These piles are not shown on NOS chart 11329. It is recommended that the two visible piles be deleted from chart 11328.

7. Two visible dolphins in the vicinity of pier 7, Latitude 29°43'50.0"N, Longitude 95°01'08.8"W are shown on NOS chart 11328. These piles are not shown on NOS chart 11329. It is recommended that the two visible dolphins be deleted from chart 11328.

8. Four visible dolphins in the vicinity of pier 7, Latitude 29°43'49.0"N, Longitude 95°01'08.6"W, are shown on NOS chart 11329. These piles are not shown on NOS chart 11328. It is recommended that at the four visible dolphins be deleted from chart 11329.

9. Four visible dolphins in the vicinity of pier 6, Latitude 29°43'46.4"N, Longitude 95°01'11.0"W are shown on NOS chart 11329. These piles are not shown on NOS chart 11328. It is recommended that at the four visible dolphins be deleted from chart 11329.

10. A charted visible dolphin in Latitude 29°45'40.0"N, Longitude 95°04'40.0"W was not verified by the hydrographer. It is recommended that the visible dolphin be revised to a submerged dolphin.

11. A charted obstruction in Latitude 29°45'07.0"N, Longitude 95°03'47.5"W was located by the hydrographer and verified as a pipeline crossing sign. It is recommended that the charted obstruction be revised to a sign.

12. Numerous uncharted pipeline crossing signs were located by the present survey. It is recommended that these signs be charted as shown on the present survey.

13. Fourteen dolphins were located by the hydrographer in the vicinity of Latitude 29°42'29.0"N, Longitude 95°03'17.0"W. Three of these dolphins are presently charted. It is recommended that eleven dolphins be charted as shown on the present survey. It is also recommended that the two charted submerged dolphins in the immediate vicinity be deleted from the chart.

14. Four dolphins were located by the hydrographer in the vicinity of Latitude 29°42'18.0"N, Longitude 95°02'25.0"W. Three of these dolphins are presently charted. It is

recommended that three charted dolphins be retained and one dolphin be charted as shown on the present survey.

15. Charted pier ruins in the vicinity of Latitude 29°42'55.0"N, Longitude 95°03'22.0"W originate with an unknown source. Present survey depths in the area are 8 to 9 feet deeper than the chart. No indication of any ruins can be seen on the fathograms. It is recommended that the pier ruins be removed from the chart.

16. Four charted areas that uncover at low water datum along the north and south sides of the Upper San Jacinto Bay Channel in the vicinity of Latitude 29°42'30"N, Longitude 95°02'40"W were not discussed by the hydrographer. Present survey soundings show that these areas no longer exist. It is recommended that these areas be deleted from the chart.

Except as noted, the present survey is adequate to supersede the charted hydrography within the common area.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic survey. No additional work is recommended.

Q. Aids to Navigation

The hydrographer located 82 fixed and 12 floating aids to navigation on the present survey. These aids appear adequate to serve their intended purpose.

1. The following uncharted San Jacinto Barge Channel daybeacons (private aids) were located by the field unit. These daybeacons are not listed in Light, List Volume IV, Gulf of Mexico. All of the other private aids in the San Jacinto Barge Canal are listed in the light list.

<u>DESCRIPTION</u>	<u>LATITUDE (N)</u>	<u>LONGITUDE (W)</u>
Daybeacon 7	29°42'13.11"	95°01'39.40"
Daybeacon 9	29°42'15.39"	95°01'48.16"
Daybeacon 11	29°42'17.89"	95°01'57.69"
Daybeacon 13	29°42'20.24"	95°02'06.76"
Daybeacon 17	29°42'24.57"	95°02'23.12"
Daybeacon 19	29°42'30.66"	95°02'46.50"
Daybeacon 21	29°42'33.53"	95°02'57.31"

It is recommended that these daybeacons be charted as

shown on the present survey unless other information indicates otherwise.

2. The following three charted aids to navigation were not found by the field unit:

<u>DESCRIPTION</u>	<u>LATITUDE (N)</u>	<u>LONGITUDE (W)</u>
San Jacinto Bay Barge Channel daybeacon 1	29°42'14.5"	95°01'14.5"
San Jacinto Bay Barge Channel daybeacon 28	29°42'45.2"	95°03'15.0"
Houston Ship Channel Buoy 101	29°41'55.0"	95°00'19.0"

It is recommended that these aids to navigation be deleted from the chart unless other information indicates otherwise.

3. One charted floating aid to navigation, green can buoy 107, in Latitude 29°42'38.6"W, Longitude 95°01'18.0"W, was neither verified nor disproved by the field unit. The aid to navigation is not listed in the light list. It is recommended that the green can buoy 107 be retained as charted unless other information indicates otherwise.

4. The following aids to navigation are in the Light List, but they were not verified by the hydrographer during the present survey. No change in charting is recommended unless other information indicates otherwise.

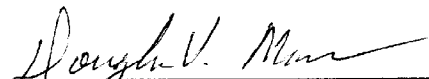
<u>DESCRIPTION</u>	<u>LATITUDE (N)</u>	<u>LONGITUDE (W)</u>	<u>LL#</u>
Can 101	29°41'59"	95°00'19"	23850
Exxon Dock Lt 2	29°43'36"	95°01'18"	24045
Exxon Dock Lt 5	29°43'36"	95°01'24"	24050
Baytown Bend Tower	29°43'42"	95°01'42"	24065
Obstr Lt A			
Baytown Bend Tower	29°43'42"	95°01'44"	24070
Obstr Lt B			
Lower Peggy's Lake	29°43'45"	95°01'10"	24090
Outbound Rng Rear Lt			

H-10663

S. MISCELLANEOUS

Chart compilation using the present survey was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data has been forwarded to Marine Chart Division, Silver Spring, Maryland.

H-10663




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

APPROVAL SHEET
H-10663

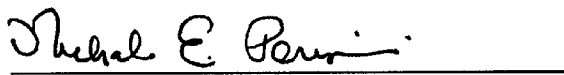
Initial Approvals:

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


Richard H. Whitfield
Cartographer
Atlantic Hydrographic Branch

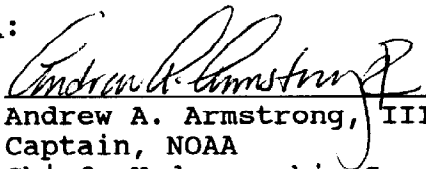
Date: June 12, 1997

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.


Nicholas E. Perugini, CDR, NOAA
Chief, Atlantic Hydrographic Branch

Date: June 12, 1997

Final Approval:

Approved: 
Andrew A. Armstrong, III
Captain, NOAA
Chief, Hydrographic Surveys Division

Date: Dec 9, 1997

MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10663

INSTRUCTIONS

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

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

CHART	DATE	CARTOGRAPHER	REMARKS
11329	9/10/97	<i>[Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No.
11328	9/22/97	<i>[Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
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