

10390

Diagram No. 1284-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey .. Hydrographic

Field No. AHP-10-10-91

Registry No. H-10390

LOCALITY

State Texas

General Locality .. Lavaca Bay

Sublocality Sand Point to Point Comfort

19 91

CHIEF OF PARTY
LT T.R. Waddington

LIBRARY & ARCHIVES

DATE May 22, 1992

10390

EC/G

PRODUCTS

11317

11316

11300 N/C

HYDROGRAPHIC TITLE SHEET

H-10390

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 10-10-91

State Texas

General locality Lavaca Bay

Locality Sand Point to Point Comfort

Scale 1:10,000 Date of survey August 5, 1991
October 10, 1991

Instructions dated March 1, 1991 Project No. OPR-K228-AHP-2

Vessel NOAA Launch 0770

Chief of party Lt. Thomas R. Waddington, NOAA

Surveyed by Glenn Hendrix, Larry Martinez, James Verlaque, Nester Yruegas

Soundings taken by echo sounder, ~~hand lead, pole~~ DE-719C

Graphic record scaled by GDH, LAM, JSV, NY

Graphic record checked by GDH, LAM, NY

Verification by: R. Davies Automated plot by PHS Xynetics Plotter

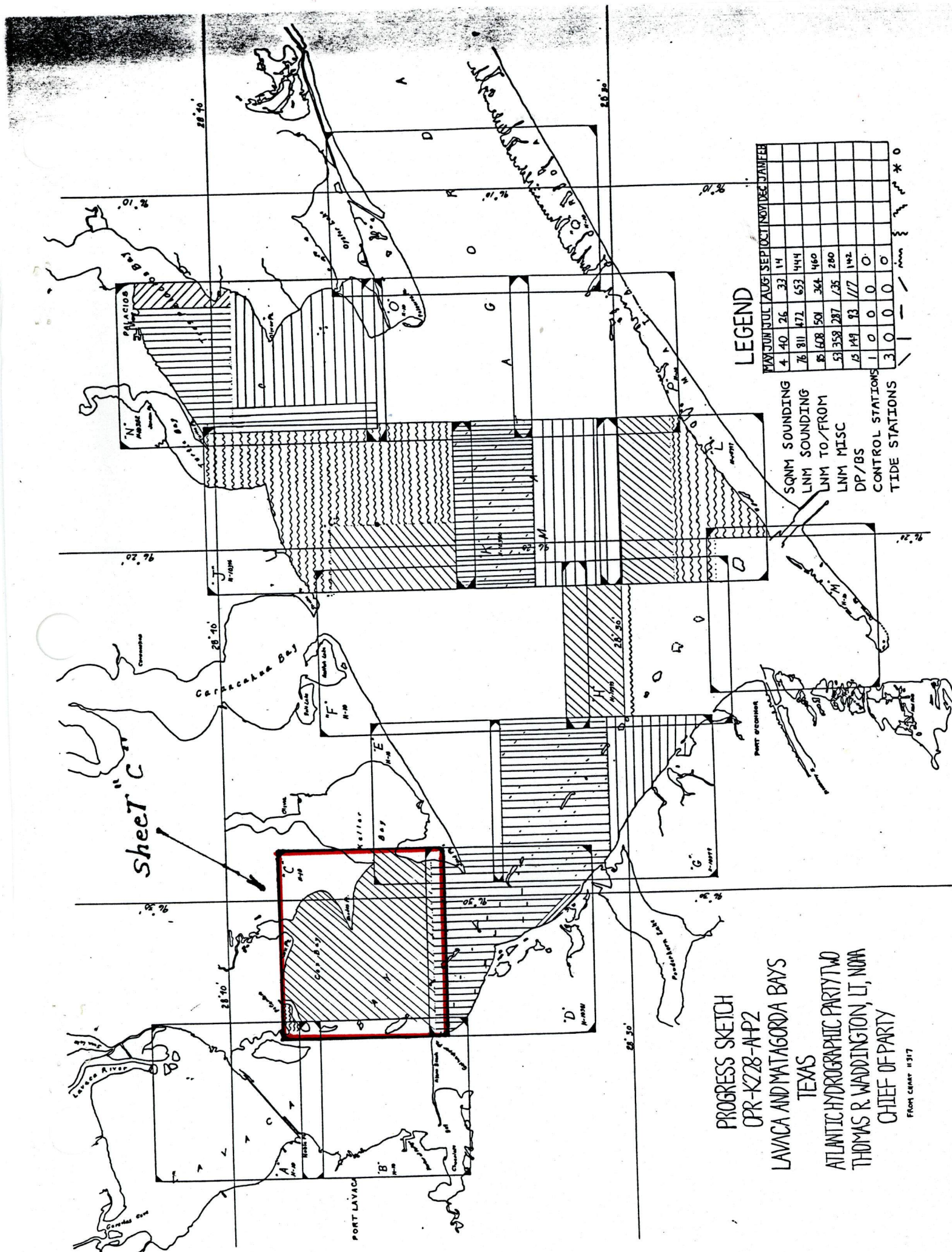
Evaluation by: R. Davies

Soundings in ~~fathoms~~ ~~feet~~ at ~~MLW~~ MLLW Meters and decimeters

REMARKS: Time in UTC. Revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

AWOIS/SURFV 6/5/92 SSJ

SW
XWW
JAN 29 1997



LEGEND

	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB
SQNM SOUNDING	4	40	26	32	14					
LNM SOUNDING	76	811	472	653	444					
LNM TO/FROM	8	608	501	364	460					
LNM MISC	53	358	287	735	280					
DP/BS	15	149	93	177	192					
CONTROL STATIONS	1	0	0	0	0					
TIDE STATIONS	3	0	0	0	0					

SQNM SOUNDING
 LNM SOUNDING
 LNM TO/FROM
 LNM MISC
 DP/BS
 CONTROL STATIONS
 TIDE STATIONS

PROGRESS SKETCH
 OPR-K228-AP2
 TEXAS
 LAVACA AND MATAGORDA BAYS
 ATLANTIC HYDROGRAPHIC PARTY TWO
 THOMAS R. WASHINGTON, LT, NOAA
 CHIEF OF PARTY
 FROM GENR 11317

Sheet C

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-10390
(Field No. AHP2-10-10-91)
Scale:1:10,000
1991

Atlantic Hydrographic Party Two
Chief of Party: Lt. Thomas R. Waddington, NOAA

A. PROJECT ✓

This survey was conducted in accordance with Hydrographic Project Instructions OPR-K228-AHP2, Matagorda and Lavaca Bays, Texas, dated March 01, 1991, Change No. 1, dated June 4, 1991, Change No. 2, dated July 11, 1991 and Change No. 3 dated August 15, 1991.

This survey is designated as sheet "C" in the project instructions.

The purpose of this project is to provide contemporary hydrography for the maintenance of existing nautical charts of Matagorda and Lavaca Bays.

B. AREA SURVEYED ✓

The area surveyed for H-10390 encompasses the southern shoreline of Point Comfort, the mouth of Keller Bay and is bounded by the following limits:

North - 28°38'^{9 00}55"N
South - 28°35'^{0 00}06"N
East - 096°28'^{0 00}45"W
West - 096°33'^{0 00}54"W

This survey was conducted from August 5, 1991 (day 217) to October 10, 1991 (day 283).

The bottom is composed of mostly gray mud and fine sand.

Depths in this survey range from 0.⁰3 to 12.²3 meters.

C. SOUNDING VESSELS ✓

Vessel 770 (EDP No. 770), a 21-foot MonArk, was the sounding vessel used to collect all survey data. There were no unusual vessel configurations nor problems encountered.

D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

The HDAPS currently in use consists of the following system components: A Hewlett Packard (HP) 9000 Model 340 computer, an HP 9153B Disk Drive with a hard disk storage capacity of 20 Mbytes, an HP 7959B hard disk with a storage capacity of 300 Mbytes, an HP 98785A Color Monitor, a Bruning ZETA 824 plotter, an HP Ruggedwriter 480 printer, and an HP Model 9145 tape drive. The system on the 21-foot MonArk consists of an IBM PC compatible system, using the Navitronic's Hyflex 1000 as the interface between the computer and the hydrographic sensors. Data are acquired and stored on vessel 770, using a Texas Microsystems computer. Data are written to 3.5-inch double sided micro-floppy diskettes. A Navitronic Path Guidance Unit (PGU) functions both as a remote steering display for the coxswain and as a remote control for the HDAPS. The office and launch systems are not compatible. The Oswego "Lif" utility program must be used to convert the raw data collected on-line to Hewlett-Packard format.

In addition to the HDAPS, the following non-HDAPS computer programs were used:

	<u>Version</u>	<u>Date</u>
VELOCITY - Velocity Computations (IBM PC)	1.01	1/90
MTEN3 with enhancements Geodetic Computations (IBM PC)		6/88
WORDPERFECT - Descriptive Report (IBM PC)	5.1	/90

E. SONAR EQUIPMENT ✓

No sonar equipment was used during this survey.

F. SOUNDING EQUIPMENT ✓

The following Raytheon Fathometers (Model DE-719-C) with Odom Hydrographic Systems, Inc. Digitraces, were used on vessel 770.

<u>Vessel</u>		<u>S/N</u>	<u>Day</u>
770	Raytheon DE-719-C	7727	217 - 283

A minor problem was experienced when changing the sounding interval on line. The Raytheon Fathometer and the TMI computer process the selected sounding inserted by this action differently. On several occasions, after the hydrographer used the selected sounding interval function, either an inbetween sounding is omitted on the fathogram or the fix number is duplicated. This causes the position numbers to be on a different selected sounding throughout the rest of the line.
Did not cause a problem with the quality of this survey.

In general, comparisons between digital and analog depths revealed the digital depths to be 0.1-meter shallower than the analog and leadline depths.

G. CORRECTIONS TO SOUNDINGS ✓

When using the Raytheon Model DE-719-C Fathometers, calibration checks were made frequently on each day of hydrography. The Digitrace readings were closely monitored for agreement with the fathogram trace. The digitized soundings matched the fathometer's trace to plus or minus 0.1 meter. Any necessary corrections were made during scanning of the fathograms. Any required adjustments of the tide and draft, speed of sound, and sensitivity were made and noted on the fathogram. Any departures from the initial zero were corrected during scanning of the fathogram.

Soundings were recorded in meters. The Raythoen DE-719-C fathometer is adjusted for an assumed speed of sound through water of 1500 meters/second. Corrections for the speed of sound through water were computed from data obtained with ODOM DIGIBAR speed of sound profilers (S/N 155). NOS Program "Velocity" was used for the speed of sound correction computations. Copies of cast forms can be found in the separates of this report.*

The following speed of sound casts were taken during the course of the survey:

<u>Table Applied</u>	<u>Day</u>	<u>Cast Depth Meters</u>	<u>Location NAD 1983</u>	<u>Days Used</u>
1	219	14.3	28°35'45"N 096°34'00"W	217-221
2	224	14.3	28°35'30"N 096°33'00"W	224-233
3	238	13.0	28°35'45"N 096°34'00"W	238-241
4	247	13.0	28°35'45"N 096°34'00"W	246

* Filled with the hydrographic data.

<u>Table Applied</u>	<u>Day</u>	<u>Cast Depth Meters</u>	<u>Location NAD 1983</u>	<u>Days Used</u>
5	256	12.0	28°35'45"N 096°34'00"W	254-260
6	274	9.0	28°38'36"N 096°33'15"W	269-275
7	281	11.0	28°35'45"N 096°34'00"W	281-283

A data quality assurance test (DQA) was performed prior to each speed of sound cast to assure proper working condition of the probe. Speed of sound tables are included in the separates of this report.*

Weather permitting, lead line comparisons were conducted on each day of hydrography to determine an instrument corrector and check the static draft. Instrument corrections are applied via the velocity table. Lead line comparison forms can be found in the separates of this report.*

Settlement and squat measurements for vessel 770 were performed on May 23, 1991 (DN 143) at the Harbor Refuge in Port Lavaca, Texas, using the NOS prescribed level rod method (Zeiss Level S/N 08765). Settlement and squat correctors and the static draft corrector of .32-meter for vessel 770 were applied on-line through the offset tables. Copies of the field data, the graphs of the settlement and squat correctors vs. RPM, and the offset tables are included in the separates.*

The final field sheets and rough sheets were plotted with predicted tides using Port O'Connor as the reference station and the correctors designated in the project instructions. Approved tides were requested from the Sea and Lake Levels Branch, N/OMA1212, in a letter dated October 15, 1991. Copies of the field tide level note, request for approved tides, and HDAPS tide tables are included with the separates.*

Survey records were scanned by AHP-2 employees. Significant peaks and deeps which occurred between selected soundings, missed depths, incorrectly digitized soundings, and the effects of sea and swell action were corrected while scanning the echograms.

H. CONTROL STATIONS ✓

The horizontal control datum for this project is the North American Datum of 1983.

* Filed with the hydrographic data

Five monumented control stations (stations 001, 014, 016, 017 and 019), and three fixed aids to navigation (stations 009, 010 and 012), were used to control this survey. The control stations are listed in the Descriptive Report Appendices. *Attached to this report.*

All control stations used on this survey were either existing stations or stations set by the Coastal Surveys Unit. All monumented control stations were established using third order, class I Geosatellite Positioning System methods. The horizontal control report was written within the Coastal Surveys Unit and was forwarded to the Atlantic Hydrographic section in Norfolk, Virginia.

I. HYDROGRAPHIC POSITION CONTROL ✓

Hydrographic position control was accomplished using the Mini-Ranger Motorola Falcon 484 system which provided accuracy to meet 1:10,000 scale survey requirements. Range/range positioning using two, three or four stations simultaneously was used during this project. A survey network was set up to allow four reference stations to be accessed simultaneously by the HDAPS. Due to limited control coverage in the ALCOA ship basin, manual range/azimuth hydrography was required to adequately cover this small area.

The R/T (S/N E2957) failed on day 246 and was returned to AMC for repairs. A baseline was performed on day 252 using a new R/T (S/N F3389), and the new baseline correctors were entered into the C-O tables on the boat and the processing trailer.

The following Falcon Mini-Ranger equipment was used:

	<u>Equipment</u>	<u>S/N</u>
(770)	RPU	E0164
	R/T	E2957 (days 217-246)
	R/T	F3389 (days 254-283)
	R/S	F3180
	R/S	E2906
	R/S	E2977
	R/S	E2963
	R/S	E2890
	R/S	C2091

Positions which had erratic lines of position, indicated by high residuals (over 5 meters) or high error circle radii (over 15 meters) were "smoothed" or recomputed with point computation during processing. Positions were "smoothed" by dead reckoning between two accurate positions. Positions were recomputed with point computation by turning off the problem station or turning on a station with a good distance which was off when the position was recorded.

If more than six consecutive selected soundings had high residuals, high error circle radii, or angles of intersection outside the 30 to 150 degree margin with an erratic track plot, the data were rejected and later rerun. Occasionally, the residual values were greater than 5 meters or error circle radii values were greater than 15, yet the trackline plot showed that the position of the survey vessel was accurate. In those instances, the data were considered adequate and were plotted without smoothing on the final field sheet. Point computation was used if possible when high residuals or high error circle radii occurred at the first or last position of a line.

All data was reviewed, and is considered adequate.

Another occasional problem was encountered when a good residual and error circle radius appeared on the "raw" listing, but the easting or northing of the position was off by thousands of meters. These positions were rejected, smoothed, or recomputed with point computation following the standards mentioned above.

Critical system checks were performed by visually observing the error circle radii and residual values on the Texas Microsystems (TMI) screen in the survey vessel. The "DUMP ALPHA" and "DUMP GRAPHICS" functions are not available with the TMI so no hard copy of these checks are possible. However, the data identification listing serves as the record of the quality of the positional data.

Independent observations were monitored to ensure the ECR values remained less than 10 meters (1.0 mm at the scale of the survey) and the maximum residual was consistently smaller than 3 meters. Multiple lines of position were used throughout the survey eliminating the need for formal critical checks, per section 3.1.3.3 of the field procedures manual. *See Eurr Rpt, section 2*

Baseline calibrations were performed as specified in the field procedures manual. The baseline values were incorporated into the Texas Microsystems "C-O" table and applied directly to all "on-line" data. Baseline calibration forms and the "C-O" tables are included in the separates of this report.*

A closing baseline calibration was not performed since the survey was conducted in less than a six month period.

H. SHORELINE *See Eurr Rpt, section 2*

Shoreline details shown on the final field sheet were manually transferred from TP-01648, TP-01649 and TP-01650. The shoreline manuscripts were compiled at 1:20,000 scale and photographically enlarged to 1:10,000 scale.

* Fited with the hydrographic data.

Shoreline verification was accomplished by comparison of the main scheme hydrography which junctions at shore, and by visual inspections. The shoreline in this survey area agrees very well with the manuscripts except the shoreline on the east end and south side of the turning basin at the Alcoa plant located at Pt. Comfort in the northwest section of this survey. Changes in the shoreline are shown in solid red ink, shoreline under construction are shown in broken red ink and verified shoreline are shown in solid black ink on the final field sheet.

All shoreline details on the manuscript were verified visually. These features and new features not related to the shoreline were transferred to the final field sheet in black ink.

I. CROSSLINES ✓

A total of 27.1 linear nautical miles of crosslines were run on H-10390 which equals 10% of the linear nautical miles of hydrography. Crossline soundings agree to within .3 meters of the mainscheme soundings throughout the survey. These differences were caused by predicted tides anomalies. See comments made on Section P "Miscellaneous", of this report about these predicted tides anomalies.

J. JUNCTIONS See EVMC Report, section 5

This sheet junctions with H-10381 to the south.

Junction soundings between the present survey and the junction surveys agree to within three tenths of a meter. This difference could be partly attributed to the predicted tides anomalies in this area. See comments made on Section P, "Miscellaneous", of this report about these predicted tides anomalies.

K. COMPARISON WITH PRIOR SURVEYS See EVMC Report, section 6

This survey was compared with prior survey, H-5857, dated 1934-1935, at \times 1:20,000.

The soundings between the prior survey and the present survey agreed to within .8 meter with the present survey soundings being shoaler. The Matagorda ship channel was dredged after completion of the prior survey and prior to commencement of the present survey. The soundings from the prior survey which are located within the limits of the Matagorda ship channel differ greatly with the present survey soundings. The hydrographer recommends that the present survey soundings be charted. *Concur*

As a direct result of the dredging in the Matagorda ship channel, several spoil islands have been created along the eastside of the channel and the west area of the survey area.

A significant shoreline change occurred in the vicinity of latitude $28^{\circ}38'43''$ ³⁹N, longitude $096^{\circ}33'52''$ W with the construction of the ALCOA industrial plant.

With consideration for the above statements, the present survey is adequate to supersede the prior surveys within the common areas. *Concur*

L. COMPARISON WITH THE CHART *See Eval Report, section 7*

Comparisons were made with the following largest scale chart covering the present survey area:

<u>Chart No.</u>	<u>Edition</u>	<u>Edition Date</u>
11317	20th	March 23, 1991

There are eleven AWOIS items within the limits of the present survey. See the AWOIS reports included with the separates* of this report for findings on these AWOIS items.

The hydrography ran during the investigation for Awois Item 5277 (positions 2857-2861) was plotted on the final field sheet; Awois Item 5281 hydrography (positions 2870-2871) was plotted on the chain drag track plot. This was done to eliminate congestion with detached positions plotted on the overlay in that area.

Awois item 5278 is located at the junctions of sheet "A" and sheet "B" with this survey. This Awois item is in two sections. The first will be addressed during the hydrography on sheet "A" and the other will be addressed during hydrography on sheet "B".

*Sheet A = H-10416
Sheet B = H-10411*

23 lighted well platforms were located within the survey area by detached position. Although none of these platforms are charted, the Chart does include a general note stating that numerous uncharted wells, pipes, and platforms exist in the area.

Retain general note.

In general, the soundings from this survey compared to within .8 meter of the charted depths. The present soundings are adequate to supersede charted soundings within the common areas.

Concur

The two charted submerged piles centered around latitude $28^{\circ}35'15''$ N, longitude $096^{\circ}33'30''$ W no longer exist. Chain drags were performed on day 259 (positions 2671-2690) and on day 275 (positions 2820-2837) and nothing was found. The hydrographer recommends that the submerged piles be removed from the chart.

Concur

* Attached to this report

The pipeline crossing light "D8" charted at position latitude 28°37'15"N, longitude 096°32'18"W no longer exists at that position. The light has been relocated* and a detached position was taken on day 256 (position 2616). A 50-meter radius chain drag was performed on day 283 (positions 2900-2917) to check for any submerged obstruction which may have been left from the previous light; nothing was found. The U. S. Coast Guard Aids To Navigation Team at Port O'Connor, Texas has been informed by telephone of the new position for this light. The hydrographer recommends that the light be removed from the old position and recharted at the new surveyed position. *Concur*

* Surveyed position is 720 meters northwest of charted location.

The charted platform located at latitude 28°35'39"N, longitude 096°33'54"W exists and should remain ~~as~~ charted. A detached position was taken on day 283 (position 2946). The hydrographer recommends that the platform be charted at the surveyed position. *Concur*

The charted platform located at latitude 28°36'51"N, longitude 096°33'12"W exists and should remain ~~as~~ charted. A detached position was taken on day 228 (position 1494). The hydrographer recommends that the platform be charted at the surveyed position. *Concur*

A concrete bulkhead has been constructed across the entrance to the intake canal located at latitude 28°38'42"N, longitude 096°32'57"W. The intake canal still has a continuous flow of water because of openings located within the bulkhead. The hydrographer recommends that the intake canal remain as charted. *Concur*
The note "Intake Canal" was drawn on the smooth sheet.

A row of eleven dolphins not previously charted was located in the turning basin for the Alcoa plant at Point Comfort. Detached positions were taken, (day 269 positions 2888, 2890), on the dolphins located at each end of the row. The hydrographer recommends that the dolphin symbol be charted at the surveyed positions and the remaining nine dolphins be charted evenly spaced between the two positions. *Concur, shown on the smooth sheet as a row of dots (2³) between lat. 28°38'29.86N, long. 96°33'15.41W and lat. 28°38'29.79N, long. 96°33'23.45W.*

The U. S. Army Corps of Engineers in Corpus Christi, Texas informed us that all spoil areas located on the east side of the Matagorda ship channel are still active.

M. ADEQUACY OF SURVEY ✓

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

Do not concur, see section 7.a. + b. of Final Report.

N. AIDS TO NAVIGATION ✓

There ~~are no~~ ^{is one} floating aids to navigation located in the survey area. There are ~~thirteen~~ ^{eighteen} non-floating aids to navigation located within the survey area.

These aids were compared to the U. S. Coast Guard Light List Volume IV, 1991. The aids with light list positions agree well with the surveyed positions. Do not concur. Reference Paragraph L, page 9 of this report concerning Lavaca Pipeline Light D-8 and Matagorda Ship Channel Light "84" as noted below.

The charted positions of the non-floating aids agree well with the surveyed positions except for light "84". It is located 50 meters north of the charted position. Only on the 1:20000 scale inset of chart 11317.

An uncharted pipeline crossing light was located within the survey area. The U. S. Coast Guard Aids To Navigation Team at Port O'Connor, Texas has been informed by telephone of the existence of this light. The hydrographer recommends that the light and characteristics be charted at the position listed below. Concur, shown on the smooth sheet as a lighted private marker (pipeline crossing sign, do1)

<u>LIGHT</u>	<u>SURVEYED POSITION</u>	<u>CHARACTERISTIC</u>
STA-3 5.1M	28°36'10.579"N 096°31'31.775"W	QF FL R privately maintained

All non-floating aids adequately serve their apparent purpose.

No submarine cables, overhead cables, ferry routes, nor overhead pipelines are within the survey area. Concur
Note C, obstr, wells and pipelines should be retained.

No new landmarks were located within the survey area. Landmarks portrayed on the manuscript were verified by visual inspection. No discrepancies were found with the landmarks portrayed on shoreline manuscript T-01648, 01649 nor T-01650.

Two landmarks were transferred from shoreline map TP-01650 to this survey.

O. STATISTICS ✓

<u>Description</u>	<u>770</u>
Total Number of Positions	2891.0
Total Lineal Nautical Miles of Hydrography	305.1
Square Nautical Miles of Hydrography	18.0
Days of Production	26.0
Detached Positions	57.0
Bottom Samples	47.0
Tide Stations	0.0
Current Stations	0.0
Speed of Sound Casts	7.0
Magnetic Stations	0.0

P. MISCELLANEOUS

All positions listed in this report are based on the North American Datum of 1983 (NAD 83).

There were predicted tide anomalies observed during this survey causing depths to differ by .3 meter. The hydrographer believes that when smooth tides are applied this problem will be resolved. *It was resolved when smooth tides applied.*

Thirteen position numbers were duplicated. The PC-DAS on-line acquisition program periodically loses position number count and ends up one position number short; this often leads to duplication of the first position number on the next line. In addition, using the selected sounding interval function can also lead to duplicated positions. See comments made under Section F, "Sounding Equipment".

Forty-seven bottom samples were taken and submitted to the Smithsonian Institution on October 11, 1991, as directed in Section 6.7 of the project instructions. Bottom sample positions are plotted on the overlay and are listed on the Oceanographic Log Sheet-M, NOAA Form 75-44, which may be found in the separates of this report.

No anomalous currents were observed in the survey area.

Q. RECOMMENDATIONS ✓

None.

S. REFERRAL TO REPORTS ✓

<u>Title</u>	<u>Transmittal Information</u>
Descriptive Report to Accompany Survey H-10381	Pacific Hydrographic Section N/CG245 Seattle, WA, 1991
Horizontal Control Report for OPR-K228-AHP2	Field Photogrammetry Section N/CG23322 Norfolk, VA, 1991
Chart Sales Agent Report	Chart Distribution Branch N/CG33 Rockville, MD, 1991
User Evaluation Report	Atlantic Hydrographic Section N/CG244 Norfolk, VA, 1991
Chart Inspection Report	Atlantic Hydrographic Section N/CG244 Norfolk, VA, 1991
Coast Pilot Report	Pacific Hydrographic Section N/CG245 Seattle, WA, 1991

Submitted by:

Glenn D. Hendrix
Surveying Technician, Atlantic Hydrographic Party Two

AWOIS NO: 5277

Item Description: 6 ft. rep depth note scaled from inset of chart
11317

Source: unknown source

AWOIS Position: Lat - 28/38/40W Lon - 96/33/29W

Required Investigation: ES

INVESTIGATION

Date(s)/DN(s): October 9, 1991/282

Position Numbers: 2857-2861

Launch Number: 0770

Investigation Used: ES

Positioning: Falcon R/R

Investigation Summary: The main scheme hydrography was split to 50 meters in this area. Soundings ranged from 1.6 meters to 2.0 meters. The hydrography was plotted on the final field sheet and not the overlay to eliminate congestion with detached positions plotted in the area on the overlay.

CHARTING RECOMMENDATION

The Hydrographer recommends that the 6 foot reported be removed from the chart and the present survey soundings be charted. *Concur*

See Final Report section 7.C.

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5281

Item Description: 8 ft. rep 1982 depth note in dredged area on south shore of Pt. Comfort scaled from inset of chart 11317

Source: CL1249/82--CPR5-11317(1982)

AWOIS Position: Lat - 28/38/40N

Lon - 96/33/27W

Required Investigation: ES

INVESTIGATION

Date(s)/DN(s): October 9, 1991/282

Position Numbers: 2870-2871

Launch Number: 0770

Investigation Used: ES

Positioning: Falcon R/R

Investigation Summary: A line of hydrography was run along a northwest angle to the main scheme in the area. Soundings on that line and the main scheme in that area ranged from 2.1 meters to 4.3 meters. The sounding line that was run at an angle to the main scheme is plotted on the chain drag track plot and not the overlay to eliminate congestion with detached positions plotted in that area on the overlay.

CHARTING RECOMMENDATION

The Hydrographer recommends that the 8 foot reported be removed from the chart and the present survey soundings be charted. *Concur*

See Eval Report, section 7.1

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5282

Item Description: Pier and 4 piles bare at ^{mhw}~~mhw~~ (at end of pier) from proposed docking facility at Pt. Comfort scaled from inset of chart 11317

Source: CL1504/69--COE

AWOIS Position: Lat - 28/38/41 N

Lon - 96/33/28w

Required Investigation: VS, BD, DI, SD

INVESTIGATION

Date(s)/DN(s): October 9, 1991/282

Position Numbers: 2863 & 2864
2867 & 2869
2865 + 2866

Launch Number: 0770

Investigation Used: VS

Positioning: Falcon R/R

Investigation Summary: The item was located visually. The item is a pier which angles slightly to the left with four dolphins at the offshore end. The T-Map shows the pier ^{and} two of the dolphins. Detached positions were taken on the other two dolphins and also at the angle and the offshore end of the pier.

CHARTING RECOMMENDATION

The Hydrographer recommends that the pier and the two dolphins be charted as shown on the T-Map. The remaining two dolphins be charted at the following positions. *Do not concur*

See smooth sheet for depiction of features.

Recommended Position: Lat - 28°38'41.550"N Lon - 096°33'28.140"W

Lat - 28°38'41.310"N Lon - 096°33'27.770"W

Recommended Depth: Pier bares ⁴1.5 meters, Dolphins bare ^{3.9}~~3.0~~ meters
(All heights are corrected for ~~predicted~~ ^{approved} tides.)

Retain pier and dots as charted, see Enc. report, section 7.6.

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5283

Item Description: L-shape pier scaled from inset of chart 11317

Source: Unknown source

AWOIS Position: Lat - 28/38/35N

Lon - 96/33/49W

Required Investigation: VS,BD,DI,SD

INVESTIGATION

Date(s)/DN(s): October 9, 1991/282

Position Numbers: 2872

Launch Number: 0770

Investigation Used: VS

Positioning: Falcon R/R

Investigation Summary: The item was located visually and a detached position was taken on the offshore end. The item is a small finger pier 3 meters by 18 meters used for mooring tugs. The tugs are used for docking and undocking of ships at the Alcoa plant terminal located at Pt. Comfort.

CHARTING RECOMMENDATION

The Hydrographer recommends that a pier be charted at the following position. *The charted L shaped pier should be removed.*

Recommended Position: Lat - 28°38'36.⁵~~40~~"N Lon - 096°33'49.⁹~~80~~"W

Recommended Depth: Pier bares 1.⁴~~5~~ meters, corrected for ^{Approved} ~~predicted~~ tides.

COMPILATION NOTES

Chart

Applied As

CHART NO.

AWOIS ITEM NO.

ITEM DESCRIPTION:

AWOIS NO: 5284

Item Description: Large pier with extension scaled from inset of chart 11317

Source: Unknown source

AWOIS Position: Lat - 28/38/43N

Lon - ⁹⁶~~69~~/33/47W

Required Investigation: VS, BD, DI, SD

INVESTIGATION

Date(s)/DN(s): October 9, 1991/282

Position Numbers: 2873

Launch Number: 0770

Investigation Used: VS

Positioning: Falcon R/R

Investigation Summary: The item was located visually and a detached position was taken on the offshore end. The item is a large pier that is used for ship mooring at the Alcoa plant terminal located at Pt. Comfort. Because of numerous ships moored at the pier only one detached position was taken. The pier agrees well with the T-Map.

CHARTING RECOMMENDATION

The Hydrographer recommends that the pier, ^{with a mooring platform} remain as charted at the following position. *COMPLY*

Recommended Position: Lat - 28°38'43.¹⁰~~00~~"N Lon - 096°33'53.2⁸~~90~~"W

Recommended Depth: Pier bares ^{2.9}~~3.0~~ meters, corrected for ^(approved) predicted tides.

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5320

Item Description: Submerged obstruction scaled from inset of chart 11317

Source: Unknown source

AWOIS Position: Lat - 28/37/43N

Lon - 96/33/14W

Required Investigation: BD,DI,SD - 100m

INVESTIGATION

Date(s)/DN(s): September 13, 1991/256

Position Numbers: 2618

Launch Number: 0770

Investigation Used: VS

Positioning: Falcon R/R

Investigation Summary: An uncharted well platform was located by detached position at latitude 28°37'44.3"N, longitude 096°33'14.8"W which is very near the position of the item obstruction. This precluded further investigation of the obstruction by bottom drag. A dive investigation was also impossible due to mercury contaminants in Cox Bay resulting in health hazard warnings being issued for this area by the Texas Department of Health. A copy of the warning is attached.

CHARTING RECOMMENDATION

Due to NOS policy not to chart petroleum related platforms because of their temporary nature, the Hydrographer recommends the well platform not be charted, and the obstruction remain as charted. *COMLW*
A platform is shown on the smooth sheet.

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5333

Item Description: Row of 4 piles extending from shore scaled from most seaward pile offshore on chart 11317

Source: CL1618/77--USPS

AWOIS Position: Lat - 28/38/15W Lon - 96/30/56W

Required Investigation: VS, BD, DI

INVESTIGATION

Date(s)/DN(s): September 12, 1991/255

Position Numbers: 2565-2566

Launch Number: 0770

Investigation Used: VS

Positioning: Falcon R/R

Investigation Summary: A visual search was made of the area and the four piles were located. Detached positions were taken on the inshore pile and the offshore pile.

The search area was not conducted in the area of the charted piles PA.

CHARTING RECOMMENDATION

The Hydrographer recommends the currently charted piles PA be deleted and the four piles found in-line by the visual search be charted based on the following positions: *Do not concern chart piles as found on this survey and retain charted piles PA as submerged piles PA.*

Inshore Pile - lat. 28°38'27.6"N, lon. 096°31'01.8"W *See ERM Report, section 7a*

Offshore Pile - lat. 28°38'26.7"N, lon. 096°31'00.8"W

The piles were found ^{bare} ~~uncovered~~ ^{1.0} 0.7m at 194657z, corrected to ^{MHW} ~~MLLW~~ by ~~predicted~~ ^{Approved} tides.

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5334

Item Description: Large pier appeared on chart 11317 scaled at offshore end of pier from chart 11317

Source: Unknown source

AWOIS Position: Lat - 28/38/32 N

Lon - 96/32/33 W

Required Investigation: VS, BD, DI

INVESTIGATION

Date(s)/DN(s): October 9, 1991/282

Position Numbers: 2856

Launch Number: 0770

Investigation Used: VS

Positioning: Falcon R/R

Investigation Summary: The item was located visually and a detached position was taken on the offshore end. The item appears to be a large breakwater, 8 meters by 300 meters, filled with earth and shells.

CHARTING RECOMMENDATION

The Hydrographer recommends the item be charted as shown on the TP-01650 *CONUR* ~~Map~~ but labeled as a breakwater.

Recommended Position: Lat - 28°38'31.87"N Lon - 096°32'34.00"W

Recommended Depth: Breakwater bares 1.5 meters, corrected for ~~predicted~~ *approved* tides.

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5344

Item Description: Pile reported scaled from chart 11317.

Source: CL1393/70--USPS

AWOIS Position: Lat - 28/36/02.99N Lon - 096/28/56.90W

Required Investigation: VS, BD, DI - 100m

INVESTIGATION

Date(s)/DN(s): September 16, 1991/259

Position Numbers: 2625-2667

Launch Number: 0770

Investigation Used: BD

Positioning: Falcon R/R

Investigation Summary: A chain drag was performed at 15 meter line spacing over the required area and nothing was found.

CHARTING RECOMMENDATION

The Hydrographer recommends that the pile be removed from the chart. *COMCAY*

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5364

Item Description: Submerged obstruction scaled from inset of chart 11317

Source: Unknown source

AWOIS Position: Lat - 28/37/18

Lon - 96/33/13

Required Investigation: BD,DI,SD - 100m

INVESTIGATION

Date(s)/DN(s): September 13, 1991/256
September 16, 1991/259

Position Numbers: 2574 - 2602
2713 - 2752

Launch Number: 0770

Investigation Used: BD, ES

Positioning: Falcon R/R

Investigation Summary: A chain drag was performed over some of the area, but the drag doors repeatedly dug into the thick mud, almost completely stopping the boat. The doors were brought aboard and cleaned and each time the search was resumed the doors would again dig in. The chain drag was suspended and we conducted echosounder development over the entire area at 7 meter line spacing. No obstructions were evident during these developments. During our operations in this area, we observed shrimp boats trawling over the entire area. Local shrimpers had no knowledge of any hangs or obstructions in this area. A dive investigation was not possible due to mercury contaminants in Cox Bay resulting in health hazard warnings being issued for this area by the Texas Department of Health. A copy of the warning is attached. *Adequate coverage for disposal.*

CHARTING RECOMMENDATION

The Hydrographer recommends that the charted obstruction be removed from the chart. *COMENT*

COMPILATION NOTES

Chart

Applied As

AWOIS NO: 5368

Item Description: Pier scaled from inset of chart 11317

Source: Unknown source

AWOIS Position: Lat - 28/38/48N

Lon - 96/33/44W

Required Investigation: VS,BD,DI,SD

INVESTIGATION

Date(s)/DN(s): October 10, 1991/283

Position Numbers: 2874

Launch Number: 0770

Investigation Used: VS

Positioning: Falcon R/R

Investigation Summary: The item was located visually and a detached position was taken on the offshore end. The item is a finger pier 1 meter by 30 meters with a mooring dolphin at the end of the pier. Because of numerous moored ships, we could not establish adequate control at this sight. The T-map depicts the pier and dolphin accurately. *Concur. Chart the pier and dolphin as shown on the smooth sheet. Position 2874 was taken for general reference purposes only. Because of control was bad, this position plots 50 meters north of T-sheet location.*

CHARTING RECOMMENDATION

The Hydrographer recommends that the pier and dolphin be charted as depicted on ~~the T-Map~~. *Elevation determined for this feature is 1.5m at MHW.*
TP-01650

COMPILATION NOTES

Chart

Applied As



Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

May 16, 1991

Dear Colleague:

I am writing to notify you of a possible threat to patients in your practice area. Several species of finfish and blue crabs taken from Lavaca Bay near Port Comfort have been shown to be contaminated with mercury/methylmercury at levels which may present a hazard to human health. A closure order, issued by the Commissioner of Health, Dr. Robert Bernstein, is in effect for portions of Lavaca Bay. Taking of finfish or crabs from the closed areas of the bay is prohibited.

Regular consumption of fish contaminated with methylmercury at concentrations observed in tissue of aquatic biota from Lavaca Bay is a potential threat to human health.

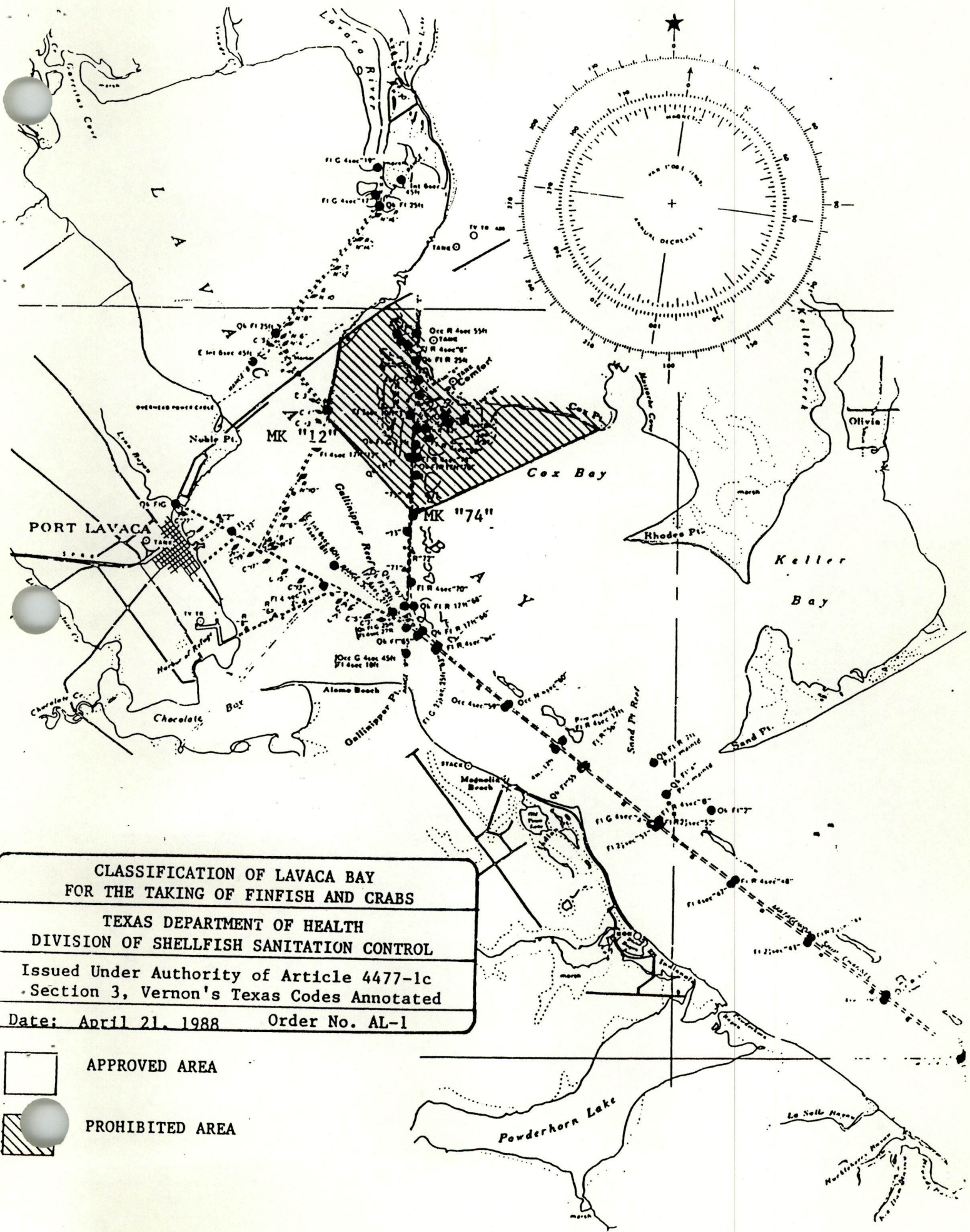
Methylmercury passes without restriction from the maternal to the fetal circulation. It is readily secreted into breast milk. Infants excrete mercury more slowly than adults, adding to the hazard. Infants and fetuses may be as much as 10 times more sensitive to methylmercury than adults, and may display both motor and intellectual retardation. Although gross methylmercury intoxication is not often observed, the prospect of subtle functional impairment of the central nervous system is most worrisome. Methylmercury is not a known carcinogen.

Physicians practicing in the area of Lavaca Bay are encouraged to caution their pregnant patients/mothers of young children about this potential health risk. A map of the area closed to the taking of fish or blue crabs is enclosed. Further information about the health effects of mercury may be obtained by calling the Environmental Epidemiology Program at 512/458-7269.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Diane M. Simpson".

Diane M. Simpson, Ph.D., M.D.
State Epidemiologist and
Associate Commissioner
Disease Prevention





**CLASSIFICATION OF LAVACA BAY
FOR THE TAKING OF FINFISH AND CRABS**

**TEXAS DEPARTMENT OF HEALTH
DIVISION OF SHELLFISH SANITATION CONTROL**

Issued Under Authority of Article 4477-1c
Section 3, Vernon's Texas Codes Annotated

Date: April 21, 1988 Order No. AL-1

-  APPROVED AREA
-  PROHIBITED AREA

CONTROL STATIONS

OPR-K228-AHP2
 AHP-10-10-91
 H-10390

STA	LATITUDE YEAR	CC	LONGITUDE	STATION NAME
001	28°39'08.751"N 1990	250	096°33'48.617"W	ALCOA, 1990
009	28°35'58.914"N 1990	139	096°34'14.621"W	RNG C FRT LT, 1989
010	28°36'35.747"N 1990	250	096°35'07.085"W	RNG C R LT, 1989
012	28°35'26.693"N 1990	250	096°34'02.932"W	RNG D R LT, 1989
014	28°38'23.410"N 1990	250	096°36'38.092"W	NOLE, 1990
016	28°36'57.750"N 1990	250	096°30'48.191"W	RHOD, 1990
017	28°34'12.754"N 1990	250	096°29'19.105"W	SAND, 1990
019	28°38'37.047"N 1989	250	096°33'47.871"W	ZEPP, 1990



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey

Seattle, Washington 98115-0070
Pacific Hydrographic Section
7600 Sand Point Way NE
Seattle, Washington 98115-0070

November 7, 1991

**ADVANCE
INFORMATION**

Commander (OAN)
Eighth Coast Guard District
Hale Boggs Federal Building
501 Magazine Street
New Orleans, Louisiana 70130-3396

Dear Sir:

Preliminary office review of hydrographic survey H-10390, Texas, Lavaca Bay, Sand Point to Point Comfort, disclosed potential dangers to navigation affecting the following nautical charts.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Datum</u>
11316	33rd	1/19/91	NAD 83
11317	20th	3/23/91	NAD 83

I recommend that the enclosed Report of Dangers to Navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

Sincerely,

Douglas G. Hennick
Commander, NOAA
Chief, Pacific Hydrographic Section

Enclosure

cc: DMA/TC
N/CG221



REPORT OF DANGERS TO NAVIGATION

ADVANCE
INFORMATION

Hydrographic Survey Registry Number: H-10390

Survey Title: State: Texas

Locality: Lavaca Bay

Sublocality: Sand Point to Point Comfort

Project Number: OPR-K228-AHP2

All depth data reduced to Mean Lower Low Water using predicted tides.

Affected nautical charts:

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Datum</u>
11316	33rd	1/19/91	NAD 83
11317	20nd	3/23/91	NAD 83

Shoaling has occurred throughout the area of Cox Bay south to latitude 28/35/00N, and east to longitude 96/29/00W. Depths may be 1 foot to 2 feet shallower than presently charted.

An uncharted pile which bares at Mean High Water exists at latitude 28/36/45.0N, longitude 96/30/49.8W.

Mariners should be advised that this is advance information subject to further office review.

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Norfolk, Virginia 23510-1114

Atlantic Hydrographic Party Two
439 West York Street
Norfolk, VA 23510-1114

March 27, 1992

**ADVANCE
INFORMATION**

Memorandum For: Mr. Dennis Hill
Chief, Pacific Hydrographic Processing Unit

From: *Thomas R. Waddington*
Thomas R. Waddington, LT., NOAA
Chief, Atlantic Hydrographic Party

Subject: NAVAID Positions from OPR-K228-AHP

Listed below are the positions for five aids to navigation which were requested by Mr. Bruce Olmstead. These aids are required for your final processing of survey H-10390. These aids were located as part of H-10416 (sheet A) or H-10411 (sheet B) as indicated.

► Located on H-10416 (Sheet A):

Point Comfort Inner Channel Buoy R"2", (L.L. #26580), PN 785
latitude 28°38'09.66"N, longitude 096°33'55.56"W

Point Comfort Inner Channel Light 4, (L.L. #26590), PN 784
latitude 28°38'28.56"N, longitude 096°33'54.71"W
Tower structure, bares 7.1m at MLLW.

Point Comfort Inner Channel Light 6, (L.L. #26600), PN 776
* latitude 28°38'53.42"N, longitude 096°33'52.39"W
Tower structure, bares 4.0m at MLLW.

* Position obtained on survey H-10416, did not include a 6 meter range correction at a 090° bearing. Position listed was computed by forward computation using MTEN (listing attached).

► Located on H-10411 (Sheet B):

Matagorda Ship Channel Light 76, (L.L. #26535), PN 5009
latitude 28°37'50.69"N, longitude 096°33'55.94"W
Single Pile structure, bares 6.5m at MLLW.

Matagorda Ship Channel Light 78, (L.L. #26545), PN 5010
latitude 28°38'03.00"N, longitude 096°33'53.01"W
Single Pile structure, bares 7.0m at MLLW.



Elevations shown are corrected for predicted tides. Positions are NAD 1983.

Additionally, Point Comfort Turning Basin light "88" and daybeacon "90" were not addressed as part of survey H-10390. These were verified as removed on January 29, 1990, by telephone conversation with the U.S.C.G. Aids to Navigation Team at Port O'Connor, Texas (512) 983-4313). The entire structure was reported removed. Neither the lights nor any remnants are charted on the 20th edition of chart 11317 or the 33rd edition of chart 11316. This area has been dredged from the currently charted limits of the turning basin, eastward to shore, making these aids to navigation unnecessary.

If you have any further questions concerning these aids to navigation, please call me at (512)552-3274 until April 6, 1992 or (804)441-6746 thereafter.

Attachment

DIRECT COMPUTATIONS

GRS80

STATION ... "FROM"

AZIMUTHS/DISTANCE

STATION ... "TO"

BOAT

-DIRECT-

LT 6

LAT 028-38-53.42000 N
LON 096-33-52.61000 W

FWD 090-00-00.00000
BCK 270-00-00.10592
DST 6.0000

LAT 028-38-53.42000 N
LON 096-33-52.38907 W

APPROVAL SHEET

BASIC HYDROGRAPHIC SURVEY
OPR-K228-AHP2
AHP-10-10-91
H-10390
1991

This basic hydrographic survey was conducted in accordance with the project instructions for OPR-K229-AHP2, the hydrographic manual, the hydrographic survey guidelines, and the field procedures manual. The survey data and reports were completed under frequent supervision. All boat sheets and final field sheets were reviewed in their entirety and all supporting records were also checked.

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

Thomas R. Waddington
LT., NOAA
Chief, Atlantic Hydrographic Party Two



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

ORIGINAL

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: December 17, 1991

MARINE CENTER: Pacific

OPR: K228

HYDROGRAPHIC SHEET: H-10390

LOCALITY: Lavaca Bay, Sand Point to Point Comfort, TX

TIME PERIOD: August 5 - October 10, 1991

TIDE STATIONS USED: 877 3259 Port Lavaca, TX
Lat. $28^{\circ} 38.5'N$ Lon. $96^{\circ} 36.5'W$

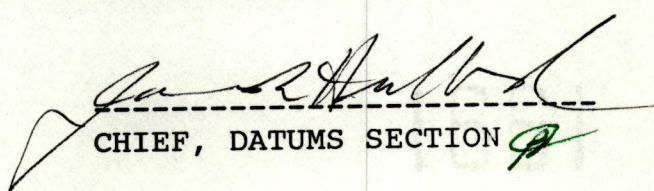
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 1.78 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.0 foot

REMARKS: RECOMMENDED ZONING

Apply a -00hr. 30min correction to times and heights are direct on Port Lavaca, TX.

NOTE: Hourly heights are tabulated on Central Standard Time.


CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

H-10390

Name on Survey	ON CHART NO. 11317											
	A	B	C	D	E	F	G	H	K			
	ON PREVIOUS SURVEY NO.											
	CON U.S. QUADRANGLE MAPS											
	FROM LOCAL INFORMATION											
	ON LOCAL MAPS											
	P.O. GUIDE OR MAP											
	GRAND McNALLY ATLAS											
	U.S. LIGHT LIST											
COMFORT, POINT	X		X									1
COX BAY	X		X									2
COX POINT	X		X									3
LAVACA BAY	X		X									4
HUISACHE COVE	X	X	X									5
MUD POINT	X	X	X									6
RHODES POINT	X		X									7
RUPERT POINT	X	X	X									8
TEXAS (title)	X	X	X									9
												10
												11
												12
												13
												14
												15
												16
												17
												18
												19
												20
												21
												22
												23
												24
												25

Approved:

Charles E. Harrington
Chief Geographer - N/CG 2x5

NOV 13 1991

HYDROGRAPHIC SURVEY STATISTICS

RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	SMOOTH OVERLAYS: POS., ARC, EXCESS		6
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS		8
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION FILES	1				
ENVELOPES					
VOLUMES					
CAHIERS					
BOXES					

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	VERIFICATION	EVALUATION	TOTALS	
POSITIONS ON SHEET			2891	
POSITIONS REVISED				
SOUNDINGS REVISED				
CONTROL STATIONS REVISED				
	TIME-HOURS			
	VERIFICATION	EVALUATION	TOTALS	
PRE-PROCESSING EXAMINATION				
VERIFICATION OF CONTROL				
VERIFICATION OF POSITIONS	21		21	
VERIFICATION OF SOUNDINGS	19		19	
VERIFICATION OF JUNCTIONS				
APPLICATION OF PHOTOBATHYMETRY				
SHORELINE APPLICATION/VERIFICATION				
COMPILATION OF SMOOTH SHEET	19		19	
COMPARISON WITH PRIOR SURVEYS AND CHARTS		11	11	
EVALUATION OF SIDE SCAN SONAR RECORDS				
EVALUATION OF WIRE DRAGS AND SWEEPS				
EVALUATION REPORT		35	35	
GEOGRAPHIC NAMES				
OTHER: Digitization				
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	59	46	105

Pre-processing Examination by
D. Hill

Beginning Date
11/5/91

Ending Date
11/13/91

Verification of Field Data by
R. Davies

Time (Hours)
59

Ending Date
3/25/92

Verification Check by
B. Olmstead, J. Green

Time (Hours)
44

Ending Date
4/3/92

Evaluation and Analysis by
R. Davies

Time (Hours)
46

Ending Date
4/3/92

Inspection by
D. Hill

Time (Hours) **4**

Ending Date
5-15-92

EVALUATION REPORT

H-10390

1. INTRODUCTION

Survey H-10390 is a basic hydrographic survey accomplished by the Atlantic Hydrographic Party 2 under the following Project Instructions.

OPR-K228-AHP, dated March 1, 1991
CHANGE NO. 1, dated June 4, 1991
CHANGE NO. 2, dated July 11, 1991
CHANGE NO. 3, dated August 15, 1991

This survey was conducted in Texas and covers a portion of Lavaca Bay. Specifically, the survey area includes all of Cox Bay with a eastern limit defined by the entrance of Keller Bay between Mud Point and Rupert Point and the western limit defined by a north-south line between Point Comfort and Gallinipper Point. The surveyed area extends from latitude 28/35/00N to latitude 28/39/00N, and from longitude 96/28/42W to longitude 96/33/57W. The surveyed area includes two portions of the Matagorda Ship Channel; in the vicinity of Gallinipper Point and again at the entrance to and including the Point Comfort Turning Basin. The shoreline consists of sand, spoil islands created by contemporary dredging activities and several piers, while numerous oil platforms exist throughout the survey area. The bottom consists of mud and sand. Depths range from 0 to 12.2 meters.

Predicted tides for Port O'Connor, Texas, were used for the reduction of soundings during field processing. Approved hourly heights zoned from Port Lavaca, Texas, gage 877-3259, were used during office processing.

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The TRA, sound velocity and electronic control correctors are adequate. An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey that includes categories of information required to comply with Hydrographic Survey Guidelines No. 52, Standard Digital Data Exchange Format, April 15, 1986. Certain descriptive information, however, may not be in the digital record due to the restrictions of the presently available cartographic codes. The user should refer to the smooth sheet for complete information.

2. CONTROL AND SHORELINE

Sections H and I of the hydrographer's report contain adequate discussions of horizontal control and hydrographic positioning. Additional detailed information on horizontal control is in the following.

GPS and Terrestrial Survey, San Antonio and Lavaca Bays, Texas, October 1990;
Field Report, Matagorda Bay, Texas and vicinity, January 23, 1989 to March 13, 1989;
Fixed Aids to Navigation and Landmark Features, Photogrammetric Survey CM-8715,
Matagorda Bay and Vicinity.

Positions of horizontal control stations used during hydrography are 1989 and 1990 field values based on NAD 83. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 27 adjustment ticks based on values determined with NGS program NADCON. Geographic positions based on NAD 27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: 0.988 seconds (30.423 meters)
 Longitude: 0.911 seconds (24.753 meters)

The year of establishment of control stations shown on the smooth sheet originates with the above mentioned horizontal reports.

The quality of several positions exceeds limits in terms of error circle radius and residual or have angles of intersection less than 30 degrees or more than 150 degrees. A review of the data, however, indicates that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with surroundings. These fixes are considered acceptable.

The following shoreline maps were compiled on NAD 83 and apply to this survey.

	<u>Photo Date</u>	<u>Class</u>
TP-01648	Feb., Mar. 1989	III
TP-01649	Feb., Mar. 1989	III
TP-01650	Feb., Mar. 1989	III

An oil platform at latitude 28/38/26N, longitude 93/33/48W, was transferred to this survey from shoreline map TP-01650.

The following shoreline changes are depicted in red with supporting positional information. These revisions are consider adequate to supersede the common photogrammetrically delineated shoreline.

	<u>Latitude(N)</u>	<u>Longitude(W)</u>
Conc. bkhd from	28/38/30	96/33/00
to	28/38/43	96/32/58

The following shoreline changes are depicted in dashed red without supporting positional information. These revisions are consider adequate to supersede the common photogrammetrically delineated shoreline.

	<u>Latitude(N)</u>	<u>Longitude(W)</u>
Shoreline from	28/38/29	96/33/15
to	28/38/30	96/33/00
Shoreline	28/36/06	96/33/45
Shoreline	28/35/47	96/33/32

3. HYDROGRAPHY

Except as noted, hydrography is adequate to:

- a. delineate the bottom configuration, determine least depths, and draw the standard depth curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation; and
- c. show the survey was properly controlled and soundings are correctly plotted.

The hydrographer was apparently unable to define the zero depth curve due to shallowness which prevented an approach by boat.

Several isolated shoal soundings which differ from the surrounding soundings as much as .5 meters were not investigated for least depths. Also, a 8.7 meter depth at latitude 28/38/38.47N, longitude 96/33/14.60W, the center of the Point Comfort Turning Basin, was not investigated for a least depth and identified as to the nature of the sounding. This depth corresponds to a Daybeacon 90 on the previous edition, 19th edition, of chart 11317. This depth was submitted as a danger to navigation.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, April 1990 Edition, except as follows.

Two danger to navigation letters were generated during office processing. The hydrographer should closely compare the chart and the data from this survey for possible dangers.

Several charted items were not investigated, or were inadequately investigated, during this survey. Refer to section 7 of this report for identification of these features.

The discussion of landmarks, Section N, Aids to Navigation, does not contain a recommendation regarding their charted status nor does it indicate if the landmarks were inspected from seaward. Instead, the discussion pertains to the quality of the aids as depicted on the shoreline maps and merely indicates the landmarks were visually inspected.

A number of aids to navigation which fall within the survey area were not located or evaluated. These aids do fall within the junction area of two surveys in progress, however, some of the aids are far enough within the limits of this survey that they should have been located. These aids were transferred to this survey from positions obtained on the junction surveys and are listed in section 7d. of this report.

A comparison with the prior survey should discuss general trends such as shoaling or deepening that have occurred in the survey area. Give conclusions or opinions as to the reasons for significant differences. In addition, significant changes in the shoreline should be accounted for in a like quantifiable manner, discussing degree of accretion or erosion. Reference the FPM Figure 6.1, Section M, Comparison with Prior Surveys.

The hydrographer's report was not signed by the chief of party.

5. JUNCTIONS

Survey H-10390 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10381	1991	10,000	South
H-10411	1992	10,000	West (south of latitude 28/38/00N)
H-10416	1992	10,000	West (north of latitude 28/38/00N)

The junction with survey H-10381 is complete.

The junctions with surveys H-10411 and H-10416 could not be accomplished because these surveys are in the field. The junctions with the two surveys and survey H-10390 will be addressed in the Evaluation Report for surveys H-10411 and H-10416. A comparison with this survey and the charted depths reveals good agreement.

There are no contemporary surveys to the east. A sounding comparison with the chart and this survey reveals good agreement.

6. COMPARISON WITH PRIOR SURVEYS

H-5857 (1934-35) 1:20000

Survey H-5857 covers the entire area of the present survey. Generally, soundings have shoaled between .1 and .7 meters (0.5 ft to 2.0 ft) except in the areas of the Matagorda Ship Channel and the new Alcoa facility centered at latitude 28/38/30N, longitude 96/33/30W. These areas have changed considerably; where there were once depths of six to seven feet there is now a dredged maintained channel with a 34 foot project depth. The northern shoreline has receded approximately 100 meters to the north and a new turning basin (Alcoa facility) has been dredged and the spoil material has created a new peninsula centered at latitude 28/38/15N, longitude 96/33/30W. Within the Point Comfort Turning Basin, present survey depths are generally 26 feet to 34 feet deeper since the prior survey. The east side of the Matagorda Ship Channel has been affected by constant dredging activity causing the creation of numerous spoil islands not present on the prior survey.

There are no AWOIS items which originate from the prior survey H-5857.

Survey H-10390 is adequate to supersede this prior survey within the common area.

7. COMPARISON WITH CHART

Chart 13117, 20th edition, dated March 23, 1991; scale 1:50,000

a. Hydrography

All charted hydrography originates with survey H-5857 and miscellaneous sources.

Survey H-10390 is adequate to supersede charted hydrography within the common area with the following exceptions.

<u>Feature</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>	<u>AWOIS</u>
Pier/dols	28/38/41	96/33/28	5282
pier	28/38/43	96/33/47	5284
subm obstr	28/37/43	96/33/14	5320
subm piles PA	28/38/15	96/30/56	5333
platform	28/38/26	96/33/48	

b. AWOIS

All AWOIS items within the survey area originate with miscellaneous sources. Refer to the hydrographer's report, section 7.a. of this report and as follows for discussion and disposition of these features.

AWOIS item 5333, piles PA, charted at latitude 28/38/15N, longitude 96/30/56N, was not investigated adequately for disproval. The search area, and the row of piles which were positioned at latitude 28/38/27N, longitude 96/31/02W, are approximately 200 meters north of the charted AWOIS item. The piles PA should be retained as charted and the notation should be changed to "submerged piles PA".

AWOIS item 5282, pier and piles, charted at latitude 28/38/41N, longitude 96/33/28W, was investigated by the hydrographer. The positions of the dols, positions 2865-2869, were rejected because the control for the positions was weak, they did not confirm the verbal description by the hydrographer and were in conflict with their portrayal on the final field sheet. The dols were transferred from the final field sheet to the smooth sheet. The pier and four dols should be retained as charted.

c. Controlling Depths

The Matagorda Ship Channel is a federally maintained channel located within the area of this survey. The depths found during this survey are consistent with or deeper than the charted controlling depths.

The note, 6 ft rep, charted at latitude 28/38/40N, longitude 96/33/29W, should be revised. Depths in the survey area range between 1.2m to 1.8m (4ft to 6ft) at MLLW. Chart according to this survey with a note, 4 ft 1991 (1.2m). This is AWOIS item 5277.

The note, 8 ft rep 1982, charted at latitude 28/38/40N, longitude 96/33/27W, should be revised. Depths in the survey area range between 1.8m to 4.0m (6ft to 13ft) at MLLW. Chart according to the survey with a note, 6 ft 1991 (1.8m). This is AWOIS item 5281.

d. Aids to Navigation

There is one floating aid located within the area. There are eighteen fixed aids located on this survey and they were located and serve their intended purpose.

The following aids to navigation were located on the junction surveys and fall within the limits of this survey. See attached letter, dated March 27, 1992, NAVAID Positions from OPR-K228-AHP. These aids were transferred to survey H-10390. These aids serve their intended purpose.

<u>Light List Name</u>	<u>Latitude(N)</u>	<u>Longitude(W)</u>	<u>Survey</u>
Point Comfort Inner Channel Light 6	28/38/53.42	96/33/52.39	H-10416
Point Comfort Inner Channel Light 4	28/38/28.56	96/33/54.71	H-10416
Point Comfort Inner Channel Buoy 2	28/38/09.66	96/33/55.56	H-10416
Matagorda Ship Channel Light 68	28/36/02.09	96/33/56.64	H-10411

Matagorda Ship Channel Light 74	28/37/18.71	96/33/56.95	H-10411
Matagorda Ship Channel Light 76	28/37/50.69	96/33/55.94	H-10411
Matagorda Ship Channel Light 78	28/38/03.00	96/33/53.01	H-10411

Two landmarks found within the survey area were verified by the hydrographer and transferred to the smooth sheet from shoreline map TP-01650.

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation

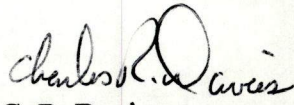
No dangers to navigation were reported by the hydrographer. Two dangers to navigation were generated during office processing. Copies of the reports are attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10390 adequately complies with the Project Instructions except where noted in this report.

9. ADDITIONAL FIELD WORK

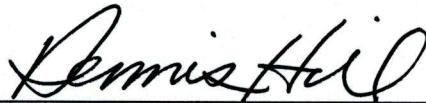
This is a adequate hydrographic survey. Additional field work on a low priority basis is recommended to investigate features not found or disproven during this survey, as noted in section 7 of this report.


C. R. Davies
Cartographer

APPROVAL SHEET
H-10390

Initial Approvals:

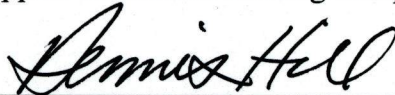
The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The digital data have been completed and all revisions and processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts have been made and are included with the survey records. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.



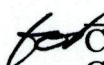
Date: 5-15-92

Dennis J. Hill
Chief, Hydrographic Processing Unit
Pacific Hydrographic Section

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.

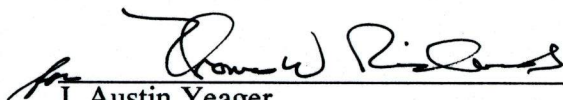


Date: 5-15-92

 Commander Douglas G. Hennick, NOAA
Chief, Pacific Hydrographic Section

Final Approval

Approved:

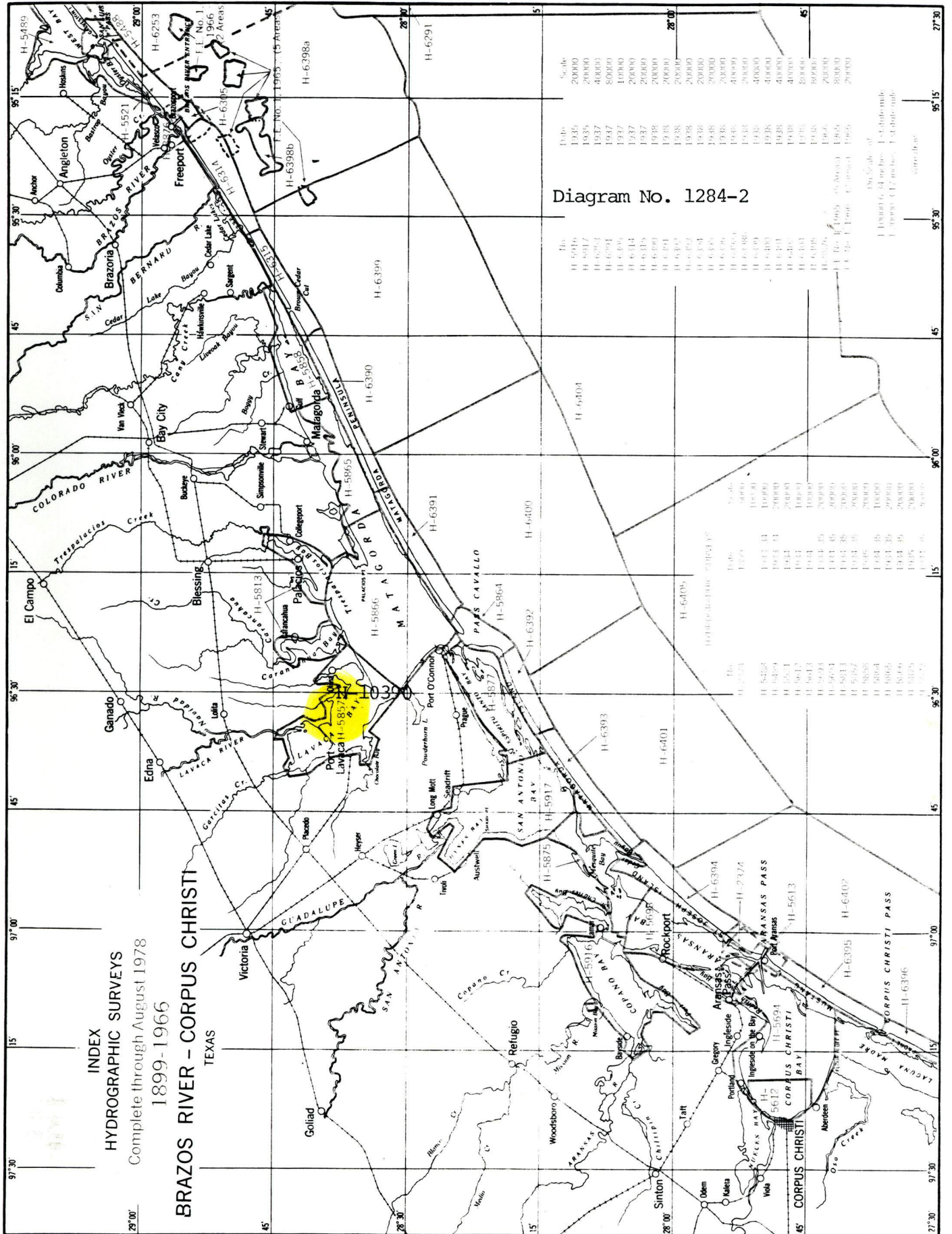


Date: 2-16-95

J. Austin Yeager
Rear Admiral, NOAA
Director, Coast and Geodetic Survey

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 90 C



MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10390

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
11300	5-15-92	Russ Davin	Full Part Before After Marine Center Approval Signed Via <u>NO corrections applied</u> Drawing No. <u>to chart #45</u>
11317	7-14-92	Ken Foster	Full Part Before After Marine Center Approval Signed Via Drawing No. <u>21 Critical corr Applied only</u>
11317	5/19/93	L. Arkman ✓	Full Part Before After Marine Center Approval Signed Via Drawing No. <u>22 in full</u>
11316	6/23/97	L. Arkman ✓	Full Part Before After Marine Center Approval Signed Via Drawing No. <u>50, Then CHART 11317</u>
411	2-15-95	[Signature]	Full Part Before After Marine Center Approval Signed Via Drawing No. <u>- Exam No Com - 3E area</u>
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED