

6019

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES

AUG 14 1934

Acc. No. \_\_\_\_\_

6019

Form 504  
Ed. June, 1928

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
R. S. Patton Director

State: California

**DESCRIPTIVE REPORT**

Topographic }  
Hydrographic } Sheet No. P (T-5035)  
6019

LOCALITY

SACRAMENTO - SAN JOAQUIN DELTA

HERDLYN

1934

CHIEF OF PARTY

Lieut. L. P. Raynor

U. S. GOVERNMENT PRINTING OFFICE: 1928

Serial 1527

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY  
LIBRARY AND ARCHIVES  
AUG 14 1934  
Acc. No. \_\_\_\_\_

REG. NO. 6019

HYDROGRAPHIC TITLE SHEET

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. P. (T-5035)

REGISTER NO. 6019

State CALIFORNIA

General locality SACRAMENTO - SAN JOAQUIN DELTA

Locality HERDLYN

Scale 1:10,000 ✓ Date of survey MAY 9 TO JUNE 14, 1934 ✓

Vessel HELEN F (Leased Launch)

Chief of Party L. P. RAYNOR ✓

Surveyed by L. P. RAYNOR ✓

Protracted by GEORGE C. WHITE

Soundings penciled by GEORGE C. WHITE

Soundings in ~~FATHOMS~~ feet ✓

Plane of reference MLLW ✓

Subdivision of wire dragged areas by

Inked by A.H. YEOMANS

Verified by A.H.Y.

Instructions dated <sup>200174</sup> SEPTEMBER 2, 1933 et.al., 19

Remarks: HYDROGRAPHIC SIGNALS PLOTTED BY: JOSEPH LeCONTE

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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. **P. (P-5055)**

REGISTER NO.

State **CALIFORNIA**

General locality **SAN JOAQUIN DELTA**

Locality **OLD RIVER, LATITUDE 37° 48' 30" to LATITUDE 37° 52' 30" with TRIBUTARY CANALS & SLOUGHS, 121° 32' TO 121° 36'**

Scale **1:10,000** Date of survey **MAY 9 TO JUNE 14, 1934**

Vessel **HELEN F. (Leased Launch)**

Chief of Party **L. P. RAYNOR**

Surveyed by **L. P. RAYNOR**

Protracted by **GEORGE C. WHITE**

Soundings penciled by **GEORGE C. WHITE**

Soundings in ~~2000~~ feet

Plane of reference **M.L.W.**

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated **SEPTEMBER 2, 1933 et.al.**, 19

Remarks: **HYDROGRAPHIC SIGNALS PLOTTED BY: JOSEPH LeCONTE**

DESCRIPTIVE REPORT

of

HYDROGRAPHIC SHEET P (T-5035)

AUTHORITY, LIMITS, PARTY, DATES:

The AUTHORITY for this work is contained in the following letters:

1. 22 LE 1990 March 17, 1933
2. 22 AHH 1990 August 12, 1933
3. SUPPLEMENTAL INSTRUCTIONS  
PROJECT 98 HT Sept. 2, 1933
4. 26 RS 1990 Nov. 9, 1933
5. 22 AHH 1990 Nov. 16, 1933
6. 22 MEN 1990 Dec. 2, 1933

The work covers the hydrography accomplished in Old River from about Latitude  $37^{\circ} 52' 15''$  to  $37^{\circ} 18' 30''$ ; Italian Slough, West Canal, portions of Victoria and North Canals, Grant Line Canal and Fabian and Bell, connecting with Old River. The signal building party was in charge of J. LeConte, Observer. The hydrography was accomplished under direct supervision of the Chief of Party, between May 9 and June 14.

GENERAL NOTES:

All of the waterways on this sheet are held within levees from 10 to 20 feet high, built to protect the rich agricultural land from overflow by flood waters. These levees are fairly stable and do not require the frequent rebuilding necessary in the lower delta. Most of them have a fairly heavy growth of trees on the outer bank. This growth is at infrequent intervals cut for use as firewood.

SURVEY METHODS:

Signals were located by:

- A. Taking boat sheet in the field and spotting topographic detail such as tule points, shed gables, syphons, and by measurement along the levee with tape or stadia from spottable detail.
- B. By sextant three-point fixes using objects previously located by the photo compilation party and shown in blue on the boat and smooth sheets.
- C. By using the boat sheet on the planetable and locating by standard topographic methods. These are also shown in red and indicated on the boat sheet with letter, (P).

Boat positions were located by:

- A. Standard method of three-point fix with sextant, or

B. By bearings read on pelorus #24874 used with compass of same number, in conjunction with distances as read by range finder #7277.

The range finder was frequently tested at 5 meter intervals and results are tabulated in range finder book #2, which will be submitted. Constant use of the range finder by the observers has made it possible to read distances up to 60 meters with a probable error of not over two meters and up to 70 meters with probable error of not over four meters. Distances greater than this were rarely used. If necessary, due to the width of the stream, bearings were taken on objects on the opposite shore and at the same time a range finder reading was taken to the nearest shore.

Compass deviations were obtained on May 9 and June 12 and have been entered on the proper pages in the front of each sounding volume. The deviations to be used with each day have been indicated in the sounding record.

Depths were obtained with line using 9# lead or with sounding pole graduated in fathoms and feet up to 4 fathoms and turned end for end after each sounding. Spacing was done on time using clock with automatic sounding device for most of the work. Depths were read to the nearest tenth of a foot and reduced to the nearest  $\frac{1}{2}$  ft. in the sounding records. Smooth sheet was plotted in one-half feet up to  $9\frac{1}{2}$  feet and even feet beyond 10 feet as authorized in INSTRUCTIONS of December 2, 1933. *In cases the half-foot depths were plotted in initial depths only which is in accordance with the liberty allowed by the instructions - H. W. M.*

Smooth plotting was done on an aluminum sheet coated with tanned gum arabic on which the photo compilation had been printed.

#### NAVIGATION, LANDINGS;

Large tonnages of sugar beets are barged through Old River and Grant Line Canal to eventually reach the Holly Sugar Refinery just north of Tracy. In return, sugar and lime are sent down the river from the refinery. Sand is barged down the Grant Line Canal and thence out Old River from dredger outfits working near Mossdale on the San Joaquin River. In addition there is considerable barge traffic carrying local agricultural products from the various ranches to Stockton and the San Francisco Bay region. Practically all the waterways shown on the sheet are used by small fishing and pleasure craft drawing from 20 inches to 4 feet of water. There are only a few small boat wharves anywhere in these waterways, landings being made alongside the bank wherever desired where depth of water permits.

5035

CHANNELS, SHOALS:

17  
Old River, from the lower end shown on the sheet, up to West Canal is comparatively deep, 10 feet being the controlling depth at the downstream end. West Canal is generally deep throughout but at the south end of Coney Island the controlling depth appears to be 10 feet. 14 feet can be carried through that portion of Grant Line Canal shown on this sheet and 8 feet appears to be the controlling depth in the Fabian Bell Canal, this shallow spot being on the west end. That section of Old River beyond Clifton Court is quite shoal and the controlling depth is 8 feet. In Italian Slough, which is deep enough for practically all type of craft navigating these waters, there is a small shoal, least depth being 4 feet, SSE of 0 ISN3A rising from comparatively deep water. Other shoal water of considerable extent is evident from the plotted soundings.

6' possible  
4 1/2' 41-430

1 H  
5 H

A heavy aquatic growth with leaves and tendrils which float on the surface of the water but with roots in the bottom was encountered in many places. They are shown on the smooth sheet with the kelp symbol, note weeds. The limits of the growth is sketched from notes on the boat sheet and in the sounding records.

BRIDGES, FERRIES, OVERHEAD CABLE CROSSINGS:

There are no bridges at present over the waterways shown on this sheet. There is a private vehicular ferry operated by hand over Old River between Coney Island and Union Island. Another small private hand operated ferry for transfer of sheep is located across Italian Slough near its junction with Old River. At Clifton Court, the County maintains a ferry propelled by power from a gasoline engine, service on which is furnished free during certain daylight hours. Each of these ferries is drawn back and forth by means of wire rope cable made fast to the levee bank on each side of the stream. Any of these can be safely passed by small craft when the ferry is at either slip. Due to the fairly strong current at this point, the Clifton Court Ferry cable is kept under considerable tension and larger craft should signal and wait until the wire has been slackened from the windlass on the west bank before attempting to pass.

An overhead cable crosses Old River from Union Island to Coney Island with a clearance of 110 feet at HW. Another high power transmission line crosses Old River and Grant Line Canal with a clearance of 112 feet above HW. This clearance was not checked in the field and comes from data furnished by the U. S. Engineers, a copy of which was submitted last year. (Chart Letter # 738, 1933)

DISCREPANCIES:

1. Near @ ISM 7 in Italian Slough positions 86E<sup>10 1/2</sup> and 8H show 17 feet while between 104D and 105D 13 feet was found. The bottom is quite uneven in this locality and line 104D-105D being a shore line it is not placed with too great certainty. The 13 foot depth, however, has been shown on the smooth sheet.
2. Near ORW 2; <sup>1.11.1</sup> Between positions 37F and 38F a 15 ft. sounding occurs over a 17 ft. sounding on 43F-44F line. The latter sounding is probably further offshore due to the location of the sounding chair being on the starboard side of the boat, while the port side was nearer shore. On the 37-38F line the reverse is true.

TIDAL DATA:

A standard automatic tide gage was installed on the three pile dolphin just below the west ferry slip at Clifton Court and maintained for about 6 weeks. The plane of reference is MLLW and was found to be 5.74 for the period May 1 to May 28 by simultaneous comparisons with gage maintained at McLeod Lake. A previous comparison for the period of April 11 to 30 gave a value of 5.64, and this latter value was used in the reduction of soundings.

The time corrections to be made to readings on this gage are shown in red with appropriate notes on the boat sheet. Corrections for the tide were scaled from the marigram or taken from readings of staff by an observer, stationed at that place. A table giving the tide reducers for each one-half foot corresponding to the readings of the staff is given below:

Staff reads:

4.3 to 4.8	add 1 ft.
4.8 to 5.3	" 1/2 ft.
5.3 to 5.8	zero
5.8 to 6.3	subtract 1/2 ft.
6.3 to 6.8	" 1 ft.
6.8 to 7.3	" 1 1/2 ft.
7.3 to 7.8	" 2 ft.
7.8 to 8.3	" 2 1/2 ft.
8.3 to 8.8	" 3 ft.
8.8 to 9.3	" 3 1/2 ft.
9.3 to 9.8	" 4 ft.
9.8 to 10.3	" 4 1/2 ft.
10.3 to 10.8	" 5 ft.
10.8 to 11.3	" 5 1/2 ft.

Highest tide on staff was 10.4 feet on May 28, and the lowest was 5.2 on May 20.

5035

GEOGRAPHIC NAMES:

Reference should be made to the Descriptive Report of the photo compilation of sheet T-5035 for notes on geographic names.

LANDMARKS:

List of Landmarks for this sheet was submitted with the report referred to in the above paragraph. (T-5027 contains general letter)

INSPECTION OF PHOTO COMPILATION:

The visual inspection of the photo compilation while hydrography was in progress, as well as the plotting of boat positions in this work, indicated that the compilation was very satisfactory. The only error found was in the delineation in a small island in Italian Slough. This was relocated by planetable, using one of the photo-lithographic prints, and from detail immediately adjacent to the island. The island in its correct position and shape has been drawn on the smooth sheet. Attached to the smooth sheet is a small section of the photo-lithographic print of 5035 showing in red the proper location of the island's position transferred to the smooth sheet.

*Lat. 37° 51.7'*  
*Long. 121° 34.7'*  
*Filed as Air Photo letter no. 24.*

LPR:T

*L. P. Raynor*  
L. P. Raynor  
Chief of Party.



## STATISTICS

DATE	DAY	VOL.	MILES	SOUNDINGS	POSITIONS
May 9	A	1	3.0	217	25
" 10	B	1	17.7	1277	137
" 11	C	1	9.9	666	66
" 11	C	2	6.4	457	33
" 12	D	2	14.0	989	117
" 14	E	2	10.8	670	94
" 14	E	3	6.7	498	60
June 4	F	3	5.4	518	80
" 5	G	3	0.8	107	21
" 14	H	3	<u>1.5</u>	<u>150</u>	<u>34</u>
TOTALS			76.2	5549	667

HYDROGRAPHIC SIGNALS 155

Survey No. H 6019  
T 5035

GEOGRAPHIC NAMES

Date. Oct. 31, 1934

Chart No. \_\_\_\_\_

Names underlined in red approved Oct 31, 1934  
H.B.

Diagram No. 5534

\* Approved by the Division of Geographic Names, Department of Interior.

Ø Not Approved by the Division of Geographic Names, Department of Interior.

R, Referred to the Division of Geographic Names, Department of Interior.

Comparison made with  
U.S. Ed. Bethany Quad.  
Further inquiry to be  
made concerning names  
not approved

Status	Name on Survey	Name on Chart or other Maps or Reports	New Names in local use	Names assigned by Field	Location
	<u>OLD RIVER</u>	✓ U.S.G.S. same Disc Rept. T 5036 same		Name as indicated in pencil.	
	<u>Byron Tract</u>	✓ Same USGS			
	<u>WEST CANAL</u>	✓		No authority for name	
	<u>Byron</u>	✓ Same USGS.			
	<u>GRANT LINE CANAL</u>	✓ Same USGS			
	<u>Byron Hot Springs Sta</u>	✓ Same USGS.			
	<u>FABIAN AND BELL CANAL</u>	✓ Same USGS.			
	<u>Herdlyn</u>	✓ Same USGS.			
	<u>VICTORIA CANAL</u>	✓ Same USGS			
	<u>Coney Island</u>	✓ Same USGS.			
	<u>NORTH CANAL</u>	✓ Same USGS.			
	<u>Union Island</u>	✓ Same USGS.			
	<u>ITALIAN SLOUGH</u>	✓ Same. USGS			
	<u>Clifton Court Road</u>	✓ See Desc Report T 5035			
	<u>Alameda County</u>	✓ Same USGS.			
	<u>Contra Costa County</u>	✓ Same USGS.			
	<u>San Joaquin County</u>	✓ Same USGS.			
	<u>Widdows Island</u>	<del>Widdows</del> Named after Chas H Widdows a Civil Engineer of Stockton Calif.			
	<u>Clifton Court</u>	✓ Appears on all later maps and blueprints			
	<u>Clifton Court Tract</u>	✓ Is generally so call on nearly all maps and blueprints			
	<u>Clifton Court Canal</u>	✓ from D.R. 6019. Accpt as correct			
	<u>Byron-Bethany Irrigation District.</u>	See House Doc. 791 - 71st Congress 3rd session The last 5 are from report by Miss Strong for authorities consulted see D.R. for T-5029 Halls			

Report on H 6019

Chief of Party L. P. Raynor

Protracted by G. C. White

Verified and inked by A. H. Yeomans

Surveyed in May-June 1934

Surveyed by L. P. R.

Soundings plotted by G. C. W.

1. The records conform to the requirements of the General Instructions

2. The usual depth curves were completely drawn.

3. The field plotting was completed to the extent prescribed in the Hydrographic Manual.

4. The office draftsman did no drafting over that had been done by the field party.

5. The junction with sheet H 6020, H 6024 and H 6018 were made and found to be satisfactory.

6. The word "snag" was often recorded in the bottom characteristic column of the records and was put on the smooth sheet as such.

Submitted by,

A. H. Yeomans

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 6019.

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

Number of positions on sheet	.667.
Number of positions checked	..9..
Number of positions revised	..0..
Number of soundings recorded	5549.
Number of soundings revised	..3..
Number of signals erroneously plotted or transferred	....0

Date:.....Oct. 31, 1934.....

Cartographer:..A. H. YEOMANS.....

Verification of protracting  
Verification & inking of rocks and shoals) } by A.H.Y.  
Verification of inking by

Time: }  
Time; } 64 hrs.

Review by

H. W. Murray Time: 34 hrs.

*includes inking*

Rae

October 1, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in  
3 volumes of sounding records for


HYDROGRAPHIC SHEET 6019

Locality Herdlyn, San Joaquin Delta, Calif.

Chief of Party: L. P. Raynor in 1934  
Plane of reference is mean lower low water, reading  
5.7 ft. on tide staff at Clifton Court Ferry  
14.6 ft. below B.M. 1

Height of mean higher high water above plane of reference is 3.6 feet.

Condition of records satisfactory except as noted below:

  
Acting Chief, Division of Tides and Currents.



8. Field Plotting.

Field protracting and plotting were excellent and conform to the requirements of the Hydrographic Manual.

9. Additional Field Work Recommended.

For Future Consideration.

Additional work would be desirable in the following areas:

	<u>Latitude</u>	<u>Longitude</u>	
(a)	37°49'.2	121°32'.8	To determine the controlling depth in the cut-off between the Fabian and Bell Canal and the Grant Line Canal.
(b)	37°49'.5	121°33'.0	To determine the controlling depth and to define the depth curves to the east and northward of the small island shown here.
(c)	37°52'.0	121°34'.4	To supplement the deeper soundings shown on the present survey.

10. Superseding Previous Surveys.

There are no <sup>previous</sup> prior surveys to be superseded.

11. Reviewed by Harold W. Murray - November 5, 1934.

Inspected by A. L. Shalowitz.

Examined and approved:

C. K. Green, *C. K. Green*  
Acting Chief, Section of Field Records.

*H. S. Borden*  
Chief, Section of Field Work.

*L. O. Gilbert*  
Chief, Division of Charts.

*G. Thude*  
Chief, Division of H. & T.