

4739

Diag. Cht. No. 6154

Form 504

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY  
L. & A.  
FEB 29 1928  
Acc. No.

State: Oregon

11-5613

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 4739  
Contains some Wire Drag Work

LOCALITY:

~~Multnomah Channel, Multnomah Co.~~

Columbia River

Junction Willamette River and Multnomah  
Channel

~~1918~~  
1920

CHIEF OF PARTY:

Augustus D. Lotti, U. S. G. Eng'r.

4739

Descriptive Report to Accompany Hydrographic  
Sheet of Multnomah Channel, Multnomah County, Oregon.

This sheet covers Multnomah Channel for a distance of two naut. miles from the junction with the Willamette River. The hydrography was extended into the Willamette River for a distance of  $\frac{1}{4}$  mile to overlap the previous hydrographic survey.

The controlling depth at the junction is 11 ft. at L.W. Columbia River Datum. The 10 ft. curve extends out from the north bank of the channel between  $\odot$  DIP and  $\odot$  BOY for 90 yards. There is a shoal, rocky bottom, off the south bank of the channel between  $\odot$  MAS and  $\odot$  RIO, the tip of which is 175 meters 338 from  $\odot$  RIO, with a depth of 7 ft. This shoal drops off quickly into deep water.

Position of snags are plotted and marked on this sheet and locations of same are mentioned in the wire drag report.

The bottom throughout the survey is Clay except on the shoal between  $\odot$  MAS and  $\odot$  RIO.

The controlling depth along the face of the dock of the Johnson Lbr. Co. is 18 ft. soft bottom.

The above company is planning on extending this dock into the channel so that the outer face will be on line with  $\odot$  LOG and  $\odot$  BEN which are dolphins. This company is contemplating doing this after the junction is dredged and snags cleared away between  $\odot$  NEAR and  $\odot$  TID. It may be mentioned here that the Johnson Lbr. Co. is very anxious to get a ship to their dock to load lumber direct as they now have to load on barges at a high cost.

All soundings on this sheet are in feet reduced to low

water datum, Columbia River. A portable automatic tide gauge was maintained at OTID.

STATISTICS

	Date	Day	Vol	Positions	Soundings	Miles	Launch
1928	Feb. 2	a	1	143	330	6.8	
	" 3	b	1	141	427	8.5	
	" 4	c	1,2	131	393	10.0	
	" 6	d	2	2	2	0	
	" 8	e	2	7	17	0.5	
		Total		424	1169	25.8	

Area  $\frac{3}{4}$  sq. mile.

*Augustus P. Ratti*

Respectfully submitted,

H. and G. E.

Descriptive Report of Wire Drag Survey of the  
Junction of the Willamette River and Multnomah Channel,  
Multnomah County, Oregon.

As per instructions of December 29, 1927, the section at the junction of the Willamette River and Multnomah Channel, Oregon, and also the section between  $\odot$ Near and  $\odot$ Tid were wire dragged to determine whether there were any projecting piles under the surface. These sections were the locations of the dikes that were removed.

The short wire drag was used, 85 lbs. weights and barrel buoys were used at the ends. Length of drag used was 400 feet, length of section was 100 feet, and lengths of towlines were 70 and 35 meters. When the 35 meter towlines were used an allowance for lift of 2 to 3 ft. was made in setting the end buoys.

Boats (Guide and End Launches) used were gas launches furnished by the B.F. Johnson Lumber Co., Linnton, Oregon. No tender was available.

Several obstructions were found and they plotted in the vicinity of the old dikes.

On the first line of drag, the drag set at an effective depth of 12 feet, an obstruction was found 120 meters  $27^{\circ}$  (true) from  $\odot$ Bel. The least sounding that could be obtained was 14 feet as recorded on page 2 vol. 1 position 3 of the wire drag record. Line was begun again at  $4^{\circ}$  and the drag ran aground at position  $6^{\circ}$  on an obstruction 72.5 meters  $62^{\circ}$  (true) from  $\odot$ Bel. In the process of manoeuvring and reversing, trying to clear the drag, the drag hung up on 2 more obstructions 137 meters

357° (true) from  $\odot$ Bel and 122 meters 351° (true) from  $\odot$ Bel.

An attempt was made to carry an effective depth of 12 ft. and 9 ft. through the section between  $\odot$ Near and  $\odot$ Tid but this was unsuccessful as several obstructions were found in this vicinity which seems to be the location of the old dike that was removed.

Positions of obstructions found are as follows:

8 Ft.	-350°	(true)	17 meters	from $\odot$ Tid
19 "	14°	"	58 "	" "
15 "	21°	"	38 "	" "
19 "	23½°	"	128 "	" "

The above soundings are in the vicinity of the sunken piles.

Soundings on the piles could not be obtained.

This channel is not recommended for vessels other <sup>than</sup> river boats.

If these sunken piles are removed a controlling depth of 11 ft. at low water Columbia River Datum, can be carried through the junction and the section between  $\odot$ Near and  $\odot$ Tid. The channel from this section to the B.F. Johnson Lbr. Co.,s dock seems to be clear with exception of a few shoals described in the descriptive report accompanying the hydrographic sheet.

Mr. L. Johnson, manager of the Johnson Lbr. Co.

was taken out while the wire dragging was done with a view of instructing him in its use.

The compliment for the drag work was as follows:

A.P. Ratti, H. and G. E., in charge, Guild Launch, taking right and left angles, buoy angle, plotting and recording.

S.Frey, seaman, line tender.

O.Rush " " "

H.O.Westby, Aid, in charge End Launch, taking right and left angles,  
buoy angle, and recording.

R.Beers, seaman, engineer, and coxswain.

No smooth sheet was made of the wire dragging because  
the lines are of no value . All groundings were located by  
sextant fixes.

Respectfully submitted,

*Augustus P. Ratti*

H.and G. E.

Copy for Records Section files.

March 5, 1928.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in  
4 volumes of sounding records for

HYDROGRAPHIC SHEET  
4738

Locality: **MULTNOMAH CHANNEL, COLUMBIA RIVER, OREGON.**

Chief of Party:

Plane of reference is **A. P. Ratti, 1928.**

**1.6** ft. on tide staff at **U.S. Engineers Columbia River datum,  
Multnomah Channel.**

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

*G. H. Rude*

Chief, Division of Tides and Currents.

## Section of Field Records

Report on Sheet No. 4739

Chief of Party A. P. Ratti

Protracted by H. O. Westby

Verified and Inked by J. Walker

Surveyed in 1928

Surveyed by A. P. Ratti

Soundings plotted by H. O. Westby

A rather large amount of distortion between the topo sheet and the smooth hydro sheet was found. This caused some doubt as to the correct position of a number of signals. The position of the following signals were changed on the smooth sheet: Jet, Paw, Diz, Lug, Fat, Out, Uxa, Rod, Tat, Pur, and Front.

The sounding records were legible but not very neat. The recorder was apparently new at the job and improved with experience.

Two hundred thirty two boat positions or 55% were checked. The short lines and changed position of signals made this necessary. Eighteen positions or 8% were found to be wrong but as most of these were due to changed signals the protracting can be considered as good. The soundings were taken at uniform intervals and were correctly plotted in most instances.

The sheet was clean and the work was legible. A poor job was made of transferring the signals from the topo sheet to the hydro sheet but otherwise the drafting seemed all right.

Reviewed by

Date

Approved. *[Signature]*

Respectfully submitted  
*[Signature]* J. Walker.



IN REPLY ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY  
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO NO. 11-DEM

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

August 25, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4739

Columbia River, Oregon - Junction of Multnomah Channel and  
Willamette River

Surveyed in February, 1928

Instructions dated December 29, 1927

Surveyed by A. P. Ratti.

Chief of Party, A. P. R.

Protracted and soundings plotted by H. O. Westby.

Verified and inked by J. T. Walker.

1. Specific instructions for hydrography were carried out.
2. General Instructions were generally followed. The recording was fairly well done but was not very neat. More bottom characteristics should have been obtained, particularly in the center of the channel.
3. Data are sufficient for drawing of depth curves.
4. Development is adequate. No additional work is thought necessary.
5. In a number of cases it was found that the spacing of soundings on the same line and with the same time interval did not agree. This was undoubtedly due to the fact that as one man was observing left angle and also recording, the positions were not taken exactly on the sounding.
6. Comparison was made with sheet No. 1673 surveyed in 1885. As far as the Multnomah Channel was concerned that survey was not much more than a reconnaissance. The snags found in the channel itself are all located on the position of an old dike shown on this sheet (No. 1673). The curves in the channel

have somewhat the same characteristics as those of the present survey. The depths on the east side of the Willamette River are greater than in 1885 due perhaps to dredging and scouring.

7. Inking - neat and very good.
8. Reviewed by E. R. McCarthy, March 19, 1928.

Approved:

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Chief, Section of Field Records (Charts)

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Chief, Section of Field Work (H. & T.)

IN REPLY ADDRESS THE DIRECTOR  
U. S. COAST AND GEODETIC SURVEY  
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DRM

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

August 27, 1928.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4739.

Junction of Willamette River and Multnomah Channel, Oregon

Surveyed in 1928

Instructions dated December 29, 1927 (SURVEYOR)

Chief of Party, A. P. Ratti.

Surveyed by A. P. R.

Protracted and soundings plotted by A. P. Ratti.

Verified and inked by G. Risegari.

1. The records conform to the requirements of the General Instructions with the following exceptions:
  - a. Failure on "a" day to take the distance angle as required in single-vessel control between the end launch and F buoy, which failure made the position of the end launch indeterminate. Though the end launch positions for "a" day are plotted, no information is given as to how they were obtained.
  - b. Failure to enter wire drag soundings in the wire drag records -- they having been entered in the regular sounding records.
2. Due to the indeterminate location of the end launch positions mentioned above, the wire drag work for "a" day was not considered to be of much value, except for the locations of the obstacles that were found.

The work on "b" day, however, was satisfactorily controlled and appears to cover the requirements of the specific instructions and the information may be useful for the effective depths used as well as for the locations of the obstacles that were found.

3. The purpose involving the use of the wire drag was mainly to locate obstructions and it appears that the dragging was sufficient for their locations.

The position of each obstruction found was obtained by a fix.

4. Character and scope of drag operations - fair.  
Field drafting for boat sheet (no smooth sheet submitted) - good.
5. Reviewed by G. Risegari, March, 1928.

Inspected by \_\_\_\_\_

Approved:

\_\_\_\_\_  
Chief, Section of Field Records (Charts)

\_\_\_\_\_  
Chief, Section of Field Work (H. & T.)

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4739

HYDROGRAPHIC TITLE SHEET

Contains Wire Drag Work also

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. \_\_\_\_\_

REGISTER NO. <sup>4739</sup> 4739

State Oregon

General locality Columbia River, Multnomah County

Locality Junction Willamette River and Multnomah Channel

Scale 1-5000 Date of survey Feb. 2, to 8, 192<sup>8</sup>

Vessel Multnomah Channel Survey Party

Chief of Party A. P. Ratti

Surveyed by A. P. Ratti

Protracted by H. O. Westby

Soundings penciled by H. O. W.

Soundings in fathoms feet

Plane of reference Low water Columbia River.

Subdivision of wire dragged areas by \_\_\_\_\_

Inked by \_\_\_\_\_

Verified by \_\_\_\_\_

Instructions dated Dec. 29, 192<sup>7</sup>

Remarks: Launches furnished by B.F. Johnson Lumber Co. were used