

7614

Diag'd. on Diag. Ch. No. 8502-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Pf 1147
Field No. Pf 1247 Office No. H 7614

LOCALITY

State Alaska

General locality Bristol Bay

Locality Naknek River

194 7

CHIEF OF PARTY

R F A Studds

LIBRARY & ARCHIVES

DATE SEP 1 1948

B-1870-1 (1)

7614

SEP 1 1948

Form 587
(Ed. June 1946)

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.

H7614

REGISTER No. H 7614

Field No. Pf 1147 & PF 1247

State Alaska ✓

General locality Bristol Bay ✓

Locality Naknek River (~~Telephone Point to Naknek Air Base~~) ✓

Scale 1/10 000 Date of survey 8/14/47 to 9/13/47 ✓

Instructions dated 20 June 1946 Project CS 327

Vessel PATHFINDER'S Launches Nos. 1, 2, & 4

Chief of party R. F. A. Studds ✓

Surveyed by J. C. Tribble ^M Wm. M. Martin ✓

Soundings taken by ~~fathometer~~, graphic recorder, ~~hand lead wire~~ & Pole

Fathograms scaled by Sorenson, H.S. Cole, H.G.E.

Fathograms checked by H.S. Cole H.D. Reed J.R. Plaggmier H.G.E.

Protracted by Wm. M. Martin

Soundings penciled by Wm. M. Martin

Soundings in ~~fathoms~~ feet at ~~MLXX~~ MLLW ✓

REMARKS: Smooth sheet and plotting by Seattle Processing Office.

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H 7639 and H 7614

The original of these three carbon pages is in the descriptive report for H 7639.

DESCRIPTIVE REPORT

to accompany

Hydrographic Field Sheet PF-1146, Pf 1147 & Pf 1247

Project CS 327

Bristol Bay Area - Naknek River

Instructions dated 20 June 1946.

This survey covers ^{that} the lower part of ^{the} Naknek River, ^{from Telephone Pt. to Naknek Air Base.} It is a completion of Boat Sheet PF-1146. The survey of 1946 was plotted on H-7164.⁽¹⁹⁴⁶⁾ It was intended that the survey of 1947 would be treated as additional work. However, a new smooth sheet was ordered for the additional work and a registry number has not yet been assigned. H-7614 (1947)

Limits and junctions:

~~The new work supplements and completes H-7164, splits being run to the western limit of that sheet. To the eastward a junction is made up river with H-7614 (PF-1147 and PF-1247).~~ This sheet junctions with H-7639 (1947-48) in the vicinity of Telephone Pt. & extends eastward (upstream) to Naknek Air Base

Equipment:

The soundings were made from Launch No. 1, using 808 fathometer No. 68, and Launch No. 4, using 808 fathometer No. 46. Visual fixes and standard methods were used throughout.

The Naknek River:

This area is covered by hydrographic sheets 1146, ^{H-7639 (1947-48)} (1147, and ^{H-7164 (1946)} 1247), all of which have been completed. Hydrography on sheet 1146, ^{H-7614 (1947)} from the river entrance to Naknek was done during the 1946 field season with the exception of a few splits ^{H-7164 (1946)} done during the ~~past~~ 1948 season. and bottom characteristics which were

Portable automatic tide gages were in operation for periods covering the entire time that hydrography was being done at Naknek River Entrance, at Prominent Point (Omakstalia Point), and at Naknek Air Base (Upper Landing).

In addition a portable automatic tide gage was in operation at Anchor Hole (Morakas Point), for the period 11 July to 1 August 1947, prior to beginning hydrography. Supplementary observations were made at Horseshoe Bend, by fathometer for the period July 28-29, 1947, and

by tide staff readings for the period July 29-30, 1947. Observations were continuous over the period July 28-30, but the results obtained by fathometer are erratic.

The following tabulation shows the spacing between tide stations for the river as a whole:

Station	Period of operation	Dist. from river Entrance Nautical Miles	Spacing Naut. Mi.
Naknek River Entrance	26 May - 27 Sept.	0	4.1
Anchor Hole (Morakas Pt.)	11 July - 1 Aug.	4.1	3.5
Horseshoe Bend	28 July - 30 July	7.6	2.8
Prominent Pt. (Omakstalia Pt.)	10 Aug. - 12 Sept.	10.4	4.0
Naknek Air Base (Upper Landing)	18 July - 12 Sept.	14.4	

During the course of the hydrography this data was further supplemented by readings of tide staffs in the vicinity of work though no complete tidal cycles were observed. Tide staffs were located as follows:

Station	Location	Dates	Dist. from River Ent. Naut. Mi.
Fishery Creek	0.5 mi. E. of Anchor Hole gage site	21 Aug. 1400	4.6
		2105	
		22 Aug. 0711	
		2000	
Saxonoski	7.3 mi. W. of Horseshoe Bend tide station	23 Aug. 0734	6.3
		1938	
		20 Aug. 1415	
		1830	
		21 Aug. 1541	
2047			
		5 Sep. 1800	
		1947	

Station	Location	Dates	Dist. from River Ent. Naut. Miles	
Horseshoe Bend	At Horseshoe Bend Tide Station	18 Aug.	1014	7.6
			<u>1740</u>	
		19 Aug.	1300	
			<u>1856</u>	
		20 Aug.	1507	
	<u>1815</u>			
		21 Aug.	1609	
			<u>2035</u>	
King Salmon Creek	2.1 mi. E. of Prominent Point gage site	22 Aug.	1848	12.5
			<u>2031</u>	
		25 Aug.	1004	
			<u>1449</u>	
		26 Aug.	1024	
	<u>1430</u>			
		28 Aug.	1118	
			<u>1315</u>	
		4 Sep.	1317	
			<u>1743</u>	
The Narrows	2.1 mi. E. of Air Base gage site	3 Sep.	1228	16.5
			<u>1557</u>	
		7 Sep.	1728	
			<u>2023</u>	

Respectfully submitted,

J. G. Fribble,
Lieut. Comdr. C&CS

Naknek River, Alaska.

Processing Office Notes.

The surveys made on the two boatsheets Pf 1147 and Pf 1247 has been plotted on one smooth sheet H 7614. This covers Naknek River from Telephone Point to Naknek Air Base. The sounding books have been numbered consecutively in one series.

Projection.

Hand-made on Whatman paper. Topographic signals and shoreline are from sheets Pf-e-47, Pf-D-47, and Pf-G-47. These plates were sent to the Portland photogrammetric office April 22, 1948. Triangulation positions were taken from the work of Tribble 1946 and Studds 1947.

Tide zones.

The tide corrections were entered by the field party. When plotting soundings, it became apparent that the tide zones needed to be broken down into shorter pieces. So new curves were interpolated and new reducers were applied to the soundings. The results seem satisfactory except for the junction between *Pf 1147 and *Pf 1247. A tracing from the eastern end of *Pf 1147 is attached to this report. It is a foot or so shoaler than the west end of *Pf 1247. The tide zones are shown on the plotters cover sheet which accompanies the smooth sheet. (filed with boat sheet)

Grass.

It should be noted that large areas of the river produce eel grass which affects the fathogram. See fathogram for "a" day Pos. 68 to 72. The grass in places gave indications that completely obscured the bottom, as evidenced by pole soundings. These indications pervade the fathograms of the upper river sheet. The grass occurs chiefly east of meridian 156 47, possibly above the brackish water. In places the river was choked with grass. See fathogram at 64j to 76j and 120j to 126j. Note the pole soundings. Such soundings will be found frequently in the records. Soundings in the grass areas not verified by pole soundings may be subject to doubt. Doubtful sdgs. were rejected. Desc. Report of T-7095 a & b (1947) classifies this grass as eel grass and is therefore shown by kelp symbol.

Rocks.

There are no ledges or bed rock in the section of the river surveyed. Many boulders were found by both the hydro and the topo parties. It is suggested that the air photos be examined under the stereoscope to see if other rocks are apparent.

Comparison with chart.

The controlling depth within the limits of this sheet is 2 feet at MLLW. It is in the reach crossing from Horseshoe Bend to Horseshoe Point. This was charted as 3 feet. The smooth sheet depths at the controlling points have been noted on the section of the preliminary chart which follows this sheet.

Chart deleted from report.

The plotter, Mr. Wm.M.Martin, was a member of the hydrographic party. He was acquainted with the areas where grass grew and recognized the indication of grass on the fathograms.

Edgar E. Smith

Edgar E. Smith
Cart. Engr.
Seattle Processing Office

C O P Y

Refer to No. 36-McC

Washington 25

22 December 1947.

To: Commanding Officer,
USC&GSS PATHFINDER,
400 Insurance Building,
Seattle 4, Washington.

Subject: Tide reducers, Bristol Bay, Alaska, 1947.

Reference is made to your descriptive report on tide observations made during the 1947 field season in connection with project CS-327. The Division of Tides and Currents has given careful consideration to this report and is in general agreement with its findings and conclusions.

Particularly pertinent is the conclusion that for satisfactory determination of tide reducers a much closer spacing of tide stations and longer periods of observations would be necessary. However, the practical difficulties of providing for adequate vertical control under the circumstances are recognized.

It is believed that in this case little would be gained by any general revision of the field computation of the tide records. This office has no additional tidal information not originally available to your party and no previous observations that could be used for verification purposes. Obviously the field party has given considerable time and care to the analysis of the available tide records and for this office to go over the same ground would seem to be an unwarranted duplication of effort and would unquestionably delay processing beyond the present winter season. This would be unwise as it would be a definite advantage to have the initial processing of reducers performed by personnel directly associated with the actual field operations. Under the circumstances it is expected that considerable office reviewing of reducers may be necessary, but this can be accomplished only after a comprehensive office analysis of available records. It is, therefore, planned to have your party proceed with the processing of the sounding records on the basis of field computation of reference planes and tide reducers.

In this connection this office is in complete agreement with your conclusion that the half-foot unit for tide reducers is impracticable and that the one-foot reducer should be used. Even with this unit it is recognized that reducer determination will be largely a matter of judgment and approximation.

Because of the restricted tides in most parts of the survey area, with particular reference to the low waters, the usual comparisons with simultaneous observations are ineffective and the datums derived from short series will be of uncertain accuracy. Also with the tidal characteristics varying so considerably from place to place with no assurance of uniform variation, any great refinement in sectionalizing the area for tide reducers is not considered justified. Much time and study have been given by the field party to sectionalizing the area on a time basis and the results obtained will be valuable for the determination and adjustment of reducers. However, when allowance is made for the general inadequacy of the available tide records, it is believed that a broader zoning will prove more suitable in practice.

Apparently it was the intention of the field party that inferred tide curves would be constructed for each section on the basis of computed time and height differences applied to observed tides at one or more stations. This would be a correct procedure, but, with narrow sections, it would require a very considerable amount of inferred tide curve construction. It is suggested as a possible alternative that the general area between each two contiguous tide stations be considered as a single broad zone and that the reducers be determined by estimation between the limits of the two reducers obtained separately from each of the two control stations. These two reducers, as your report observes, will sometimes differ by several feet and the actual reducer for any particular soundings must be estimated and adjusted on the basis of the position of the sounding area relative to the tide stations and any other factors that the local hydrographic features may suggest.

Your report bases its conclusion relative to reducers previously furnished for 1946 hydrography on the assumption that they were obtained from the river station. Actually they were largely based on the fathometer station records so that they should prove more suitable for general application than your report supposes. However, as in the case of the 1947 work, estimation necessarily entered into their determination to a considerable degree and they are accordingly subject to such revision as may be needed to effect reasonable agreement between the work of the two seasons.

Sketches attached to your report will be returned as requested as soon as copies can be reproduced for office use. Office processing of the tide records furnished with your transmitting letter of 4 December will be prosecuted for review purposes as rapidly as availability of personnel permits. As it is possible that your party or the processing office may require the further use of some or all of these original records, they will for the present be kept segregated in the form of their receipt so that requests for specific records can be identified.

(Signed) J. H. Hawley,
Acting Director.

STATISTICS
HYDROGRAPHIC SURVEY NO. PF-1247 H-7614 (114747)

Date 1947	Vol.	Day Letter	No. Positions	Stat. Mi. Hydro.	To and from Naut. mi.	Total Naut. Mi.
25 August	1	a	124	19.3	2.0	22.3
26 August	1	b	120	17.6	4.0	22.4
27 August	2	c	83	11.8	0.0	15.8
1 Sept.	2	d	57	7.2	7.3	15.2
3 Sept.	2-3	e	141	16.7	13.5	29.1
4 Sept.	3	f	76	2.0	7.3	11.3
7 Sept.	3	g	14	2.5	23.9	25.9
8 Sept.	4	h	31	3.8	16.5	20.0
11 Sept.	4	j	160	20.6	16.5	35.4
12 Sept.	4-3	k	115	12.5	16.7	29.6
Totals			921	114.0	107.7	227.0

Area 1.7 sq. stat. mi.

STATISTICS
HYDROGRAPHIC SURVEY NO. PF-1147 H-7644 (1947) (7)

Date 1947	Vol.	Day Letter	No. Positions	Stat. Mi. Hydro.	To and from Naut. Mi.	Total Naut. Mi.
14 August	1	a	62	18.8	2.0	19.0
15 August	1	b	157	22.0	1.0	24.0
16 August	1-2	c	161	26.4	1.5	28.0
18 August	2-3	d	153	23.7	5.7	28.4
19 August	3	e	135	22.3	5.5	28.0
21 August	3-4	f	108	17.3	12.0	30.2
25 August	4	g	34	6.4	7.0	13.6
26 August	4	h	6	0.7	11.5 8.0	8.6
27 August	4	j	36	5.1	6.0	11.5
28 August	4	k	24	3.2	---	4.8
1 Sept.	4	l	17	2.4	1.5	2.7
3 Sept.	4	m	6	1.1	1.5	2.5
12 Sept.	4	n	20	2.5	5.6	8.1
13 Sept.	4	p	27	2.8	0.5	3.2
Totals			946 947	154.7	57.8	212.6
Area			2.2 sq. stat. mi.			

TIDAL NOTE

BRISTOL BAY

MAKNEK RIVER - SHEETS H-7639, (PF-1146), H-7614, (PF-1147 & PF-1247)

STATION	Lat.	Long.	Period 1947	MLW Feet	REMARKS
Maknek River Entrance Portable	58°43.3'	157°03.3'	6/1 - 6/30	3.53	
			7/1 - 7/31	3.26	
			8/1 - 8/31	3.57	
			9/1 - 9/27	3.37	
			Means	3.43	
Anchor Hole - Portable	58°44.1'	156°55.6'	7/11 - 8/1	5.77	
Fishery Creek Staff Staff #1 #2	58°43.9'	156°54.8'		0.45	All corrections made to Staff No. 1
				2.37	
Savenofski Staff	58°43.2'	156°52.1'		17.0	
Horseshoe Bend Staff	58°42.5'	156°50.1'		2.28	
Prominent Pt. (Oakstalia) Portable	58°42.4'	156°45.4'		4.59	
King Salmon Creek Staff	58°41.1'	156°42.8'		6.3	
Maknek River - Air Base Portable	58°40.4'	156°39.4'		6.02	
The Narrows - Upper Air Base - Staff	58°39.8'	156°36.8'		5.2	

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. **..H7.614**

Records accompanying survey:

Boat sheets **.2...**; sounding vols. **.8...**; wire drag vols.;
 bomb vols.; graphic recorder rolls **.2.4...**;
 special reports, etc.

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

Number of positions on sheet	.....	1867
Number of positions checked	.....	68
Number of positions revised	.....	2
Number of soundings revised (refers to depth only)	.....	101
Number of soundings erroneously spaced	.....	15
Number of signals erroneously plotted or transferred	.....	1
Topographic details	Time	.....0
Junctions	Time	.....8
Verification of soundings from graphic record	Time	.....24

Verification by **L. LUBBERS**.....Total time **138** Date **11/12/48**

Reviewed by **J.A. Dinsmore**..... Time **24 hrs.** Date **4/7/49**

H 7614

Naknek River, Alaska

Geographic Names pencilled on smooth sheet.

- Chimenchunⁿ Pt.
- Chimenchun Creek
- Eskimo Creek
- Fishery Point
- Grassy Point
- Horseshoe Point
- Horseshoe Bend
- Iniam Point
- Iniam Island
- Kanaknoli Point
- King Salmon Creek
- Kunsiniali Point
- Kvigoi Creek
- Melokoshar Point
- Melokoshar Creek
- Mushevik Point
- Naknek River
- Naknek Air Base
- Omakstalia Point
- Papiak Point
- Pauls Creek
- Rock Creek
- Rocky Point
- Savonoski Village
- Savonoski Creek
- Slobiak Creek
- Smelt Creek
- Smelt Island
- Telephone Point
- Telephone Creek
- The Lower Lagoon

Names preceded by •
were approved. 7/1/48
L. Heck

GEOGRAPHIC NAMES
 Survey No. **H7614**

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K
									1
									2
									3
									4
									5
									6
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									26
									27

*For Geographic Names
 See preceding page*

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7614

PF-1147

FIELD NO. PF-1247

Alaska, Bristol Bay, Naknek River
Surveyed in August & September 1947 Scale 1:10,000
Project No. CS-327

Soundings:

Control:

808 Fathometer
Pole

Sextant fixes on shore signals

Chief of Party - R. F. A. Studds
Surveyed by - J. C. Tribble, W. M. Martin
Protracted by - W. M. Martin
Soundings plotted by - W. M. Martin
Verified and inked by - L. Lubbers Jr.
Reviewed by - T. A. Dinsmore, April 7, 1949
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline and signals originate with topographic surveys T-7094 and T-7095a & b (1947).

2. Sounding Line Crossings

Depths at crossings are in good agreement considering the unevenness of much of the bottom

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated except in foul inshore areas.

The bottom is generally uneven. Depths along the axis of the river channel range from 2 ft. in lat. $58^{\circ} 42.65'$, long. $156^{\circ} 49.65'$, to 22 ft. in lat. $58^{\circ} 39.90'$, long. $156^{\circ} 36.80'$. Many shoals which uncover at M.L.L.W., together with rocks both awash and sunken, contribute numerable hazards to navigation of this narrow winding channel. Eel grass of heavy growth abounds throughout the upper reaches of the river.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7639 (1947-48) on the west (downstream). On the east (upstream), the present survey terminates at the limits of Project CS-327 where no charted information is available for comparison.

5. Comparison with Prior Surveys

There are no prior surveys of the area by this Bureau.

6. Comparison with Chart A-3370 (Preliminary print of 5/24/48)

A. Hydrography

Charted information was compiled in the field from advance information of the present survey. Numerous revisions in smooth-sheet soundings have been made during verification. The present survey supersedes the charted information.

B. Aids to Navigation

No aids to navigation are charted within the area of the present survey.

7. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive.
- b. The smooth plotting was well done.

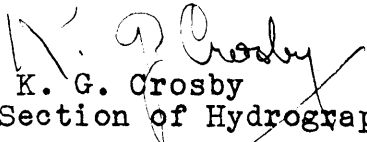
8. Compliance with Project Instructions

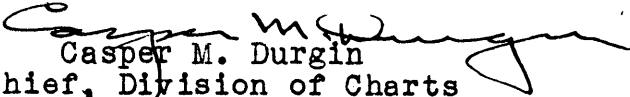

The survey adequately complies with the Project Instructions.

9. Additional Field Work

This is a basic survey and no additional field work is required.


H. R. Edmonston
Chief, Nautical Chart Branch


K. G. Crosby
Chief, Section of Hydrography

Examined and approved:

Casper M. Durgin
Chief, Division of Charts

W. M. Scaife
Chief, Division of Coastal Surveys

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~

28 September 1948

Division of Charts: R. H. Carstens

Plane of reference approved in
 10 volumes of sounding records for

HYDROGRAPHIC SHEET 7614

Locality - Naknek River, Bristol Bay, Alaska

Chief of Party: R. F. A. Studds in 1947

Plane of reference is mean lower low water, reading

- 3.2 ft. on tide staff at Naknek River Entrance
- 24.6 ft. below B. M. 2 (1946)
- 4.3 ft. on tide staff at Prominent Point, Naknek River
- 3.4 ft. below B. M. PROM (1947)
- 5.9 ft. on tide staff at U. S. Air Base, Naknek River
- 9.5 ft. below B. M. 1 (1947)

Height of mean high water above plane of reference is

- 20.7 ft. at Naknek River Entrance
- 6.6 ft. at Prominent Point, Naknek River
- 2.3 ft. at U. S. Air Base, Naknek River

Condition of records satisfactory except as noted below:

E. C. McKay
Section
 Chief, ~~Division of Tides and Currents.~~

H7614

Field No.	Registered No.
PF-1146	H-7164 & H 7639
PF-2146	H-7165
PF-1147	H-7614
PF-1247	H-7614
PF-2247	H-7615
PF-2347	H-7616
PF-2447	H-7615
PF-2547	H-7617

1946

1947

20'

157° 00'

59° 00'

40'

20'

157° 00'

40'

KVICHAK RIVER

KVICHAK BAY

NAKNEK RIVER

Note: PF-2247 and 2447
will be plotted on
one smooth sheet

Note: PF-1147 and PF-1247
will be plotted on
one smooth sheet

Layout of Hydrographic Sheets
Surveyed by Party of
Ship Pathfinder
R.E.A. Studds, Commanding
1947
Scale 1:250,000

PF-2247
H-7615

H-7615
PF-2447

PF-2347
H-7616

H-7617
PF-2547

PF-1147
H-7614

H-7164 & H 7639
PF-1146

H-7614
PF-1247

PF-2347

H-7165
PF-2146

JUL 0 1954