4036

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: Alaska

11—5813

DESCRIPTIVE REPORT.

Sheet No. 4036

LOCALITY:

Knix Arm

Cook Inlet

Alaska

1918

CHIEF OF PARTY:

Edmund Hand

4036

DESCRIPTIVE REPORT 4036

to accompany Wire Drag Sheet No.1, Knik Arm, Cook Inlet, Alaska.
(surveyed June - July, 1918.)

Eoline R.Hand, Hyd.& Geod.Eng'r.
Chief of Party.

This sheet comprises that part of Knik Arm between Pt. Woronzof and Cairn Pt. This is the harbor for Anchorage, one of the ports of the government railroad built and operated by the Alaskan Engineering Commission. The orders covering this work were dated March 15, 1918. For a description of the methods employed, and of the difficulties encountered, see my Annual Report for 1918, and season's report dated August 21, 1918. These will elucidate the apparently erratic progress of some of the strips, the sudden terminations, and the overlaps. It will be borne in mind that there is a range of tide at this place of 40 ft.

Deep water was dragged effectively to 40 feet and over: and in the shoal but navigable parts I carried the wire as closely as circumstances permitted to the 3 feet from bottom called for in orders. I gave special care to the vicinity of the new wharf. The sweep did not come nearer to the face of this because the area directly off the proposed site is being dredged to 30 feet.

No dangerous shoals were found. On the south side of a spot midway between Pt. Woronzof and Pt. Mackenzie one or two depths of about 39 feet were encountered, (deeper water about) which suggested boulders brought down with the ice. And there may be more of these shoal soundings just west of this line. But north of the above-mentioned spot midway between the points there is plenty of water: vessels when passing in or out will favor the north or Mackenzie side. A shoal of very limited extent was found with the lead a little over a half mile N by W from new dock: just off station "Gable". 33 feet was the least found in the regular development, but the wire disclosed a depth of 27, which was later cleared at 22. This spot is not in the way now, but must be heeded later when vessels begin to use the completed wharf. This shoal is well indicated on my smooth hydrographic sheet(sounding)of this same area.

The sheet is controlled by the five plotted triangulation points. Other signals were located from these by plane-table methods. The projection used in the field for this purpose is now serving as my smooth sounding sheet, mentioned in above paragraph.

Tide reducers were obtained from the automatic gauge in operation during the execution of the work. Reductions used in actual field operations were from the predicted curve roll furnished by Office.

I believe the color scheme for plotting drag work is set forth in Publication No.21. We were unable to secure a copy of this from the Office, so the color plan (see title sheet) was made up from memory.

Eoline R. Hand

HYD. & GEOD. ENG'R.

LIST OF STATISTICS

To accompany wire drag sheet No.1

Knik Harbor,(Anchorage), Cook Inlet, Alaska.

Surveyed in June and July,1918.

Colin G. Bland

HYD. & GEOD. ENGR.

Chief of Party.

Date 1918	Letter	Vol.	Angles	Miles Statute	Area, sq. Miles.	Boats.
June 14	A	1	60	2.3		B.B. No.1 Betty M. Vibienna
" 17	B	1	150	3.0		"
" 19	C	1	135	3.9		"
" 20	D	1	121	4.2		"
July 15	E	1	30	1.0		"
" 17	F	1	182	4.1		"
" 19	G	1	151	4.0		"
" 20	H	1	66	2.5		"
" 22	J	1	67	2.2		"
" 24	K	2	29	1.5		"
" 25	L	2	60	1.8		"
" 26	M	2	54	1.4		"
" 27	N	2	54	1.0		"
" 28	O	2	17	0.6		"
Totals------			1176	33.5	7.5	

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 41-ACC

FIELD RECORDS (C)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON May 17, 1919.

Division of Hydrography and Topography: HC&T

Division of Charts:

Tidal reductions have been approved in

2 volumes of Wire Drag records for

HYRDROGRAPHIC SHEET 4036

Knik Arm, Cook Inlet, Alaska.
Eoline R. Hand in 1918.

Plane of reference is
Mean lower low water, reading

10.1 ft. on staff at Anchorage.

R. H. Luce

Chief, Section of Tides
and Currents.

Hyd Sheet No 4036

The results of this wire-drag survey are probably as good as may be expected, in an area which presents so many natural difficulties.

The only thing developed by the verification was a very small split, the other splits being shown by the original plotting R. L. Johnston

Subsequent to the plotting of this sheet, soundings were found in the records of the hyd sheet. (Hyd 4035.) These soundings should have been entered in a separate volume and sent in with the drag records. The time is not recorded on some of these soundings and at the sounding at pos. 1J, neither time nor tide reducer is entered although a reduced depth is given. RLJ

E.R.H.

ADDRESS THE DIRECTOR
U.S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-DRM

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
WASHINGTON

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet No. 4036.

Surveyed in 1918.

Chief of Party: E. R. Hand.

Surveyed by: E. R. Hand and W. D. Patterson. Instructions dated Mar. 15, 1918.

Protracted and inked by: W. D. Patterson.

Verified and Area and Depth Sheet by: R. L. Johnston.

1. The depth and extent of dragging do not satisfy the specific instructions for the following reasons: The entire navigable area was not dragged as called for in the instructions. North of Point Woronzof the drag should have been carried toward the shore at least to the five fathom curve and even closer as there is a 40 foot range of tide here, and advantage could have been taken of this to drag the comparatively shoal area near the south shore. Furthermore, the least water was not determined on all separate and detached shoals as called for in the instructions. This is particularly true of the 27 foot spot found in the vicinity of Cairn Point. This spot was not subsequently dragged over. The $3\frac{1}{2}$ and $4\frac{1}{2}$ fathom spots between Point Woronzof and Anchorage should be investigated.

2. The least water was found on all shoals discovered except as noted in Paragraph 1.

3. The overlaps are sufficient.

4. There are several splits on this sheet. The one north of Point Woronzof lies in deep water and may not contain any shoal spots. But the split north of the new wharf where the drag grounded and 27 feet was found should be redragged for possible shoaler water. This spot is a dedided menace to boats using the new wharf. From an inspection of the hydrographic sheet of this locality, executed

simultaneously with the wire drag work, it would seem that with the exception of one or two spots, the entire area could have been covered with an effective depth of 40 feet. In view of the above, and particularly since the 27 foot spot was not covered again, this sheet cannot be considered as complete.

5. Owing to the unusual difficult conditions the party had to contend with (as set forth in the Chief of Party's annual and season's reports) it is not intended to pass judgment on the work, and the remarks made in the foregoing paragraphs simply point out wherein the specific instructions failed to be complied with.

It is evident from the descriptive report of the sheet and the season's report, that the Chief of Party was unaware of the existence of two 27 foot spots off Cairn Point disclosed by the drag soundings. These spots are 160 meters apart with 40 to 50 foot depths between. The one nearer shore was subsequently covered by a 22 foot drag. This is contrary to the statement made in the season's report which says "the wire brought up at 30, but cleared at an effective depth of 27 feet." The one farther offshore was not covered at all.

6. Soundings obtained by the wire drag party should be entered in a separate sounding volume, and should be included with the records of the wire drag sheet, instead of entering them in the records of a separate hydrographic sheet as was done by this party.

7. As this survey failed to comply with the requirements of the specific instructions, additional work will be required in the undragged area noted above.

8. Reviewed by A. L. Shalowitz, October, 1922.

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

Wire Drag Sheet No1 .

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4036

State . . . S.W.Alaska. . . . . .

General locality . . . Cook Inlet. . . . . .

Locality . . . . . Knik ~~Inlet~~ Arm . . . . . .

Chief of party . . Eoline R. Hand. . . . . .

Surveyed by . Eoline R.Hand and Wm.D.Patterson. . . . . .

Date of survey . . June & July- 1918. . . . . .

Scale . 1:10,000 . . . . . .

~~Soundings in~~ . . . . . .

Plane of reference . Mean Lower Low Water. . . . . .

Protracted by W.D.Patterson ~~Soundings in pencil by~~ . . . .

Inked by W.D.Patterson . . Verified by R.L.J. . . . . .

Records accompanying sheet (check those forwarded):

Des. report, ... Tide books, ... Marigrams, 1 Boat sheets,

..... Sounding books, 2 Wire-drag books, ... Photographs.

Data from other sources affecting sheet . . . . . .

Remarks: color scheme: copiedfrom letter to Chief of Party by W.D.Patterson

Over 80 ft.		orange
60 - 79	"	purple
40 - 59	"	red
30 - 39	"	blue
20 - 29	"	yellow
Below 20	"	brown