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Form 504 DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY
State: <u>SW Alaska</u>
17-5013
DESCRIPTIVE REPORT.
<i>Hydrographic</i> Sheet No. <u>4449</u>
LOCALITY:
<u>Alaska Pen.</u>
<u>Chignik Bay</u>
<u>1924</u>
CHIEF OF PARTY:
<u>Cl. Garner</u>

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET "B" CHIGNIK BAY, SOUTHWEST ALASKA.  
Instructions dated March 11, 1924.

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GENERAL.

This sheet comprises the hydrography in the main part of Chignik Bay and embraces the area between latitudes  $56^{\circ} 15'$  and  $56^{\circ} 30'$  and longitudes  $157^{\circ} 45'$  and  $158^{\circ} 15'$ .

This sheet joins on to the work of various hydrographic sheets of inshore work and are consecutive from the vicinity of Castle Cape and numbered 1, 2, 3, 4 and 5.

COAST LINE.

The coast line with the exception of the head of Chignik Bay abounds in precipitous rock cliffs ranging from a few feet to more than 400 feet in height back of which are heavy mountain ranges covered with grass and alders to an average elevation of about 1000 feet. Above this elevation there is very little vegetation of any kind. The entire coast line adjacent to the area covered by this sheet was covered by topographic surveys with detailed descriptive reports and it is not considered necessary to cover this information at greater length.

OUTLYING DANGERS.

No outlying dangers were found during the work and none of importance are believed to exist although the soundings show a very broken and uneven bottom.

INSHORE DANGERS.

On the west and north shores of Chignik Bay the area is practically all covered by hydrographic sheets which show and explain inshore dangers. The only one of any importance is the 25-foot shoal off Anchorage Bay which was developed on sheet No. 3 and 4. To the east of Hook Bay in the vicinity of Gull Island the inshore area is very foul but has not been developed. In this vicinity boats should keep a mile to the south of an east and west line through Gull Island.

There are several projecting points from Nakchamik Island which, from current indications, project nearly  $1/3$  mile from the shore. These points are on the southwest in the vicinity of triangulation station MIK; on the west in the vicinity of hydrographic stations Set and Max; on the northeast near hydrographic station Yel, and to the southwest of Lone mountain. None of the inshore area around Nakchamik Island has been done.

#### CHARACTER OF BOTTOM.

As stated in a previous paragraph the depths are very irregular and show a rugged bottom with rock at the shallow depths. It was not possible to completely develop this area with lines spaced according to the instructions because of unfavorable weather conditions at the close of the season. A large part of the work was done in running to and from the landing of working parties with the intention of filling in additional lines as time permitted.

#### CURRENTS.

No current observations were made in this area but from general observations made during navigation it is believed that the currents rarely exceed one mile per hour.

#### LANDMARKS.

Practically all of the coast line in this area which is visible from the sea is rocky with steep cliffs almost at the water's edge varying in height up to 500 feet. Heavy mountain ranges averaging about 3000 feet in height border the coast at an average distance of about 2 or 3 miles from the shore line and viewed as a general landscape forms a rather rugged outline.

The outlying islands and Castle Cape form the most prominent landmarks for navigational purposes as they are very steep to, are quite easy to identify, and can be approached close to. Of these Castle Cape is the most prominent as its Inner and Outer spires are very distinctive shafts of gray rock and the Cape can be approached within 1/4 mile with safety.

Nakchamik, Kak, and Atkulik Islands are also quite prominent and are valuable landmarks. Kak Island is steep to on all sides. The Columnar structure mentioned in the Coast Pilot is quite marked.

#### METHODS.

All hydrography on this sheet is controlled by sextant fixes or triangulation stations or other well defined and located points which form strong fixes. The sheet is unusually adapted for selecting strong fixes.

Sounding lines were in general laid out normal to the general trend of the coast line and were spaced according to the instructions for the season's work as far as possible.

#### TIDES.

All work on this sheet is reduced from the Anchorage Bay tide gauge.

Respectfully submitted

  
CLEM L. GARNER, H. & G. Engr.,  
Chief of Party.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON June 20, 1925.

SECTION OF FIELD RECORDS

Report on Verification of Hydrographic Sheet No. 4449

Chignik Bay, Alaska Peninsula

August and September, 1924

Chief of Party, C. L. Garner.

1. Character and completeness of records and notes

The records and notes were clear and complete with the following exceptions:

(a) Only 4 bottom characteristics appeared in the entire work.

(b) No comparison was obtained for the Fischer tubes used on E day, Sept. 10. Only 2 or 3 points, where the wire sounding and the tube soundings were taken simultaneously, were plotted on the curve sheets, and these were not enough upon which to base a curve. No curve correction was applied to the soundings taken with these tubes, and upon an inspection of the curves for these tubes on other days, it was decided that corrections should have been applied, so an average curve was developed from comparisons of other days and this new curve used to correct the Fischer tube readings for E day. Three such curves were made: tube No. 94, No. 29 and No. 82.

(c) The curve for tube No. 58 on J day, Sept. 18, was incorrect and a new one made and applied.

(d) The curve for tube No. 82 on K day, Sept. 26, was in error and a new one plotted and applied.

(e) A number of lead line soundings were not reduced for tide and the tube sounding had been plotted instead. These were corrected.

(f) In a Bulletin issued from this Department June 30, 1924, is an article on the use of Depth Recorders which says, "A single miss may be ignored unless in a critical area but if two successive misses occur, then one or more additional soundings shall be taken in the gap of the line caused by these misses." This was disregarded and in several instances three successive misses occurred.

Note

A study in the field of the curves for the same tubes on different days would disclose any large errors and render the field work more accurate. The Rude tube curves were good although most of them could have been corrected a fathom or

one and a half fathoms at eighty fathoms and made their work more accurate.

The other comparison curves of the Fischer tubes except as above mentioned were very well done.

2. Accuracy of Protracting.

The protracting was accurate with the following exceptions:

(a) The ~~control~~<sup>Δ<sup>m</sup></sup> point Egg (later discovered to be a triangulation point under another name, RK near Eagle RK) was incorrectly plotted and affected several soundings which depended upon it.

The plotting of this point on the Topographic Sheet was correct but the triangulation record was discovered in error.

3. Plotting of Soundings.

The time intervals were carefully adhered to.

4. Sufficiency of Development.

(a) Attention is called to a note at the end of P day's work in the sounding records.

"On account of threatening weather and the necessity of picking up shore parties it was not possible to secure comparisons for tubes No. 100 and No. 220. Much of the soundings with these tubes is in an area which will require development at another time and it is recommended that the soundings with the tubes with which they are paired be accepted for the day.

C. L. G.

Corr. for Sept. 12 applied to tubes 100 and 220."

(b) The shoal extending from 56° 19' to 56° 23' lat. and 157° 58 1/2' to 158° 01' long. needs further development.

5. Cleanliness

The sheet was clean and legible and the drafting conforms to the General Instructions for Field Work.

*John C. MacFarlane*  
Cartographic Draftsman.

STATISTICS SHEET NO. B.

Date, 1924	Letter	Vol.	Position	Soundings.	Miles Statute	Vessel.
Aug. 29	A	1	23	23	17.5	Discoverer
Aug. 30	B	1	46	101	27.6	"
Sept. 6	C	1	59	118	37.2	"
Sept. 9	D	1	52	130	26.3	"
Sept. 10	E	2	53	104	37.0	"
Sept. 11	F	2	76	129	43.3	"
Sept. 12	G	2	49	114	22.0	"
Sept. 17	H	3	63	129	29.9	"
Sept. 18	J	3	40	100	20.0	"
Sept. 26	K	3	54	138	29.9	"
TOTALS			515	1086	290.7	

Area = 172 statute miles.

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 July 15, 1925.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4449

Chignik Bay, Alaska.

Surveyed in 1924

Instructions dated March 11, 1924

Chief of Party, C. L. Garner.

Surveyed by C. L. G., R. L. Schoppe and W. Weidlich.

Protracted and soundings plotted by G. Pierce.

Verified and inked by J. C. MacNab.

1. The records conform to the requirements of the General Instructions except that there were only 4 bottom characteristics obtained during the survey.
2. The plan and character of development conform to the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions.
4. The sounding line crossings are adequate considering the uneven character of the bottom.
5. The information is sufficient for drawing the depth curves.
6. The usual field plotting was done by the field party. The lettering of position numbers and day letters is much too large.
7. The junctions with the adjoining surveys are satisfactory.
8. As stated in the descriptive report, there are a number of shoals that should be developed or dragged. The most important is the bank 3 miles west and northwest of Nakchamik Island.
9. Some of the wire soundings that were taken simultaneously with tube soundings were not reduced or plotted.

10. There were several instances of several successive "misses" in sounding tube soundings. The gaps caused by these misses should have been filled in by additional soundings.
11. The character and scope of the surveying and field drafting are good.
12. Reviewed by E. P. Ellis, July, 1925.

*Additional work require to develp numerous  
indications of shoal areas.*

*L. O. P.  
H. G.*

May 9, 1925

~~Division of Hydrography and Topography:~~

Division of Charts:

Tide reducers are approved in  
3 volumes of sounding records for

HYDROGRAPHIC SHEET 4449

Locality: Chignik Bay, S. W. Alaska.

Chief of Party: Clem. E. Garner in 1924  
Plane of reference is mean lower low water and is  
5.8 ft. on tide staff at Chignik, Anchorage Bay, Alaska.

For reduction of soundings, 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 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



Chief, Division of Tides and Currents.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

## HYDROGRAPHIC TITLE SHEET

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. (B) 4449

State . . . . . S.W. ALASKA . . . . .

General locality . . . . . ~~CHIGNIK BAY~~ Alaska Peninsula . . . . .

Locality . . . . . CHIGNIK BAY . . . . .

Chief of party . . . . . CLEM L. GARNER . . . . .

Surveyed by . . . . . CLEM L. GARNER, R. L. SCHORPE, W. WEIDLICH.

Date of survey . . . . . AUGUST AND SEPTEMBER 1924. . . . . .

Scale . . . . . 60,000 . . . . .

Soundings in . . . . . FATHOMS . . . . .

Plane of reference . . . . . MLLW . . . . .

Protracted by C. PIERCE Soundings in pencil by C. PIERCE

Inked by . . . . . Verified by . . . . .

Records accompanying sheet (check those forwarded):

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

Sounding books,  Wire-drag books,  Photographs.

Data from other sources affecting sheet . . . . .

## Remarks:

Development is not complete due to conditions at the end of the working season in Alaska.