Form 501
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: Alaska

DESCRIPTIVE REPORT.
Topog. Sheet No. 4028

LOCALITY:
Aleutian Islands

Unimak Island Swanson's Lagoon

1923

CHIEF OF PARTY:
B.R. Lukens
DESCRIPTIVE REPORT to accompany Topographic Sheet No. of Swanson’s Lagoon, Unimak Island, South West, Alaska.


Swanson’s Lagoon is a shallow, un navigable lagoon indenting the north east shore of Unimak Island on the Bering Sea side. It is about seven and one half miles (naut.) west of Chunak Point, at the north entrance of Isanotski Strait.

GENERAL DESCRIPTION OF THE COAST

Approaching Swanson’s Lagoon from the Bering Sea, the hills between the Lagoon and the Bering Sea serve as good landmarks. These hills are grassy on the south sides but are composed of a black sand on the north sides. The hill with an elevation of 70' near hydrographic signal YEL appears as a rounding ridge with a small notch in this ridge. The hill just west of this with an elevation of 90' has two small and rather sharp summits. The hill at hydrographic signal MARK with an elevation of 85' comes to a distinct cone shaped summit. At the western edge of the sheet, the hill with an elevation of 50 feet is cone shaped from the east and west and appears as a short ridge from the north and south. To the east of this hill a ridge makes to the eastward. The entrance to the lagoon appears as a break in the sandy beach of this locality. Long, low, black, sandy spits form the entrance.

LANDMARKS

The only prominent landmarks near the Lagoon are the hills already mentioned. The island at hydrographic signal GULF is easily distinguished.

DESCRIPTION OF THE SHORE LINE AND LAND SURROUNDING THE LAGOON

The shoreline is extensively sandy on the north side and earth and mud on the south side with the exception of the mouth of the large stream near hydrographic signal WET which is sandy. There are small rocks along the east and south east sides of the Lagoon. Above the high water mark island is grass covered with the exception of the north side of the range of hills on the east side of the entrance to the lagoon. The north sides of these hills are black sand. South of the lagoon, fresh water swamps and small lakes or water holes feed the streams which flow to the Lagoon. The lakes are small, the largest of them probably not over two hundred meters in length. Many of the outlets from these lakes are underground. There are small ranges of hills from 10 to 20 feet in elevation among these swamps.

CHANGE OF COAST LINE AND DEPTHS

The entrance to the Lagoon shifts from year to year. Information gathered from men stationed in the general locality indicates that several years ago the entrance was two or three hundred meters east of where it is now. At low water in the Bering Sea the level of the outlet to the Lagoon is perhaps ten feet above the Bering Sea level.
With the ebb tide the sand at the entrance is washed seaward by the
current of water from the Lagoon and a rising tide in the Bering Sea
carries this sand back. The eastern end of the Lagoon, east of the
sand spit at the mouth of the large stream, is slightly deeper than
the remainder of the Lagoon. It ranges from one to five feet in depth
and is deepest in the approximate middle and southeastern part.

STREAMS
The larger stream which enters the Lagoon near hydrographic
signal WEST is about ten m. wide for a distance of about two
miles back. This stream leads back into the mountains. Its depth vari-
ies between one and five feet. A branch from this stream leads to a
fresh water lake. The stream at the west end of the sheet drains the
swamps and small water holes well back from the Lagoon. It is about
four meters wide and two to four feet deep for a distance of several
miles back. The other streams shown on the sheet are small and drain
the swamp land back of them.

CURRENTS
Strong currents of from two to four knots were observed in
the two channels leading from the entrance. The current is
strongest at the entrance where the water flows rapidly to meet the
much lower level of the Bering Sea at low water. The ebb current runs
for about eight hours and the flood for about four.

SURVEY METHODS (TOPOGRAPHY)  A base was measured by hundred foot steel
tape between hydrographic signal WEST and
hydrographic signal EAST. Signals were located by plane table triangula-
tion. Intersections checked very well. Shore line was rodded in from
the stations. Four mountain peaks, which have been located by triangula-
tion, were observed upon from triangulation signal CAN and a three point
fix computed.

SURVEY METHODS (HYDROGRAPHY)  Hydrographic reconnaissance was accomplis-
hed by running single lines of soundings
through what were ascertained to be the deepest channels. A graduated
rod was used instead of a lead line and fixes were taken only at the begin-
ing and ends of lines. The soundings placed on the sheet in pencil have
been reduced to the lowest tide observed in the Lagoon. This Lagoon is
not navigable. Entrance could be made into the Lagoon at high water with
a calm sea and no swell, by small launches drawing not over three feet.
At times the entrance is congested with sand so that a pulling boat only
could be taken through.

Respectfully submitted,
L. C. Wieden

[Signature]

To the Director

U.S.C. & G.S.

Washington, D.C.
## Plane Table Positions

**Sheet No. Swanson's Lagoon**

<table>
<thead>
<tr>
<th>Station</th>
<th>Latitude</th>
<th>D.M.</th>
<th>Longitude</th>
<th>D.R.</th>
<th>Height</th>
<th>Remarks</th>
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*All stations marked, all with exception of mark, o snag and o grad with top stones.*
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<tr>
<th>Station</th>
<th>Latitude</th>
<th>D.M.</th>
<th>Longitude</th>
<th>D.R.</th>
<th>Height</th>
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Scaled by L.C.W.
Checked by A.J.H.
Copy checked by L.C.W.
DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
WASHINGTON
March 7, 1924.

SECTION OF FIELD RECORDS

Report on Topographic Sheet No. 4028
Swanson & Lagoon, Unimak Island, Alaska
Surveyed in 1923

Chief of Party, R. R. Lukens
Surveyed by L. C. Wilder
Topography inked by L. C. Wilder.
Hydrographic reconnaissance protracted and soundings plotted by
field party.
Verified and inked by H. R. Edmonston.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of the topographic survey fulfill the require-
   ments of the General Instructions. The hydrographic reconnaissance
   also satisfies the General Instructions.
3. The field plotting was completed to the extent prescribed in the
   General Instructions and none of it had to be done over.
4. The outer shoreline should have been completed if time permitted.
   Owing to the fact that this coast has never been surveyed, it will
   not be possible to show correctly the widths of the two spits that
   enclose the lagoon.
5. The field party states that the hydrography is to be considered as
   reconnaissance only.
6. No further surveying is required within the limits of the sheet.
7. A note in the sounding record states that this survey may be desired
   by the Bureau of Fisheries.
8. The character of the surveying and field drafting and excellent.
9. Reviewed by E. P. Ellis, March, 1924.

Approved

[Signature]
March 14, 1924.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
1. Volumes of sounding records for

XXXography Sheet 4028.

TOPOGRAPHIC

Locality: Swanson's Lagoon, Unimak Island, S. W. Alaska.

Chief of Party: R. R. Inokens in 1923

Place of reference is mean lower low water reading

0.7 ft. on tide staff at Lagoon.

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 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.

Chief, Division of Tides and Currents.
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

The finished Topographic 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. 4128

State South-West Alaska
General locality Aleutian
Locality Unimak Island, Swanson's Lagoon

Chief of party R. R. Lukens
Surveyed by L. C. Wilder
Date of survey May 25 - June 9, 1923
Scale 1 - 10,000
Heights in feet above High water
Contour interval 50 feet

Inked by L. C. Wilder Lettered by L. C. Wilder

Records accompanying sheet (check those forwarded): Photographs, Descriptive report, Horizontal angle books, Field computations,
Data from other sources affecting sheet Plane table Positions

Remarks: 1 vol. soundings submitted to accompany this sheet filed in library