

# 2539

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Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

\_\_\_\_\_  
*Superintendent.*

State: \_\_\_\_\_

DESCRIPTIVE REPORT *Waived*

*by Asst in Charge Oct 29, 1901*

Sheet No. \_\_\_\_\_

LOCALITY:

\_\_\_\_\_  
190

CHIEF OF PARTY:

2539

(2539°) Nantucket Sound Eastern Entrance, Mass  
July 20 to Aug 30, 1901 Lat. & Long.

Mem. to accompany hydro sheet 2539a

The sounding lines on this sheet were originally projected on sheet 2539 on scale of  $\frac{1}{40000}$ . This was considered too small a scale for the plotting of the soundings and sheet 2539a on scale of  $\frac{1}{20000}$  was prepared for this work. This scale also offered a ready comparison with the last previous survey (1890, 1891 and 1895) covering the ground.

The comparison shows that no material change has taken place. The 30 foot curves, outlining Great Round Shoal and Great Spit, remain about the same, and the bar between Lat.  $41^{\circ} 25'$  and  $41^{\circ} 26'$  and Long.  $69^{\circ} 56'$  and  $69^{\circ} 58'$  shows no change in general depth from the survey of 1890-91. On Great Round Shoal and also on the end of Great Spit, between Black Buoys Nos. 11 and 13, some changes have taken place, but they are unimportant and due to the shifting nature of the bottom.

As a general rule it can be assumed that channels and shoals are in the same places as in the previous survey. It is, indeed, remarkable how some characteristic depths re-occur. For instance: the 18 foot spot 400 meters N.W. of Red Buoy No. 8 showed 19 feet within 200 meters of it in 1890 and 17 feet in its exact <sup>present</sup> location in 1883.

The survey covering this sheet is an excellent one. A

proof of this is the ease with which the currents have been traced. Special attention is directed to the 30 foot current on the Great Round Shoal and to the persistency of the long ridges and holes.

The records of this sheet and of sheet no 2531 are not altogether what they should be. In the first place the records of the sheets should not have been connected. This is a fruitful source of imitation and will cause everlasting confusion in the Archives. The record is not as full as it might be - remarks, such as passing buoys are often lacking - they are really conspicuous by their frequent absence. In fact only two buoys, No 9 and the P.S. buoy, could be placed with any accuracy. Nos 6, 7 and 8 are approximate only and Nos 11 and 13 had to be taken from the published charts. At no one were angles taken. The North Atlantic Squadron placed a number of white buoys (apparently 20 or more). Some of these buoys were properly located by angles, others noted in the remarks and the rest not mentioned. Owing to the incomplete record of these buoys and that they were taken up again they are not shown on the sheet. A careless mixing of names of signals occurs in the record. The observers on the steamer using one set of names and those of the launch another for the same.

points. No complete explanation of these abbreviations of existing names of points is recorded.

When the sheets came to the office they were unaccompanied by the required title, notes, tidal data and statistics. The unfinished condition of the sheet entailed considerable preliminary work before the work of plotting the soundings could begin.

This sheet and No 2531 are now ready for lettering. They affect charts 250,<sup>213</sup> 111, 51 and 7.

W. C. Willenbücher

February 25. 1902

To the Inspector of Charts.

Inspection of Log 2539 to work of 1906

The area involved in this examination is fairly well covered; but short indications were not thoroughly developed for reasons stated in the Descriptive Report -

Notes relating to drag should be given more conspicuous place in the record - on left-hand page - and contain complete data for plotting the results - Where any doubt is involved, the Chief of party should make and sign a statement of the circumstances -

All abrupt changes of depth should be noted and verified and appropriate entry to that effect made in the sounding record -

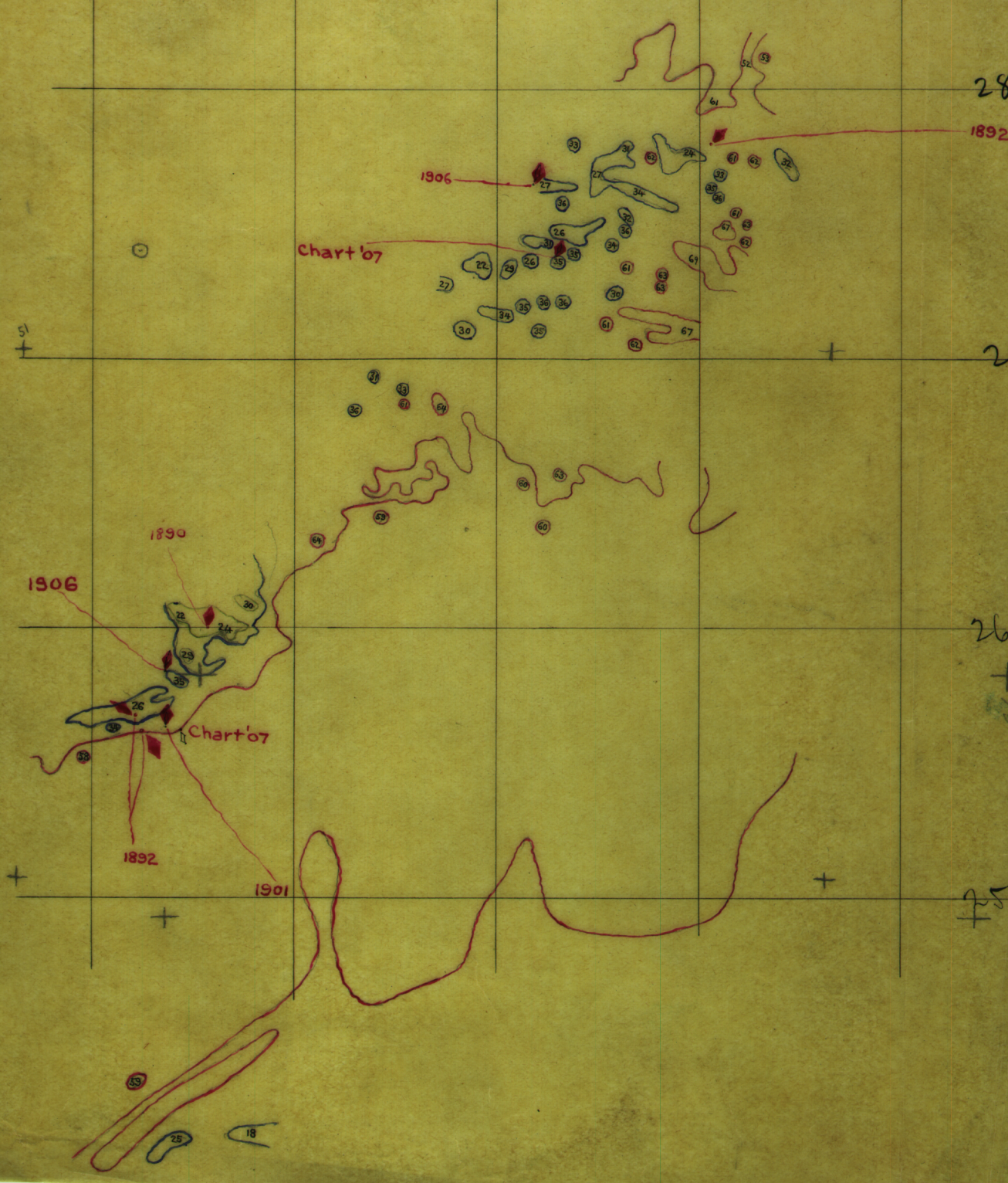
The character of bottom was entered in places as rocky, but on account of the evidence of previous surveys to the contrary and the known general character of the locality, it was omitted from the sheet.

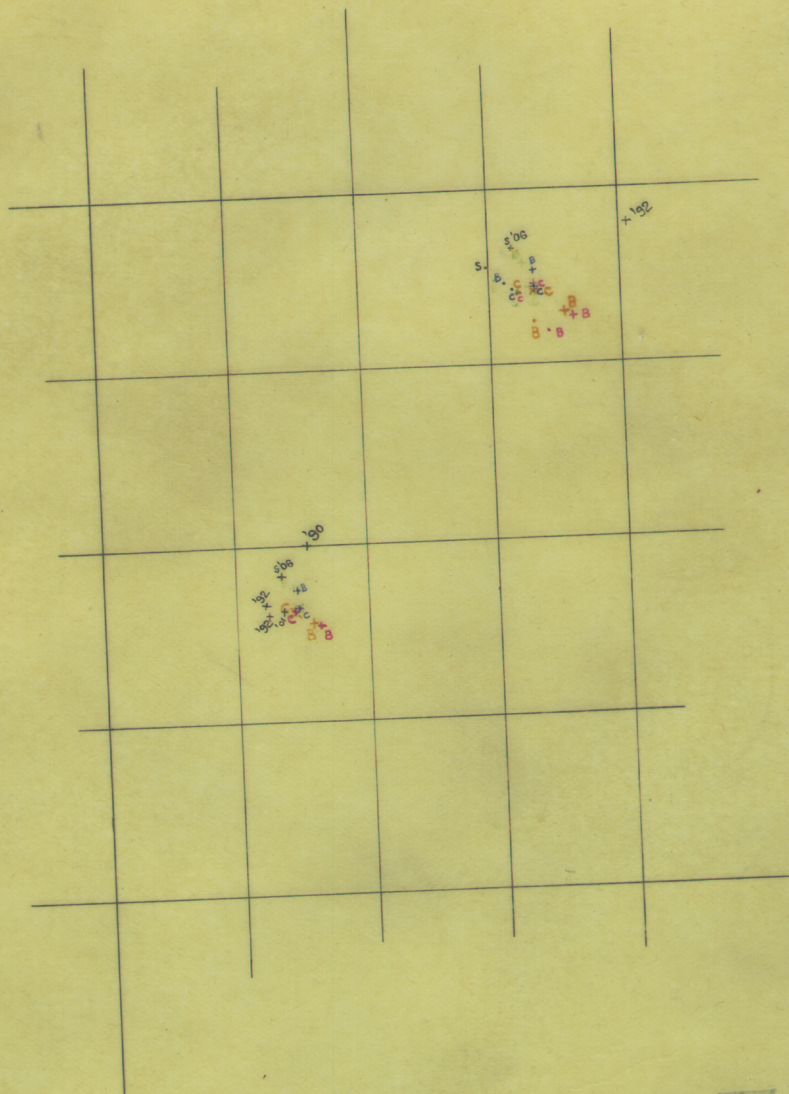
Comparison with the incomplete results of surveys in 1847-8, 1856, 1875, 1890 and 1892 shows no material change -

J. D. Bell  
2-5-08

51 50 49 48 47

29  
28  
27  
26  
25





- W 213
- W 111
- D 113
- D 111
- Hyd projection

~~W 213~~

Sheet 2539<sup>b</sup>

The work on this sheet seems to cover the ground fairly well. no special examination was made of the shoal spots where the sweep struck although several were confirmed by running over the spot more than once.

All shoal soundings in vicinity of Buoy no 6, which were transferred from other sheets 1573 and 2051, were taken out, as they do not agree with this survey. see tracing with sheet.

July 18 1907

J. C. Down.



2539<sup>b</sup>

83  
SHA  
2539B  
1906

Department of Commerce and Labor  
COAST AND GEODETIC SURVEY

*O. H. Tappan*  
Superintendent.

State: *Massachusetts*

DESCRIPTIVE REPORT.

*Hydro* Sheet No. *2539<sup>B</sup>*

LOCALITY:

*Nantucket Sound*  
*Vicinity of Orion Shoal*

1906

CHIEF OF PARTY:

*Walter C. Dibrell*

U. S. C. & G. SURVEY,  
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2539<sup>b</sup>

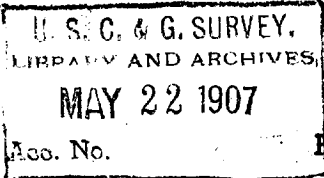
COAST AND  
GEODETIC SURVEY

2539<sup>b</sup>

MAY 21 4 20 PM 1907 DEPARTMENT OF COMMERCE AND LABOR

FILE:  
REFERRED: Coast and Geodetic Survey  
SUPERINTENDENT

O. H. Tittmann, Supt.



2539<sup>B</sup>  
Hydrographic Sheet No. ~~B~~, Field.

Eastern Approaches, Nantucket Sound, Massachusetts,  
Vicinity of Orion Shoal.

Assistant Walter C. Dibrell, Chief of Party.

Steamer "Explorer".

Begun: Sept. 4

Ended: Nov. 24

1908

Scale: 1:40,000

2/3 '07.

STATISTICS

HYDROGRAPHIC SHEET FIELD # "B".			APPROACH TO NANTUCKET SOUND, MASS.			
Date	Vol.	Let.	Miles.	Sdgs.	Angles.	Boat.
Sept. 4, '06.	1	A	3.8	105	54	"Explorer"
" 5-6, "	1	B	26.0	639	266	"
" 6, "	1	C	12.0	321	148	"
" 17, "	1	D	14.0	519	156	"
Oct. 30, "	2	E	3.2	169	38	"
Nov. 6, "	2	E'		2	4	"
" 7, "	2	F	4.1	346	82	"
" 8, "	2	G	12.3	685	140	"
" 9, "	2-3	H	23.2	1026	242	"
" 13, "	3	J	5.9	249	64	"
" 14, "	3	K	12.2	412	122	"
" 15, "	3	L	10.5	413	108	"
" 17, "	3	M	3.0	160	26	"
" 23-24 "	3-4	N	26.5	976	218	"
" 24, "	4	O	5.4	227	46	"
Totals.	4	15	162.1	6249	1714	"

*Square miles (nautical), 4.*

Observers

Walter C. Dibrell, Assistant.  
 C. M. Sparrow, "  
 Eoline R. Hand, Aid.  
 J. R. Hurley, Surgeon.  
 B. Ackerman, Mate.  
 James H. Simpson, Deck Officer 1cl.

Recorders

Edward Treffz, Chf. Wr.  
 Harold Olsen, Wr 2 cl.

Lealsmen.


Wm. Johanson, C.B.M.  
 T.N. Janssen, Q.M. 1cl.  
 A.M. Berggren, " 2cl.  
 E.N. Larsen, " 2cl.  
 H.W.L. Zall, " 2cl.  
 B. Ramberg, Seaman.

Tidal observations at Vineyard Haven, Mass. and  
 Monomoy Id. Mass.

*Plotted*  
 Sounding lines plotted by field + by F.C. Down  
~~11 - " - " Enlarged and transferred to sheet 2539 by F.C. Down~~  
 Soundings Plotted and inked on sheet 2539 by F.C. Down

Tide Observers.

W. K. Snoek, Seaman  
 G. E. Jackson, Seaman.

*Verified:*   
 2-3-08

VEC  
Apr. 18, 1907.

HYDROGRAPHIC SHEET 2539<sup>b</sup>.

Approaches to Nantucket Sound, Massachusetts, by  
W.C. Dibrell in 1906.

TIDES

	Monomoy Point.		Vineyard Haven
	Staff 1 ft.	Staff 2 ft.	ft.
Mean low water, or plane of reference on staff	0.8	2.3	4.2
Lowest tide observed on staff	-0.6	0.9	3.2
Highest " " " "	6.1	7.6	7.1
Mean rise and fall of tides	3.7	3.7	1.7

Coast and Geodetic Survey  
APR 18 1907  
TIDAL DIVISION.

Notes for Sheet 2539-

Soundings lines, within the blue line, enlarged & transferred from sheet 2539<sup>7</sup>. plotted and inked in blue.

The Harbor Sweep was used and set at a depth of 30 to 34 ft with a sweep of 32 to 45 ft

Originally plotted on boat sheet 2539<sup>6</sup>

Department of Commerce and Labor

Hyd. 2539 Charts 111 213 250

18 ft spot not developed because of error in position in Lt buoy # 2  
See descriptive report for reference to buoys -

Both buoys well determined and not very variable in position -

Bearing between buoys preserved as buoys were shifted to N.W. confused and conflicting results due to shrinkage in charts - great distortion in plate proofs, and use of poorly conditioned signals Lt. Pt., Folly Cap. + Sankatz Hd. -

Buoys probably determined from near-by aids not from distant and frequently invisible lights -

Letters 97 + 102 '08 indicate independent determination of  
St. Diego -

Department of Commerce and Labor

26 ft spot

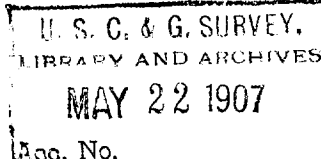
2473	Get Pt to Folly	29 08	Folly to Bank	12 35
Chart	" " "	28 57	" "	12 21
Wetk	" " "	28 49	" "	12 20

28 ft spot

2473	Get Pt to Folly	29 24	Folly to Bank	12 36
Chart	" " "	29 14	" "	12 23
Wetk	" " "	29 07	" "	12 22



Descriptive Report to Accompany Hydrographic Sheet # 2539a  
(Field Letter "B"), Eastern Approach to Nantucket Sound, Massachusetts.  
Scale 1 - 40,000.



1. This sheet shows the result of a hydrographic examination made in the vicinity of Orin Shoal, eastern entrance to Nantucket Sound.

2. The seven mast schooner "Thomas J. Lawson" drawing 28 feet 10 inches was reported to have touched bottom in this locality, and your instructions of July 17, 1906 directed that advantage be taken of some favorable condition of weather to make a search for the shoal, the existence of which was uncertain. Accordingly, an examination was made of the locality indicated on the chart forwarded with the instructions. Soundings were obtained as usual with the hand lead and the channel sweep was set at 33 feet, its breadth being 32 feet. The work covered a rectangular area 1 1/2 miles long east and west (magnetic) and 1 mile wide, lying between 1/2 mile and 2 miles east of buoy # 6. This area was carefully explored, the lines being much closer near the longer axis of the rectangle than in the vicinity of its northern and southern edges, as the assumption was made that the position of the shoal was plotted by bearing an estimated distance from the gas buoy. Owing to the strong and irregular tidal currents the lines are crooked and do not evenly cover the space.

3. No indications of any shoal were found. The depths were fairly regular and the soundings did not differ greatly from those given on the chart.

4. The positions depend for the most part upon angles observed upon the lighthouses at Monomoy Point, Great Point, <sup>and</sup> Sankaty Head.

On account of the difficulty of seeing Monomoy light house by day most of this work was done at night. While running the last few lines Monomoy Point light house was not showing, so the gas buoy at Orion Shoal was used as right hand object. The buoy had been determined by sextants cuts only a short time previously under similar conditions as to tide and wind.

5. There is no reliable tidal data for reducing these soundings. Tides were observed at Vineyard Haven at night, but as the tide staff is about 35 miles from the working ground, these readings can have little or no value. As the purpose of the work was to locate a shoal, the existence of which was uncertain I did not consider it necessary to obtain accurate tidal data.

6. Gas buoy # 6 and the one at Orion Shoal were determined in the course of the work by sextants cuts. When the cuts were plotted on the boat sheet the intersections differed materially in latitude and longitude from the positions assigned to these two buoys on the chart. The new position of buoy # 6 was 380 meters N.  $11-3/4^{\circ}$  W. (true) from the charted position, and that of Orion buoy 490 meters N.  $29-1/2^{\circ}$  W. (true) from its position as shown on the chart.

7. After returning to Vineyard Haven and before reporting the buoys out of position I plotted the cuts on the chart (# 111) and found that they intersected on the positions there given. The discrepancy between the two positions of the respective buoys probably is due partly to unequal shrinkage of the chart and partly to small differences in the positions of the lighthouses on the chart and on the projection. The geographical positions used for the lighthouses on the boat sheet are those taken from the Appendix # 10 of the Superintendents Report for 1894.

8. The important question in regard to the buoys was their

relation to the adjacent soundings. On this point, <sup>the</sup> data at hand furnished no information, so after some consideration I again visited the locality and ran several lines of soundings in the vicinity of the two buoys on the channel side. Irregular depths were found, and in some places there was a little less water than the chart would lead one to expect. No dangers to navigation were found however, and no evidence was obtained to substantiate the theory that the relation between the buoys and the adjacent soundings is incorrect on the chart. On this occasion two leadsmen were employed, sounding alternately from starboard and port chairs, and the channel sweep was not used. Upon the completion of this examination I returned to the surveys in Nantucket Sound and forwarded my report on the work done.

9. Later, more complete information in regard to the grounding of the Lawson was forwarded to me from the Office and this data indicated the need of further examination in the channel to the north-eastward of the area previously explored. The <sup>ship</sup> proceeded to Monomoy Point on October 8th. to take up the work. An accident to the machinery however necessitated returning to Vineyard Haven, and later proceeding New Bedford for repairs. It was near the end of October before another attempt to proceed with the work could be made. The season by this time was well advanced and much unfavorable weather was encountered. Owing to the bad weather and to the fact that the locality is almost beyond range of visibility of the most prominent objects on shore, the work proceeded very slowly and the results obtained are more or less unsatisfactory. The examination was not completed.

*vide* 10. To furnish data for reducing the soundings for tide, a staff was erected on the western side of Monomoy Point and connected

with one of the old tidal bench marks which was found to be still in existence. There was considerable swell here however, and some of the readings no doubt are not very accurate. Probably it will be found that some of the readings are missing, due to bad weather.

// The lines were run in the direction of the channel, north-east and south-west. Soundings were obtained as usual with the hand lead and the channel sweep was set at varying depths, as noted in the record. Irregular bottom was found and in many places there is much less water than shown on the chart. Owing to the fact that the sheet is forwarded to the Office with only a portion of the positions plotted, detailed information as to the results of the survey cannot be included in this report. The most important facts developed are noted in a general way in my report of December 1, 1906. Owing to the pressure of much office work at the close of the season I was unable to complete the plotting of the positions on this sheet before transmitting it to the Office, although the exceptional nature of this piece of work made it very desirable that the positions be plotted by some one who was engaged upon the work in the field. As before stated, at this distance the objects observed upon are very indistinct and many of the positions, where evidently in error, ~~and~~ will have to be omitted. It will be noted that in many places where the drag struck and broke no subsequent examination was made in order to determine the least water over the shoal. The reason for this is that generally the swell or the faintness of the signals rendered useless any attempt to do close work. On several occasions buoys were dropped on these places with the idea of determining the least water by a careful examination in the vicinity of the buoy, depending upon angles observed at or near the buoy to furnish the position of the lump. But the strong current immediately swept away the buoys

or carried them under and the method proved fruitless.

12. It will be necessary to continue the re-survey of the channel at another time. I would recommend that a party expecting to take up this work endeavor to devise some scheme for erecting off shore signals. The lighthouses are too far distant to be visible excepting under very favorable conditions. It is unsatisfactory trying to do close hydrography at night, and even when observing on the lights at night it is usually necessary to take the angles from aloft.

13. This channel appears to be little used by steam craft, but it is of importance on account of its use by the larger sailing vessels.

Respectfully submitted,

A handwritten signature in cursive script, reading "Walter C. Ingham".

Assistant, C. & G. Survey.

Chief of Party.