

7181

Diag'd. on Diag. Ch. No. 78-2

Form 504	
U. S. COAST AND GEODETIC SURVEY	
DEPARTMENT OF COMMERCE	
DESCRIPTIVE REPORT	
Type of Survey	Hydrographic
Field No.	CO-5247
Office No.	H-7181
LOCALITY	
State	Virginia
General locality	York River
Locality	Aberdeen Creek and Vicinity
1947	
CHIEF OF PARTY	
Ronald R. Moore	
LIBRARY & ARCHIVES	
DATE	Sept. 17, 1947

7181

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO. H7181

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-7181

Field No. CO-5247

State Virginia

General locality York River

Locality ~~Clay Bank, Va.~~ and Aberdeen Creek & vicinity

Scale 1:5000 Date of survey 27 May 1947 to 19 June 1947

Instructions dated 29 April 1947

Vessel Ship COWIE

Chief of party Ronald R. Moore

Surveyed by Ronald R. Moore, Roger C. Rowse, Charles A. Schoene

Soundings taken by fathometer, ~~graphic-recorder, hand lead, wire~~ and pole

Protracted by W. W. Williamson

Soundings penciled by W. W. Williamson

Soundings in ~~fathoms~~ feet at MLW MLLW

REMARKS: This sheet was processed in the Hydrographic Section of the S.E.

District at Norfolk, V.

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheet H-7181

(Field No. CO-5247

Office No.

Scale 1:5000

Ship COWIE

Ronald R. Moore, Comdg.

- A. This survey was done under Supplemental Instructions for Project CS-315, dated 29 April 1947, at the request of the Army Engineers.
- B. The area surveyed is designated as Aberdeen Creek and vicinity; from latitude $37^{\circ}-18'9$ north to latitude $37^{\circ}-21.4$ north and from longitude $76^{\circ}-35.2$ west to longitude $76^{\circ}-37.8$ west. It extends from the low water line on the northeast bank of the York River to designated limits in the middle of the river, and includes Aberdeen Creek for approximately 1.5 miles of its length. ✓
This survey joins sheets H-7022, H-3310 and H-3311. ✓
(1945) (1910-11) (1911)
- C. This survey was made by Launch 82 and the 25 foot skiff. An 808 Type Recording Fathometer was used in Launch 82. A Bludworth Recording Fathometer, Type ES-104, was used in the skiff. In depths of less than two feet, and in all of Aberdeen Creek, a 12 foot sounding pole was used. Pole soundings were also taken at intervals as a check. ✓
- D. A portable tide gage was established at Claybank, Virginia, and operated during the entire period of sounding. A value for the datum of mean low water was furnished by the Washington Office, based on 14 days record. Mean Low Water on the tide staff was 4.7 feet. An approximate value for Mean Low Water was determined by the field party through the approximate recovery of B.M. 3 (1911) at Claybank, the chiseled cross on the brick mentioned in the description having weathered away. This value was 4.52 feet and was used for the reduction of soundings plotted on the boat sheet. ✓
- A fixed tide staff was established in Aberdeen Creek. Readings on this staff were recorded during the period of sounding in Aberdeen Creek and were extended to cover at least one high water and one low water for comparison with the gage at Claybank. The approximate datum (Mean Low Water) on this staff as determined by the field party was 2.55 feet. ✓
- E. The smooth sheet was plotted by the Norfolk Processing Office. ✓
- F. The control for this sheet was based on two Triangulation Stations: WALLER 2, 1911 and BIGLER 4, 1947. The latter was established close to the location of BIGLER 3, which could not be found. The position of BIGLER 4 was determined by observing the quadrilateral WALLER 2 ROSEWELL 2 - CLAYBANK 2 - BIGLER 4. Theodolite cuts were taken from WALLER 2 and BIGLER 4 to determine the positions of signals and natural objects on the northeast shore of York River. The positions of signals and natural objects in Aberdeen Creek were determined by graphic control, using a planetable. The line NED - CUP was used as a base for this survey. ✓
(A-47)
(destroyed)

No signals were located exclusively by sextant angles. All signals are either triangulation or topographic stations.

Following is a list of signals, showing the method of location:

Triangulation Stations: CLAYBANK 2, ROSEWELL 2, PAGES ROCK L.H.

Topographic Intersection Stations: JON, ABE, BO, CUP, DOC, EAT, CHIM, FOX, GAS, HUT, MAN, NED, POT, SAD, TRI, PIPE,

Topographic Stations located by graphic control: END, COD, RAT, SOW, MID, BAN, ANT, RAD, PAL, BOX, LAST, DEAD, NEW, LAG, POLE, WAR, DIP.

The triangulation computations are transmitted with this report. *Filed with sdg. records. filed in Geodesy 11/149*

G. The shoreline in Aberdeen Creek was taken from an air photograph furnished by the Washington Office, and is approximate, pending the processing of the air photographs in this vicinity by radial plot. No shoreline was plotted on the remainder of the sheet. *shoreline plotted in Wash., T-8017, (1947)*

H. Soundings were obtained with an 808 type recording fathometer and a Bludworth recording fathometer, supplemented by pole soundings in depths under 10 feet. Leadline soundings were taken only at the floating aids to navigation and alongside the faces of the wharf at Claybank.

Bar checks were taken at the beginning and end of each day, and curves were drawn to obtain the fathometer corrections.

I. Soundings were controlled by three point fixes taken on hydrographic signals at intervals averaging 1 1/2 minutes. In the reaches of Aberdeen Creek when three point fixes were not available, positions were spotted by estimated distances and direction from topographic stations and noted "See Boat Sheet" in the sounding volume.

J. This survey is complete and adequate to supersede all prior surveys in this area for charting.

There are no holidays or excessive differences.

The general spacing of sounding lines is approximately 50 meters. On mud flats in depths less than 6 feet the spacing is approximately 100 meters. In Aberdeen Creek, and parallel to the axes of the approaching staked channel, the spacing is approximately 20 meters.

K. Approximately 8% crosslines were run on this survey. The crossings generally agreed within one foot or less except in a few cases where the difference was two feet. See remarks under "Fathometer Note" attached to this report.

L. Hydrographic Survey H-7022, ~~(1945)~~ ⁽¹⁹¹⁰⁻¹⁹¹¹⁾ scale 1:10,000, dated 1945, joins this survey on the south. In general the agreement between the two surveys is good. Hydrographic Surveys H-3310 and H-3311, ⁽¹⁹¹¹⁾ scale 1:20,000, dated 1911, cover the area of this survey. In general the agreement between the old and new surveys is good considering the spacing of lines in the old survey. Some discrepancies of one to two feet were encountered in depths of ten to fifteen feet, which are discussed in the "Fathometer Note" attached to this report. *see TP 5 of Review*

M. This survey was compared with chart No. 495 Print date 17 Feb. 1947 and found to be in close agreement. ✓

N. A least depth of 26 feet (reduced) was found near the eastern edge of the main channel, in latitude $37^{\circ}-21.067$, longitude $76^{\circ}-37.10$.¹¹ Surrounding depths are 31 feet or more. This spot is located between sounding lines of Survey H-3311.

The 30 foot depth curve was found to extend further into the channel than shown on H-3311 at latitude $37^{\circ}-21.15$, longitude $76^{\circ}-37.20$. This spot is also between sounding lines of the old survey. *See #5 of Review*

P. The fixed aid to navigation is:

Pages Rock L.H. (Light List, Atlantic and Gulf Coasts 1947, No. 2199) ✓

The floating aids to navigation are:

Lower Middle Ground Buoy 9, Black Can.
Latitude $37^{\circ}-19.37$ Longitude $76^{\circ}-36.04$
Pos. 110 b, Launch 82, 12 June 1947. In 21 feet. ✓

Bigler Mill Buoy 9A, Black Can.⁶
Latitude $37^{\circ}-21.05$ Longitude $76^{\circ}-37.35$
Pos. 1 a, skiff, 10 June 1947. In 19 feet. ✓
6 11

STATISTICS

<u>Vol. No.</u>	<u>Date</u>	<u>No. Pos.</u>	<u>Stat. Miles</u>	<u>Day Letter</u>	<u>Boat</u>
1	10 June 1947	250	24.0	a	SKIFF
1 & 2	11 June 1947	135	14.3	b	"
3	11 June 1947	102	17.3	a	Lch. 82
3 & 4	12 June 1947	269	42.0	b	"
4	13 June 1947	111	16.2	c	"
2	17 June 1947	232	20.6	c	SKIFF
2 & 5	18 June 1947	140	10.6	d	"
4	18 June 1947	28	2.1	d	Lch. 82
5	19 June 1947	8	0.2	e	Skiff
TOTALS:		1275	147.3		

Area: Approximately 3.3 Square Stat. Miles.

LIST OF SIGNALS

Triangulation Stations:

CLAYBANK 2, 1911 - 1942
ROSEWELL 2, 1911 - 1932
PAGES ROCK LT. HO. 1911

Topographic Intersection Stations located by theodolite:

JON, ABE, BO, CUP, DOC, EAT, CHIM, FOX, GAS, HUT, MAN,
NED, POT, SAD, TRI, PIPE.

Topographic Stations located by graphic control:

END, COD, RAT, SOW, MID, BAN, ANT, RAD, PAL, ROX, LAST,
DEAD, NEW, LAG, POLE, WAR, DIP.

TIDAL NOTE

A portable automatic tide gage was installed at the wharf at Claybank, Virginia, which operated continuously during the course of the survey, except from 1750 on 10 June to 1550 on 11 June 1947. The intervening curve was interpolated on the marigram to complete the record. Mean Low Water corresponded with a height of 4.7 feet on the tide staff, this figure being furnished by the Washington Office. No time or height correction was introduced.

A fixed tide staff was installed at the Beltanscott wharf in Aberdeen Creek. Readings on this staff were taken during the period of sounding in Aberdeen Creek on 18 and 19 June 1947, and extended to cover one high water and one low water for comparison with the gage at Claybank. Mean Low Water, as computed by the field party, corresponds with a height of 2.55 feet on the staff.

FATHOMETER CORRECTIONS

Bludworth Depth Recorder. This instrument was used in the skiff and a comparison made with a pole sounding at least once during each position in depths at which the pole could be used. This vessel operates at slow speed with little disturbance through the water.

As a majority of the pole and fathometer comparisons are in agreement, it is recommended that the corrections as taken from the bar checks be used.

808 Type Fathometer. This instrument was used in Launch 82, in depths usually too great for a pole comparison or even a good lead line comparison to be made at sounding speed. It was noted that in charted depths of 11 feet on the bank west of ClayBank Dock; and in some areas where the Launch and skiff lines crossed; also particularly, Launch 82, Positions 46a - 47a and skiff positions 97c to 98c which are adjacent lines on a fairly steep slope in latitude $37^{\circ}-19.6$ longitude $76^{\circ}-35.8$, the soundings obtained by the 808 type were shoaler than those obtained by the Bludworth Recorder. A test line was made on the bank west of the ClayBank Dock, where the bottom is relatively flat and 21 comparisons made at speeds of 800 RPM and 1000 RPM. At the former speed the correction is approximately + 1.3 feet and at the latter + 0.7 feet. The area mentioned above was rerun as a check by Launch 82 position 20d to 28d. Lat. $37^{\circ}-19.6$
Long. $76^{\circ}-35.8$

Plotted
Sdgs. in
agreement.

However in areas of depths of 24 feet up, the crossings were in agreement.

From these comparisons, the correction scale for corrections to the soundings made by Launch 82 was made.

It should be mentioned that Launch 82 makes a great disturbance when underway, ploughing the water ahead and it is thought that in the shoaler depths, the turbulence may cause the soundings to be less than actual, and that this condition is overcome in greater depths.

A D D E N D U M

to accompany

HYDROGRAPHIC SURVEY H-7181

(Field No. Co. 5247)

Shoreline: No shoreline is available for application to this survey at this time. The Director's letter dated July 22, 1947 reference 7311-1d, states that a topographic map is now being compiled of the area covered by this hydrographic survey. *Shoreline applied at Wash. Office from T-8017 (1947).*

U.S. Engineers, Norfolk, Va.: A copy of this survey has been given to the U.S. Engineers at Norfolk, Va., and the following notation has been placed thereon: "This is a preliminary survey and is subject to slight changes after verification by the Washington Office of the U.S. Coast & Geodetic Survey."

Respectfully submitted,

Isadore M. Zeskind
Isadore M. Zeskind
Cartographic Engineer

Norfolk, Va.
September 5, 1947

Approved and Forwarded

George L. Anderson
George L. Anderson
Supervisor S.E. District

GEOGRAPHIC NAMES

Survey No.

H7181

Name on Survey

	A	B	C	D	E	F	G	H	K	
	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
<u>Virginia</u>			(for title)						USGB	1
<u>York River</u>			" "							2
<u>Clay Bank</u>			(village: U.S.B.G.N. decision)	(location of tide staff): correct name under "Plan of Dock" on sheet.						3
										4
										5
<u>Aberdeen Creek</u>										6
										6
<u>Gum Point</u>			shore line at extreme south edge of sheet.							7
										8
										9
										10
			Names underlined in red are approved.	2/19/48						11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

PHOTO INSPECTION

Project CS-315

Vicinity of Aberdeen Creek, York River, Virginia.

Ship COWIE

Ronald R. Moore, Comdg.

The instructions for the field inspection of photographs were contained in Supplemental Instructions for Project CS-315 dated 29 April 1947.

The area covered was the northeast side of the York River on both sides of and including Aberdeen Creek, and is shown on single lens, aerial photographs 45C-581, 582, 583, 584, 585, and 586.

Using triangulation stations WALLER 2 (1911) and BIGLER 4, (1947) as a base, certain definite objects along the bank of the York River were observed from each station and the geographic position determined.

For objects in Aberdeen Creek, a graphic control sheet No. "A-47" on a scale of 1:5000 was made and using the Azimuth NED-CUP points in the Creek were located by planetable methods. *Signals plotted on 4-7-47, & A-47 (destroyed.)*

The points recoverable as topographic stations are listed on a separate sheet, and description cards transmitted herewith. *See Desc. Report 7-8087 (1947). Cards filed in Geography*

Triangulation station "HOUSE D, above Green Point, Chimney 1911" is clearly shown on the photograph. Stations CLAYBANK 2 (1911) and ROSEWELL 2, (1911), come within the area of the photographs, were located by the substitute station method. "CEDAR TREE" was located as a substitute for station CLAYBANK 2. "TRI" was located as a substitute for station ROSEWELL 2. Geographic positions were computed for "CEDAR TREE" and "TRI".

Following is a list of control points that were identified on the photographs by field inspection. Geographic positions of these stations are furnished separately in a list of geographic positions.

CHIMNEY, House D, TRI, DIP, WAR, RAD, GAS, CHIM, DOC, CUP, BO, CEDAR TREE, BAN.

Points were located and identified in all of the red pencil areas on the photographs, except three, as required in paragraph 5 of Supplemental Instructions, Project CS-315, York, River.

No significant changes in the shoreline of the York River or Aberdeen Creek were found. The shoreline (highwater line - not grassline) was located by stadia readings in the vicinity of the planetable set-ups in Aberdeen Creek.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. **H7181**

Records accompanying survey:

Boat sheets 1....; sounding vols. .5....; wire drag vols. 0.....;
 bomb vols. 0.....; graphic recorder rolls .7....;
 special reports, etc. 1 Vol. Observation Horiz. Cont. 4 Sheets GPs.....
 8 Sheets List of Directions *filed in Geodesy*.....

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

Number of positions on sheet		1275..
Number of positions checked		126..
Number of positions revised		15..
Number of soundings revised (refers to depth only)		520..
Number of soundings erroneously spaced		43..
Number of signals erroneously plotted or transferred		0..
Topographic details	Time	30..
Junctions	Time	16..
Verification of soundings from graphic record	Time	363..
Verification by <i>Maxwell M. Rogers</i>	Total time	¹⁰ 409.. Date <i>Oct 11, 1948</i>
Reviewed by <i>J. M. Zeskind</i>	Time	53.. Date <i>12-20-48</i>

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7181

FIELD NO. CO-5247

Virginia, York River, Aberdeen Creek & Vicinity
Surveyed in May - June, 1947 Scale 1:5,000
Project No. CS-315

Soundings:

Bludworth Fathometer
808 Fathometer
Sounding Pole

Control:

Sextant fixes on shore
signals

Chief of Party - Ronald R. Moore
Surveyed by - R. R. Moore, R. C. Rowse, C. A. Schoene
Protracted by - W. W. Williamson
Soundings plotted by - W. W. Williamson
Verified and inked by - M. M. Rogers
Reviewed by - I. M. Zeskind, December 16, 1948
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline originates with air photographic survey T-8617 (1947).

The signals originate with T-8017 supplemented by a hydrographic control survey which has subsequently been destroyed, triangulation of 1911-42 and theodolite cuts as described on page 1 of the Descriptive Report.

No description of the nature of signal PAL in lat. $37^{\circ} 20.57'$, long. $76^{\circ} 35.59'$, could be found on contemporary topographic surveys or in the records of the present survey. This signal is assumed to be temporary.

2. Sounding Line Crossings

Depths at crossings are in adequate agreement. The crossings generally agree within one foot or less.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated.

The bottom is generally smooth and slopes gradually from inshore flats to the natural channel where it drops off abruptly into depths of 30 to 40 ft. Several shoal irregularities in the channel appear in the vicinity of lat. 37° 21.1', long. 76° 37.1'.

4. Junctions with Contemporary Surveys

An adequate junction was effected with H-7022 (1945) on the south. There are no contemporary surveys on the north and west. Charted soundings in these areas are in harmony with present depths.

5. Comparison with Prior Surveys

H-583 (1857) Scale 1:20,000
H-584 (1857) Scale 1:20,000
H-3310 (1909-10) Scale 1:10,000
H-3310A (1910) Scale 1:10,000
H-3311 (1911) Scale 1:20,000

A comparison between the prior and present surveys indicates minor differences in bottom configuration. These differences are caused by a shoaling of 1-3 ft. in depths of 6-36 ft. Some discrepancies in depths are attributed to the improper spacing of prior soundings and to differences in the scales of the surveys.

With the addition of supplementary bottom characteristics, the present survey is adequate to supersede the prior surveys within the common area.

6. Comparison with Chart 495 (Latest print date 2/17/47)

A. Hydrography

The charted hydrography originates with the previously discussed surveys which need no further consideration.

B. Aids to Navigation

The present survey positions of aids to navigation are in substantial agreement with the charted positions and adequately mark the features intended.

7. Condition of Survey

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

8. Compliance with the Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

This is an excellent basic survey and no additional field work is recommended.

Examined and approved:



H. R. Edmonston
Chief, Nautical Chart Branch



Casper M. Durgin
Chief, Division of Charts



K. G. Crosby
Chief, Section of Hydrography



C. K. Green
Chief, Division of Coastal Surveys

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography:~~

15 October 1947

Division of Charts: H. W. MURRAY

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET

7181

Locality - Clay Bank, York River, Virginia

Chief of Party: R. R. Moore in 1947

Plane of reference is mean low water, reading

4.7 ft. on tide staff at Clay Bank ✓

11.0 ft. below B. M. 4 (1947)

Height of mean high water above plane of reference is 2.8 feet.

Condition of records satisfactory except as noted below:

E. C. McKay
Section

Chief, ~~Division of Tides and Currents~~

NAUTICAL CHARTS BRANCH

SURVEY NO. H7181

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
9-14-49	495	<i>M. Andrews</i>	Before After Verification and Review <i>Partially Applied</i>
5/5/52	492	<i>Evan</i>	Before After Verification and Review
7-24-53	495(Recons)	<i>Benson</i>	Before After Verification and Review <i>Fully Applied</i>
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.