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Diag. Cht. No. 903 & 904-1

Form 504	
U. S. COAST AND GEODETIC SURVEY	
DEPARTMENT OF COMMERCE	
DESCRIPTIVE REPORT	
Type of Survey	<i>Hydrographic</i>
Field No.	<i>2873.2874</i>
	Office No. <i>2876.2877</i>
LOCALITY	
State	<i>Puerto Rico</i>
General locality	<i>North Coast</i>
Locality	<i>Of Puerto Rico</i>
<u>1907</u>	
CHIEF OF PARTY	
<i>P. A. Welker.</i>	
LIBRARY & ARCHIVES	
DATE	



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COAST AND GEODETIC SURVEY

OCT 26 1907

U. S. C. & G. SURVEY.
LIBRARY OF ARCHIVES.
OCT 26 1907
Rec. No.

Department of Commerce and Labor
COAST AND GEODETIC SURVEY

O. H. Pittmann
Superintendent.

State: Porto Rico.

DESCRIPTIVE REPORT.

Hydrographic Sheets Nos. 2874.
2877.
2883.
2876.

LOCALITY:

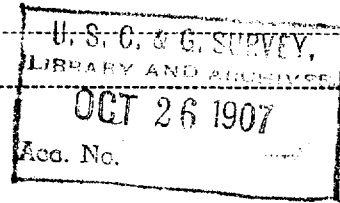
North Coast of Porto Rico,
From Port San Juan to
Cape San Juan.

1907

CHIEF OF PARTY:
P. A. Walker, Assistant

Post-Office Address: See address at the Office
 Telegraph Address: _____
 Express Office: _____

Department of Commerce and Labor
 COAST AND GEODETIC SURVEY



11-644

Washington, D.C.

October 21st, 1907

Mr. O. H. Titterman,

Superintendent, Coast and Geodetic Survey,
 Washington,
 D.C.,

ANSWERED
 OCT 26 1907
 Library and Archives.

Sir:

1. In obedience to Instructions and Memoranda for Descriptive Reports, 1887, I beg leave to submit the following report on Hydrographic Sheets Nos. 2874, 2877, 2883 and 2876:
2. The first mentioned is upon a scale of 1:80000 and the remaining three are on a scale of 1:20000.
3. The work represented upon the four sheets was executed during the months of April and May, 1907, and comprises an hydrographic survey of the north coast of Porto Rico, from Port San Juan to Cape San Juan, not including the inshore work, which consists of a strip about one half to one mile from shore, which was impractical for the party

on board of the Steamer Bach to execute without undue expense and delay. The work extended, seaward, to a distance of approximately ten nautical miles.

4. The most important part of the work consisted of the development of a shoal lying about 1 1/2 miles, north east by north, from Point Picua.

5. In the execution of the work, the plan called for in your instructions of November 9th, 1906, was followed as near as practical.

6. The shoal off Point Picua, which is of coral formation, has a least depth of 15 1/2 feet, at mean low water; it is small in area, but in the direct line of travel for steamers coasting along the north shore of Porto Rico. During the strong westerly blows, which are frequent during the winter months, the locality about this shoal is very rough and great care should be used in approaching the vicinity.

7. The method of locating positions of soundings was by simultaneous sextant angles and the three point problem. The positions of the signals were located by means of triangulation, the plan table and sextant. Lines were run at various distances apart, according to the necessity as shown by indications in the soundings. Where necessary, lines were run from 50 to 200 meters apart, while in the

deep water, to the northward, only occasional soundings were taken at from one-half to one mile apart, the depths in this region being from 100 to 600 fathoms.

8. Beyond the reef line, which extends from one-half to one mile off shore, no shoal water was found, except as heretofore mentioned.

9. San Juan is the principal city on the island. It has about 35000 inhabitants, and is the only city of importance on the north coast. The harbor has excellent holding ground for anchoring and it is well protected from all winds and seas. It is the largest shipping port on the island and is connected by rail with all of the principal cities except Ponce, which is reached by stage and water. The city is in telegraphic communication with all important places on the island and is connected with the United States by cable and wireless. Weekly mail arrives from and departs for the United States. Ship supplies and provisions are plentiful and can be obtained at reasonable rates. There is an abundance of fresh water, which can be obtained alongside of vessels in water barges. The city is well lighted, clean and healthy. There are the Army Hospital, Naval Hospital, U.S. Marine Hospital and Public Health

Establishment, also several sectarian hospitals.

10. Time may be obtained from the numerous steamers that arrive from the United States. No regular weather signals are displayed and weather predictions are not to be depended upon.

11. The entrance to the harbor of San Juan is well buoyed, and for use at night, there are two sets of range lights. There is no life saving station on the island.

12. A wreck would hold together but a very short time upon the reefs close to shore. Assistance, however, could be obtained upon short notice. The appearance of the shore is a narrow strip of low-land, covered near the beach with coconut trees, and back of this is a low broken range of hills. Beyond this, there is a range of mountains, reaching an elevation of approximately three thousand feet. There are extensive sugar plantations and large refineries scattered over the region, also large coconut groves. The chief exports are molasses, sugar, coconuts, coffee and oranges. The wages paid are very high in comparison with other parts of the island.

13. During ordinary weather, there are few landing places on this coast. During exceptionally

moderate weather, when the sea is quiet, boats may enter the Loiza River and the Rio Grande, or landings may be made along the beach, but in severe weather, it would be impractical to make a landing anywhere on this coast on account of the heavy seas and breakers, which extend far out from shore.

14. Vessels navigating this coast should not approach closer than ^{about} two miles.

15. The general character of the bottom over the region sounded is of fine grey sand mixed with mud, with a few coral reefs. The water is very clear and shoal spots can be seen by keeping a sharp lookout, the indications at a distance being a change in the color of the water.

16. During the season while engaged upon this work the weather was generally fair with almost continuous fresh northeasterly winds and rough sea, with occasional spells of smooth sea, at very irregular intervals and of short duration.

17. There are no facilities for hauling out vessels anywhere upon the island of Porto Rico. The nearest drydock is at St. Thomas, I.W.I.

18. The season was closed on May 27th,

19. The following is a summary of the work accomplished upon the four sheets:

Number of miles of soundings (statute)	828.
" " angles measured	6196.
" " soundings	9596.
Area sounded in square statute miles	195.
Number of hydrographic signals erected	16.
" " points located for hydrographic purposes	27.

Very respectfully,
P. A. Walker,
Assistant, C. & G. Survey.

2877

Diag. Cht. No. 204-1

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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State: _____

DESCRIPTIVE REPORT.

Sheet No.

LOCALITY:

*See Rep't for
Hydro 2874*

1907

CHIEF OF PARTY:

J. A. Welton

2877
F282

NOV 30 1907

Sheet 2877 North Coast Potatoes

The field work is good and the records
well kept.

Least water shown on sheet is
174 feet on water sounding line.

August 15 1907

J. C. Wynn,

2877

U. S. C. & G. SURVEY,
LIBRARY AND ARCHIVES,
JUN 22 1907
Acc. No.

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, SUPT.

~~POINT PICHA TO POINT SAN DIEGO~~ 2

NORTH COAST

OF

PORTO RICO

Point Embarcaderos to Point Picna

BEGUN APR. 29th.

ENDED MAY 24th.

1907

STEAMER "BACHE"

P. A. WELKER, ASSISTANT, C. & G. SURVEY

CHIEF OF PARTY

SCALE 1:20,000

by field party
POSITIONS AND SOUNDINGS

Summary PLOTTED BY *Julius* by *J. O. Dorn*

Verified and correct by *L. P. Ellis*

Sheet 2877 North Coast Porto Rico

The field work is good and the records well kept. There is only one special development N.E. from Port Picua 2900 metres where 15 feet was found.

Least water shown on inshore line of soundings is 59 feet

Aug 15 1907

J. L. Dorn

STATISTICS.

SHEET No.43.

DATE.	LET.	VOL.	ANGLES.	SOUNDINGS.	MILES	BOAT.
1907.						
Apr.29	A	1	20	28	3.4	Str.BACHE
" 30	B	1	276	628	32.8	" "
May 1	C	1	263	466	27.2	" "
" 14	D	1	197	532	20.4	" "
" 15	E	2	210	251	28.0	" "
" 16	F	2	272	733	30.2	" "
" 17	G	2	38	39	5.4	" "
" 21	H	2	219	481	21.0	" "
" 23	I	3	220	425	20.3	" "
" 24	K	3	22	10	4.4	" "
Grand Total		3	1737	3593	193.1	" "

The soundings are expressed in fathoms refer to mean low water.

The 3rd 18 f is shown in Blue
 5 30 " " Yellow
 10 60 " " Brown
 20 120 " " Red
 30 180 " " Blue
 50 300 " " Yellow
 100 600 " " Purple
 200 1200 " " Scarlet

2876

Diag. Chart No. 303 & 324

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Hyd. Puerto Rico
Type of Survey

Field No. Office No. 2876

LOCALITY

State Puerto Rico

General locality North Coast

Locality

194

CHIEF OF PARTY

P. A. Welker

LIBRARY & ARCHIVES

DATE

2876
See 2874

2876



Department of Commerce and Labor
COAST AND GEODETIC SURVEY

Superintendent.

State:

U. S. C. & G. SURVEY.
LIBRARY AND ARCHIVES.

OCT 26 1907

Acc. No.

DESCRIPTIVE REPORT.

Sheet No.

LOCALITY:

See Rept. fr.
Hydro 2874

1907

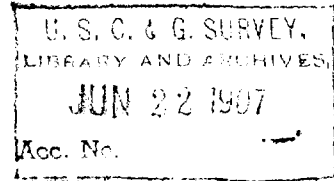
CHIEF OF PARTY:

P. A. Wheeler

2876

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DEPARTMENT OF COMMERCE AND LABOR
COAST AND GEODETIC SURVEY
O. H. TITTMANN, SUPT.



~~POINT TELLOAS TO POINT PICUA~~

NORTH COAST

OF

PORTO RICO

Point Picua to Point _____

BEGUN APR. 29th.

ENDED MAY 24th.

1907

STEAMER "BACHE"

P. A. WELKER, ASSISTANT, C. & G. SURVEY

CHIEF OF PARTY

SCALE 1:20,000

Field Party
POSITIONS ~~AND~~ SOUNDINGS

Sounding PLOTTED BY *Included* by *F. C. Down*
Verified and corrected by *E. P. Ellis*

Position of Objects used as Hydrographic Signals.

On North Coast of Porto Rico,

HYDROGRAPHIC SHEETS NOS. "B" "C". 41 & 43.

Object and Description	Lat.	D.M.	Long.	D.P.	Remarks
Ig, Small signal pole	18°26	438	65°51	409	
Uv, " " "	18 26	169	65 50	349	
Mig, Slats on palm tree	18 25	770	65 47	780	
Pec, " " "	18 24	1655	65 46	467	
Bar, Signal Pole	18 23	893	65 43	550	
Tin, " "	18 22	380	65 40	1442	
Sharp, Prominent hill	18 24	1356	65 56	642	
Three, Signal pole	18 26	1509	65 55	644	
Two, " "	18 27	213	65 57	23	
One, " "	18 27	598	65 57	1685	
Red, House with red roof	18 27	1233	66 00	906	
Tar, Slats on tree	18 27	524	66 02	1102	
Mary, Signal pole	18 27	725	66 02	644	
Dor, Dormer window of house	18 27	673	66 03	1117	
Tower, Tower building	18 26	1742	66 04	635	
Her, Sentry box on St. Geronimo:					
Fort	18 27	1651	66 05	119	
Mag, West chimney on Dooley's					
Smith & Co's Garage	18 27	1815	66 05	700	
Wire, Western pole of wireless:					
system	18 20	30	66 05	1143	
* Iron, Stack	18 28	79	66 06	500	

The above mentioned points were all located by means of sextant angles, sufficiently accurate for the hydrographic work of the locality, on a scale of 1:20000. Only a few of the points are of a permanent nature and even these cannot be described accurately enough to be of any future use.

P. A. Walker.

Asst. C. & G. Survey.

Sheet 2876 North Coast of Porto Rico

The field work is good and the records
well kept. Least water found outside
the inner line of soundings is ^{on about 17 ft. 374 Pz. cu. d. s.} 36 ft.
Least water on inner line 32 ft.

August 15 1907

J. C. Down

STATISTICS. SHEET "C".

DATE.	LET.	VOL.	ANGLES.	SOUNDINGS.	MILES.	BOAT.
1907						
Apr. 29	A	1	107	101	10.6	Str. BACHE
May 7	B	1	144	225	18.0	" "
" 8	C	1	218	456	28.5	" "
" 9	D	1	247	385	22.9	" "
" 10	E	1&2	195	433	25.8	" "
" 14	F	2	66	97	5.2	" "
" 17	G	2	82	119	11.4	" "
" 22	H	2	353	937	38.0	" "
" 23	I	3	166	287	14.3	" "
" 24	K	3	274	433	21.3	" "
Grand Total		3	1852	3473	196.0	" "

Soundings are expressed in feet and refer to mean low water

*The 3 fathoms ^{18 ft} is shown in Blue
 5 " 30ft " " " Yellow
 10 " 60ft " " " Brown
 20 " 120 " " " Red-
 30 " 180 " " " Blue
 50 " 300ft " " " Yellow
 100 " 600 " " " Purple*

2883

See Also
H. 2874

Diag. Chy No. 903

2883

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
....., Director

U. S. G. SURVEY
L. & A.
AUG 19 1927
Acc. No.

State: Porto Rico

DESCRIPTIVE REPORT

Topographic } Sheet No. 2883
Hydrographic }

LOCALITY

N. Coast of Porto Rico
San Juan to Point
Telegas

1907

CHIEF OF PARTY

P. A. Welker

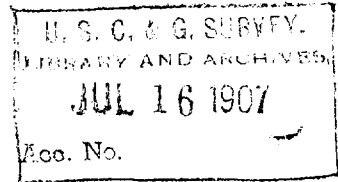
GOVERNMENT PRINTING OFFICE

2883

DEPARTMENT OF COMMERCE AND LABOR

COAST AND GEODETIC SURVEY

O. H. TITTMANN, SUPT.



SAN JUAN TO POINT TELEGAS

NORTH COAST

OF

PORTO RICO

BEGUN APR. 16th.

ENDED MAY 7th.

1907

STEAMER "BACHE"

P. A. WELKER, ASSISTANT, C. & G. SURVEY

CHIEF OF PARTY

SCALE 1:20,000

POSITIONS AND SOUNDINGS

by field party of E. A. Luce
Sounding PLOTTED BY *Dubbed & curves by F. C. Down.*

A. J. Luce.
R. H. Luce

Sheet 2883 North Coast Porto Rico

The field work is good and the record well kept.

Shoalest sounding outside the inner line of sounding is 69 feet. Shoalest sounding on inner sounding line 71 ft.

August 15 1907

L. C. Down

STATISTICS. SHEET "B".

DATE.	LET.	VOL.	ANGLES.	SOUNDINGS.	MILES.	BOAT.
1907						
Apr. 16	A	1	323	272	32.8	Str. BACHE
" 17	B	1	154	127	22.5	" "
" 19	C	1	209	282	25.8	" "
" 22	D	1	26	26	4.0	" "
" 23	E	1	130	151	13.5	" "
" 24	F	2	158	102	20.5	" "
" 25	G	2	42	60	3.3	" "
" 26	H	2	86	115	9.0	" "
" 27	I	2	305	369	32.0	" "
" 29	K	2	155	169	14.7	" "
May 2	L	2	34	31	5.3	" "
" 3	M	2&3	302	330	31.6	" "
" 6	N	3	218	259	28.8	" "
" 7	O	3	20	10	5.4	" "
Grand Total		3	2162	2302	249.2	" "

The soundings expressed in feet and refer to Mean low water.

The 20 fath 120 ft curve is shown in Red

" 30 " 180 " " " " " Blue
 " 50 " 300 " " " " " Yellow
 " 100 " 600 " " " " " Purple
 " 200 " 1200 " " " " " Pearl.