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

**DESCRIPTIVE REPORT**

~~Hydrographic~~ } Sheet No. 2510  
Hydrographic

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State California

LOCALITY

San Francisco Bay

Marin Islands to Pinole Pt.

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~~1899~~ 1899-1901

CHIEF OF PARTY

F. Westdahl

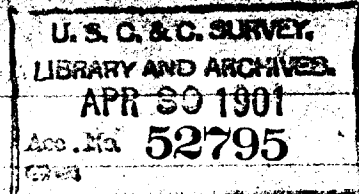
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Descriptive Report

to accompany hydrographic sheet entitled

Treasury Department

U. S. Coast and Geodetic Survey

O. H. Tittmann, Superintendent

From Point Point to Marin Islands

San Francisco Bay

California

Ferdinand Westdahl, Assistant, Chief of Party

Steamer "McArthur"

October 9 to December 22, 1899

and April 8 to 11, 1901

Scale 10,000

This is a resurvey and joins on the San Pablo Bay side to another resurvey by Lieut. Commander Osborn and Assistant Dickins. I have not had in my possession a marginal tracing of their work and therefore do not know how this work agrees with theirs. It was executed during the winter season when bad weather generally prevailed, with currents increased by freshets; and the area covered by a part of this sheet, the junction of San Pablo and San Francisco Bays, is noted for its strong and twisting currents. The deep-water work was done mainly

in an Alco-vapor launch temporarily borrowed from the "Pathfinder", and the work out of the channel on the flats in a whaleboat. Tides were observed at McKear's landing, where the ship was anchored, on a Staff-gauge set so as to read 3.0 at the plane of reference formerly established there by the above named officers. The projection was sent from the Office and has upon it the old shore-line in pencil. This has been left uninked because a new topographic survey has been recently made of which, however, no copy has been furnished to this party.

All the present signals on this sheet had been determined in the triangulation by Assistant Dickens, 1897; a few additional points were determined in the same manner by this party, and the geographical positions of most of them computed by myself.

Dangers. There are several dangers to navigation on this sheet, all but one of them marked by buoys, however. The exception is the shoal on the southeast side of the channel between Pinos Point and Point San Pablo, which is a danger or hindrance to bay craft only as the shoaling from the channel is very gradual. It is composed of sand fairly well packed and hard. The sunken, rocky dangers were carefully examined as well as the strong currents would permit. Of them the submerged ledge projecting from Point San Pablo on the prolongation of the point is

one of the most important because the channel between that point and the East Brother Islet is much used by ships under tow and steamers of all sizes. The red buoy marking it was in my opinion placed too far from the danger and misleading to vessels bound northward. Upon my verbal recommendation and the furnishing of a small tracing of the soundings in the immediate vicinity the Lighthouse Inspector of this District changed its position nearer to the danger. Both positions are shown on the sheet and must not be mistaken for two buoys.

The Whiting and Invincible rocks were examined as closely as practicable: both are well known rocks and marked by buoys. These are sometimes drawn under water momentarily by the strong ebb when reinforced by winter freshets. The determination of these buoys are on the ebb only as hardly any flood current was perceptible at the time of the survey, owing to freshets.

The shoal or rock supposed to be marked by the red buoy to the westward of the Brothers Islets does not exist. I have already, under date of February 28<sup>th</sup>, 1900, reported this fact to the Officer. The work done with the ship in sweeping for this supposed rock is shown on the adjoining sheet to the southward.

The soundings on the flat between Point San Pedro and Point San Quentin taken in 1900 do not seem to cross

well. They were made partly in the whaleboat and partly by the steam-launch on days when the bay was too rough to admit of work in the channel. The whaleboat work agrees with itself fairly well considering the very soft mud of which the flat consists. The launch work gives generally less water and does not agree with itself. I suspect the leadsmen used a much lighter lead for the soundings on the flat, hence the smaller depths. However, I concluded to run the principal ones of the launch lines thru. over again this year with the whaleboat. This later work is plotted in blue soundings and the positions in red, and makes the low water line much smoother as well as confirms the whaleboat work of last year. I have allowed the former soundings, in black, to remain however as I did not have time to scrape them out neatly, but have disregarded them in drawing the low water line. The flat between Point San Pablo and Pinos Point is not so soft and the whaleboat and steam-launch lines cross much better; but <sup>even</sup> here the launch lines give less water than the whaleboat. Notwithstanding the rule to select the least depths for the published chart I recommend that more reliance be placed on the whaleboat soundings here also as they agree with each other, and for the further reason that I did the whaleboat work personally and watched the leadsmen and recorded closely. There may be some errors of recording in

in the launch work, not to be wondered at when one considers the frightful noise of the Alco-vapor motor used for a part of that work.

Respectfully submitted

Ferdinand Westdahl

Asst. C. & G. Survey, Convidg