

10386

Orig

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Form 504

U. S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Shoreline Triangulation

Field No. Ph-63 Office No. E-103e

LOCALITY

State Washington

General locality var

Locality near a river

1960

CHIEF OF PARTY

V. ... raiski

Port ... triangulation office

LIBRARY & ARCHIVES

DATE

JUN 6 1960

10386

DESCRIPTIVE REPORT - DATA RECORD

T - 10386

Project No. (II): Ph-63                      Quadrangle Name (IV):

Field Office (II): Pasco, Washington

Chief of Party: V. Ralph Sobieralski

Photogrammetric Office (III): Portland, Oregon

Unit Chief: Robert B. Melby

Officer-in-Charge: V. Ralph Sobieralski

Instructions dated (II) (III): 20 March 1956  
(Field & Office)

Copy filed in Division of  
Photogrammetry (IV)

Method of Compilation (III): Graphic

Manuscript Scale (III): 1:15,000

Stereoscopic Plotting Instrument Scale (III):

Scale Factor (III): None

Date received in Washington Office (IV): **AUG 21 1958**

Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV): *18 Aug 1959*

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): N.A. 1927

Vertical Datum (III):

~~Mean sea level except as follows:~~

~~Elevations shown as (26) refer to mean high water~~

~~Elevations shown as (5) refer to sounding datum~~

~~i.e., mean low water or mean lower low water~~

340 ft. above M.S.L. which is the  
normal water level of McNary Dam Pool

Reference Station (III): ROGER (USE) 1948

Lat.:

Long.:

Adjusted  
Unadjusted

Plane Coordinates (IV):

State: Washington    Zone: South

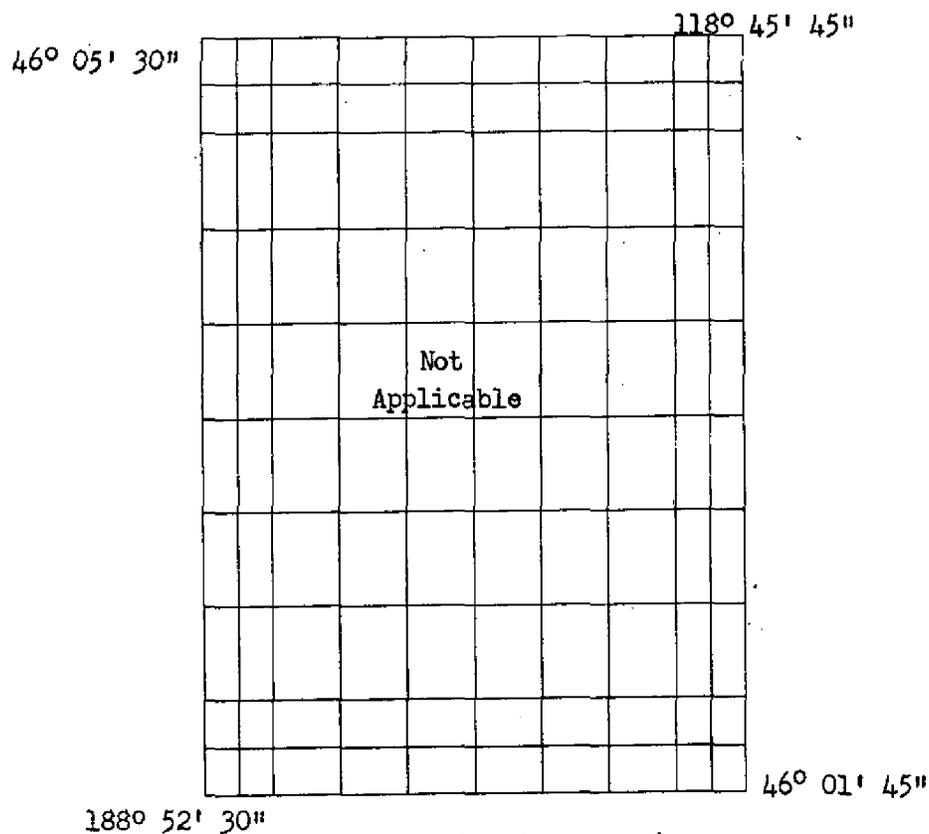
Y= 271,454.78

X= 2,419,875.00

Roman numerals indicate whether the item is to be entered by (I) Field Party, (II) Photogrammetric Office,  
or (IV) Washington Office.

When entering names of personnel on this record give the surname and initials, not initials only.

DESCRIPTIVE REPORT - DATA RECORD



Areas contoured by various personnel  
(Show name within area)  
(II) (III)

DESCRIPTIVE REPORT - DATA RECORD

Field Inspection by (II): R. B. Melby

Date: Summer 1957

Planetable contouring by (II):

Date:

Completion Surveys by (II):

Date:

Mean High Water Location (III) (State date and method of location): Spot locations at intricate places were made in the field. For the most part the shoreline at normal pool level of 340 ft. above M.S.L. was delineated in the office from photographs taken on 9-26-54 when the pool was at that level.

Projection and Grids ruled by (IV): D. N. Williams, Portland Office

Date: July 1957

Projection and Grids checked by (IV): J. E. Deal, Portland, Office

Date: July 1957

Control plotted by (III): J. L. Harris  
D. N. Williams

Date: April 1957  
July 1957

Control checked by (III): J. E. Deal  
L. L. Graves

Date: April 1957

Radial Plot or Stereoscopic J. L. Harris  
Control extension by (III):

Date: April 30, 1957

Stereoscopic Instrument compilation (III):

Planimetry

Date:

Contours

Date:

Manuscript delineated by (III): L.L. Graves, Compilation  
L.L. Graves, Scribing  
C.C. Harris, Stick-up

Date: July 19, 1957  
July 25, 1957  
Sept. 12, 1957

Photogrammetric Office Review by (III): J. E. Deal

Date: October 1957

Elevations on Manuscript  
checked by (II) (III):

Date:

DESCRIPTIVE REPORT - DATA RECORD

Camera (kind or source) (III): C&GS - 9 lens - focal length 8.25 inches

Number	Date	PHOTOGRAPHS (III)		Scale	Water Level of Pool
		Time			<del>Stage of Tide</del>
46207 & 46208	9-26-54	14:30		1:15,000	340 ft. above M.S.L.

Tide (III)

Reference Station: Not applicable  
Subordinate Station:  
Subordinate Station:

Ratio of Ranges	Mean Range	Spring Range

Washington Office Review by (IV):

*S. Streifler*

Date:

*June 1959*

Final Drafting by (IV):

*Portland Photogr. Office*

Date:

*July - Sept. 1957*

Drafting verified for reproduction by (IV):

*S. Streifler*

Date:

*June 1959*

Proof Edit by (IV):

Date:

Land Area (Sq. Statute Miles) (III): 6

Shoreline (More than 200 meters to opposite shore) (III): 2

Shoreline (Less than 200 meters to opposite shore) (III): 2

Control Leveling - Miles (II):

Number of Triangulation Stations searched for (II): 5

Recovered: 5

Identified: 1

Number of BMs searched for (II):

Recovered:

Identified:

Number of Recoverable Photo Stations established (III): None

Number of Temporary Photo Hydro Stations established (III): None

Remarks:

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Summary

to accompany shoreline manuscript T-10386

Subject survey is one of Shoreline Project PH-63 (27020). The project consists of eighteen manuscripts and covers a part of the upper Columbia River from McNary Dam northward to Pasco, Washington, and was designed to support hydrographic surveys for the construction of new nautical charts 6163 and 6164. T-10386 covers a relatively small area near the mouth of the Walla Walla River, a tributary of the Columbia River.

With instructions of March 1956 the project was assigned to the Portland Photogrammetric Office, who completed the field work of subject area during 1957. During the same year the radial plot and compilation were accomplished from photography of Sept. 1954. The final manuscript, as submitted by that field office in August 1958, is the result of an adequately scribed sheet to be used to obtain good permanent file copy.

The project area was surveyed previously by the U. S. Geological Survey in 1915 and the resulting topographic quadrangles at the scale of 1:125000 aided little in the compilation or review of subject area.

A cronar film positive at the compilation scale of 1:15000 and the Descriptive Report will be registered and filed in the Bureau Archives.

June 1959

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FIELD INSPECTION REPORT

(1957 Season)

Map Manuscripts T-10385, T-10421 thru T-10424

and T-11317

Project Pa-63

2. Areal Field Inspection:

The field inspection of this portion of the project was inspected on nine-lens photographs furnished by the Coast and Geodetic Survey. While some of the prints lack the desired amount of contrast, the photographs were of sufficient clarity to interpret and denote the images of the physical features. The inspection of the photographs was conducted from a motor vehicle when possible and by small boat or on foot where vehicular travel was unfeasible.

The area can be considered semi-arid. Near the northern limits of the project area, some of the land is under cultivation, watered by an extensive irrigation system.

The Columbia River flows southward through the area. Near the town of Umatilla, Oregon, is McNary Dam that impounds the Columbia River to form a reservoir. This reservoir will be referred to as McNary Pool, as an official name has not been designated for this feature. The area is served by a heavy duty two lane highway (U.S. 395/410) that extends north-south paralleling the Columbia River along its east shore. Three railroads, the Union Pacific Railroad, the Spokane, Portland and Seattle Railway and the Northern Pacific Railway operate through the area.

Tug and barge traffic as well as pleasure craft ply the waters of McNary Pool. Portions of the pool serve as State Game Range and Wildlife Management Areas.

Sucajawca State Park, situated on the east shore of McNary Pool at the mouth of the Snake River, near the town of Pasco is the only state park in the area. City parks in Pasco and Kennewick have been denoted on field photographs.

3. Horizontal Control:

Five new supplemental, horizontal control stations were established by triangulation methods, stations DRIFT 1957, TARGET 1957 and WALLULA DEPOT, U.P.R.R. ELEVATED TANK 1957. These stations were necessary to fulfill photogrammetric requirements.

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Stations PASCO, SECTION ROAD, RADIO MAST 1957 and PASCO, STATION KALE, RADIO MAST, CENTER ONE OF TRAILS 1957 were also located as they are of landmark value. A systematic search was made for all listed permanent control stations in the project area.

4. Vertical Control:

Vertical control for use by stereoscopic instruments was not required.

One bench mark, established by the Coast and Geodetic Survey was recovered and photo-identified to serve as a topographic station.

5. Contours and Drainage:

Contours not applicable. The drainage was indicated on field photographs. The drainage pattern is generally visible due to the lack of woodland cover. In some of the large canyons, the images of the dry, intermittent stream beds appear on the photographs. Except for the Columbia River, Snake River and the Walla Walla River the drainage in this area is mostly intermittent. The main trunk system of the irrigation canals, ditches and pipelines has been indicated on the field photographs.

6. Woodland Cover:

The area is almost devoid of woodland cover, with the exception of willow, locust and similar deciduous trees that flourish in clumps along the rivers and irrigation canals. The rest of the uncultivated terrain is generally covered with sage brush and wild grasses adapted to this type of country.

7. Shoreline and Alongshore Features:

A water surface elevation of 340 feet above mean sea level was established by the Corps of Engineers and is maintained at the face of McNary Dam as the normal pool level. This is the level of the pool that appears on the nine-inch photography and is the accepted mean high-water line.

The low water line was not verified in the field. Due to the level of McNary Pool at the time of field inspection, this feature was flooded. The project instructions require this feature to be delineated from Corps of Engineers photography taken when the pool was at a lower surface level. Small bodies of water that connect to McNary Pool and whose water surface elevations are controlled by the McNary Pool have been termed pools, other small bodies of

water not normally influenced by McNary Pool are denoted as ponds.

From the mouth of the Walla Walla River northward, the area east of the Columbia River (McNary Pool) is gentle, rolling, uncultivated lands, except near the community of Burbank Heights, where an irrigation project makes mixed farming possible. On the west side of McNary Pool, opposite the mouth of the Walla Walla River, the precipitous bluffs meet the pool; proceeding northward the bluffs slowly recede from the pool's edge and give way to gentle, rolling lands, that northward from the vicinity of Hover are cultivated. Water necessary for cultivation is supplied by an irrigation system.

There are few piers, wharves or landings along the Pool. At Wallula Depot, there is a basin with wharves; at East Pasco on the Snake River upstream from the mouth are small wharves serving the petroleum and aqua ammonia storage tank sites. There are two chemical plants on the west side of the pool south of Kennewick. Grain elevators are located at Pasco and Kennewick with facilities to load or unload river barges or railroad cars.

There are five railroad bridges, three highway bridges and two power line crossings in the area. Clearances of the features will be described under Item 12, Other Interior Features.

8. Offshore Features:

Except for a few small islands and rocks, the area appears relatively free of offshore features.

9. Landmarks and Aids:

Significant land marks for nautical charts will be described on form 567.

A system of lighted fixed aids, floating aids and daybeacons have been erected and are being maintained along the Columbia River (McNary Pool). The fixed aids were located by either photogrammetric, triangulation or traverse methods.

10. Boundaries, Monuments and Lines:

Only one state, Washington, is involved in this area.

The boundaries of Sacajawea State Park were not determined as the limits of the park was not marked by recoverable monuments. The three involved counties, Benton, Franklin and Walla Walla, share common boundaries formed by the Columbia and Snake Rivers.

11. Other Control:

Twenty one marked, recoverable topographic stations and twenty three un-monumented, recoverable photo-topo stations were established. All of the above stations are along the shores of the Columbia or Snake Rivers. One Corps of Engineers triangulation station and eleven Corps of Engineers Sedimentation Range stations were recovered to serve for control of hydrographic surveys in the delta of the Walla Walla River.

The following are the marked, recoverable topographic stations established.

T-10386 - None

T-10421 - EM X 2 RESET, OVER, SACAJAWEA LIGHT, SPAN, APEX, REFR RADIO STATION MAST, CROW

T-10422 - DAYBEACON, JUNCTION LIGHT

T-10423 - BARB, ITEM, WORK, RANGE 1 FRONT LIGHT, RANGE 1 REAR LIGHT

T-10424 - RANGE 2 FRONT LIGHT, RANGE 2 REAR LIGHT, TEAL, B 336-2, CARP, HOVER LIGHT, GRIP

T-11317 - None

The names of the un-monumented photo-topo stations will be listed under Notes to the Hydrographer.

12. Other Interior Features:

Highway and roads were classified on field photographs as described under section 5411, Topographic Manual. Railroads were denoted on the field photographs.

Clearances for bridges and power line crossings are listed below;

Snake River Railroad Bridge, swing bridge

Horizontal clearance, 152 feet  
Vertical clearance - open 67.5 feet  
closed 13.5 feet

Snake River Highway Bridge, fixed span

Horizontal clearance, 426 feet  
Vertical clearance, 62 feet

Old Pasco-Konnetwick Highway Bridge, fixed span

Horizontal clearance, 421 feet  
Vertical clearance, 52 feet

Northern Pacific Railway Bridge, over Columbia River,  
lift span

Horizontal clearance, 293 feet  
Vertical clearance - open, 68 feet  
closed, 15.8 feet

Union Pacific Railroad Bridge, over Columbia River,  
swing bridge

Horizontal clearance, 122 feet  
Vertical clearance - open, 68 feet  
closed, 11 feet

Railroad Bridge, near south end of Burbank Slough,  
fixed span

Horizontal clearance, 33 feet  
Vertical clearance 10.8 feet

Highway Bridge, near south end of Burbank Slough,  
fixed span

Horizontal clearance, 17.8 feet  
Vertical clearance, 13 feet

Railroad Bridge, near Zagar Junction, over Walla Walla  
River, fixed span

Horizontal clearance, 92 feet  
Vertical clearance, 49 feet

Power Line Crossing, over Columbia River near Sacajawea  
State Park

Vertical clearance, 103 feet

Power Line Crossing over Columbia River at Clover Island

Vertical clearance, 52 feet

Approved:

Respectfully submitted:

V. Ralph Sobieralski  
LCDR, USCG  
Officer-in-Charge

Robert B. Molby  
Carto. Survey Aid  
Unit Chief

PROCEEDINGS OF THE BOARD

Radial Plot 100

Map Manuscripts T-10424, T-10425,

T-10386, T-11317 and T-11318

Project PI-63

21. Area Covered:

This radial plot covers the shorelines of the Columbia River to an interior depth of about 3 miles, from the Washington-Oregon boundary upstream to Attalia, and the shorelines of the Walla Walla River to an interior depth of one mile, from the Columbia River upstream to the Northern Pacific Railroad bridge. It comprises map manuscripts T-10424, T-10425, T-10386, T-11317 and T-11318.

22. Method:

The control extension was accomplished by the hand templet radial line plot method using acetate templates made from nine-frames photographs taken in 1954 and 1956. Photographs were prepared by the usual methods and meter calibration templates No. 43497 and No. 48340 were used respectively for the 1954 and 1956 photography when correcting for transforming errors and paper distortion. Refer to letter, 73-mcl dated 9 August 1956, subject: "Compilation - Projects 27260, Charleston, S. C. and 27020, Upper Columbia River, Oregon", relative to the use of calibration templet No. 48340 (1955) for 1956 photography.

For each of the five manuscripts in this radial plot a polyconic projection was furnished of the respective areas ruled on 2' x 3' sheets of Mylar material. Each of the polyconic projections for T-10424 and T-10425 covered 3 minutes 45 seconds of latitude and 7 minutes 30 seconds of longitude. For T-10386, T-11317 and T-11318 each covered 3 minutes 45 seconds of latitude and longitude. The Lambert State grids of Oregon and Washington were also ruled on T-10424 and T-10425. For T-10386, T-11317 and T-11318 the Lambert State grid of Washington only was added. The horizontal control stations falling on each of the respective manuscripts were plotted and verified. The five sheets were joined together by matching at the meet line junctions and then fastened with clear cellulose tape. The templates were oriented to the identified control directly on the joined work sheets and fastened with masking tape. After all templates were satisfactorily oriented and fastened the entire radial plot was turned face down and the locations of pass points and principal points were pricked and indicated by circles on the reverse sides of the work sheets using Craftint No. 111 red plastic ink. The plot was then turned face

up and the templots were dismantled. The photogrammetric points falling in the margins at the junctions of adjoining sheets were transferred and then the joined work sheets were dismantled.

There were more than an adequate number of identified horizontal control stations available and all were satisfactorily held in this radial plot. The results were excellent and well within the limits of horizontal accuracy requirements.

23. Adequacy of Control:

The identification of horizontal control stations was satisfactory and more than an adequate number were available.

24. Supplemental Data:

There were topographic maps, compiled by the Corps of Engineers, U. S. Army, Walla Walla District, available which covered the area of this radial plot. These were not needed to supplement the identified horizontal control stations, but they were used during the compilation of planimetric details for verification of certain features for which state coordinate positions of the U. S. Engineers were available.

25. Photography:

The photography was adequate. The P.M.A. ratio prints were not needed to supplement the nine-lens photography.

Approved:

Respectfully submitted:

V. Ralph Sobioralski  
LCDR, C&GS  
Officer-in-Charge

J. Edward Deal  
Cartographer  
C&GS



COMPILATION REPORT

Map Manuscript T-10386

Project Ph-63

31. Delineation:

The compilation and drafting were accomplished as follows:

- (a) Graphic compilation in ink on a work sheet, the projection for which was hand ruled in the Portland Office.
- (b) Office review.
- (c) Transfer of compiled planimetry and projections to yellow coated scribe sheet by "Watercote" method.
- (d) Scribing in negative of compiled details and projections.
- (e) Reproduction of scribed features on Van Dyke grained positive.
- (f) Stick-up of symbols and type.
- (g) Final office review and inspections by Officer-in-Charge.

32. Control:

Refer to Items 22 and 23 of the Photogrammetric Plot Report, a copy of which is included in this Descriptive Report.

33. Supplemental Data:

This office was furnished a set of prints of a survey made by the Corps of Engineers, U. S. Army, Walla Walla District of an area behind the McNary Dam previous to flooding. Several points of planimetry that appear on T-10386 were located by triangulation ties during this survey and for these Lambert State Coordinates were furnished. They were plotted on the manuscript and found to be in excellent agreement with the graphically compiled planimetry.

A print of this survey covering the area of T-10386 is submitted: McNary, Lock and Dam, Columbia River, Oregon and Washington, Relocations and Section Corner ties, Walla Walla District, Corps of Engineers, Nov. 1, 1954, Drawing MDR-1-12/21, Sheet No. 17.

34. Contours and Drainage:

Contours are not applicable. Drainage was delineated by field inspection and refined by office examination of the photographs supplemented by reference to the U. S. Geological Survey quadrangles of the area.

35. Shoreline and Alongshore Details:

The shoreline of the nine-lens photographs taken on 9-26-54 when the pool level was 340 feet above mean sea level has been shown. Except where clarification was needed no field inspection was made of the shoreline.

The approximate low-water line was compiled from Corps of Engineers, U. S. Army photographs taken on 13 October 1953 when the water level of the pool was about 324 feet above mean sea level.

36. Offshore Details:

None.

37. Landmarks and Aids:

None.

38. Control for Future Surveys:

None.

39. Junctions:

Satisfactory junctions were completed with T-10424 and T-10425.

40. Horizontal and Vertical Accuracy:

There are no areas believed to be of sub-normal horizontal accuracy. Vertical accuracy is not applicable.

46. Comparison with Existing Maps:

The U. S. Geological Survey quadrangle maps of the area are obsolete for comparison with this shoreline manuscript because they were made previous to the flooding of the McNary Pool.

47. Comparison with Nautical Charts:

There are no nautical charts of the area. Recent hydro-graphic surveys by the Corps of Engineers were not available for comparison purposes.

Approved:

*V. Ralph Sobieralski*

V. Ralph Sobieralski  
LCDR, C&GS  
Officer-in-Charge

Respectfully submitted:

*J. Edward Deal*

J. Edward Deal  
Cartographer  
C&GS

T-10386

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48. Geographic Names:

The geographic names shown on this manuscript are not final. They were obtained from the geographic name inspection made by the field unit. The verified and recommended names shown are:

Johnson Pond

Walla Walla River

Wallula State Park

Van Sycle Canyon

Zangar Junction

Names approved 5-15-59  
L. Heck

Review Report of  
Shoreline Manuscript T-10386  
June 1959

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

There are no registered topographic surveys of this area.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

Wallula, Wash., 1:125000, Edition of 1918,  
U. S. Geological Survey

Date and scale of the topographic quadrangle are inadequate for a detailed comparison.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

None!

65. COMPARISON WITH NAUTICAL CHARTS:

None!

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

T-10386 meets the requirements for adequacy and accuracy for this type of survey.

Reviewed by:

*Josef J. Streifler*  
Josef J. Streifler

Approved by:

*L. C. Lande*  
Chief, Review & Drafting Section  
Photogrammetry Division

*Max S. Roberts*  
Chief, Nautical Chart Branch  
Charts Division

*L. W. Johnson*  
Chief, Photogrammetry Division  
26 May 60

*J. Bowie*  
Chief, Coastal Surveys Division

