

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SHEET

DATE: January 2, 1987

Marine Center: Pacific

OPR: R184

Hydrographic Sheet: H-10219

Locality: Round Island and vicinity, Bristol Bay, AK

Time Period: June 24 - August 6, 1986

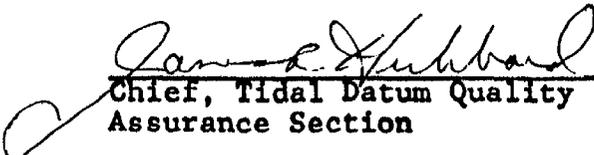
Tide Station Used: 946-5182 Black Rock, AK

Plane of Reference (Mean Lower Low Water): 8.91 Ft.

Height of Mean High Water Above Plane of Reference: 9.0 Ft

Remarks: Recommended Zoning:

1. East of longitude $160^{\circ}00.0'$ apply a -10 minute time correction and a x1.01 Range Ratio to all heights.
2. West of longitude $160^{\circ}00.0'$ Zone Direct.


Chief, Tidal Datum Quality
Assurance Section

ORIGINAL

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: June 7, 1991

MARINE CENTER: Pacific

OPR: R-184

HYDROGRAPHIC SHEET: H-10219 (REVISED)

LOCALITY: Round Island and Vicinity, Bristol Bay, Alaska

TIME PERIOD: June 24 to August 6, 1986

TIDE STATIONS USED: 946-5182 Black Rock, Alaska
Lat. 58° 42.5'N Lon. 160° 11.3'W

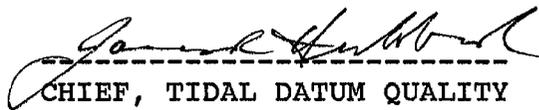
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 8.91 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 9.0 ft.

REMARKS: RECOMMENDED ZONING

1. East of longitude of 160° 00.0'N, apply a -10 min. time correction and a x0.81 range ratio to Black Rock (946-5182).
2. West of longitude of 160° 00.0'N, times are direct and apply a x0.81 range ratio to Black Rock (946-5182).

Note: Times are tabulated in Greenwich Mean Time.


CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

FIELD TIDE NOTE
RA 20-2-86
H-10219

Field tide reduction of soundings was accomplished by applying range ratio and time correctors derived by RAINIER to predicted tides from Black Rock, Alaska. Black Rock predicted tides were supplied by N/OMA123 Tidal Datum Quality Assurance Section. Predicted tide corrections were derived using program AM500. All times of both predicted and recorded tides are Coordinated Universal Time (UTC).

Bristol Bubbler tide gages were installed at five locations in the project area. Data from these stations were used for zoning recommendations. Tide station information follows:

BLACK ROCK (946-5182)

Geographic Locale - Black Rock, Walrus Islands, Bristol Bay, Alaska. 58-42.5 N, 160-11.3 W.

Installation Date - June 6, 1986

Removal Date - September 9, 1986

Gage Type - Two 0-30 scale Bristol Bubblers, primary S/N 64A 11028 and backup S/N 67A 16208.

Levels - Installation levels, 6/6/86, and final levels, 9/9/86 were in excellent agreement with previous levels (difference $\leq 0.002\text{m}$).

Bench Marks - Five recovered in good condition (BM No. 1 1948, No. 2 1948, No. 3 1948, BMS 5182 A 1985, 5182 B 1985).

Staff-Gage - Primary = 0.73 ft
- Backup = 0.19 ft.

Marigram Records - Continuous records were obtained from both gages with the following exceptions:
Primary - Between July 20(DN 201) and July 23(DN 204) the gage was overdampened. During this time the backup gage was also overdampened and no usable data were acquired. This break amounted to less than three days. It should be noted that the Summit Island and Kulukak gages were operational during this period.
Backup - Between July 20(DN 201) and July 30(DN 211) was overdampened. Hourly heights were scaled from the primary marigram.

KULUKAK POINT (946-5265)

Geographic Locale - Kulukak Point, AK. 58-50.4 N, 159-38.8W
 Installation Date - June 8, 1986
 Removal Date - September 7, 1986
 Gage Type - Two Bristol Bubbler 0-30 ft scale,
 primary S/N 68A14940, backup S/N
 64A11030. The backup gage also has an
 electronic digital logger gage for
 field evaluation. The marigram for the
 backup gage will be sent to the Pacific
 Tide Party.

Levels - Installation levels, 6/8/86, and final
 levels, 9/7/86, were in excellent
 agreement with previous levels
 (difference \leq 0.002m).

Bench Marks - Recovered 5 in good condition (BM's
 5265 A 1985, 5265 B 1985, 5265 C 1985,
 5265 D 1985, 5265 E 1985).

Staff-Gage - Primary 2.09 ft
 Backup 2.48 ft

Marigram Records - Uninterrupted records were obtained from
 the primary gage and hourly heights
 were scaled from this marigram. The
 backup gage lost nitrogen pressure
 between July 9 (DN 190) and
 July 13 (DN 194). The digital gage
 recorded data from July 3 (DN 184)
 through July 21 (DN 202).

NUSHAGAK PENINSULA (946-4961)

Geographic Locale - Southwest side Nushagak Peninsula, AK
 58/31.6 N, 159/09.6 W

Installation Date - June 10, 1986
 Removal Date - August 7, 1986

Gage Type - Two 0-30 ft Bristol Bubblers
 Primary S/N 67A 16205
 Backup S/N 68A 9333

Levels - Installation levels, 6/10/86, had
 excellent closure (difference = 0.002m).
 Levels run on 6/19/86 and 8/7/86
 verified no staff movement. Final
 levels, 9/7/86, had a closure of
 0.004m.

- Bench Marks - One mark, 4961 B 1985, was recovered in good condition. BM's 4961 A 1985, 4961 C 1985, 4961 D 1985, 4961 E 1985 were destroyed. Six marks were set (4961 G 1986, 4961 H 1986, 4961 J 1986, 4961 K 1986, 4961 L 1986, TBM 1). BM's K, L, and TBM 1 are prefabricated 4 ft pipe marks. BM's G, H, and J are rod marks driven to refusal. All marks are protected with PVC pipe.
- Staff-Gage - Primary = 3.91 ft
- Backup = 3.66 ft
- Marigram Records - Uninterrupted records were obtained from the primary gage which was used for hourly heights. The backup gage chart drive would not work consistently.

NE SIDE SUMMIT ISLAND (946-4961)

- Geographic Locale - Northeast side Summit Island, AK
58/50.8 N, 160/12.6 W
- Installation Date - July 18, 1986
- Removal Date - September 6, 1986
- Gage Type - Bristol Bubbler 0-30 ft
Primary S/N 73A 235
- Levels - Installation levels, 7/19/86, had excellent closure (difference =0.001m). Final levels, 9/6/86, were in excellent agreement with previous levels (difference $\leq 0.002m$).
- Bench Marks - Five marks were set (5283 A 1986, 5283 B 1986, 5283 C 1986, 5283 D 1986, 5283 E 1986). BM's were standard NOS bronze disk set in bedrock.
- Staff-Gage - Primary = 2.02 ft
- Marigram Records - Uninterrupted records were obtained. Upon changing marigram paper types from Charts-Inc(brown) paper to Bristol Company(red) paper, the staff to gage ratio changed from 2.02 to 1.55 ft.

ROUND ISLAND

Note: This gage was not required for this survey. The data were used to determine zoning.

- Geographic Locale - Northeast side Round Island, AK
58/36.7 N, 159/58.0 W
- Installation Date - July 9, 1986
- Removal Date - July 16, 1986

Gage Type - Bristol Bubbler 0-30 ft
 Primary S/N 73A 235
Levels - No marks were set or leveled. The
 station was established only for zoning
 purposes. Levels were run to the
 waters edge from a rock TBM 1.
Bench Marks - No marks were set.
Water-Gage - Primary = 5.65 ft
Marigram Records - Uninterrupted records were obtained.

UNALASKA CONTROL STATION

The control station at Unalaska was leveled July 26, 1986 by the Pacific Tide Party. RAINIER personnel also leveled the station. No problems were encountered with this station.

ZONING RECOMMENDATIONS

In accordance with section 5.9 of the project instructions for OPR-R184 the attached field tidal zoning is submitted for review.

Comparison of mainscheme data with soundings observed on crosslines and mainscheme splits indicated these data did not agree within expected tolerances. The apparent error was about one-half fathom, depending on the stage of tide. It was also noted that the tide data observed at two supplemental locations did not agree with the tidal zoning scheme provided in the project instructions.

One tide cycle was measured with the ship's echo sounder while anchored at 58/25.5N, 160/08.3W in Sheet X. This data conflicts with the preliminary zoning in that it indicates that the time correction with Black Rock is small and the range ratio is smaller offshore. In addition, a reconnaissance tide station was established on Round Island. This data confirmed that the co-tidal lines move from east to west and that the range of tide is less at Round Island than at Black Rock.