Publication No. 75-e16

WA-01-0020

MEMORANDUM

August 7, 1975

To: Files

From: Dan Glantz

Subject: Drayton Harbor, Bellingham Harbor, Guemes Channel and Swinomish Channel

On July 7 (Monday) Darrel Anderson and myself towed the "Glassply" to Bellingham and had it put in the water at the yacht club in preparation for the sampling tour.

On July 8, John Glynn of the Redmond office joined us and we proceeded toward Drayton Harbor at Blaine. The previous night the area experienced a severe thunder and lighning storm with considerable rain. The thunder and lightning, though moderating, continued through much of the morning, at least in the Bellingham-Lummi Island area. There were small whitecaps, but generally the water was not too rough. It was the first day for the purse seiners and it was necessary, at times, to proceed cautiously in order to avoid their nets.

In Drayton Harbor, we took our first samples and lowered the "Hydro-lab". The time was 10:25. Reference to attached copies of the Field Book will provide information regarding parameters, locations, etc. Commencing with station 005 we moved south to the refinery docks at Cherry Point and the Intalco Dock, same location. At Intalco a bottom sample was taken with a Petersen dredge to determine fluoride concentration. The final sampling of the day was done in the Sandy Point Harbor adjacent to new housing development in the area.

The following day, July 9, we left our mooring in Bellingham Harbor and moved south to the Shell and Texaco refinery docks off Fidalgo Island near Anacortes. Sampling and testing commenced at 0930 near the Shell diffuser. Again, refer to attached field book data for details. Weather was much improved over the previous day.

An attempt was made to approach Publisher's Forest Products outfall; however, the water in Fidalgo Bay was too shallow and the tide was outgoing. We moved down into Guemes Channel and sampled near the Anacortes STP outfall. Again moving south we attempted sampling near the Skyline STP outfall, but here too the outgoing tide would not allow us near enough. However, based on previous observations of this STP with its low flow, it is doubtful there would be any significant effect.

Drayton Harbor

As we left the Skyline area we encountered heavy fog. Our radar was defunct and we proceeded cautiously by compass. We broke out of the fog on target at Deception Pass and were able to clear the Pass with full visibility. Coliform samples were taken off Dewey Beach and near the piling in Similk Bay where there have been reports of problems with the oysters.

Our course next took us through Skagit Bay where we sampled off Snee-oosh Beach in the Hope Island area. We then entered the south end of Swinomish Channel and proceeded toward LaConner where additional samples were taken. The "in town" coliform readings (see Lab Report) were not surprising as visible signs of contamination were quite evident. Fortunately the new LaConner STP should go on stream within a matter of weeks thereby reducing or eliminating much of this direct outfall from the town and the canneries. Above town, the channel clears considerably.

The final day, July 10, was bad, weatherwise. It was fortunate we had arranged our schedule to take care of the farthest locations the previous days as we would not have travelled far under these conditions. We first sampled near Mt. Baker Plywood inside the breakwater then went out to Post Point near the outfall from Bellingham's new STP. Samples and readings were taken at several depths under rather difficult conditions. We then returned to Inner Bellingham Bay and Whatcom Creek Waterway adjacent to the Georgia-Pacific operation. Contamination is evident in the entire area and is confirmed by the lab reports. PBI readings were extremely high near the surface with substantial readings at 15' and 20' in some areas.

This concluded our sampling and reading.

DG:ee

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

ORIGINAL TO: D. GLANTZ
COPIES TO:
LAB FILES

DATA SUMMARY

Source DRAYTON HBR. - B'HAM BAY - BIRCH BAY Collected By GLANTZ & ANDERSON

Date Collected 7-8-75 Goal, Pro./Obj.

Log Number: 75-	2838	39	40	41	42	43	44	45			STORET
Station:	DRAYTON SURFACE #001	DRAYTON #002	INSIDE PILING #003	SEWER OUTFALL #004	@ 20' #004	@ 40' #004	OYSTER beds	SANDY POINT SHORES			
pH											00403
Turbidity (JTU)											00070
Conductivity (µmhos/cm)@25°C											00095
COD											00340
BOD (5 day)											00310
Total Coliform (Col./100ml)	EST* 80.	EST* 250.	* 250	<10	EST 10	EST 20	EST 10	EST 20			31504
Fecal Coliform (Col./100ml)	EST 25	EST 48	EST 75	<5	EST 16	EST 8	<5	<5			31616
NO3-N (Filtered)											00620
NO2-N (Filtered)											00615
NH3-N (Unfiltered)											00610
T. Kjeldahl-N (Unfiltered)											00625
O-PO4-P (Filtered)											00671
Total Phos.-P (Unfiltered)											00665
Total Solids											00500
Total Non Vol. Solids											
Total Suspended Solids											00530
Total Sus. Non Vol. Solids											
FECAL STREP (colonies/100ml)	-	-	-	<5	EST 5	EST 20	-	EST 5			

Note: All results are in PPM unless otherwise specified. ND is "None Detected"
Convert those marked with a * to PPB (PPM X 10^3) prior to entry into STORET

* MANY NON-SHEEN COLONIES

Summary By Stephen D. Bell Date 7-14-75

C.C. Flynn + Sylvester.

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO: D. GLANTZ

COPIES TO:

LAB FILES

Source NOOKSACK & SKAGIT BASINS

Collected By D. GLANTZ & D. ANDERSON

Date Collected 7-9 & 10-75

Log Number: 75-	2882	83	84	85	86	87	88	89	90	91	92	93
						SWINOMISH CHANNEL						
Station:	ANACORTES STP OUTFALL	GUEMES CHANNEL NEAR SCOTT	DEWEY BEACH	SIMILK BAY	SNEECOSH BEACH STP	IN TOWN	SHELTER BAY	ABOVE TOWN	SHELL @ DOCK	SHELL @ DIFFUSER	TEXACO	WHITING FISHERY
pH												
Turbidity (JTU)												
Conductivity (umhos/cm)@25°C												
COD												
BOD (5 day)												
Total Coliform (Col./100ml)	3700.	—	EST 10	<5	EST 200	36000	EST 160	EST 340	—	—	—	—
Fecal Coliform (Col./100ml)	470	—	EST 4.	<2	<50	1800.	<10	<10	—	—	—	—
NO3-N (Filtered)												
NO2-N (Filtered)												
NH3-N (Unfiltered)												
T. Kjeldahl-N (Unfiltered)												
O-PO4-P (Filtered)												
Total Phos.-P (Unfiltered)												
Total Solids												
Total Non Vol. Solids												
Total Suspended Solids												
Total Sus. Non Vol. Solids												
PBI	7.	5.	—	—	—	—	—	—	·	—	—	—
TOTAL OILS	—	—	—	—	—	—	—	—	N.D.	N.D.	N.D.	N.D.

Note: All results are in PPM unless otherwise specified. ND is "None Detected"
Convert those marked with a * to PPB (PPM X 10^3) prior to entry into STORET

cc Glynn Sylvester

Summary By Stephen D. Bell Date 7-18-75

State of Washington Department of Ecology

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

WATER QUALITY LABORATORY

DATA SUMMARY

ORIGINAL TO: D. GLANTZ

COPIES TO:

LAB FILES

Source B'HAM. BAY

Collected By D. GLANTZ

Date Collected 7-(8-10)-75

Log No.	Station	Turbidity (NTU)	PBI	Phenols	T. Oils	Fluorides*				
75-2901	G.P. CLARIFIER OUTFALL	6	1,200.							
02	OFF OLD STP OUTFALL	10.	2,200.							
03	OFF G.P. CL2 PLANT	14	3,500.							
04	OFF G.P. PLANT CONTROL PT.	25.	74.							
05	G.P. @ CLARIFIER DIST. HL@ 15 FT	6.	800.							
06	BETWEEN SEASPAN & G.P.	18.	8,500.							
07	BEYOND G.P. - CONTROL PT. 20' D.	3.	20.							
08	LAST G.P. dock - SURFACE	12.	2,500							
09	LAST G.P. dock - 15'	6.	220.							
10	OFF B'HAM STP OUTFALL 1030	3.								
11	" 1035 (SURFACE)	4.								
12	" 1045 (@ 25')	3.								
13	MT. BAKER PLY. - BAY			0.004						
14	ARCO REF. - CHERRY PT.				<1.					
15	G.P. CLARIFIER DIST. D.G.-#1				<1.					
16	B'HAM. HARBOR & MARINE AREA				<1.					
17	MOBIL REFINERY dock @ CHERRY PT.				<1.					
18	NO. END OF INTALCO dock					0.70				
19	SO. END. OF INTALCO dock					1.16				

Note: All results are in PPM unless otherwise specified. ND is "None Detected"

* SOLUBLE F^-

cc Darrell Glynn, John Glynn, Bob Sylvester

Summary by Stephen D. Roll Date 7-23-75

STATION # ~~LOCATION~~	TIME	DO	COND	PH	TEMP	DEPTH	LOCATION DESCRIPTION			SAMPLES TAKEN
014	1300	6.4	0-100 / 39000	8.0	12°	10'	SNE OFF BEAST OFF HOPE ISLD			COLIF
							add coliform samples from Swinomish channel			
					7/10/75					
015	0955	7.5	0-100 / 10000	7.9	18°	Surface	~~Not taken yet~~ ~~Rhem Bay~~			oil & phenol
016	1030	8.4	35000	8.4	16°	"	Port Pt STP	Very Rough weather		
"	"	8.3	42000	8.3	15°	10'	"	"		
"	"	8.5	43000	8.2	14°	20'	"	"		
017	1120	6.7	0-100 / 33000	5.9	20°	SURFACE	B'HAM BAY OFF GP CLARIFIER			oil @ surface PBI & Tank
"	1125	2.7	0-100 / 39000	7.0	16°	15'	"			" "
018	1130	6.5	0-100 / 6000	7.7	20°	SURFACE	OFF OLD STP OUTFALL			oil - PBI & Tank
"	1135	4.3	0-100 / 18000	7.7	18°	5'	" "			
019	1145	4.4	0-100 / 13000	6.1	21°	SURFACE	OFF GP CHLORINE PLANT			
"	1145	3.7	0-100 / 15000	5.9	19°	4'	" "			
020	1150	4.3	0-100 / 15000	6.3	19°	Surface	" LAST DOCK			
"	1150	5.0	0-100 / 30000	7.7	17°	15'	" "			
021	1155	7.1	0-100 / 26000	8.2	17°	Surface	Control Point (200 yd off dock)			Clear water
"	1155	6.8	0-100 / 2600	8.2	17°	20'	" "			
022	1330	6.3	0-100 / 700	7.8	25°	Surface	Between Seafoam Barges			OIP

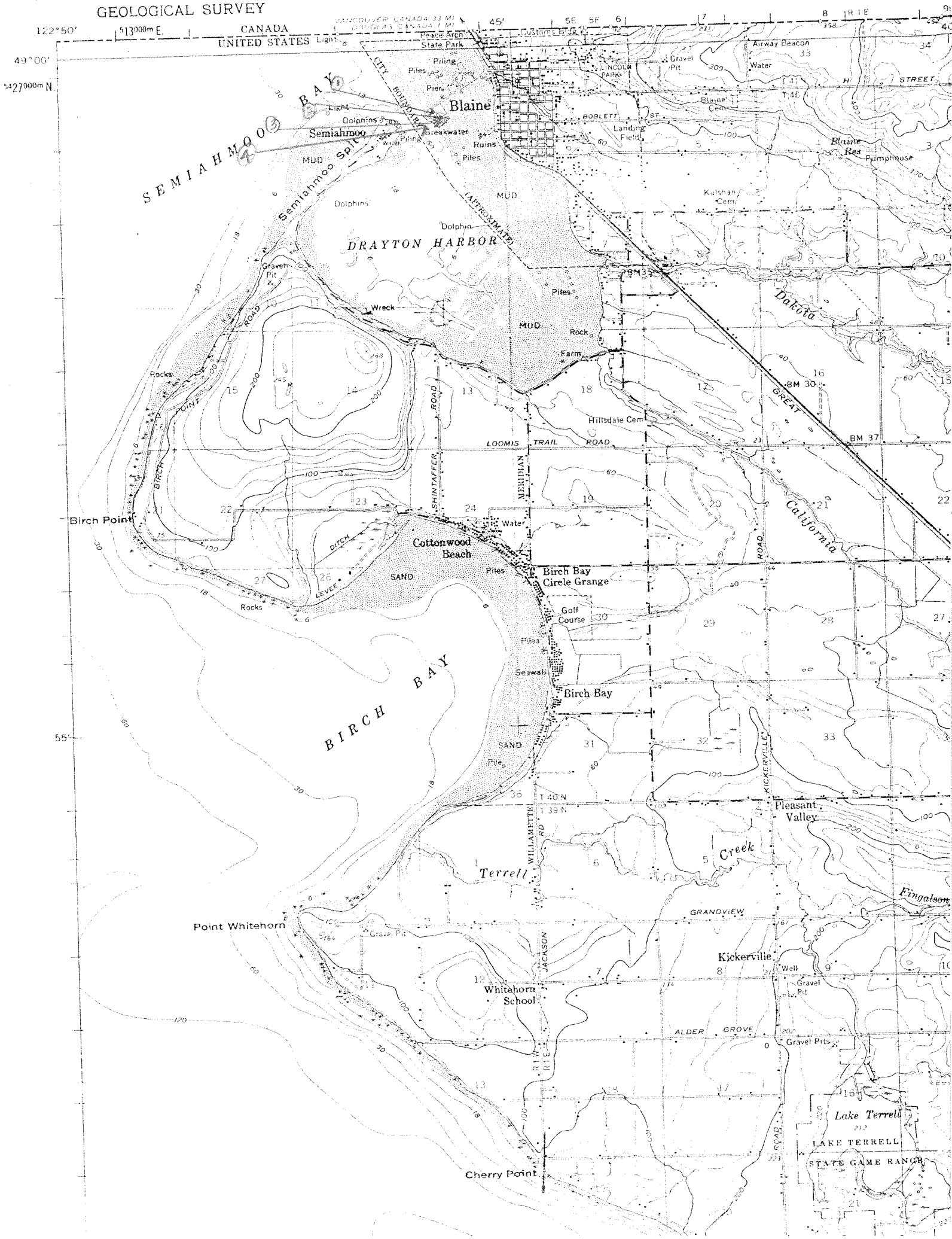
Field Book

STATION # ~~LOCATION~~	DRAYTON HARBOR (BLAINE) TIME	D.O.	COND.	P.H.	1/8/15 TEMP	DEPTH	LOCATION DESCRIPTION		SAMPLES TAKEN
001	1025	7.4	10K/25000	8.2	18°	SURFACE	WEST END DOCK		Colif + Total
002	1035	7.5	1K/[illegible]	6.2	18°	"	NO. OF DOCK BETWEEN BOATS		" "
003	1045	7.8	0-100K/10000	8.1	18°	"	INSIDE PILING ENTRANCE		Colif - T. Colif
"	1045	7.7	0-100/25000	8.1	16°	10'	" "		
004	1055	7.4	0-100/18000	8.2	18°	SURFACE	AT STP OUTFALL		T. Colif - FEC - STREP
"	"	7.5	0-100/22000	6.2	17°	20'	" "		" " "
"	1100	7.2	0-100/25000	8.1	16°	40'	" "		" " "
005	1210	8.2	0-100/26000	8.3	15°	Surface	arco dock cherry pt		Oils
006	1225	7.8	0-100/39000	8.2	13°	~~Surface~~ Surface	Intalco Dock (Bottom)		Fluorides
007	1235	8.3	0-100/37000	8.4	13°	Surface	Mobil Dock cherry pt		Oils
008	1255	7.9	0-100/41000	8.7	15°	Surface	Sandy pt Hbr		Colif fecal - Strep
					7/9/75				
009	0930	6.7	0-100/49000	9.2	12°	Surface	Shell - Difuser near Dock	anacortes "	oils
"	0935	7.9	0-100/49500	8.2	12°	20'		"	
010	0940	6.4	0-100/48500	8.2	12°	Surface	" " 50 yds out	"	
"	0940	6.5	0-100/47000	8.0	12°	20'	" "	"	
"	0940	6.3	0-100/47500	8.0	12°	40'	" "	"	
011	0955	6.8	0-100/45000	8.6	12°	Surface	Texaco Dock @ Difuser	"	oils
"	0955	6.6	0-100/47000	8.2	11°	20'	" "	"	
012	1000	6.8	0-100/47000	8.7	12°	Surface	Texaco 50 yds out	"	
"	1000	6.5	0-100/48000	8.2	11°	20'	"	"	
013	1025	6.3	0-100/48000	8.8	11°	Surf	anacortes STP outfall	"	Colif + PBI
"	"	6.6	0-100/47000	8.2	11°	15'	"	"	

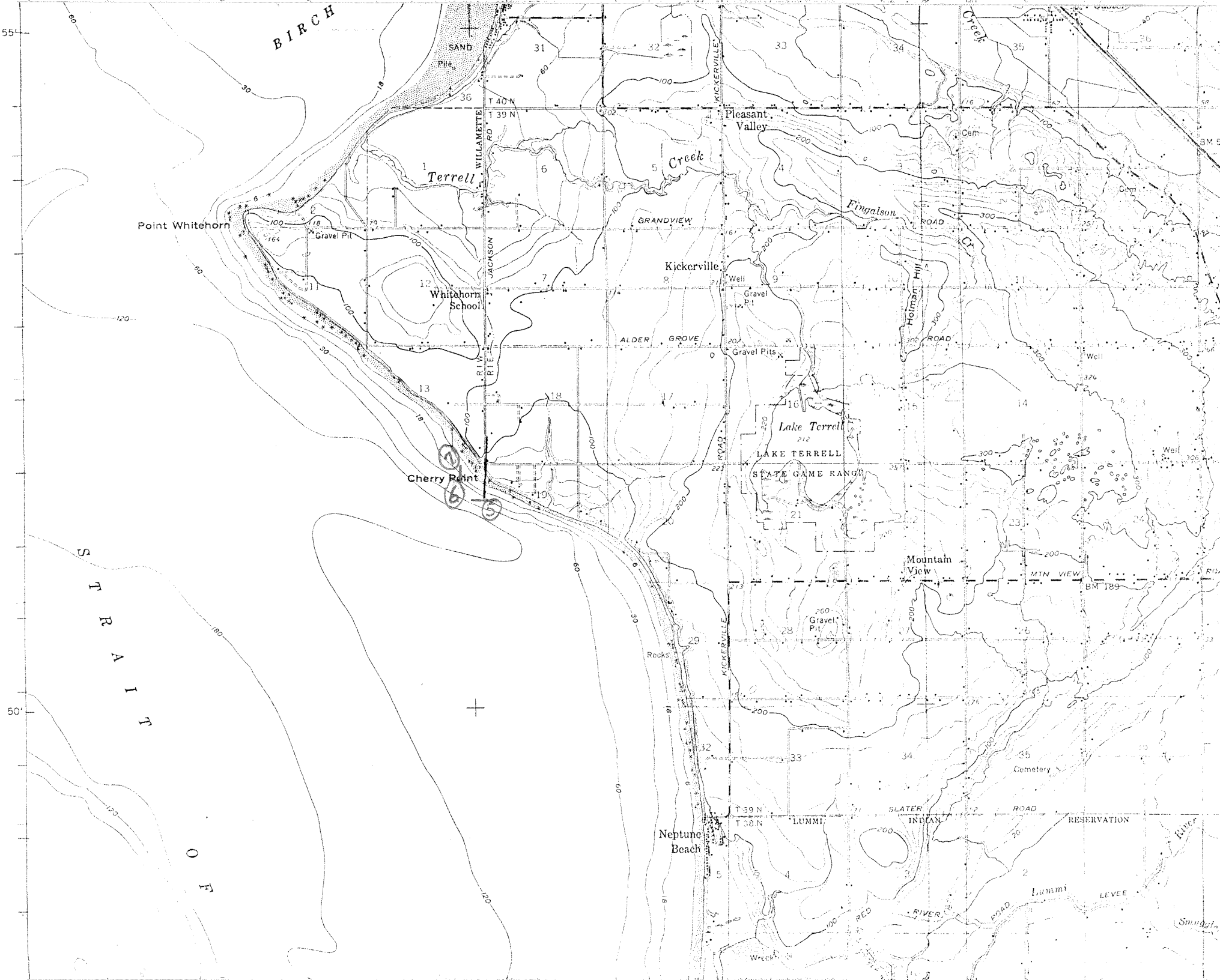
Field Book

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

COAST AND GEO



BIRCH
SAND
Pile
T 40 N
T 39 N
WILLAMETTE RD
KICKERVILLE
Pleasant Valley
Terrell
Creek
Point Whitehorn
Gravel Pit
GRANDVIEW
Fingalson
JACKSON
Kickerville
Well
Gravel Pit
Whitehorn School
ALDER GROVE
Gravel Pits
Holman Hill
Lake Terrell
LAKE TERRELL
STATE GAME RANGE
ROAD
Cherry Point
Mountain View
Gravel Pit
Rocks
KICKERVILLE
STRAIT OF GEORGIA
T 39 N
T 38 N
LUMMI
SLATER
INDIAN
Neptune Beach
RED RIVER
Wreck
Pier
SAND
LUMMI FLATS
Sandy Point
LUMMI BAY
WHATCOM
55'
50'
650 000 FEET



BIRCH
SAND
Pile
T 40 N
T 39 N
WILLAMETTE RD
JACKSON
KICKERVILLE
Pleasant Valley
Terrell
Creek
Point Whitehorn
Gravel Pit
GRANDVIEW
Fingalson
ROAD
Kickerville
Well
Gravel Pit
Whitehorn School
Holman Hill
ALDER GROVE
ROAD
Gravel Pits
Well
Lake Terrell
LAKE TERRELL
STATE GAME RANGE
Cherry Point
Mountain View
MTN VIEW
BM 189
Gravel Pit
Rocks
KICKERVILLE
ROAD
Cemetery
T 39 N
T 38 N
LUMMI
INDIAN
SLATER
ROAD
RESERVATION
Neptune Beach
Lummi
LEVEE
RED
RIVER
ROAD
Wreck
STRAIT OF
55'
50'

4 MILES
12000 15000 18000 21000 FEET
3 4 5 KILOMETERS

L 20 FEET
0-FOOT CONTOURS
EA LEVEL
MEAN LOWER LOW WATER
MATE LINE OF MEAN HIGH WATER
PPROXIMATELY 6 FEET

MAP ACCURACY STANDARDS
25, COLORADO OR WASHINGTON 25, D. C.
SYMBOLS IS AVAILABLE ON REQUEST

WASHINGTON
QUADRANGLE LOCATION

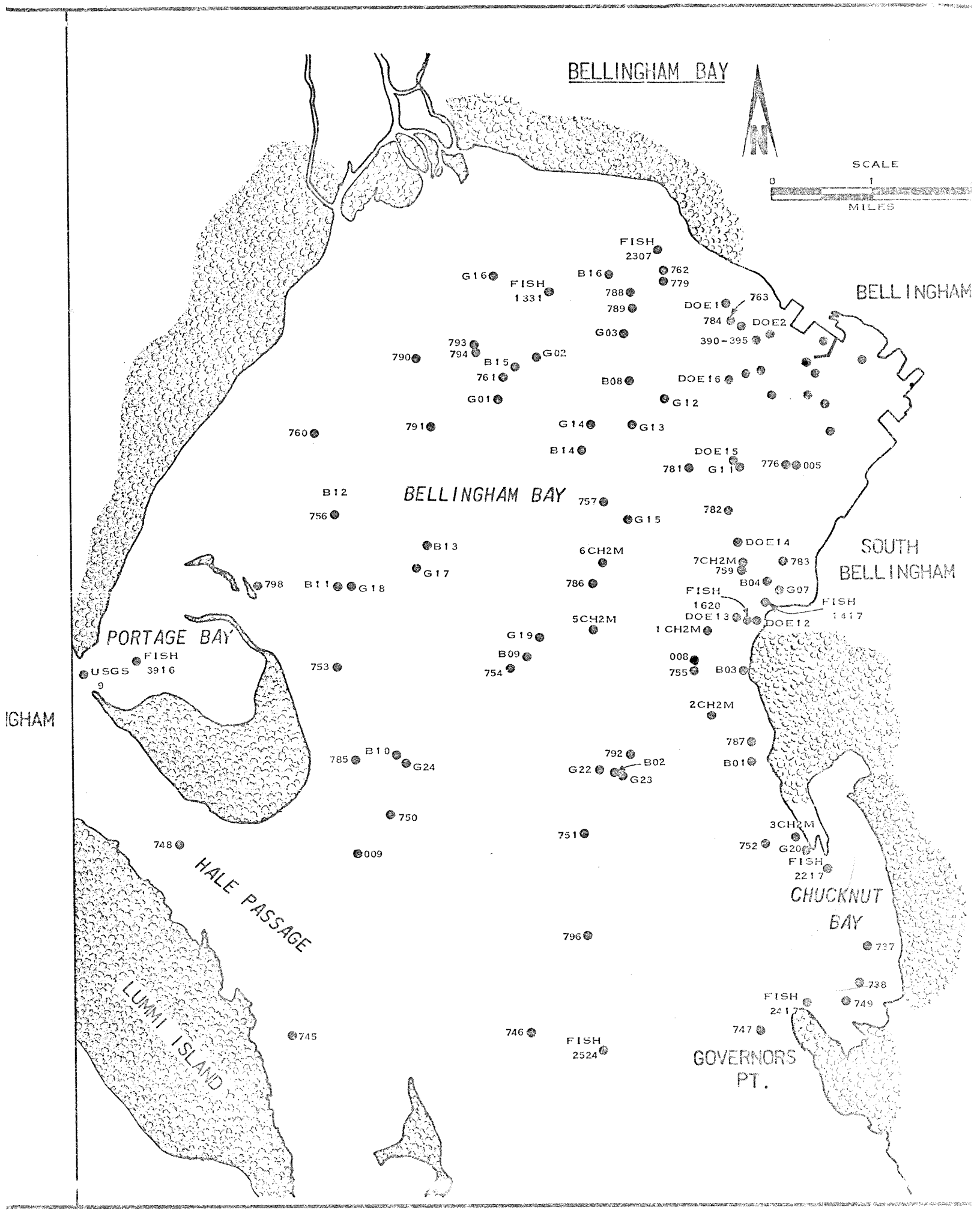
ROAD CLASSIFICATION

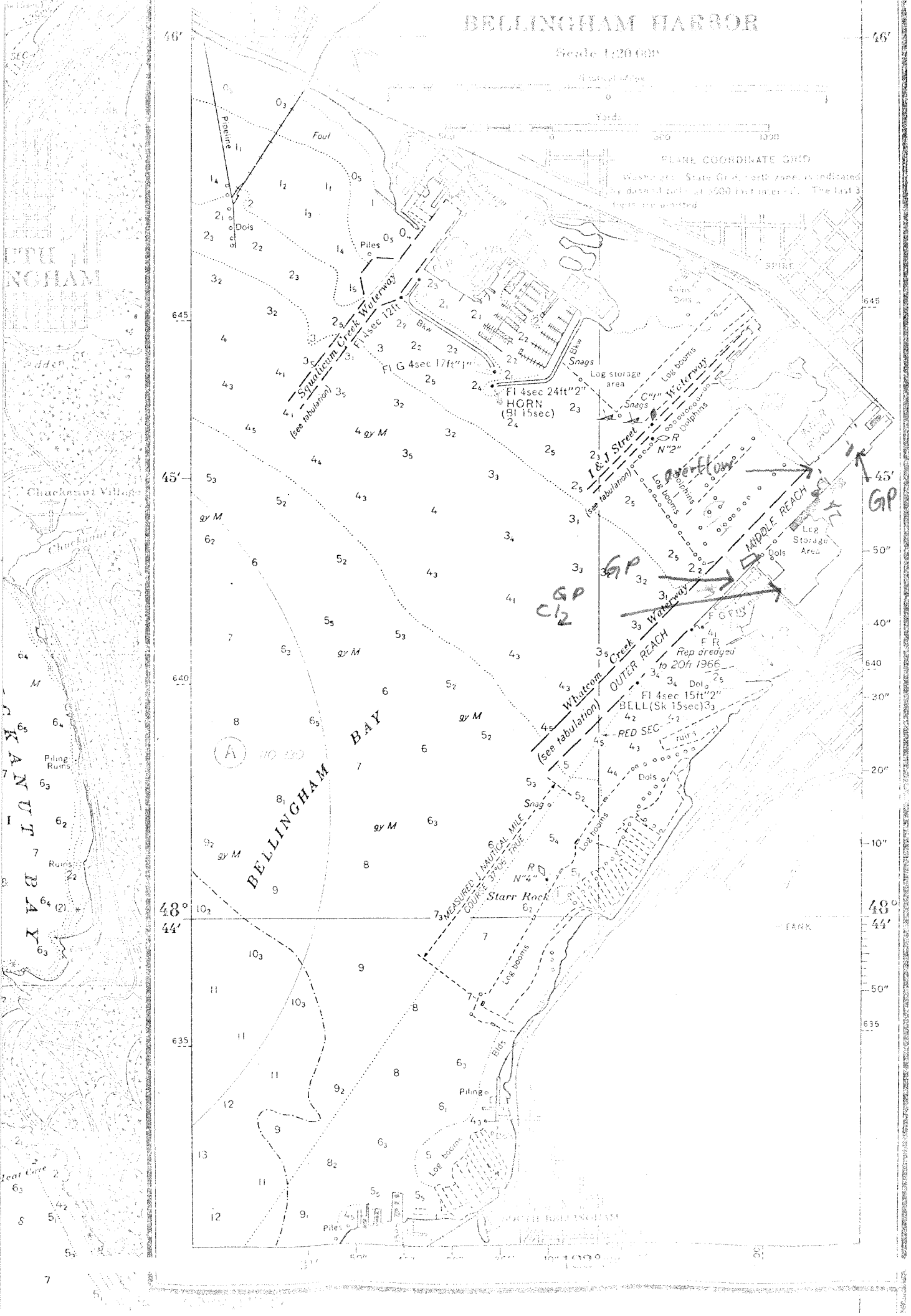
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
U. S. Route — State Route

This area also covered by 1:24 000 scale maps of Bertrand Creek, Blaine, Birch Point, Lummi Bay, and Ferndale 7.5 minute quadrangles surveyed 1952

BLAINE, WASH.
N4845—W12230/15 x 20

1952


BELLINGHAM BAY
N
SCALE
0
1
MILES
BELLINGHAM
SOUTH BELLINGHAM
BELLINGHAM BAY
PORTAGE BAY
HALE PASSAGE
LUMMI ISLAND
CHUCKNUT BAY
GOVERNORS PT.
IGHAM
FISH 2307
G16
FISH 1331
B16
762
779
788
789
763
DOE1
784
DOE2
390-395
G03
793
794
790
B15
G02
761
B08
DOE16
G01
G12
760
791
G14
G13
B14
DOE15
781
G11
776
005
B12
757
782
756
G15
B13
6CH2M
DOE14
7CH2M
759
783
G17
786
B04
G07
798
B11
G18
FISH 1620
FISH 1417
DOE13
DOE12
5CH2M
1CH2M
G19
B09
008
FISH 3916
USGS 9
753
754
755
B03
2CH2M
787
B10
792
B02
785
G24
G22
G23
B01
750
3CH2M
751
752
G20
748
009
FISH 2217
796
737
738
FISH 2417
749
747
745
746
FISH 2524


BELLINGHAM HARBOR
Scale 1:20 000
Yards
PLANE COORDINATE GRID
Squalicum Creek Waterway
(see tabulation)
Fl 4sec 12ft
Fl G 4sec 17ft"1"
Fl 4sec 24ft"2"
HORN
(Bl 15sec)
Log storage area
Log booms
Snags
Dolphins
I & J Street Waterway
(see tabulation)
overflow
GP
MIDDLE REACH
Log Storage Area
Whatcom Creek Waterway
(see tabulation)
OUTER REACH
Rep dredged to 20ft 1966
Fl 4sec 15ft"2"
BELL(Sk 15sec)
RED SEC
BELLINGHAM BAY
MEASURED 1 NAUTICAL MILE
COURSE 37°06' TRUE
Starr Rock
Piling
Piles
Dols
Foul
Pipeline
Bkw
Bldg
TANK
Chuckanut Village
Piling Ruins
Ruins
46'
45'
48°
44'
645
640
635
50"
40"
30"
20"
10"

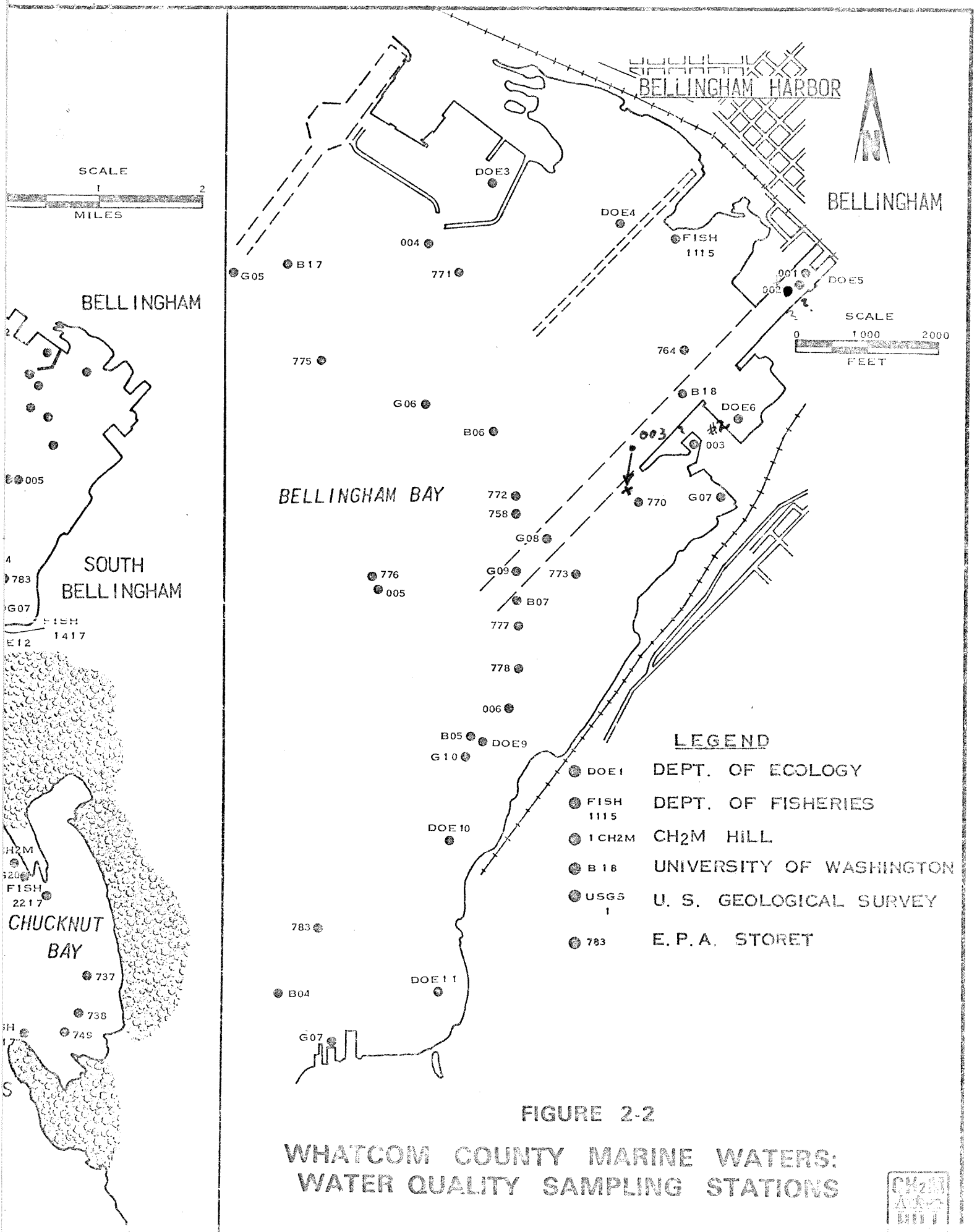


FIGURE 2-2

WHATCOM COUNTY MARINE WATERS: WATER QUALITY SAMPLING STATIONS