79008nav

NE-3-79
R/V NEECHO
POTOMAC RIVER
18 MAY - 27 MAY

79008
NECH
3-79
100692

S2 begining
3
4
5

OPS							COMMENTS AND OBSERVATIONS									
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA			START 5/23	5/23 END	START 5/24	END 5/24	5/25 START	5/25 END	5/26 ST	5/26 END
							SIDE SCAN	RECORDS COLLECTED END OF EACH DAY 5/22	/	/	/	/				
							AIRGUN		0900-	←		1641	→			
							7 KHz		0900-1510	1510 →		1020 5/25	1025	1300 5/26	1300 —	
							7KHz - FATHOMETER		0900-	—	1110	~~0937~~ 5/25	0937 1'	1530 1535	1430 → 1430	
							BATFISH 2.5 & SIDE SCAN		0900-1340	1350 →			—	1540		
							LORAN RECORDER		0900-1600	1600	0800 —	@1700	0800 —		0800 —	1610
							LORAN TAPES			—		@1700	0800 —			

5/18	3 ✓ 26.5
19	15.5
20	35.0
21	36.0
22	22.5
23	36.0
24	23.0
25	32.5
26	
27	
	227.0

170-645 20 1/4 sump 1sec

POTOMAC RIVER DAY #1 CLOUDY

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	CORAN NAVIGATION LAT ° ' MIN	LONG ° ' MIN
18	05	79	0800				° ' MIN	° ' MIN
			0801				.	.
			0837				.	.
			0849				.	.
			0845				.	.
			0849				38.1156	76.5168
			0907				38.1078	76.5159
			0909				@ 38.1068	76.5123
			0915				38.2165	76.4282
							.	.
			0920		@ 50		38.2149	76.4225
			0925				38.2706	76.4114
		→	0925.15		205		.	.
			0926.45				.	.
			0930				38.2185	76.4116
			0935				38.2070	76.4185
			0940.10				38.2092	76.4167
			0945				38.2062	76.4182
			0950				38.2038	76.4193
			0955				38.2015	76.4202
		←	1000				38.1922	76.4258
		→	1002				38.1899	76.4283
			1005				38.1934	76.4284
			1009				.	.
			1010				38.1960	76.4384
			1015				38.1985	76.4337
			1020.15				38.1995	76.4379
			1025				38.1936	.9465
			1026.30				38.2005	.4432
			1027		325		.	.

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							NAVIGATION TIME SET AT DOCK - COBB ISLAND MARINA
							FIRST NAVIGATION TIME READING " " "
							LEAVE DOCK - COBB ISLAND MARINA
							NAVIGATION TIME RE-SET
							FIRST NAV. READING AFTER RESET.
							BUOY - 1W AND WBN (COBB ISLAND POINT LIGHT & BAR)
							RB-N MID-CHANNEL BUOY (HEADING TO 14A)
							1ST MARK 3.5 KHz
							1/2 miles abeam of St. Catherine Island
							abeam of N 14A / c/c to 205° START LINE #1
							c/c complete to 205° / airgun operating
							1.75 mi off Nomini Cliffs /
							1/2 mi off Nomini Cliffs. c/c to 305°
							c/c complete to 305° END line #2
							3/4 mi NE STAFFORD WATER TOWER
							1.5 mi NE HORSEHEAD CLIFFS 1.75 NE SHORE
							c/c to 325°
							on course 325°

GMT DAY	GMT MO	GMT YR	GMT EDT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION LAT	NAVIGATION LON
18	05	79	1029		325		.	.
			1030				38.1990	76.4472
			1033				.	.
			1035	c/c	340		38.2079	.4453
			1040				38.2039	.4523
			1045				.2066	.4543
			1050				.2065	.4586
			1055	c/c	317		.2099	.4599
			1059 30				.	.
			1100				.2131	.4624
			1103		314		.	.
			1105		314		.2111	.4684
			1109.10				.	.
			1110				STAND BY.	.
			1111				38.0978	.5553
			1114				.	.
			1115				38.0968	76.5598
			1120				38.1005	76.5621
			1125				.1023	.5656
			1130				.1046	.5685
			1135.20				.1032	.5797
			1137.25				.	.
			1140	c/c	330		38.2247	76.4911
			1145				.2266	.4941
			1150				38.2284	76.4975
			1155				.2312	.5001
			1200	c/c	338		.2323	.5043
			1205				.2348	.5060
			1208				.	.
			1210	c/c	340		.2394	.5054

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							HORSEHEAD CLIFFS ABEAM .8 MILE
							HORSEHEAD is 1. MI SW (45°)
							c/c 340°
							1 1/2 MI N. HH 3 MI NW. Wakefield
							c/c to 317°
							CHECK BOAT MOTION
							1 1/2 MI OFF SHORE S.of CJ Buoy / 2 MI ABREAST OF N17
							AT C"J" BUOY
							TEMPORARY POWER LOSS
							RESET TIME ON NAV. TO 1144
							1.75 NE WAKEFIELD
							2 MI EAST OF CHURCH PT. 2.25 M SW OF TANK CUPOLA COLONIAL BEACH
							ABREAST OF C "L" BUOY
							c/c to 330°
							1.5 M NE CHURCH PT.
							c/c to 338° .5 MI FROM BEACH / 1M SW of WHITE PT
							off C "N"
							c/c to 340°

GMT DAY	GMT MO	GMT YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION LAT	NAVIGATION LONG
18	05	79	1215		340	55	.2356	.5120
			1220				38.2426	76.5109
			1225				.2413	.5162
			1230	20			.2474	.5147
			1235		346		.2472	.5179
			1240		345		.2452	.5229
			1245				.2543	.5197
			1250				.2559	.5222
			1253	15 c/c	305		.2591	.5223
			1255				.2547	.5270
			1300				.2596	.5274
			1305	c/c	326		.2575	.5336
			1310	20			38.2592	76.5369
			1315				Stand by	
			1320				.2654	.5409
			1325				.2642	.5452
			1330				38.2699	76.5453
			1335				.2707	.5485
			1340				STAND BY	
			1343	30	113			
			1345	20			.2694	.5510
			1348				.2732	.5458
			1350		100-80		.2726	.5448
			1354		100		.2714	.5415
			1355				.2738	.5307
			1400		080		.2723	.5348
			1405	c/c	008		.2734	.5318
			1410				38.2760	76.5311
			1415		008		.2768	.5325
			1420				.2759	.5350

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							ABREAST .25 Mi off TANK (NEAR COLONIAL BEACH)
							¼ mi off / 1 Mi SW of BLUFF Point
							.35 mi off BLUFF Pt. .4 mi to C "P" (1247)
							AT BUOY C "P" 305
							C/C TO 326 AT N "5" BUOY
							¼ off shore
							AT N "2"
							ABEAM OF CHANNEL MARKER C/C 113° BEGIN LINE #2 (?) following buoys out channel
							OFF BUOY 6 – Buoy to our left
							OFF BUOY 4 – Buoy to our left
							ABEAM of BUOY 2 " "
							C/C TO OOB HEADING TO BRIDGE

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	EST TIME	±	COURSE	SPD	LAT	LONG
18	05	79	1425		008	5.5	.2823	.5324
			1430		008		.2866	.5312
			1435				.2830	.5357
			1438				.	.
			1440	c/c	025		38.2881	76.5333
			1445				38.1785	77.0144
			1451	30			.1783	.0160
			1455		010		38.2954	77.5293
			1500		360		38.3000	.5277
			1505				.1858	.0153
		→	150755		270		.1889	.0125
			1510				38.1846	76.0176
			151235		305		.1844	.0197
			1515				38.2963	76.5376
		→	151810				.3064	.5373
			1520	c/c	085	5.5	.1860	.0209
			1525				STAND. BY — .	
		→	1529				.1886	77.0130
							38.2316	76.4345

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							Abeam of N"32" (buoy on starboard side)
							ABeam of F1 5M 3 (opposite Lower Cedar Point)
							c/c TO 025 Heading toward Bridge - shallow water EAST SIDE
							ABEAM OF BW C"S" BUOY
							~~BEGIN LINE #3~~ (7)
							c/c AT OUTFALL - 100-200 METERS OFF SHORE HEADING PARALLEL TO BRIDGE W 270°
							c/c TO COMPENSATE FOR WIND
							AT WEST SIDE EDGE PIER ON W SIDE OF CHANNEL
							SIDE SCAN TURNED OFF TEMPORARILY
							END LINE #3
							END OPEN STEEL UNDERSTRUCTURE - TURN MARK c/c TO 085
							START LINE #4 HEADING PARALLEL TO BRIDGE EAST c/c DOM: 085
							END LINE #4 TURN STARTED - HEADING TO COBB ISLAND
							CHECK ON LORAN READINGS NEAR BUOY 1W
							26.5 NAUTICAL MILES OF TRACK LINE w/ RECORDS
							LORAN RECORD, LORAN TAPES
							SIDESCAN, 2x 7KHz, AIRGUN

2.75 bar

POTOMAC RIVER DAY #2 PARTLY CLOUDY / WINDY LATER

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORANC NAVIGATION	LAT ° ' 1/100	LONG ° '
19	05	79	0756					.	.
			0759					.	.
			0800					.	.
			0816					38.1148	76.5176
			0830					.	.
			0831					.	.
					LORAN RECORDER OFF			38.	76.
			0935					.	.
			0936					.	.
			→ 0945		260			38.1651	76.5925
								.	.
			0950					38.1652	76.5969
			0955					.1641	77.0018
			0958	c/c	245			.	.
			1002					.1631	77.0081
			1005	c/c	205			38.1601	77.0122
			1010					.1577	.0141
			1014	c/c				.	.
			1015	c/c	246			38.1539	77.0173
			1019					.	.
			1020					.1535	.0207
			1025					38.1500	77.0264
			1030					.1489	.0301
			1031	c/c				.	.
			→ 1035		135			.1513	.0291
			1040					.1477	.0281
			1045					.1446	.0265
			1050					.1434	.0224
			1053	30				.	.
			1055	c/c	170			.1401	.0197

340 - 1905

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							DEPART COBB ISLAND PIER
							NAVIGATION CLOCK SET TO START AT 0800
							LORAN C STARTED 0800
							NEAR BUOY 1W AND WP-A (COBB ISLAND LIGHT ? POINT BASE)
							RESET NAV. CLOCK
							1ST READING IS AT 0831
							RESET NAV TIME -
							1ST READING ON NAV TIME
							4/10 MI OFF SHORE OFF AXIS OF OPENING BETWEEN WAVERLY CR. AND PICCOWAREN CR.
							BEGINNING OF LINE #5
							C/C TO 245. HEADING TO CHANNEL BUOY F1 "29"
							@ 2.75 MI S Bridge, 1.25 MI OFF OPENING AXIS PICCOWAREN
							C/C TOWARD BUOY N "2"
							C/C 246
							OFF F1 "29" DIRECTLY S of BUOY
							HEADING TOWARD N "2"
							R"2" AND R"4" IN LINE
							TO LINE #6 TURN TO GO DOWN RIVER
							C/C TO 135 OPPOSITE DIRECTION
							ON LINE #6 - SAME LINE AS LINE #3 (1325 HRS) 18.4 KM
							OFF S BUOY C/C TO 170° (Dec 1055).
							170° C/C HEADING TO MARKER PR.V "8A"

GMT DAY	MO	YR	EST TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORAN C NAVIGATION			
19	05	79	1100		170		38	.1367	77	.0185
		→	1101.45					.		.
			1103.30		088			.		.
			1105				38	.1359	77	.0145
								.		.
			1110				38	.1381	77	.0087
			1115					.1358		.0068
			1118	30 c/c	175			.		.
			1120					.1375		.0021
			1125				38	.1413	76	.5971
			1130	30				.1446		.5971
			1137					.1459		.5872
			1140					.1468		.5845
		→	1143	45 c/c				.1480		.5811
			1146					.1494		.5818
			1150					.1458		.5849
			1155					.1424		.5824
			1200					.1383		.5805
			1205		145			.1368		.5761
		→	1210	c/c	065			.1538		.5731
			1215				38	.1379	76	.5678
			1217.45	c/c				.		.
			1219	c/c	231°			.1372		.
			1220		208			.1375		.5671
			1226		205			.1361		.5681
			1230					.1284		.5738
			1234.15					.		.
			1235		220			.1291		.5729
			1240					.1240		.5777
			1245		220			.1193		.5827

1235
1217
18

1120
1143 23 min

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							START TURN - BEGIN LINE #7
							TURN COMPLETED CSE IS 088 - HEADING TOWARD "H" BELL
							PASSING CRAB POT
							½ MI OFF BLUFF PT - ON HEADING TO "H" BELL
							OFF BELL "H" ON COURSE 075 HEADING FOR N "Q" — SWAN POINT
							1.25 MI OFF SWAN PT. BEGIN LINE #8
							START TURN LEFT AWAY FROM SWAN POINT
							TURNING
							"
							HEADING ALONG SHORE TO ABEAM OF POTOMAC VIEW
							TURNING IN TOWARD POTOMAC VIEW c/o 065 BEGIN LINE #9
							BEGIN TURN
							ON CSE 231° HEADING TO RED NUN "28"
							1.75 MI AWAY FROM POTOMAC VIEW
							NUN AND FI 19 ON LINE W/ NEECHO
							HEADING FOR FI M "2"

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD	LAT	LONG
19	05	79	1250				38.1175	76.5846
			1255				.1140	.5880
			1300				.1091	.5913
			1303	c/c			.	.
			→ 1305		110		.1042	.5938
			1311				.	.
							.	.
			@ 1400				38.1186	76.5143

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							OFF MARKER BUOY M "2" / c/c HIGH WAVES SLOWING FORWARD PROGRESS AND GOOD DATA
							TURNING OFF EQUIPMENT TO END SURVEYING DUE TO HIGH SEAS END LINE 9
							CHECK ON LORAN NAV. 1W - COBB ISLAND SHOALS PT. BAR - WBM
							15.5 NAUTICAL MILES - RECORD TRACK
							Loran read-out, LORAN TAPES
							2x 7 Khz, sidescan, airgun

DAY #3 POTOMAC RIVER

CLOUDY - MORN
SUNNY - AFT

GMT DAY	MO	YR	EST TIME	TIME ZONE ±	SHIPS COURSE	SPD KNT	LORAN C NAVIGATION ° LAT	° LONG
20	05	79	0755				.	.
			0810				.	.
			0811				.	.
			0817.45				38 11.37	76 51.79
			0855				13.11	54.17
		→	0855.30		210	50	13.52	53.96
			0900				12.80	54.45
			0905		200		12.24	54.82
			0909.20				11.94	54.98
			0910				11.34	55.41
			0910.35		202		11.77	55.10
			0915				11.42	55.32
			0920		200		10.23	56.14
			0925				10.07	56.21
			0930				09.69	56.37
			0935		208		09.39	56.49
			0940				08.96	56.79
		→	0945				08.92	56.83
							.	.
			0955				09.20	55.76
			0958				.	.
			1000		100		09.01	55.15
			1005				09.17	54.18
			1010				09.19	53.28
			1015				20.38	44.50
			1020				08.68	51.82
			1025				08.80	50.78
			1030				08.88	49.92
			1035				08.99	48.98
			1040				08.69	48.31

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							LEAVE COBB ISLAND MARINA DOCK
							SET NAVIGATION CLOCK
							FIRST READING ON LORAN READOUT (25 SEC TD)
							IW AND WBN (COBB ISLAND POINT BAR'S LIGHT)
							BEGIN LINE #10
							O/C 210 .2 mi off FIR "2" ON A LINE HEADING TO N "22"
							.5 mi off FIR "2" 1.0 TO N "22"
							.5 mi from N "22"
							off N "22"
							off FIG "21"
							.5 mi away from FIG "21"
							1.25 mi away from FIG "21" 2 mi from shore
							@ on line between W "J" and W "L"
							END OF LINE #10 .25 mi off shore PULL-IN GEAR TO HEAD DOWN RIVER (@ 4 knots record)
							.3 mi off C "J" (S) BD LINE #11
							@ 2 mi off Horse Head 1012 HRS
							1.75 mi off Nominee Cliffs.
							1.25 mi off Mt. Ring

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORAN C NAVIGATION LAT ° '	LONG ° '
20	05	79	1045		120		38 08.75	76 47.34
			1048				.	.
			1051				08.40	46.48
			1055				08.38	45.71
			1100				07.91	45.06
			1106				06.91	45.08
			1110		210°		06.76	44.73
			1115				06.49	44.86
			1120				05.83	45.19
			1125				05.71	45.30
		→	1127		025		.	.
			1131				05.95	45.10
			1134				.	.
			1135		027		06.55	44.84
			1140				06.92	44.71
			1141				.	.
			1145		029		07.21	44.65
			1150				07.89	44.31
			1152				.	.
			1155	c/c	012		08.32	44.12
			1200				08.60	44.18
			1205				09.15	44.10
			1210				09.82	43.99
			1212	45 c/c			.	.
			1215	c/c	034		10.14	44.04
			1220		015		10.47	43.82
			1225				38 21.96'	76° 36.11'
			1230				23.22	35.49
			1235				22.82	36.00
			1240	c/c	090		24.14	35.31

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							OFF BW "F" - .75 mi S of Buoy
							OFF BW "53B"
							TURN IN TOWARD NOLINI POINT TO MARKER
							AVOIDING FISH NETS IN NOLINI POINT
							TURNING TO GET ON LINE 12
							ON LINE #12
							RESET NAV CLOCK AT 1134
							FIRST READING ON NAV CLOCK
							PROBLEM WITH RECORDERS - SIDESCAN
							ON LINE BETWEEN N"53B" and N"52B"
							C/C TO 012
							.9 mi away from RB N
							at 50' E of RB N
							MOTOR BOAT WAKES WILL BE ON RECORDS.
							TURN TO C/C STARTED AT 1249 HRS.

GMT DAY	GMT MO	GMT YR	GMT EDT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION		
20	05	79	1245		090		3823.56	7635.25	
			1250				24.21	34.23	
			1255	E	052		23.74	34.09	
			1300		048		24.14	33.58	
			1305	c/c			25.11	32.82	
			1308.30				24.99	32.62	
			1310				24.66	32.78	
			1315				25.08	32.23	
	→		1318						
			1320				25.34	31.97	
			1322						
	→		1325				24.85	32.35	
			1330				25.24	32.13	
			1334.30						
			1335				24.19	33.23	
			1336.				24.48	33.23	
			1340				24.58	33.25	
			1345				24.08	33.78	
			1347.45						
			1350				3823.78	7634.43	
			1355				23.63	34.96	
			1400				23.67	35.21	
			1404.40				22.84	35.79	
			1405				22.85	35.75	
			1409						
			1410				22.61	35.87	
			1414				11.03	43.61	
			1415				10.93	43.62	
			1420				10.39	43.76	
			1425	c/c	108		21.40	36.19	

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							PASS FIG "7" - changing use o/c 1257 HRS.
							PASS BY FIR "8" AT 1305.30
							PASS BY G "9"
							TAKE IN GEAR END OF LINE #12
							OFF G "11" NEAR LEQUARDTOWN
							BEGINNING OF LINE #13 - OUT OF BRETON BAY
							PASSING G "9"
							PASSING FIR "8"
							PASSING FIG "7" (on Needle Starboard) PUTTING BAT FISH OUT. START BAT FISH RECORD
							PASSING R MARKER "4"
							RECT CLOCK 1410.30 (ACTUAL CLOCK TIME). HEADING TO RB N MARKER - stick ("C") - OFF TO STARBOARD
							CONTINUING LINE #13
							START TURNING AWAY FROM RBN TO MAKE LINE TO N548 — LINE 13.

GMT DAY	GMT MO	GMT YR	GMT ~~EDT~~ TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION
20	05	79	1430	0	108	5.0	3810.19 7643.23
			1435				- 10.01 42.67
			1440		115		21.30 34.43
			1443				21.20 34.04
			1445				09.69 41.58
			1450				09.30 41.15
		→	1455				09.36 40.40
							3802.73 7625.96
							02.93 26.17
							03.22 26.27

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							PASSING BUOY N "54B"
							CONTINUE HEADING TO BUOY N "55B"
							END LINE #13, PULL IN GEAR
							HEADING DOWN RIVER TO CLAYTONS MARINA
							@ 35 NAUTICAL MILES OF DATA
							BATFISH TEST RECORD, SIDESCAN, AIRGUN, 7 KHz (2x), NAV TAPE, NAV. 2 (long) 7 KHz rolls.
							RED MARKER BUOY "2"
							GREEN " "3"
							RED MARKER "4"
							RED MARKER "6"

DAY #4 POTOMAC RIVER

OVERCAST

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORANC NAVIGATION LAT ° '	LONG ° '
21	05	79	0825					
			0838					
							38° 03.20	76° 26.29
							02.95	26.16
			0837					
							02.43	26.18
			0900					
			0905					
			0928				04.84	33.57
			0932					
			0940				06.96	35.16
			0955				07.97	34.73
			1000				08.11	34.62
		→	1000.20		243			
			1003	c/c	200			
			1005				07.42	35.27
			1010			s/c	07.03	35.47
			1013.45				06.60	35.76
			1015	c/c	254		06.61	35.74
			1020				38° 06.69'	76° 36.11'
			1025				06.32	36.84
			1030				06.17	37.43
		→	1034				06.00	37.91
			1035				06.06	37.95
			1037 35 (1032.35)					→
		→	1040				06.11	37.74
			1045		140		05.85	37.14
			1050				05.67	36.18
			1055		185		04.67	35.77

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG.	GRAV.	SONO.	STA	
							DEPART CLAYTON'S MARINA
							SET NAV CLOCK
							RED BUOY "4"
							GREEN MARKER "3"
							1ST NAV READ-OUT
							RED MARKER "2" / RUN TO RB F I R AND TALL TIMBERS
							REEF NAV. CLOCK
							" " "
							ON LINE BETWEEN PINEY PT. PIER AND BW BALL "B"
							1ST READ-OUT NAV CLOCK
							TURNING IN TO TALLTIMBERS ½ MILE FROM N"56B" OFF LINE BW "B" AND N"56B"
							PUTING GEAR OUT NEAR JETTIES AT TALLTIMBERS.
							ON LINE #14
							½ MILE OFF JETTY WHEN C/C TO 200 TO HEAD TO N"56B"
							Change winspeed — slower speed
							PASSING N"56B" - .1 MI N
							C/C TO HEAD TO MARKERS 5 OF RAGGED POINT TO 254° .6 mi off "56B"
							1.25 mi off DOCKS NORTH OF LONG POND
							.75 mi off DOCKS
							TURNING AWAY AT 5 MI FROM DOCKS END LINE 14
							" PULLING GEAR
							→ 1032.35 1ST NAV READING AFTER RESET
							BEGIN LINE #15
							STEAMING DOWN RIVER TO NEXT TRANSECT (R"2" - BW"B")
							1/4 offshore
							TURNING INTO RED MARKER

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD	LAT	LONG
21	05	79	1057		180			
			1100				36° 03.91	76° 35.85
			1105		235		03.46	36.06
		→	1109.10	c/c	076		03.32	36.36
			1110				03.40	36.22
			1115				03.59	35.66
			1117		078			
			1120				03.74	35.06
			1125		080		03.90	34.48
			1130				03.81	34.02
			1133	c/c	060		03.88	33.70
			1135				04.13	33.42
			1140		060		04.62	32.88
			1145		080		04.85	32.48
		→	1150	c/c			05.05	32.16
			1155		150		04.92	32.98
			1200		157		04.30	31.81
			1205				04.12	31.27
			1210	c/c	065		03.56	31.09
		→	1215	c/c	240		03.58	30.85
			1217					
			1220	c/c	226		03.54	31.24
			1225				02.95	31.80
			1230.10				02.69	32.11
			1235		233		02.57	32.43
			1240				02.14	32.95
			1245				01.61	33.57
		→	1246.15					
			1250				01.47	33.35
			1255		108		01.21	32.71

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							1.5 mi N of R "2" (.75mi)
							@1.0 mi from R "2" (.50mi)
							ON LINE START of #16 END #15 o/c 076
							1.5 mi AWAY FROM PBW BELL "B" ON LINE FROM "R" "2" 078
							1.2 mi " " "
							.75 mi " "
							.20 mi " "
							ABEAM OF POWELL "B" / C/C TO 060
							.70 (.3) mi away from "PB" on 060 CSE TO G "1" (ND)
							COMING UP SLACK .6 mi FROM G "1"
							START TURN END LINE #16 START #17
							DROPPING DOWN SLACK .5 mi offshore
							TURNING IN TO ST GEORGE BEACH
							BEGIN LINE #18 EOL #17 on CSE 240° .75 mi offshore
							C/C DUE TO CURRENT / CRAB POTS.
							o/c 226 / 3 mi
							1.5 mi from SANDY POINT CSE 233
							.8 mi " " "
							1.5 mi
							~~START LINE #19~~
							END LINE #18 PULLING GEAR RUN TO CORNFIELD HBR.

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION ° ′	° ′
21	05	79	1300		108		38 00.97	76 31.83
			1305				01.17	30.59
			1310		110		00.99	29.60
			1315		113		06.64	28.76
			1320				00.62	27.67
			1325				00.26	26.85
			1330				00.03	25.93
			1337.30				00.04	24.32
			1340		114		00.01	23.80
			1345				37° 59.65	76° 22.99
			1350				59.68	22.12
			1355				59.50	20.02
		→	1400				59.68	21.98
			1406		200		59.51	20.00
			1410				59.04	22.14
			1415				58.62	22.24
			1420				57.99	22.46
			1425				57.70	22.54
			1426				.	.
			1430				57.19	20.91
			1435				56.71	23.20
			1440		205		56.43	23.24
			1445		185		55.96	23.38
			1450				55.54	23.48
			1455		205		54.98	23.77
			1500				54.52	24.14
		→	1503.15				.	.
			1505	c/c 335			54.72	24.27
		→	1510		335		54.93	24.58
			1516				55.49	24.86

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							1 mile from RB 1 @ FIR
							<5M off entrance to canfield harbor
							TURNING INTOWARD TANK
							CIRCLING TO PUT GEAR OUT.
							BEGIN LINE 20
							.25 mi. from buoy
							ABEAM of BW "A" GONG c/c 215°
							@ 3
							@ .25 mi from shore.
							1.1 mi from shore
							END LINE # 20 TURN OUT FROM SHORE BOL 21
							PICKED-UP CRAB POT (SLOWED SPEED TEMPORARILY)
							HEADING TO N "48.8" BEGIN LINE #21
							FI BELL 5"

GMT DAY	MO	YR	~~EDT~~ TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORANC NAVIGATION ° ′	° ′
21	05	79	1520				37 55.68	76 25.18
			1525				55.99	25.53
			1530		~~034~~ 5		56.38	25.82
			1535				57.00	25.96
			1540				57.27	26.32
			1545				57.63	26.62
			1550				58.11	26.84
			1555		C/C 018		58.63	27.04
	→		1600				58.70	27.24
			1605				59.48	27.00
							.	.
			1610				38 00.05	26.79
			1615				00.81	26.54
			1620				01.49	26.49
			1625				02.45	26.14
							02.50	26.14
							03.05	26.13
			1630				03.11	26.21
							02.93	26.49
			1642				.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.
							.	.

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							CONTINUE LINE #21
							OFF BELL "5" 1 MILE TO STARBOARD C/C TO 018
							END LINE #21
							36 NAUTICAL MILES RECORD
							SIDESCAN #1,#2 AIRGUN #1,#2 7KHz, 7KHz (FREQUENCY) LORAN OUTPUT / 2 TAPES
							MARKER RED #2
							MARKER GREEN #3
							MARKER RED #4
							ARRIVE CLAYTON'S MARINA

DAY #5 POTOMAC RIVER

OVERCAST — HAZY

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION	
22	05	79	0810					
			0820				38° 02.64	76° 26.64
							02.97	26.16
			0832				14.23	18.98
			0834.30				02.52	26.12
		→	0846				02.48	26.12
			0841		240	@5.0	02.39	26.21
			0845				02.13	26.65
			0848.30				01.97	27.00
			0850				01.84	27.19
			0851.30				01.77	27.33
			0855				01.67	27.65
			0858.15				01.53	28.01
			0859				01.58	27.99
			0900		c/c 239		01.42	28.15
			0905		238		01.28	28.60
			0910		237		00.99	29.13
			0915		234		00.49	27.72
			0920		232.5		00.24	30.18
			0925				00.09	30.56
			0930				37° 59.96	30.93
			0935				59.53	31.50
			0936				59.56	31.63
			0937.15				59.30	31.78
			0938		c/c 260			
			0940		c/c 260		59.19	32.05
			0942.30				59.27	32.23
			0945		268		59.36	32.42
			0950		270		58.90	33.22
			0955				58.97	33.75

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							DEPART CLAYTON'S MARINA RIDGE, MD.
							RED MARKER #4
							GREEN MARKER #3
							RED MARKER #2A
							RED MARKER #2
							BEGIN LINE #22 — MARKER #2 → RB 10 FIR
							SAMPLE - BOTTOM
							1.25 mi to RB 10 FIR
							SAMPLE - BOTTOM
							SAMPLE - BOTTOM
							~3.5 mi from buoy RB
							SAMPLE - BOTTOM #1
							OFF
							CHANGE HEADING TO BW N "49B"
							.6 mi away from RB buoy heading to MARKER 2 ~~N "49B"~~
							1.2 mi " " " "
							1.75 mi " " " " / .25 mi off N "49B"
							4 mi of N 49B
							1.2 mi from MARKER "2" (MOUTH of YEOCOMICO RIVER)
							.7 mi off MARKER "2"
							.3 mi off MARKER "2"
							SAMPLE - BOTTOM #2 Brn uniform fine to medium sand
							ABEAM of MARKER 2
							C/C TO HEAD TO GREEN "3"
							SAMPLER ON BOTTOM #3 Grey-black silty clay.
							1.2 mi to GREEN "3"
							.25 mi off GREEN 3

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION	
22	05	79	0957 30	c/c			37° 58.85	76° 34.07
		→	1000	096			59.32	33.78
			1005	085			59.05	33.35
			1010	084			59.10	32.79
			1015	¢c 073			59.37	32.15
			1018 45				59.46	31.80
			1019				59.58	31.71
			1020				59.34	31.79
			1025				59.60	31.31
			1025 30				59.78	31.17
			1028	¢c 043			00.14	30.81
			1031	041			00.08	30.80
			1035	¢c 042			00.54	30.54
			1040				00.51	30.50
			1045	045			38° 01.09	76° 30.05
			1046.35				01.14	29.98
			1050				01.52	29.69
			1055	044			01.59	29.54
			1100				02.34	28.99
			1101				02.01	29.17
			1105				02.77	28.64
			1110				02.78	28.54
			1113				03.34	28.14
			1115				03.52	27.99
			1120				03.68	27.80
		→	1122				03.71	27.76
			1125				03.72	27.92
			1130				02.99	28.28
			1135				02.68	27.81
			1140				01.97	27.34

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							AT 6'3"
							END LINE #22 TURNING AWAY FROM 0 "3"
							HEADING BACK TO MARKER "2" ON LINE #23
							1.2 mi to MARKER "2"
							.8 mi to " "
							.35 mi to "
							Bottom Sample #4
							Heading 060 / off Marker "2"
							.6 mi from Marker "2"
							Bottom Sample #5
							c/c .8 mi from marker at 073
							c/c 025 1034 temp to 1035
							o/c 045 1037.5 1.5 mi away from MARKER "2"
							Bottom Sample #6
							1.75 1.5
							1.5 mi to Deep pt. 1.25 mi to RB
							1.25 mi to " 1.25 " " " (RB ABEAM (1))
							Bottom Sample #7
							1.5 to Kitts pt. 1.25 to Deep pt. 1.25 to RB
							1.25 mi to INIGOES NECK
							Bottom Sample #8
							.75 miles land
							END LINE #23 / .3 mi off KITTS PT.
							13.5 N. MILES RECORDING
							RETURN TO (LAYTON'S MARINA)

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD	° ′	° ′
22	05	79	1145				38° 02.15	76° 26.38
							02.58	26.07
							02.91	26.18
							03.09	26.36
			1202				.	.
			.				.	.
			.				.	.
			1452				.	.
							38° 03.01	76° 26.41
							02.66	26.36
							02.48	26.19
		→	1527		225		01.33	25.23
			1529	45			01.27	25.27
			1530				01.20	25.36
			1535	c/c	210		00.78	25.75
			1540		212		00.37	25.97
			1543	15			00.36	25.96
			1545				00.11	26.11
			1550				37° 57.76	26.32
			1555				58.92	26.83
			1600				58.39	27.15
			1601	30			58.39	27.19
			1605	c/c	230		58.27	27.35
			1607	40			57.86	27.71
			1610				57.83	27.81
			1611	50	230		.	.
			1615				57.58	28.16
			1620	c/c	245		57.13	28.70
		→	1625				57.08	29.04
			1630				56.93	29.01

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							RED MARKER "2"
							GREEN MARKER "3"
							RED MARKER "4"
							ARRIVE CLAYTON'S MARINA
							DEPART CLAYTON'S MARINA
							RED MARKER "4"
							GREEN MARKER "3"
							RED MARKER "2" — OFF
							BEGIN LINE #24 off 12 meter maker end of fishing net
							BOTTOM SAMPLE #9 to BELL "5" - FINE BROWN SAND
							.2 mi off maker .5 shore
							2.25 mi off BELL "5"
							BOTTOM SAMPLE #10
							1.75 mi
							1.15 mi off BELL "5"
							.65 mi off " "
							.10
							PASSING BELL "5" (BUOY ON PORTSIDE) HEADING TO N "2"
							BOTTOM SAMPLE #11
							RUNNING PARALLEL TO RED NUNS APPROACHING GR "5".
							OFF RN "2"
							.25 mi from N "4". .9 mi from G "5"
							.45 mi off G "5" .35 mi off N "4"
							TURN / END LINE #24 / PUTTING OUT BATFISH

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
22	05	79	1632.15				37°57.13	76°28.85
			1635		055	5.0	57.40	28.57
			1637					
			1640				57.55	28.24
			1645				57.81	27.82
			1650		050		58.18	27.39
			1655		018		58.40	27.07
			1700				58.64	27.06
			1705				59.41	26.75
			1710				59.75	26.69
			1715				38°00.05	26.69
			1720		013		00.32	26.63
			1725				00.97	26.45
			1730		015		01.40	26.47
			1735				02.49	26.15
							02.82	26.21
							03.14	26.32
			@1750					

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							BEGIN LINE #25
							~~AREAL~~ OF N "4"
							1.25 FROM BELL "5", .3 FROM N "2"
							.8 " " " .3 " " "
							.4 " " " .16 " " "
							~~AREAL~~ OF BELL "5" C/C TO 018
							.8 mi off Bell 5 on 018 heading
							1.2 mi Bell 5 2 mi RB
							END LINE 25 1.6 mi from Bell 5 1.7 mi from RB
							~~START~~ BACK TO CLAYTON'S.
							RED MARKER #2
							~~GREEN~~ GREEN MARKER #3
							RED MARKER #1
							ARRIVE CLAYTON'S MARINA
							#1, #2 7KHz - Fathometer, 7KHz 1,2, Airgun, SIDESCAN, 11 BOTTOM SAMPLES
							9 nautical miles record + 13.5 = 22.5 miles records.

D

cloudy

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION ° ′	NAVIGATION ° ′
23	05	79	0822				.	.
							38° 02.76	76° 26.57
							02.82	26.27
							02.25	26.30
			0851	c/c			01.36	27.94
							.	.
	→		0900	c/c	305		01.44	27.82
			0905				01.29	28.42
			0910				01.77	28.67
			0915				01.87	29.19
			0920				02.16	29.56
			0925				02.39	29.95
			0930				02.56	30.41
			0935				02.81	30.81
			0940				02.71	31.42
			0945				02.84	31.91
			0950				03.04	32.36
			0955				03.31	32.77
			1000				03.41	33.28
			1005	c/c	323		03.75	33.66
			1010				03.86	34.15
			1015				?? 15.90	27.04
			1020				04.40	35.03
			1025				16.38	27.92
			1030				05.02	35.82
			1035	c/c	335		05.35	36.22
			1040				05.75	36.54
			1045				06.22	36.77
			1050				06.92	36.86
			1054.30				06.91	37.39

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							DEPART CLAYTON'S MARINA / START RECORDS RUN THROUGH DAYS
							RED MARKER #4
							GREEN MARKER #3
							RED MARKER #2 / HEAD TO RB AT HEAD OF St MARYS RIVER
							ABEAM OF RB (RB ON STARBOARD SIDE .1 MILE)
							BAFFIN — 2.5KHz SIDESCAN, AIRGUN, 7KHz, 7KHz Fathometer
							BEGIN LINE 26 AT RB
							.25 mi off RB
							.5 from Deep Point 1.1 from RB
							.25 1.5
							2.25 from RB 3.0 mi to Bell "R" 56 At 10°
							2.10 to Bell "R" 56
							1.4 mi to Bell B 56
							.60 mi to Bell B 56
							.3 mi " "
							.7 mi from Bell B 56
							1.25 mi
							2.05 mi from Bell / 2 mi to FI 9M off RAGGED POINT
							1.8 M TO RAGGED PT. 2.5 mi from Bell B 56
							1.0 M TO RAGGED PT / BW N "51B"
							ABEAM OF BW "N 51B"

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
23	05	79	1055	d/c	296		38 06.95	76° 37.38
			1100				07.05	37.91
			1105				06.97	38.61
			1110				07.27	39.03
			1115				07.32	39.58
			1120				07.34	40.27
			1125				07.37	40.86
			1130				07.71	41.23
			1135				07.90	41.70
			1140				07.99	42.26
			1145				08.09	42.79
			1148				.	.
			1150				08.29	43.25
			1155				08.14	43.94
			1200				08.27	44.47
			1205				08.35	45.00
			1210				08.60	45.41
			1215				08.78	45.87
			1220				08.99	46.34
			1225	d/c	305		08.72	47.15
			1230				09.07	47.54
			1235				09.16	48.14
			1240				09.43	48.58
			1245				09.30	49.35
			1250				09.69	49.71
			1255				09.76	50.30
			1300	d/c	315		10.00	50.89
			1305				21.32	43.48
			1310				22.25	43.47
			1312.25				.	.

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							296° - HEADING TO BW "F"
							.5 mi from FIG RACKED PT. TO LINE BWN 51B TO BW "F"
							.8 mi " FIG. " TO " " " "
							1.2 " FIG
							2.1 mi from .
							ABEAM of BW "32B"
							.7 mi from BW "F"
							ABEAM of BWF .30 mi TO PORT SIDE of BW4
							1.2 mi away from BW "F"
							.6 mi from RN "14A"
							1.8 mi to
							ABEAM of C "15"

327

CORAN C

GMT DAY	GMT MO	GMT YR	EST TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION ° ′	NAVIGATION ° ′
23	05	79	1315		315		38 10.76	76 52.18
			1320				10.86	52.75
			1325				11.22	53.08
			1325.40	C	304		11.40	53.66
			1330	C	304		11.22	53.74
			1334				11.53	54.09
			1335				11.31	54.31
			1340				11.72	54.67
			1342.30				.	.
			43.30				12.24	54.76
			1345				11.94	55.15
			1350				12.07	55.71
			1350.45				12.03	55.84
			1355				12.25	56.21
			1357.30				12.30	56.98
			1359.30				12.64	56.45
			1400				12.81	56.42
			1405				12.72	57.12
			1410				12.62	58.84
			1415				13.15	58.08
			1420				13.43	58.52
			1425				13.61	59.06
			1430				13.76	59.60
			1435	C	327		13.78	00.24
			1440				14.33	00.46
			1445				14.47	00.96
			1450				15.06	01.12
			1455				15.34	01.54
			1500	C	001		15.61	01.92
			1504	C	010		.	.

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							BETWEEN N"17" and N"18" — ON LINE
							ON LINE BETWEEN N"19" AND N"20"
							~~ABEAM of "21"~~
							~~ABEAM of "22"~~
							ON LINE BETWEEN N"24" AND C"23"
							~~ABEAM of~~ FL"25"
							ABEAM of N"26"
							[" " N"28")
							ON LINE BTWN N"28" AND C"27"
							JUST PAST C"27"
							C/C 327°
							PAST FL"29" C/C 004
							C/C 010

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORAN C NAVIGATION					
							°	′		°	′	
23	05	79	1505		004		38	16.		77	01.	89
			1510		011		38	16.72		77	01.	77
			1515		015			16.97			01.	85
			1520		013			17.40			01.	79
			1525					17.95			01.	73
			1528					.			.	
			1530					18.67			01.	58
			1535					18.94			01.	83
			1538		~345			19.37			01.	77
			1540					19.51			01.	91
			1545					20.20			—	—
			1550					20.57			02.	36
			1555		350			20.73			02.	83
			1559.20					21.12			03.	05
		→	1600					21.48			02.	84
			16					.			.	

2+ 28.5 x 5.25 = 30.5
35.

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							.25 mi W of FIR "30"
							<.5 mi from FI "33"
							ABEAM of FI "33"
							.7 mi from
							PASSING C "5"
							.25 mi from Bridge
							ABEAM OF BUOY "N" HEADING FOR R "2"
							.85 mi from R "2"
							.5 mi from R "2"
							OFF R "2" OFF ROSES CREEK
							END LINE #26
							ARRIVE AQUALAND
							TOTAL NAUTICAL MILES RECORDING = @ 36
							RECORDS STORED: BATFISH, 7KHz, 7KHz - FATHOMETER

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORAN-C NAVIGATION			
							°	′	°	′
24	05	79	0800							
			0821				38	21.12	77°	03.02
			0915							
		→	0927		330			19.39		10.19
			0930		325			19.59		10.29
			0935		315			20.37		10.16
			0940		280			20.25		10.74
		→	0945	4c	195			20.30		11.00
			0950	@				19.63		11.30
			0955		205			20.09		10.77
			1000		180			19.51		11.03
			1006					18.92		11.10
		→	1006		316					
			1010		300			19.14		11.30
			1015		285			19.33		11.69
			1020		275			19.52		12.11
		→	1021	4c	205					
			1025					19.14		12.48
			1028.30							
			1031		220			19.02		12.73
			1035					18.88		12.88
			1040	4c				18.42		13.27
			1045		230			18.46		13.22
			1050					18.09		13.49
			1055		245			17.90		13.83
			1100		260			17.65		14.25
		→	1101.30							
			110230		350					
			1105					17.72		14.55
			1110					17.78		14.32

~~27~~ 28 ~~29~~ ~~30~~ 31

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							DEPART AQUALAND DOCK
							NAV READING AT R"2" OFF POPES CREEK
							PUTING OUT GEAR
							BEGIN LINE #27 BAT FISH 7KHz, 7KHz fathometer, NAV, AIRGUN
							.5 mi from Metonkin 1.0 mile to Riverside
							.5 mi off G"15" and "13" (BEING PUSHED DOWN STREAM BY WIND)
							OFF MARKER "14" R HEAD TO STUART WHARF END LINE 27 / BEGIN LINE #28
							WIND
							ABEAM OF FI G "15"
							15' OF WATER END LINE 28 BEGIN #29 HEAD TO STAKES
							.4 mi from STUART WHF. .6 OFF FI G"15"
							C/C'S MADE TO MAKE UP FOR WINDS
							END LINE #29 BEGIN LINE #30 changing planned csc to avoid fish nets
							C/C AFTER FISH NET TOWARD N"16"
							AT N"16" HEAD TO R"18"
							.7 mi from R"18" OFF LINE 16-18 NOT HEADING TO "18"
							Running along shore (E).
							END LINE 30
							slowing due to list to starboard BAT FISH OUT OF WATER
							Maneuvering back toward shore - return crab pot.

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORAN C NAVIGATION ° ′	° ′
24	05	79	1111	o/c	348		38° 17.69	74 14.42
			1115				17.89	14.58
			1116	30			.	.
		→	1120				18.33	14.74
			1121	30	230		.	.
			1125				18.16	14.97
			1130				18.01	15.21
			1135				17.70	15.59
			1140				17.42	16.03
		→	1145				17.44	16.24
		→	1146		005		.	.
			1150				17.94	16.24
			1155		360		18.40	16.19
			1200				18.44	16.46
			1205				SNR 84	.
		→	1206				.	.
			1210		285		23.88	36.29
			1215	c/c	240		.	.
			1220				.	.
			1225				.	.
			1227				.	.
			1230				.	.
			1235				.	.
		→	1238				17.73	18.96
			1240				17.88	18.82
		→	1240	45			.	.
			1245				18.35	18.38
			1250		033		18.79	18.02
			1255				18.93	17.83
			1300	c/c	335		19.55	17.46

31 32 33 34 35

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							BEGIN LINE #31
							APPROX OF CAN 17
							END LINE 31 .25mi off Maryland Pt.
							BEGIN LINE 32 .
							.35mi to shore / 1.0 mi to R"22"
							END LINE 32
							ON LINE#33 START
							1.4 mi to antenna
							.9 mi " "
							END LINE#33 / BEGIN LINE #34
							PASSING BETWEEN RN "24" AND FI "23"
							EEL POT ON BATFISH
							RESTART BATFISH
							END LINE 34
							BEGIN LINE 35

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	CORAN NAVIGATION ° ′	° ′
24	05	79	1305		240		38° 19.86	77 17.77
			1310		020		20.35	17.81
		→	1311				.	.
		→	1313		260		.	.
			1314.15				20.43	17.83
			1315				20.19	18.10
			1320				20.08	18.60
			1325		257		19.92	19.14
			1330				20.13	19.39
		→	1333.30				.	.
		→	1335		040		19.59	20.20
			1340				20.30	19.72
			1345				20.59	19.26
			1350				20.86	18.90
			1355				21.15	18.63
		→	1400				21.07	18.16
			1405				21.29	19.25
			1410				21.64	19.54
			1415				21.77	19.99
			1420				21.50	20.78
		→	1421				.	.
							.	.
		→	1620		016		21.30	09.52
			1625				21.75	04.40
			1630		020		21.92	04.36
			1635		018		22.47	03.98
			1640				— Stand by —	.
		→	1641				.	.
							.	.
			1710				.	.

35 36 37 38 39

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							END LINE 35
							BEGIN LINE 36
							PASS RN "26"
							1.25 from shore behind marker WBn Δ
							.75 " " " " " "
							END LINE 36
							BEGIN LINE #37
							END LINE #37 BEGIN #38
							END LINE 38
							HEAD DOWN RIVER TO PORT TOBACCO AREA
							BEGIN LINE #39
							HEADING FROM .5 mi E of FI "5" TO CHURCH SPIRE
							END LINE 39 23 minutes of recording
							records stored - 7 KHz - fault, Loran, AIRGUN, 2 LORAN TAPES
							ARRIVE AQUALAND

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORAN NAVIGATION	
25	05	79	0810				.	.
			0828				21.23	02.95
		→	0830				21.24	03.05
			0835				21.31	03.42
			0840				21.45	03.75
			0845				21.29	04.31
			0850				21.76	04.40
			0855				21.52	04.97
			0900				21.47	05.32
			0905				21.54	05.52
			0910				21.40	05.95
			0915			3.2	21.35	06.09
			0920				21.04	06.80
			0925			4/5	21.08	07.00
			0930			3.4	20.99	07.35
			0935				20.97	07.64
			0940		265		20.74	08.09
			0945				20.54	08.53
			0950				20.60	08.76
			0955		265		20.46	09.15
			0957				20.76	09.05
			1000			3.4	20.52	09.48
			1005			4/5	20.42	09.76
			1010				20.54	10.03
			1011.30				20.53	10.20
			1015	c/c	230		20.37	10.56
			1020				20.34	10.74
			1025				19.85	11.25
			1030	c/c	235		19.75	11.38
			1035		240		.	.

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							DEPART AQUALAND MARINA
							LORAN FIX AT R"2"
							BEGIN LINE #40 FOLLOWING CENTER CHANNEL CSE
							AIRGUN, BATFISH, 7KHz, 7KHz-fath
							.4 mi from R"2", .3 from C"3"
							.5 mi from Mathias Pt, .3 from S1"5", .6 mi from F1"6"
							.35 to F1"8" and .4 to C"7" - cross line between
							.3 mi from F1"8" and 1.5 mi from F1"11"
							.4 mi to C"9", .6 to F1"11" 1.0 to F1"8"
							.35 mi to F1"11"
							between N"10" and F"11"
							(3.4 mi/hr.)
							ABEAM OF F1"13"
							1019 - X'ed LINE 27

GMT DAY	GMT MO	GMT YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	LORAN NAVIGATION			
							°	′	°	′
25	05	79	1040		235		38	19.31	77	12.09
			1045					18.85		12.65
			1046					— .		— .
			1050					18.86		12.84
			1055					18.45		13.32
			1100					18.45		13.96
			1105					18.30		13.74
			1110		280			18.09		14.32
			1115					18.23		14.67
			1120					18.10		15.22
			1125					18.03		15.71
			1130					18.07		16.17
			1135	C/C	318			18.47		16.40
			1140					18.77		16.78
			1145		345			18.94		— . —
			1150					19.27		17.52
			1155					19.75		17.61
			1200					— .		— .
			1205					20.29		18.15
			1210					20.70		18.31
			1215					20.95		18.58
			1219							
			1220					21.45		18.64
			1225					21.57		18.83
			1230					22.33		18.62
			1235					22.53		18.81
			1236							
			1240					23.25		18.61
			1245					23.48		18.78
			1247							

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							1038.30 X'ed LINE 29 1.5 mi to R "18"
							1.1 mi to R "18"
							ABEAM of N "16"
							.8 mi to R "18" X'ed Line 30
							.5 mi to R "18" 1057.30 - boat wake
							.5 mi to R "22"
							.25 mi to R "22" 1133 pass R "22"
							.4 mi to FL "23" — motor boat wake on records.
							ON LINE BETWEEN FL "24" and R "23"
							LOST NAVIGATION (L/C)
							BOUYS "27" & "28" ALONGSIDE
							ALONGSIDE #"30"
							N #"32" ON BEAM
							.5 mi to FL "33"
							BETWEEN #33 & #34

GMT DAY	GMT MO	GMT YR	GMT TIME (EST)	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION Loran C	
25	05	79	1250		362		38 23.81	78 18.92
			1255				24.43	18.76
			1300				24.73	18.85
			1305				25.05	19.01
			1310				25.75	18.84
			1315				26.92	19.10
			1320				26.98	18.81
			1325		355		27.04	18.99
			1330	C/C	010		27.88	18.70
			1335				27.84	18.99
			1340				28.16	19.03
			1343				28.50	18.94
			1345	C/C	030		28.77	18.76
			1350				29.32	18.36
			1355		050		29.55	18.25
			1357	30			.	.
			1400				29.91	17.93
			1405				30.28	17.96
			1410				30.57	17.22
			1415				30.50	16.95
			1419				30.96	16.54
			1420		045		31.00	16.50
			1425				31.60	15.91
			1429	30			31.60	15.82
			1430				31.79	15.66
			1435				31.89	15.54
			1440				32.24	15.17
			1445				32.70	14.74
			1450				33.31	14.17
							.	.

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							AT SAUCH PT.
							PASSING C "41" — C on port side
							PASSING C "43"
							.5 mi to marker 3E .7 mi to 4E (E = from east)
							PASSING BETWEEN 3E - 4E
							.3 mi N of 3E
							.7 mi N of 4E
							PASSING BETWEEN "45" AND E N "46"
							.5 mi to E1 "47"
							ABEAM of E1 "47"
							ABEAM BUOY # 49
							SWITCH TO CHART # 12289
							ABEAM BUOY # "51"

GMT DAY	MO	YR	TIME (EDT)	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION ° ' ° '
25	05	79	1455				38 33.23 77 13.93
			1500				33.76 13.34
			1505				34.16 12.72
			1507				. .
			1510				34.31 12.20
			1515		090		34.10 11.88
			1520		097		34.08 11.32
			1525		055		34.07 10.80
			1530		045		34.44 10.30
			1535				35.32 09.47
			1539		020		. .
		→	1540				35.26 09.58
			1700				. .

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV.	SONO	STA	COMMENTS AND OBSERVATIONS
							.2 mi to R N"54"
							~~Abeam of~~ R N"54"
							1509 Pull Airgun
							1517,30 boat wake
							.5 mi to Fl "56"
							~~Just off~~ Fl "56"
							~~Abeam of~~ N"58"
							R "60" - ~~Abeam of~~
							~~END LINE #40~~ 32.5 nautical miles recording
							Bathfish Record, Fath-7Khz, 7KHz, Loran stored
							Arrive Quantico

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GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORAN NAVIGATION			
26	05	79	0815							
		→	0910				38	32.68	77	14.20
			0915		348			32.93		14.48
			0920					33.47		14.55
			0925					33.67		14.85
			0930					34.14		15.00
			0935					34.75		15.03
			0936					34.66		15.22
			0940		348			35.36		15.08
			0940.10					35.33		15.07
			0945					35.59		15.35
			0946.30							
		→	0947.30					36.08		15.16
		→	1026.20		244			34.29		14.21
	60		1030		235			33.75		14.80
			1035					33.69		15.23
			1040					33.37		15.71
			1045					33.14		1607
			1050					32.81		16.59
		→	1053.30					32.29		17.15
			1055					32.45		16.97
			1055.30		130					
			1100					32.21		16.50
			1105					31.89		16.15
			1109.15					31.61		15.88
			1110		125			31.66		15.77
			1115					31.37		15.37
		→	1116							

~~#~~ ~~42~~ ~~43~~

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							DEPART QUANTICO
							BATFISH, AIRGUN, 7KHz - fath, 7KHz, LORAN
							BEGIN LINE 41 0913 boat wake
							ABEAM of FL"51"
							.9 mi to High Pt. .5 mi to Fl"51"
							.5 " " .9 " " " "
							.2 .8 to marker R"4"
							.1 mi off Marker Fl"2"
							ABEAM of Marker Fl"2" / 0938 boat wake
							approaching R"4"
							ABEAM of marker R"4"
							PULLING BATFISH.
							END OF LINE #41 PULL GEAR / RETURN TO HIGH Pt.
							BEGIN LINE #42 - off line - R"4" - Fl"2" →
							END LINE 42 / BEGIN LINE 43 (OFF "PRV 15B")
							o/c 130
							.75 mi to "47" at slt. angle
							.4 mi to "47" at SHS and 1.0 mi to Deep pt.
							ABEAM of "47"
							END LINE #43

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
26	05	79	1116	30	275			
			1120				31.30	15.49
			1125		270		31.31	16.04
			1130				31.08	16.77
			1135				31.19	17.20
		→	1137			9/4	31.17	17.48
		→	1139	15	9/4	20	31.04	17.53
			1140		115		31.03	17.46
			1145		105		30.63	17.17
			1150				30.95	16.37
		→	1152				30.70	—
		→	1235	.15	9/c	20	33.95	12.73
			1240				34.19	12.75
			1245				34.79	12.44
		→	1246		9/4	145°	34.80	12.48
			1250				34.60	12.18
			1255				34.47	11.65
			1300				34.05	11.37
		→	1302	.30			33.97	11.19
		→	1325		9/	023	35.14	09.61
			1330				35.52	09.60
			1335		345		36.10	09.63
			1340		330		36.41	09.83
			1345		340		36.63	10.22
			1348		005			
			1350		010		37.22	10.14
			1355				37.39	10.31
			1356				37.59	10.20

~~44 45 46 47 48~~

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							O/C BEGIN LINE #44
							.4 TO N "46", 1.0 TO DEEP POINT
							END LINE #44 c/c
							BEGIN LINE #45 o/c
							HEADING TO STUMP NECK FROM COCKPIT PT.
							.5M TO MARKER "PVR IIA"
							OFF PIER ON STUMP NECK
							END LINE #45 OFF MARKER "PVR IIA" -
							ON LINE #46
							END LINE #46 / BEGIN LINE #47
							END LINE #47 / RUN TO N "60" (12.5 / 9.5 n.m / 22.0)
							~~ABEAM OF~~ R "60" / START LINE #48
							.5M S of R "62"
							~~ABEAM OF~~ "62" R
							.5 TO R "64"
							OFF R "64"
							~~ABEAM OF~~ R "64"

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION (CORAM) ° ′	″
26	05	79	1400		040	5.0	38 38.05	77 09.78
			1405				38.43	09.44
			1409		050		38.52	09.38
			1410				38.55	09.40
			1415				38.96	08.86
			1416.10				39.04	08.73
			1420				38.89	08.63
			1424.30				39.13	07.97
			1425				39.08	07.96
			1430				39.24	07.44
			1431				39.09	07.47
			1435				39.50	06.81
			1440				39.64	06.35
			1440.50				39.41	06.45
			1445		↑		39.62	06.00
			1450		075		39.78	05.47
			1451.15		↓		39.72	05.40
			1454				39.70	05.09
			1455				40.98	04.98
			1500				40.25	04.53
			1501.30				40.31	04.49
			1505				40.85	04.10
			1506				40.61	04.30
			1509				40.88	04.17
			1510				41.97	04.19
			1515				41.46	04.26
			1520				41.93	04.28
			1520.15		010		— .	— .
			1525		005		42.39	04.21
			1530		010		42.80	04.19

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							.25 mi to RN "66" / .8 mi from R "64"
							~~ABEAM~~ of RN "66"
							(slowed speed due to said race) off FL "67"
							~~ABEAM~~ of FL "67"
							.4 mi from FL "67"
							~~ABEAM~~ of C "69"
							off C "69"
							off FIG "71"
							~~ABEAM~~ of FIG "71"
							off C "73"
							~~ABEAM~~ of C "73"
							~~ABEAM~~ of C "75"
							~~ABEAM~~ of FL "77"
							~~ABEAM~~ of C "79"
							~~ABEAM~~ of Bell "80"
							~~ABEAM~~ of C "81"
							~~ABEAM~~ of M82 and C "83"
							18.5 TO FM
							off RN 84
							~~ABEAM~~ of RN "84"
							.5 mi from R "84"
							~~ABEAM~~ of N "86"

GMT DAY	GMT MO	GMT YR	GMT EDT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	LORAN NAVIGATION ° ′	LORAN NAVIGATION ° ′
26	05	79	1535		010		43.05	04.29
			1540		010		43.65	04.04
			1545		355		44.07	04.11
			1550		350		44.54	04.16
			1555		345		45.02	04.21
			1558.40					
			1600				45.93	04.28
			1603.40				45.69	04.24
		→	1605				45.78	04.21
			1615		At Dock			

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							1.25 mi to R "90"
							Abeam of C "87"
							off C "90"
							495 BRIDGE — UNDER BRIDGE (W SIDE)
							at R "2"
							END OF LINE #48 22 miles of record
							Pull gear, go to Alexandria - Old Town Yacht Basin
							7 KHz, 7 KHz - fath, Loran C

GMT DAY	MO	YR	EDT TIME	TIME ZONE ±	SHIPS COURSE	SPD	LORAN C NAVIGATION ° ′	° ′
27	05	79	0755				.	.
		→	0811 30		010		38 45.70	77 04.22
			0815				46.05	04.18
			0819				46.37	04.17
			0820				46.40	04.21
			0825				47.05	03.98
			0826				46.88	04.23
			0830		↑		47.32	03.92
			0831		020		47.57	03.77
			0835		↓		47.84	03.70
			0836.30				48.18	03.46
			0840				48.16	03.63
			0841 10				48.50	03.39
			0845				48.80	03.35
			0847				48.93	03.47
			0850				49.08	03.66
			0852.30				49.30	03.74
			0855		345		49.67	03.70
			0858.30				49.90	03.92
		→	0859.30				49.96	04.00
							.	.
			0905				49.67	03.68
			0910				49.20	03.42
							.	.
		→	0914				48.93	03.23
			0915				48.99	03.22
			0918 15				48.29	03.19
			0920				49.51	03.11
			0921				49.60	03.13
			0923 35				49.90	03.12

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							~~DEPART~~ ALEXANDRIA - OLD TOWN YACHT BASIN BATTS# A-12 GUN 7.5's
							BEGIN LINE #49 ~~ABEAM OF~~ RN "2"
							ABEAM OF RN "6".
							ABEAM OF CAN "1"
							~~ABEAM OF~~ F1 "7"
							ABEAM OF C "9" (Boat wake 0839).
							~~ABEAM OF~~ C "11"
							TURNING AT BR 10K FIG - BUOY N STARBOARD
							~~ABEAM OF~~ C "1"
							^
							ABEAM OF RN "4"
							.25-3 M from RN "4"
							~~ABEAM OF~~ RN "6"
							END LINE #49 - RETURN TO JUNCTION BUOY BR 10K FIG.
							BEGIN LINE* 50 AT JUNCTION BUOY
							~~ABEAM OF~~ RB "15"
							OFF R "2"
							~~ABEAM OF~~ R "2" N
							ABEAM OF R "4" N

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD	° ′	° ′
27	05	79	0925		005		38 49.92	77 03.19
		→	0930				50.28	03.47
			0935				50.09	03.42
			0940				49.68	03.28
			0945				49.23	03.35
			0950				48.98	03.21
			0955				48.44	03.43
			1000				48.29	03.44
			1005				47.59	03.81
			1010				47.15	04.03
			1015				46.66	04.20
		→	1017.20				46.46	04.20
			1020				46.50	04.93
			1021 30					
		→	1022 45					

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							END LINE #50
							Junction Buoy
							At F1 "7" - line along W side slope
							At C "1"
							On LINE #51
							along shortened pipeline
							to at dock
							END LINE 51 PULL GEAR 11 n. miles

	18	19	20	21	22	23	24	25	26	27	TOTAL
SIDESCAN (n.m.)	26.5	15.5	29.5	30.0	19.5						127 (24hrs) (235.2 KM)
AIRGUN (n.m)	26.5	15.5	35.0	30.0	22.5	36	23	32.5	22.0	11.0	260. (481.5KM)
7KHz (n.m.)	26.5	15.5	35.0	30.0	22.5	36	23	32.5	22.0	11.0	260
7KHz FATHOMETER (n.m.)	26.5	15.5	35.0	30.0	22.5	36	23	32.5	22.0	11.0	260
BATFISH: SIDESCAN 2.5 (n.m)			TEST 5.5		3.0	36	23	32.5	22.0	11.0	133 (30hrs 50m) (246.3 KM)
LORAN RECORD (n.m)	26.5	15.5	35.0	30.0	22.5	36	23	32.5	22.0	11.0	@260
LORAN TAPES (n.m)	26.5	15.5	35.0	30.0	22.5	36	23	32.5	22.0	11.0	@260
BOTTOM SAMPLES.					11						11
HRS.	6.0	3.10	6.0	5.55	4.22	7.0	7.13	7.2	6.55	2.10	56h50min