

**UPPER POTLATCH RIVER STUDY**

**Latah County**

**Data Collected 1979**

**Final Summary October 1980**

**Department of Health and Welfare  
Division of Environment  
Statehouse  
Boise, Idaho 83720**

**Water Quality Summary  
No. 9**

UPPER POTLATCH RIVER STUDY

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TABLE OF CONTENTS

Summary

Data Inventory

Graphics

SUMMARY OF  
UPPER POTLATCH RIVER STUDY

During Water Year 1979 the upper Potlatch River near Bovill in Latah County was studied to determine its present water quality and to obtain background information for developing effluent limitations for the City of Bovill sewage treatment facility. The river was monitored on about a bi-monthly frequency above and below the present Bovill discharge, and the parameter coverage during the study included the following categories:

Temperature	Solids
Dissolved Oxygen	Select Ions
pH	Nutrients
Bacteria	Heavy Metals
Oxygen Demand	Radioactivity

The study has shown that the Potlatch River near Bovill is of very high quality except for violations of the bacteria standard for primary contact recreation which were found to occur below the Bovill discharge. The study also found that Bovill can substantially increase total phosphorus concentrations in the river, but both phosphorus and nitrogen concentrations are below the trophic levels recommended for free flowing streams.

In June and August of 1979, the Bovill lagoons were not discharging and the absence of a discharge prevented water quality problems below their discharge. A staff evaluation on effluent limitations for Bovill has

determined that Bovill should continue to prevent a discharge during late summer and early fall. The remainder of the year secondary treatment will be adequate to maintain the present water quality of the upper Potlatch River.

DATA INVENTORY

2020053  
 46 54 40.0 116 23 20.0 5  
 PULATCH RIVER ABOVE BOVIL  
 16057 IDAHO  
 PACIFIC NORTHWEST  
 UPPER SNAKE RIVER BASIN  
 211DSURV 760520  
 0000 CLASS 00

/TYPA/AMUNT/STREAM

INDEX 1310001 002740 01350 0490  
 MILES 0324.30 0139.30 015.10 051.70  
 PARAMETER

INDEX	TYPA	AMUNT	STREAM	NUMBER	MEAN	VARIANCE	STAN DEV	COEF VAR	STAN ER	MAXIMUM	MINIMUM	BEG DATE	END DATE
00010	WATER	TEMP	CENT	7	8.31429	36.5081	6.04219	.726724	2.28373	20.0000	2.00000	75/11/03	79/08/13
00042	ALTITUDE	FEET	AB MSL	1	2850.00					2850.00	2850.00	01/01/01	01/01/01
00061	STREAM	FLOW	INSI-CFS	6	33.3316	3221.58	56.7590	1.70285	23.1717	147.200	.540000	75/11/03	79/08/13
00070	TURB	JKSN	JTU	2	5.35000	11.0450	3.32340	.621197	2.35000	7.70000	3.00000	75/11/03	76/05/24
00076	TURB	TRBIDMR	HACH FTU	6	5.16666	15.9667	3.99584	.773389	1.63129	12.0000	1.80000	78/10/23	79/08/13
00094	CONDUCTIVY	FIELD	MICROMHO	3	29.3333	66.3339	8.14456	.277655	4.70226	35.0000	20.0000	79/03/19	79/06/04
00095	CONDUCTIVY	AT 25C	MICROMHO	8	41.9375	547.302	23.3945	.557842	8.27120	83.0000	6.20000	75/11/03	79/08/13
00116	INTINSVE	SURVEY	IDENT	7	781603	.699E+06	.000000		.000000	781603	781603	01/01/01	79/08/13
00300	DD		MG/L	7	10.4143	3.31816	1.82158	.174912	.688493	13.5000	7.70000	75/11/03	79/08/13
00310	DD	S DAY	MG/L	1	30.0000					30.0000	30.0000	79/08/13	79/08/13
00335	DD	LOWLEVEL	MG/L	6	12.6500	17.5950	4.19464	.331592	1.71245	19.1000	8.40000	78/10/23	79/08/13
00400	PH		SU	7	7.80000	.763387	.873720	.112015	.330235	8.90000	6.70000	75/11/03	79/08/13
00403	LAB	PH	SU	5	7.13999	.278095	.527347	.073858	.235837	7.60000	6.40000	75/11/03	79/08/13
00410	I ALK	CACU3	MG/L	8	20.0000	79.4286	8.91227	.445613	3.15096	31.0000	6.00000	75/11/03	79/08/13
00425	HCO3 ALK	CACU3	MG/L	6	18.6667	96.2671	9.81158	.525621	4.00556	31.0000	6.00000	78/10/23	79/08/13
00430	CO3 ALK	CACU3	MG/L	6	.666667	.266667	.516398	.774597	.210819	1.00000	.000000	78/10/23	79/08/13
00500	RESIDUE	TOTAL	MG/L	8	63.7375	95.6384	9.77949	.153434	3.45757	74.0000	43.9000	75/11/03	79/08/13
00505	RESIDUE	TOT VOL	MG/L	2	25.5000	60.5000	7.77817	.305026	5.50000	31.0000	20.0000	75/11/03	76/05/24
00520	RESIDUE	VOL FLI	MG/L	2	9.00000	98.0000	9.89949	1.09944	7.00000	16.0000	2.00000	75/11/03	76/05/24
00530	RESIDUE	TOT NFLI	MG/L	6	5.60000	16.3200	4.03980	.721392	1.64924	10.0000	2.00000	78/10/23	79/08/13
00610	NH3+NH4-	N TOTAL	MG/L	7	.086369	.015139	.123041	1.42426	.046505	.364907	.028000	75/11/03	79/08/13
00615	NO2-N	TOTAL	MG/L	4	.001184	.799E-06	.000894	.755299	.000447	.002432	.000304	75/11/03	79/01/23
00620	NO3-N	TOTAL	MG/L	4	.016129	.000323	.017976	1.11468	.008989	.040000	.002257	75/11/03	79/01/23
00625	TOT KJEL	N	MG/L	7	.010000	.166033	.407472	.667987	.154010	1.30000	.200000	75/11/03	79/08/13
00630	NO2&NO3	N-TOTAL	MG/L	4	.030000	.000133	.011547	.384900	.005774	.040000	.020000	79/03/19	79/08/13
00650	I PO4	PO4	MG/L	2	.160000	.372E-08	.000000		.000000	.160000	.160000	75/11/03	76/05/24
00665	PHOS-TOT		MG/L P	8	.040000	.001114	.033381	.834523	.011802	.110000	.010000	75/11/03	79/08/13
00900	TOT HARD	CACU3	MG/L	7	18.5714	79.6192	8.92296	.480467	3.37256	30.0000	8.00000	76/05/24	79/08/13
00916	CALCIUM	CA-TOT	MG/L	6	4.33333	2.47470	1.57312	.363027	.642223	6.40000	2.00000	78/10/23	79/08/13
00927	MAGNESIUM	MG, TOT	MG/L	6	1.31333	.397867	.630767	.480280	.257510	2.40000	.600000	78/10/23	79/08/13
00929	SODIUM	NA, TOT	MG/L	6	3.48333	3.38969	1.84111	.528549	.751630	6.50000	1.60000	78/10/23	79/08/13
00937	POTASSIUM	K, TOT	MG/L	6	1.16667	.110667	.332666	.285143	.135810	1.70000	.800000	78/10/23	79/08/13
00940	CHLORIDE	CL	MG/L	8	4.58375	10.4104	3.22651	.703903	1.14074	10.0000	2.00000	75/11/03	79/08/13
00945	SULFATE	SU4-TOT	MG/L	6	8.83333	3.36670	1.83486	.207720	.749077	10.0000	6.00000	78/10/23	79/08/13
00951	FLUORIDE	F, TOTAL	MG/L	4	.125000	.000567	.023805	.190437	.011902	.150000	.100000	78/10/23	79/08/13
00956	SILICA	TOTAL	MG/L	6	21.6916	32.0628	5.66241	.261041	2.31167	29.3000	15.0000	78/10/23	79/08/13
01002	ARSENIC	AS, TOT	UG/L	6	10.0000	.000000	.000000		.000000	10.0000	10.0000	78/10/23	79/08/13
01027	CADMIUM	CD, TOT	UG/L	6	2.33333	4.26667	2.06559	.885254	.843274	5.00000	1.00000	78/10/23	79/08/13
01042	COPPER	CU, TOT	UG/L	6	10.0000	.000000	.000000		.000000	10.0000	10.0000	78/10/23	79/08/13

2020053  
 48 54 40.0 116 23 20.0 5  
 POTLATCH RIVER ABOVE BOVIL  
 16057 IDAHO  
 PACIFIC NORTHWEST  
 UPPER SNAKE RIVER BASIN  
 211DSURV 760520  
 0000 CLASS 00

/TYPE/AMOUNT/STREAM

INDEX 1310001 002740 01350 0490  
 MILES 0324.30 0139.30 015.10 051.70

PARAMETER	NUMBER	MEAN	VARIANCE	STAN DEV	COEF VAR	STAND ER	MAXIMUM	MINIMUM	BEG DATE	END DATE
01045 IRON FE,TOT UG/L	6	585.000	34190.0	184.905	.316078	75.4873	870.000	400.000	78/10/23	79/08/13
01051 LEAD PB,TOT UG/L	6	50.0000	.000000	.000000		.000000	50.0000	50.0000	78/10/23	79/08/13
01055 MANGNESE MN UG/L	6	28.3333	536.667	23.1661	.817626	9.45751	70.0000	10.0000	78/10/23	79/08/13
01092 ZINC ZN,TOT UG/L	6	4.83333	49.7667	7.05455	1.45956	2.88001	19.0000	1.00000	78/10/23	79/08/13
01501 ALPHA TOTAL PC/L	6	.851666	.531617	.729121	.856111	.297662	2.00000	.010000	78/10/23	79/08/13
03501 BETA TOTAL PC/L	6	1.51667	1.04167	1.02062	.672937	.416666	3.00000	.100000	78/10/23	79/08/13
31501 TOT COLI MFIMENDU /100ML	1	5000.00					5000.00	5000.00	75/11/03	75/11/03
31616 FEC COLI MFH-FCBR /100ML	7	46.2857	2820.24	53.1059	1.14735	20.0722	160.000	6.00000	75/11/03	79/08/13
31679 FECSTREP MF M-ENT /100ML	6	30.6667	680.668	26.0896	.850749	10.6510	66.0000	1.00000	78/10/23	79/08/13
70300 RESIDUE DISS-180 C NG/L	2	50.0500	644.406	25.3852	.507196	17.9500	68.0000	32.1000	78/10/23	79/01/23
70507 PHOS-T URTHD NG/L P	8	.015380	.000279	.016716	1.08685	.005910	.054000	.001000	75/11/03	79/08/13
71900 MERCURY HG,TOTAL UG/L	6	.500000	.000000	.000000		.000000	.500000	.500000	78/10/23	79/08/13

2020103  
 46 54 40.0 116 23 15.0 2  
 NOVILL EFF TO PUTLATCH RIVER  
 16057 IDAHO LATAH  
 PACIFIC NORTHWEST 130800  
 LOWER SNAKE RIVER  
 211DSURV 791208  
 0000 CLASS 00

/TYPA/AMBNT/STREAM

INDEX 1310001 002740 01350 0490  
 MILES 0324.30 0139.30 015.10 051.60

PARAMETER	TEMP	CENT	NUMBER	MEAN	VARIANCE	STAN DEV	COEF VAR	STAND ER	MAXIMUM	MINIMUM	BEG DATE	END DATE
00010 WATER			3	6.66667	16.3334	4.04146	.606219	2.33334	11.0000	3.00000	78/10/23	79/03/19
00042 ALTITUDE	FEET	AB MSL	1	2850.00					2850.00	2850.00	01/01/01	01/01/01
00061 STREAM	FLOW	INST-CFS	2	.000000	.000000	.000000		.000000	.000000	.000000	79/06/04	79/08/13
00076 TURB	TRIDMTR	HACH FTU	4	26.1250	531.729	23.0592	.882651	11.5296	58.0000	7.50000	78/10/23	79/04/30
00094 CONDUCTVY	FIELD	MICROMHO	2	116.500	17112.5	130.815	1.12287	92.5000	209.000	24.0000	79/03/19	79/04/30
00095 CONDUCTVY	AT 25C	MICROMHO	4	299.125	22887.1	151.285	.505757	75.6423	435.000	82.5000	78/10/23	79/04/30
00116 INTNSVE	SURVEY	IDENT	7	781603	.699E+06	.000000		.000000	781603	781603	01/01/01	79/08/13
00300 DO		MG/L	3	6.73333	5.96341	2.44201	.362675	1.40989	8.70000	4.00000	78/10/23	79/03/19
00310 BOD	5 DAY	MG/L	1	60.0000					60.0000	60.0000	79/08/13	79/08/13
00335 COD	LOWLEVEL	MG/L	4	81.2499	2042.00	45.1894	.556177	22.5947	142.600	35.1000	78/10/23	79/04/30
00400 PH		SU	3	7.80000	.070099	.264762	.033944	.152860	8.10000	7.60000	78/10/23	79/04/30
00403 LAB	PH	SU	2	7.00000	.020004	.141436	.020205	.100011	7.10000	6.90000	79/03/19	79/04/30
00500 NLSIDUE	TOTAL	MG/L	4	221.650	8249.56	90.8271	.409777	45.4135	288.000	91.6000	78/10/23	79/04/30
00530 RESIDUE	TOT NFLT	MG/L	4	19.1250	38.7292	6.22327	.325400	3.11164	25.0000	13.5000	78/10/23	79/04/30
00610 NH3+NH4-	N TOTAL	MG/L	4	4.67300	20.6044	4.53921	.971370	2.26960	10.0000	.602000	78/10/23	79/04/30
00615 NO2-N	TOTAL	MG/L	4	.021500	.000228	.015111	.702824	.007555	.036000	.007000	78/10/23	79/04/30
00620 NO3-N	TOTAL	MG/L	4	.159250	.044369	.210639	1.32269	.105320	.460000	.007000	78/10/23	79/04/30
00625 TOT KJEL	N	MG/L	4	9.34999	35.8435	5.98694	.640316	2.99347	14.5000	1.80000	78/10/23	79/04/30
00665 PHOS-TOT		MG/L P	4	3.69500	3.54456	1.88270	.509527	.941351	5.41000	1.01000	78/10/23	79/04/30
00940 CHLORIDE	CL	MG/L	4	21.6300	126.361	11.2411	.519698	5.62053	32.0000	6.52000	78/10/23	79/04/30
31501 TOT COLI	MFIMENDU	/100ML	1	480.000					480.000	480.000	79/03/19	79/03/19
31616 FEC COLI	MFH-FCHR	/100ML	4	3875.00	.179E+08	4232.71	1.09231	2116.35	8800.00	100.000	78/10/23	79/04/30
31679 FECSTREP	MF M-ENT	/100ML	4	327.500	12/558	357.153	1.09054	178.577	760.000	10.0000	78/10/23	79/04/30
70507 PHOS-F	ORTHO	MG/L P	4	3.24250	3.41949	1.84919	.570297	.924594	5.41000	.900000	78/10/23	79/04/30

2020104  
 46 50 50.0 116 24 15.0 2  
 POTLATCH RIVER BL BOVILL OUTFALL  
 16057 IDAHO LATAH  
 PACIFIC NORTHWEST 130800  
 LOWER SNAKE RIVER  
 211DSURV 791201  
 0000 CLASS 00

/TYP/AMUN/STREAM

INDEX 1310001 002740 01350 0490  
 MILES 0324.30 0139.30 015.10 050.00  
 PARAMETER

PARAMETER	NUMBER	MEAN	VARIANCE	STAN DEV	COEF VAR	STAN ER	MAXIMUM	MINIMUM	BEG DATE	END DATE
00010 WATER TEMP CENT	4	8.37500	63.2292	7.95168	.949454	3.97584	20.0000	3.00000	78/10/23	79/08/13
00042 ALTITUDE FEET AB MSL	1	2800.00					2800.00	2800.00	01/01/01	01/01/01
00061 STREAM FLOW, INST-CFS	2	76.0000	10082.0	100.409	1.32117	71.0000	147.000	5.00000	78/10/23	79/03/19
00076 TURB TRBIDMTR HACH FTU	6	5.33333	14.9388	3.86507	.724702	1.57791	12.0000	2.40000	78/10/23	79/08/13
00094 CONDUCTIVY FIELD MICROMHO	3	45.0000	739.000	27.1846	.604101	15.6950	75.0000	22.0000	79/03/19	79/06/04
00095 CONDUCTIVY AT 25C MICROMHO	6	55.0166	667.608	25.8381	.469642	10.5484	96.0000	25.1000	78/10/23	79/08/13
00116 INTNSVE SURVEY IDENT	7	781603	.699E+06	.000000		.000000	781603	781603	01/01/01	79/08/13
00300 DO MG/L	4	10.6750	2.28922	1.51302	.141735	.756509	11.8000	8.50000	78/10/23	79/08/13
00310 BOD 5 DAY MG/L	1	30.0000					30.0000	30.0000	79/08/13	79/08/13
00335 COD LOWLEVEL MG/L	5	13.0000	25.5500	5.05471	.388824	2.26053	18.9000	7.50000	78/10/23	79/08/13
00400 PH SU	6	7.80000	.688037	.829480	.106344	.338634	8.50000	6.20000	78/10/23	79/08/13
00403 LAB PH SU	3	6.60000	.130119	.360721	.054655	.208262	6.90000	6.20000	79/03/19	79/08/13
00500 RESIDUE TOTAL MG/L	6	66.9666	158.816	12.6022	.188186	5.14483	80.0000	46.8000	78/10/23	79/08/13
00530 RESIDUE TOT NFLT MG/L	6	5.70000	18.0600	4.24971	.745563	1.73494	13.0000	2.00000	78/10/23	79/08/13
00610 NH3+NH4-N TOTAL MG/L	5	.120800	.019586	.139949	1.15852	.062587	.301000	.006000	79/01/23	79/08/13
00615 NO2-N TOTAL MG/L	5	.005800	.000045	.006686	1.15272	.002990	.017000	.001000	78/10/23	79/08/13
00620 NO3-N TOTAL MG/L	6	.030000	.000608	.024666	.822192	.010070	.071000	.010000	78/10/23	79/08/13
00625 TOT NJEL N MG/L	6	.608333	.034417	.185518	.304961	.075737	.900000	.400000	78/10/23	79/08/13
00665 PHOS-TOT MG/L P	6	.118333	.011937	.109255	.923282	.044603	.330000	.030000	78/10/23	79/08/13
00940 CHLORIDE CL MG/L	6	4.42500	2.45579	1.56709	.354146	.639764	7.00000	2.20000	78/10/23	79/08/13
31616 FEC COLI MFH-FCBR /100ML	6	439.000	466433	682.959	1.55571	278.817	1800.00	36.0000	78/10/23	79/08/13
31679 FECSTREP MF M-ENT /100ML	6	58.3333	2986.67	54.6504	.936865	22.3109	150.000	9.00000	78/10/23	79/08/13
70507 PHOS-T ORTHO MG/L P	6	.061333	.004744	.068876	1.12297	.028118	.177000	.006000	78/10/23	79/08/13

GRAPHICS

POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 8 DAYS OF MONITORING

1 : 10-23-78

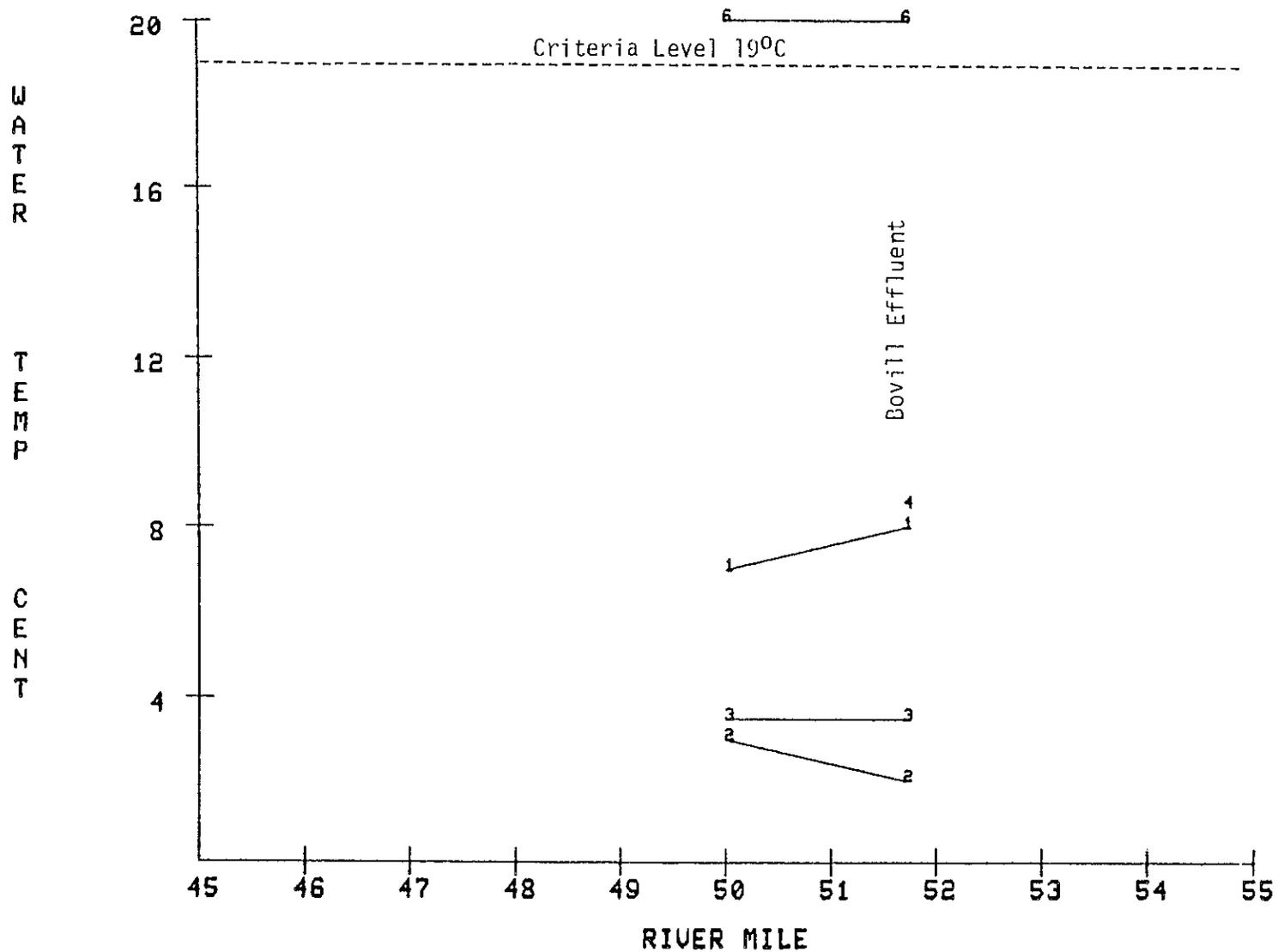
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3 : 03-19-79

4 : 04-30-79

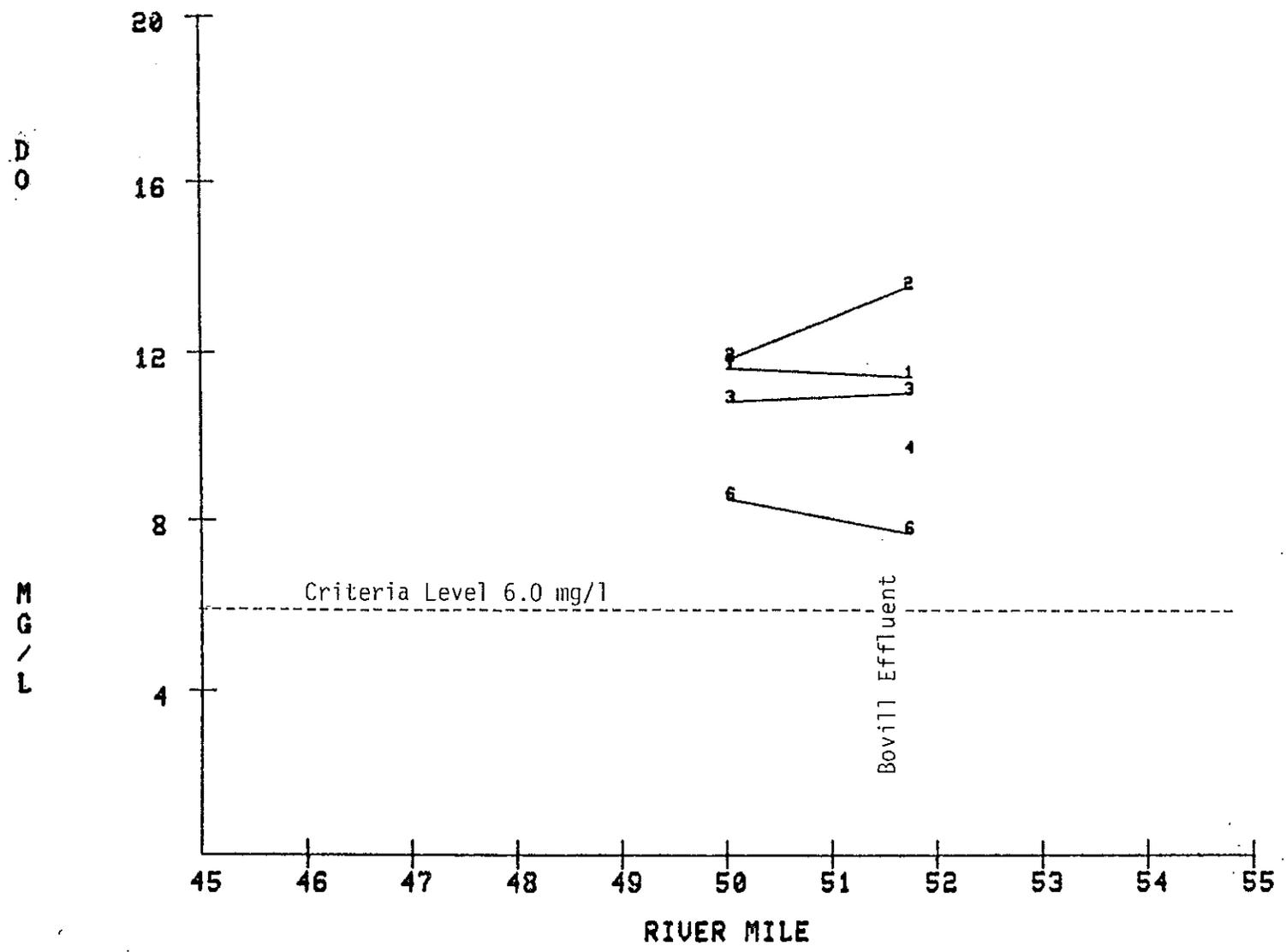
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6 : 08-13-79

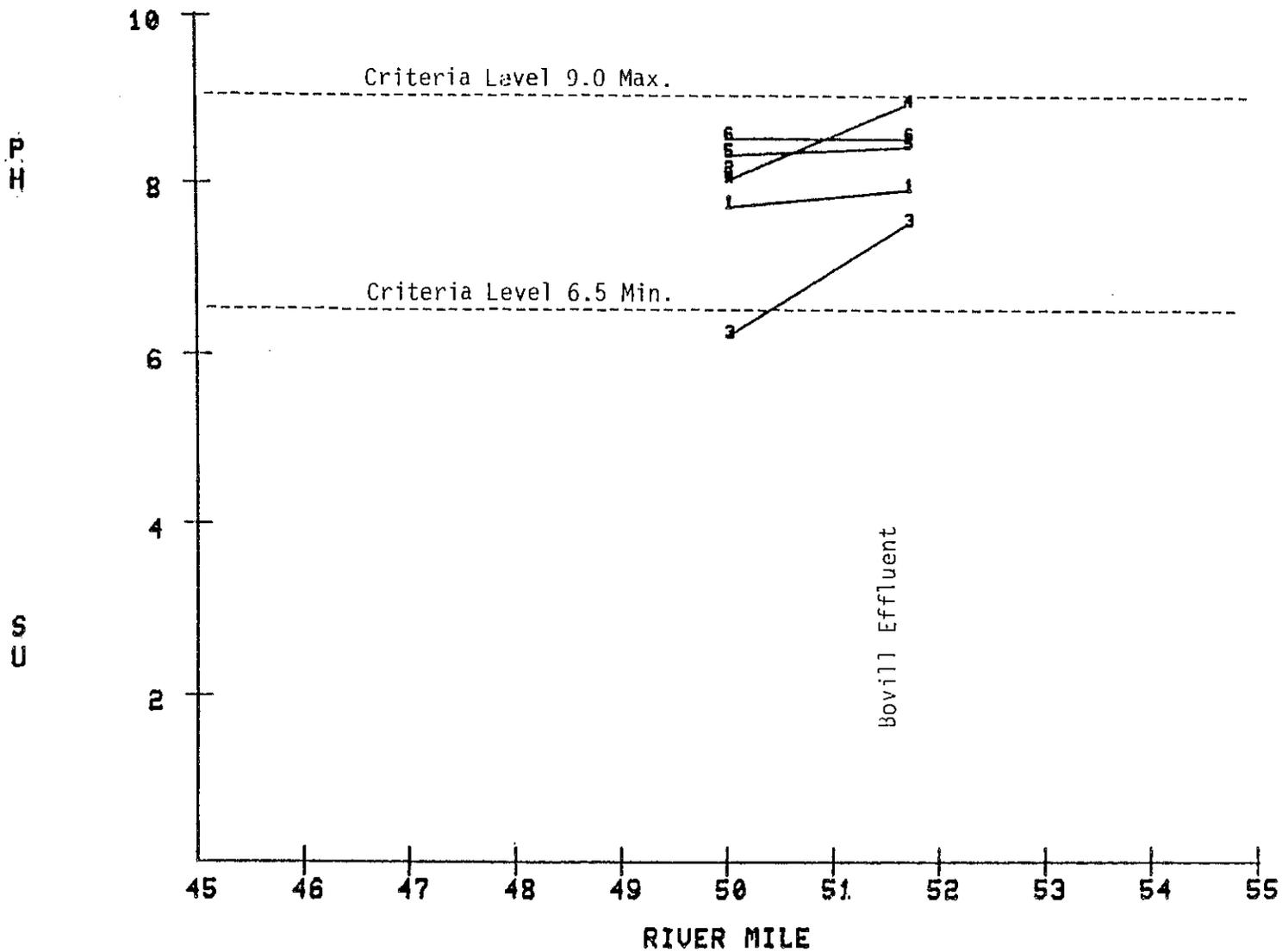


POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING

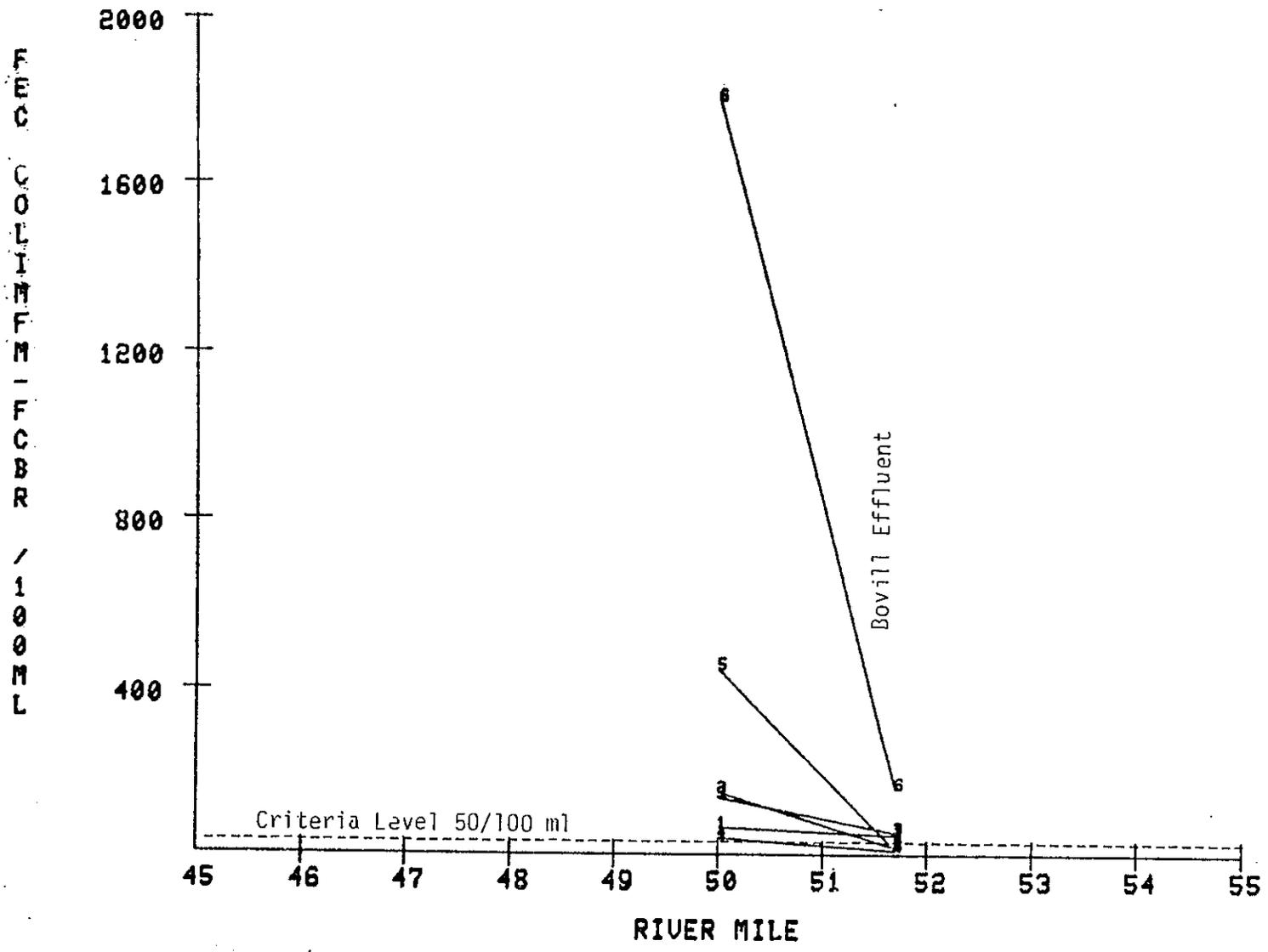
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 4 : 04-30-79      5 : 06-04-79      6 : 08-13-79



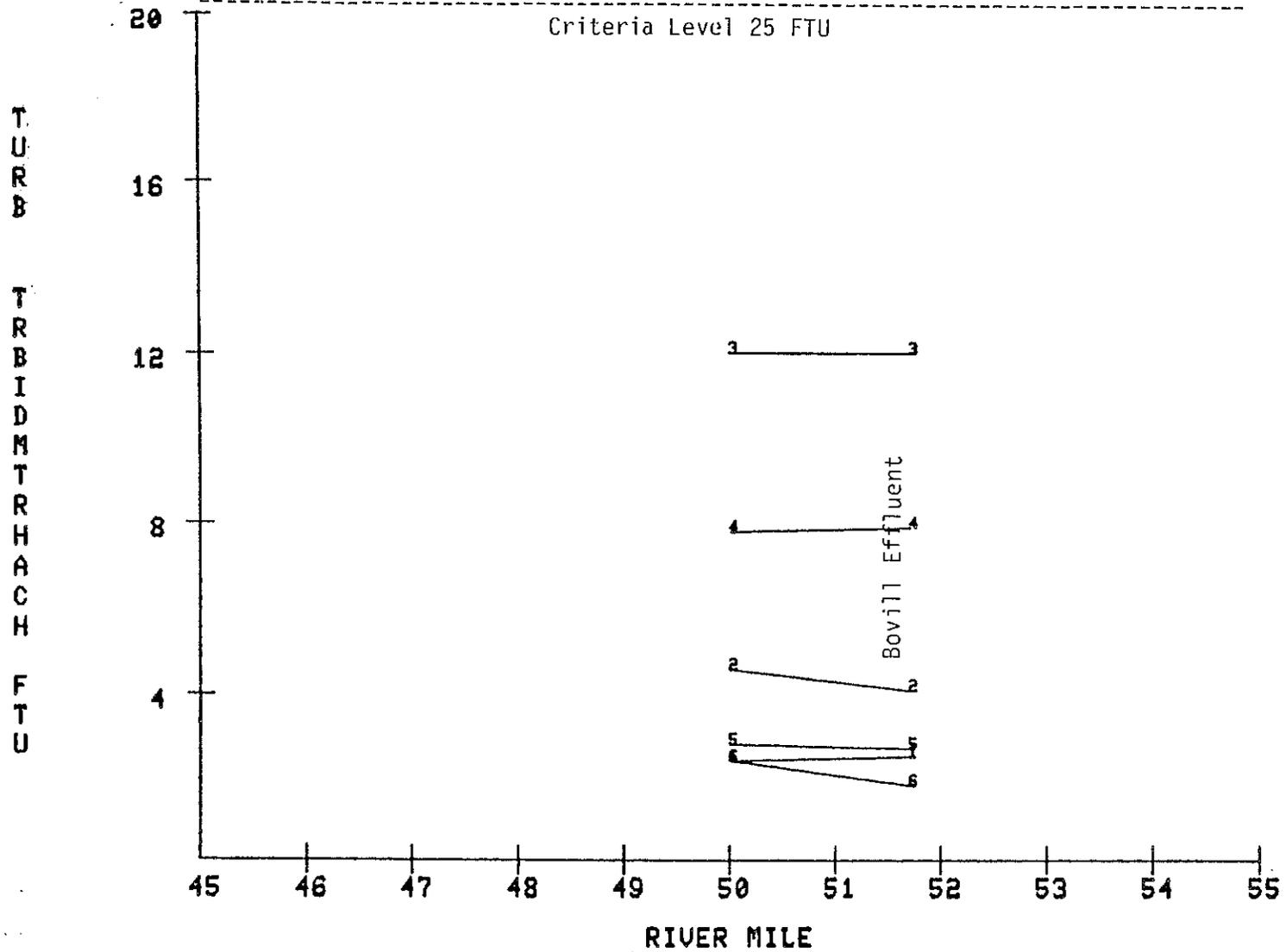
POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING  
 1 : 10-23-78      2 : 01-23-79      3 : 03-19-79  
 4 : 04-30-79      5 : 06-04-79      6 : 08-13-79



**POTLATCH RIVER**  
**INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING**  
 1 : 10-23-78      2 : 01-23-79      3 : 03-19-79  
 4 : 04-30-79      5 : 06-04-79      6 : 08-13-79

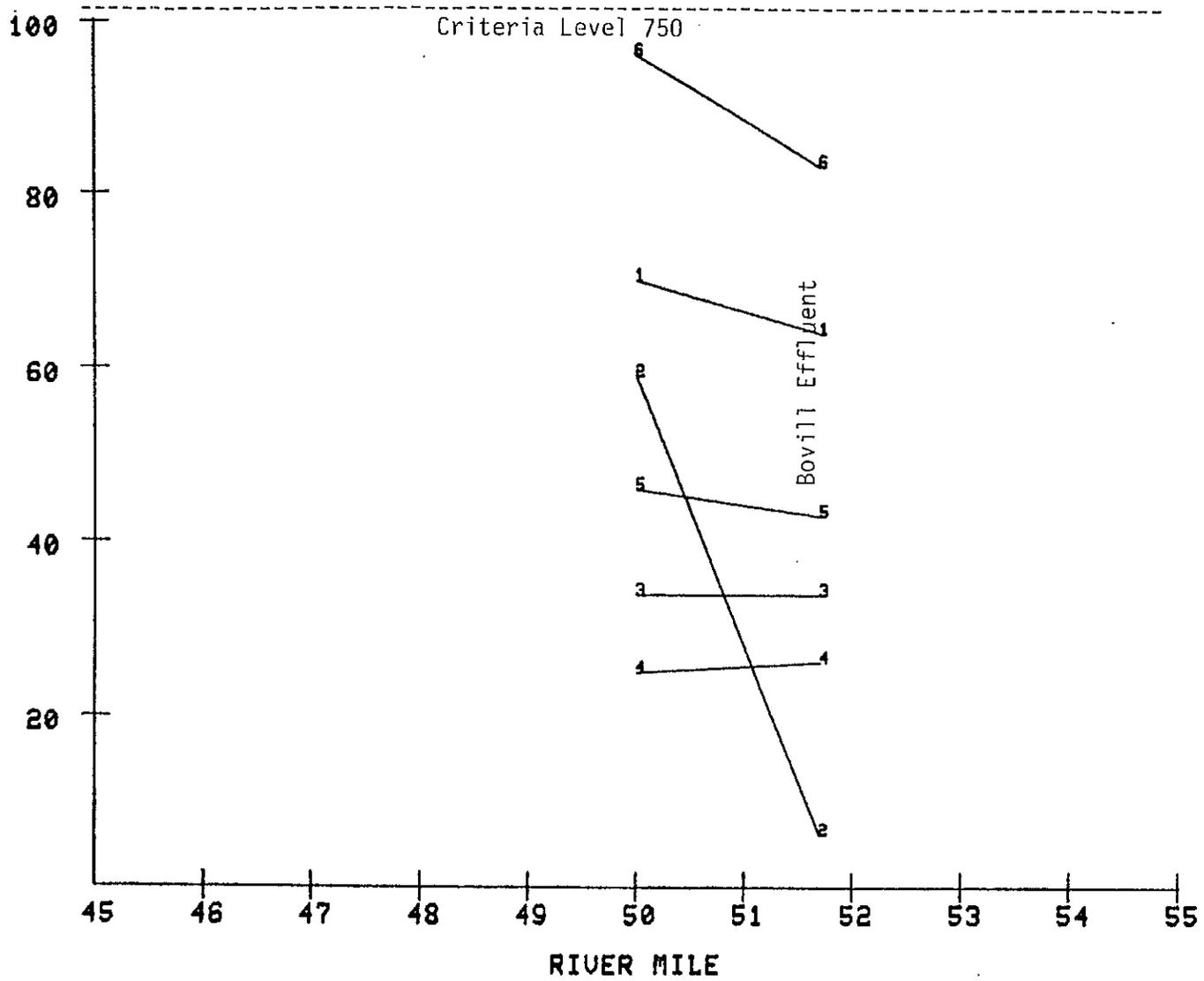


POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING  
 1 : 10-23-78      2 : 01-23-79      3 : 03-19-79  
 4 : 04-30-79      5 : 06-04-79      6 : 08-13-79



POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING  
 1 : 10-23-78      2 : 01-23-79      3 : 03-19-79  
 4 : 04-30-79      5 : 06-04-79      6 : 08-13-79

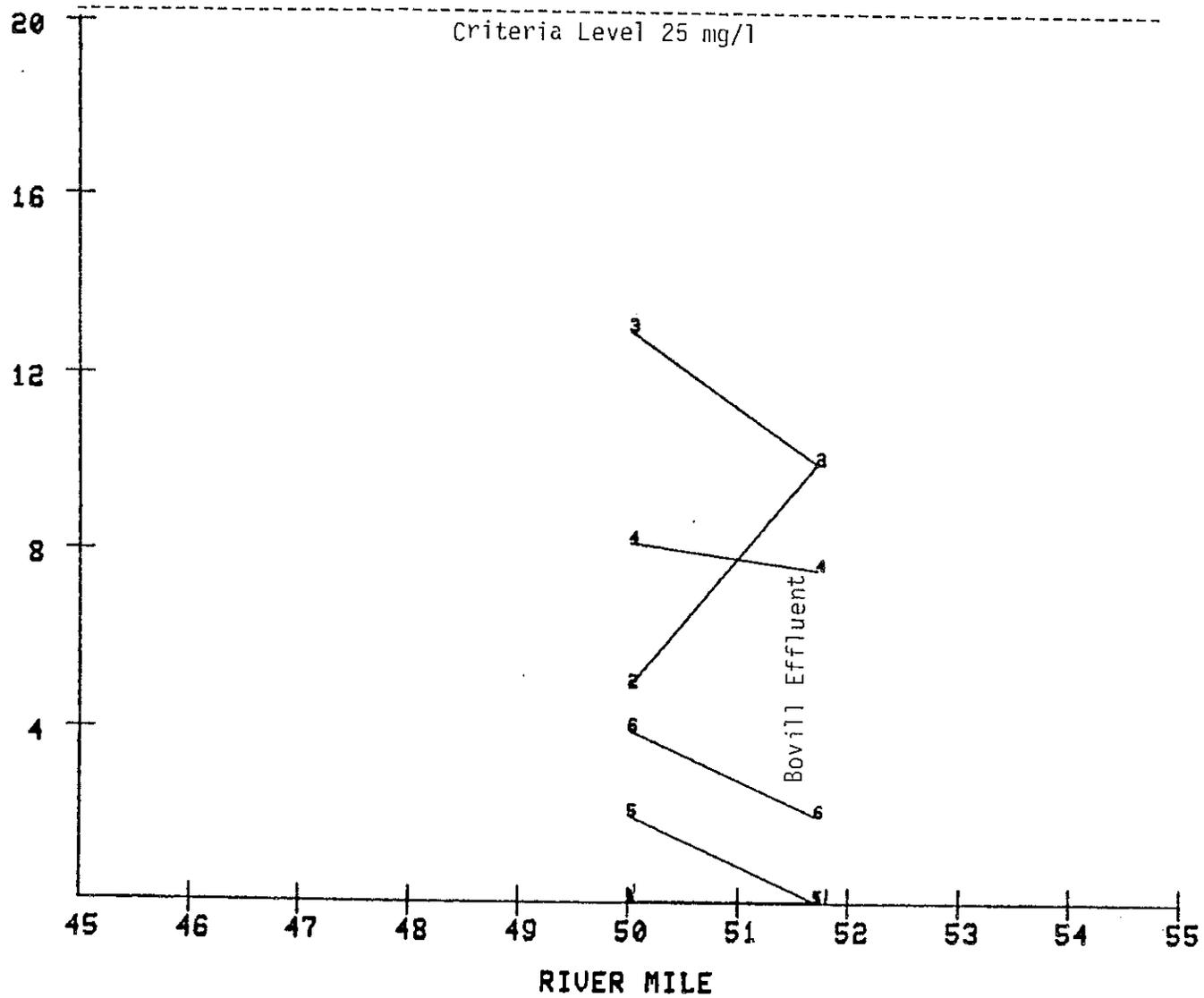
POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING



POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING

1 : 10-23-78      2 : 01-23-79      3 : 03-19-79  
 4 : 04-30-79      5 : 06-04-79      6 : 08-13-79

POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING



POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING

1 : 10-23-78

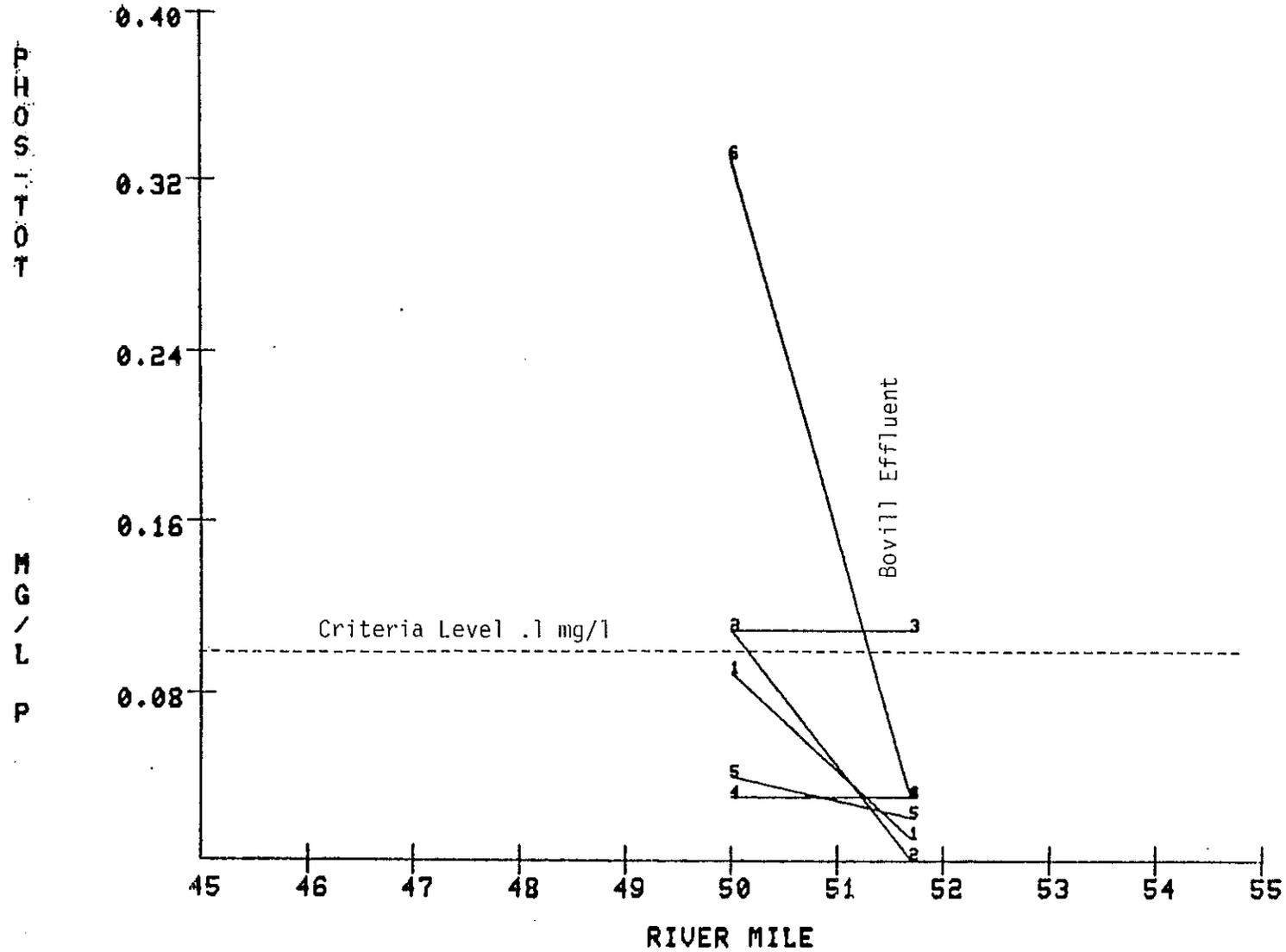
2 : 01-23-79

3 : 03-19-79

4 : 04-30-79

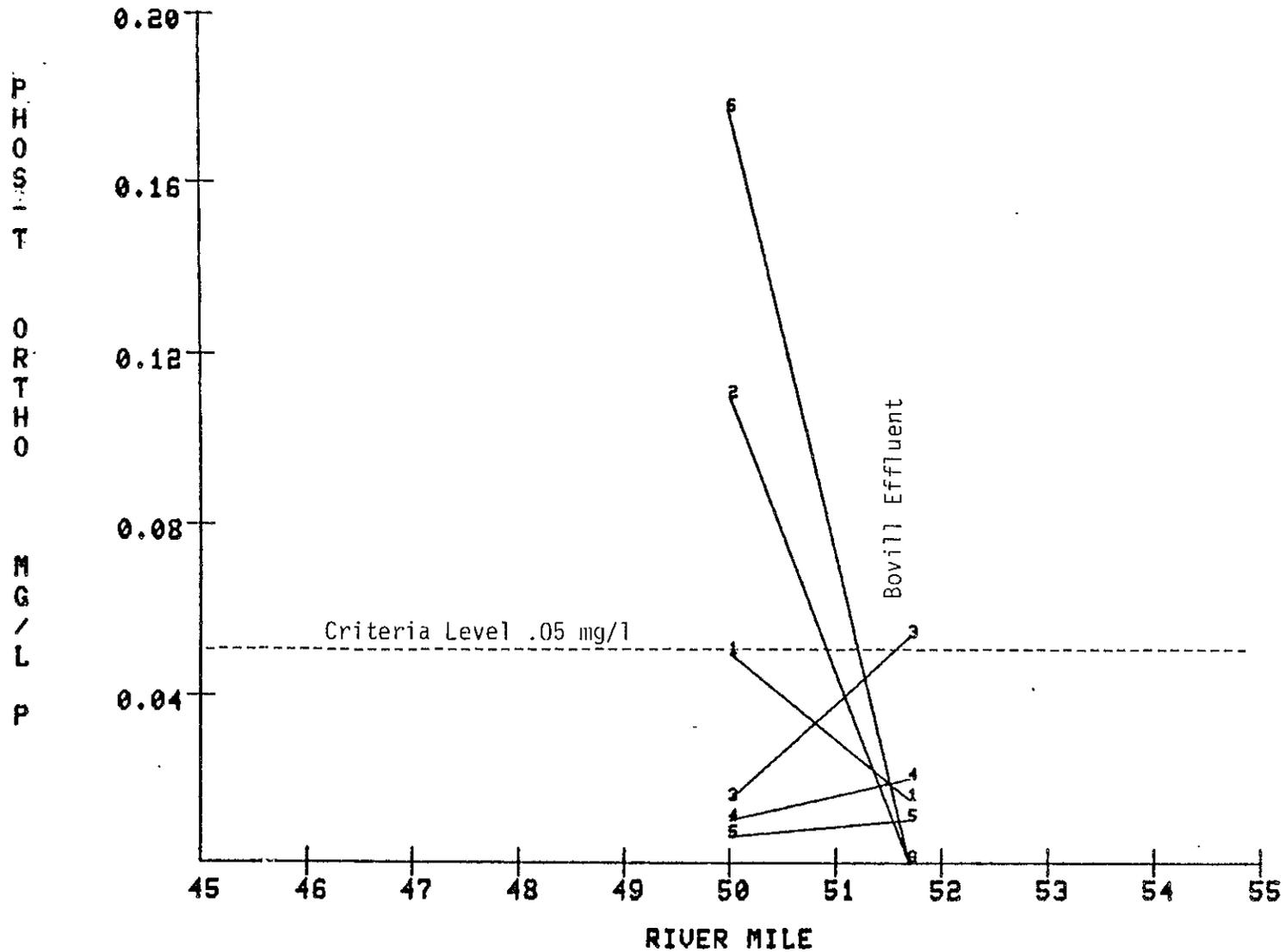
5 : 06-04-79

6 : 08-13-79



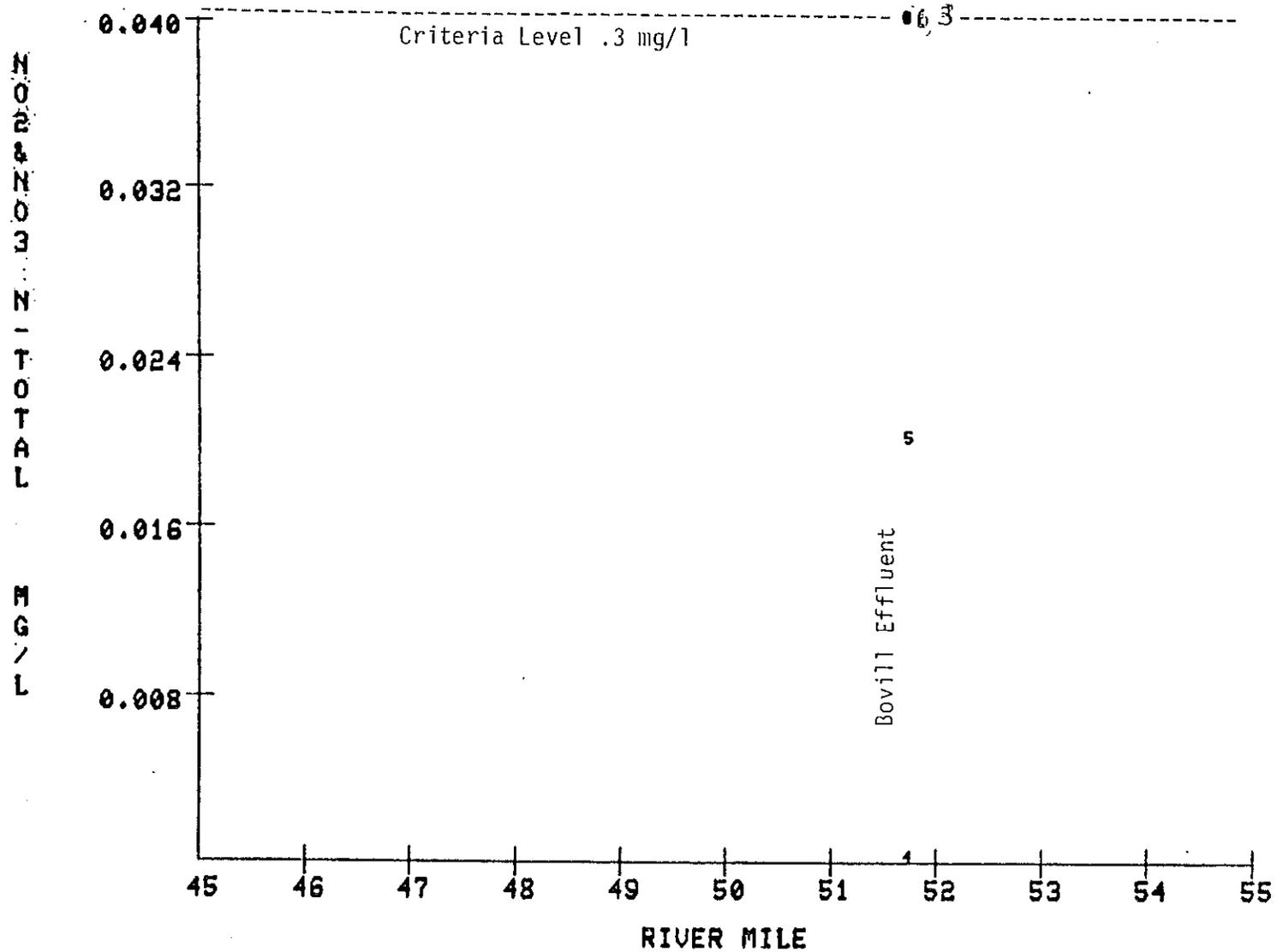
POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING

1 : 10-23-78      2 : 01-23-79      3 : 03-19-79  
 4 : 04-30-79      5 : 06-04-79      6 : 08-13-79



POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING

1 : 10-23-78      2 : 01-23-79      3 : 03-19-79  
 4 : 04-30-79      5 : 06-04-79      6 : 08-13-79



POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING

1 : 10-23-78

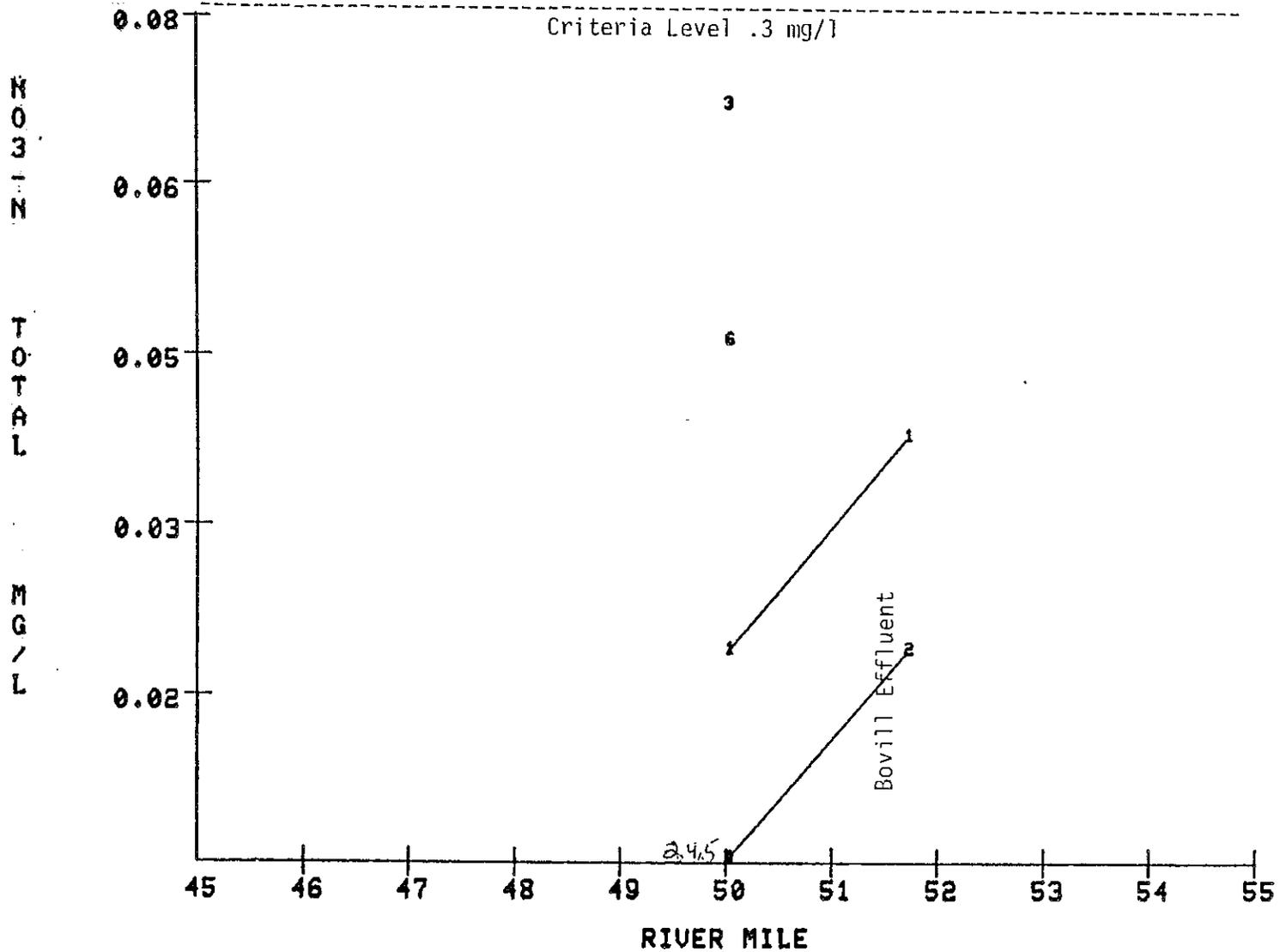
2 : 01-23-79

3 : 03-19-79

4 : 04-30-79

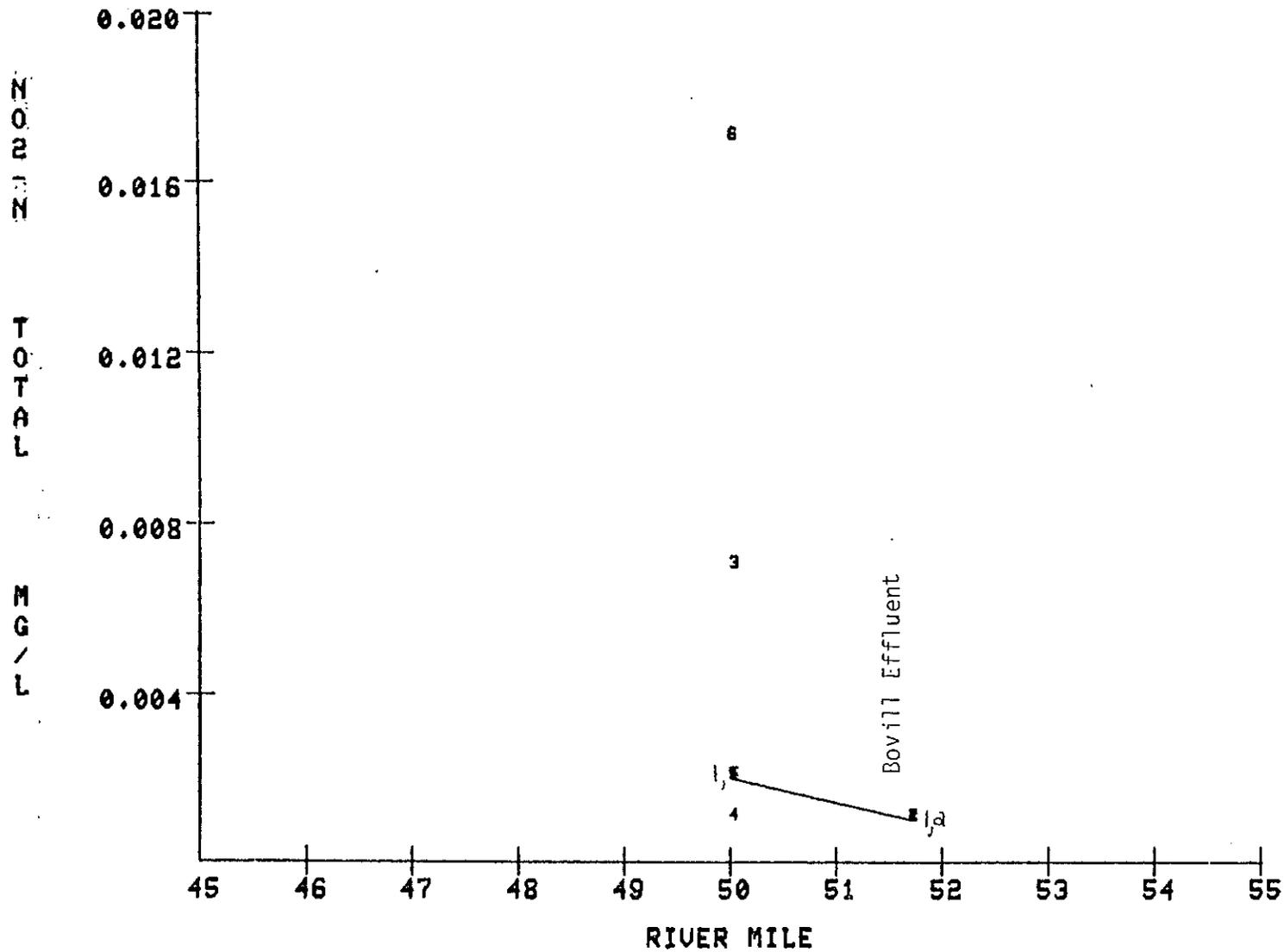
5 : 06-04-79

6 : 08-13-79



POTLATCH RIVER  
 INTENSIVE SURVEY DATA FOR 6 DAYS OF MONITORING

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