Appendix A Table 1. Mean monthly diversion, 1978-1990, included in Text Figure 4 (numbers in parentheses represent number of readings taken over the month.) Source: Washington Department of Ecology except where noted.

Month	1978 (a)	1979 (a)	1980 (a)	1986	1987	1988	1989	1990	Weighted mean (b)
1		37	18					30(2)	28
2		32	15						24
3		30	15			43(2)			29
4		47	58		68	51(3)	35		52
5		130	110		108(2)	85(4)	91		105
6		150	82		124	99(5)	113		114
7		140	96		129	116(3)	108		118
8		110	120		126	113(5)(c)	16(2)		117
9	76	76		91(d)		122(2)(d)	80(d)		89
10	44	51		50					48
11	44	48					38		43
12	31	33							32

(a) Source: Frost (1983). Number of readings per month not specified.
(b) Each year given equal weight.
(c) Flow at one diversion was estimated because of missing data on the last of the five dates from which this average was computed.
(d) Readings taken on or before September 15, the nominal end of the irrigation season.

Appendix A Table 2. Instantaneous discharge measurements, August through October, 1986-1989, included in Text Figure 5.

Year	Date	Total diversion	River Mile 3.3 Woodcock Br. (a)	River Mile 11.4 USGS gauge (b)	River Mile 6.4 101 Bridge (c)
1986	8/13	112(d)	58	170	
	8/26	97(e)	33	130	44
	9/4	91	34	125	
	9/24	67(d)	48	115	
	10/7	50	42(f)	92	
	10/23	63(d)	26	89	
1987	8/13	155(d)	74(g)	229	
	8/26	126	38(h)	149	38
	9/1	125(e)	26(h)	151	26
	9/12	65	37(i)	122(j)	
	9/23	54(e)	47(h)	101	47
	9/30	30(e)	63(h)	93	63
	10/12	41	32	93(j)	
	10/23	36(e)	28(k)	73	37
1988	8/8	106	158	291(j)	
	8/15	106	135	250(j)	
	8/22	108	100	209(j)	
	8/29	125	83	215(j)	
	9/6	122	59	186(j)	
	9/12	99	39(f)	138	
1989	8/21	119	82(k)		
	9/6	122	31		
	9/11	81(m)	21(m)		
	9/26	63(m)	25(m)	97(j)	
	10/4	43	26(n)		
	10/12	68(m)	48(m)		

(a) Source: Washington Department of Ecology except where noted.
(b) Source: U.S. Geological Survey
(c) Source: Jamestown Klallam Tribe
(d) Estimated as flow at gauge minus flow at Woodcock Bridge.
(e) Estimated as flow at gauge minus flow at 101 Bridge.
(f) Estimated as flow at gauge minus total diversion.
(g) Reading taken on 8/12.
(h) Flow assumed equal to flow at 101 Bridge.
(i) Average of 31 cfs on 9/10 and 44 cfs on 9/14.
(j) Not used in calculation; used for data in Appendix A Table 3.
(k) Reading taken on 10/22.
(l) Reading taken on 8/22.
(m) Source: U.S. Fish and Wildlife Service.
(n) Reading taken on 10/5.

Appendix A Table 3. Loss of instream flow between irrigation diversions and Woodcock Bridge, 1987-1989. Data selected from Appendix A Table 2 when direct measurements were available at diversions and at Woodcock Bridge.

Year	Date	Total diversion (a)	River Mile 3.3 Woodcock Br. (a)	River Mile 11.4 USGS gauge (b)	Gauge minus diversion
1987	9/12	65	37(c)	122	57
	10/12	41	32	93	52
1988	8/8	106	158	291	135
	8/15	106	135	250	144
	8/22	108	100	209	101
	8/29	125	83	215	90
	9/6	122	59	186	64
1989	9/26	63(d)	25(d)	97(d)	34

Predictive equation: $W = 0.95(G - D) - 7.7$

where: W = discharge at Woodcock Bridge
G = discharge at USGS Gauge
D = total irrigation diversion

Standard error of estimate = 9 cfs; R squared = 0.970

Predictive Table

Gauge - diversion	Woodcock Bridge	Loss
130	116	14
110	97	13
90	78	12
70	59	11
50	40	10
30	21	9

(a) Source: Washington Department of Ecology except where noted.
(b) Source: U.S. Geological Survey except where noted.
(c) Average of 31 cfs on 9/10 and 44 cfs on 9/14.
(d) Source: U.S. Fish and Wildlife Service.

APPENDIX B. Data Files For Hydraulic Models

```
FILE = MAINMED2.IN4

DUNGENESS RIVER,IFG4,UPPER SITE RM.4.1,LOW TO MED.FLOWS:
MED.FLOW 224 CFS ON 10/17/88, LOW FLOW 32.0 CFS ON 9/13/88,USFWS
IOC       1100000201001000000
QARD  10.0
QARD  20.0
QARD  20.0
QARD  30.0
QARD  40.0
QARD  50.0
QARD  60.0
QARD  70.0
QARD  80.0
QARD  90.0
QARD 100.0
QARD 110.0
QARD 120.0
QARD 130.0
QARD 140.0
QARD 150.0
QARD 160.0
QARD 170.0
QARD 180.0
QARD 190.0
QARD 200.0
QARD 220.0
QARD 240.0
QARD 260.0
QARD 280.0
QARD 300.0
QARD 330.0
QARD 360.0
XSEC   1.0        0.0 .50    188.21    .00250
       1.0  0.0193.1 10.0192.1 20.0192.3 30.0191.3 30.5190.5 32.5189.6
       1.0 36.5189.1 40.5189.4 44.5189.9 48.5189.8 52.5189.9 56.5189.9
       1.0 60.5189.8 64.5189.7 68.5189.7 72.5189.7 76.5189.8 80.5190.3
       1.0 84.5190.5 88.5190.5 92.5190.5 96.5190.5100.5190.5104.5190.3
       1.0108.5190.2112.5189.8116.5189.7120.5189.3124.5188.8128.5188.4
       1.0132.5188.2136.5188.2140.5188.9144.5189.3148.5190.1149.5190.5
       1.0150.0190.5151.7190.8154.0192.0164.0192.7174.0193.0184.0194.0
       1.0185.0194.0
NS     1.0 0.0010.90 0.0010.90 0.0010.90 0.0034.60 0.0034.60 0.0034.60
NS     1.0 0.0076.70 0.0076.70 0.0076.70 0.0076.70 0.0076.70 0.0076.60
NS     1.0 0.0076.60 0.0076.60 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0076.50 0.0076.50
NS     1.0 0.0076.50 0.9076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50
NS     1.0 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0075.60
NS     1.0 0.0075.60
CAL1   1.0    189.90      31.65      35.73
VEL1   1.0 0.00 0.00 0.00 0.00 0.00  .70 1.90 1.90  .00 1.30  .00  .00
VEL1   1.0  .80 1.30 1.10  .40  .10 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   1.0 0.00 0.00  .20  .60 1.60 1.70  .90  .10 0.00 0.00 0.00 0.00
VEL1   1.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL2   1.0    190.30    224.00    224.00
```

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 VEL2   1.0
 VEL2   1.0
 VEL2   1.0
 VEL2   1.0
 XSEC   2.0      124.0 .50    189.90     .00250
        2.0  0.0193.1    .1192.1  2.0191.7  6.0190.3 10.0190.2 14.0190.3
        2.0 18.0190.5 22.0190.3 26.0190.7 30.0190.8 34.0190.7 38.0190.8
        2.0 42.0190.6 46.0190.3 50.0190.2 54.0190.4 58.0190.4 62.0190.6
        2.0 66.0190.7 70.0190.9 74.0191.2 78.0191.1 82.0191.1 86.0191.1
        2.0 90.0190.8 94.0190.2 98.0189.9102.0190.3106.0190.8110.0191.1
        2.0112.0191.7115.5194.2130.0194.5140.0193.9150.0193.2160.0192.4
        2.0170.0192.6175.0192.8
 NS     2.0 0.0013.90 0.0013.90 0.0013.90 0.0013.90 0.0013.90 0.0054.80
 NS     2.0 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.9054.80
 NS     2.0 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80
 NS     2.0 0.0054.80 0.0054.80 0.0054.80 0.0052.50 0.0052.50 0.0052.50
 NS     2.0 0.0052.50 0.9052.50 0.0052.50 0.9052.50 0.0052.50 0.0052.50
 NS     2.0 0.0060.80 0.0060.80 0.0060.80 0.0060.80 0.0060.80 0.0021.90
 NS     2.0 0.0021.90 0.0021.90
 CAL1   2.0    190.82     31.65     25.33
 VEL1   2.0 0.00 0.00 0.00  .60 1.90 1.70 1.20 1.10  .01  .01  .01  .01
 VEL1   2.0 1.10 1.20 1.00 1.20 1.60  .90  .20 0.00 0.00 0.00 0.00 0.00
 VEL1   2.0 0.00  .10  .70  .10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 VEL1   2.0 0.00 0.00
 CAL2   2.0    191.40    224.00    224.00
 VEL2   2.0
 VEL2   2.0
 VEL2   2.0
 VEL2   2.0
 XSEC   3.0      55.0 .50    190.00     .00250
        3.0  0.0196.0    .1195.0  3.0194.0  5.0192.9  8.2192.0 11.0191.0
        3.0 14.0190.6 17.0190.5 20.0190.5 23.0190.3 26.0190.0 29.0190.0
        3.0 32.0190.0 35.0190.2 38.0190.3 41.0190.4 44.0190.3 47.0190.3
        3.0 50.0190.4 53.0190.5 56.0190.7 59.0190.7 62.0190.9 65.0190.8
        3.0 68.0190.7 71.0190.7 74.0190.6 77.0191.3 77.5192.0 78.0192.3
        3.0 80.0195.2 85.0194.8 88.0196.7
 NS     3.0 0.0030.90 0.0030.90 0.0030.90 0.0046.70 0.0046.70 0.0046.70
 NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
 NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
 NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
 NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
 NS     3.0 0.0046.70 0.0046.70 0.0046.70
 CAL1   3.0    191.03     31.65     30.18
 VEL1   3.0 0.00 0.00 0.00 0.00 0.00  .10  .80  .80  .90 1.00 1.10 1.00
 VEL1   3.0 1.00  .90  .80 1.10 1.10  .80  .60  .60  .70  .50  .10  .20
 VEL1   3.0  .20  .60  .60 0.00 0.00 0.00 0.00 0.00 0.00
 CAL2   3.0    191.65    224.00    224.00
 VEL2   3.0
 VEL2   3.0
 VEL2   3.0
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XSEC   3.5       85.0 .50    190.00    .00250
       3.5  0.0195.0  7.0193.6  9.0191.6 10.0187.5 11.0186.6 12.5185.4
       3.5 15.0185.9 16.0186.4 18.0186.9 19.0187.1 20.0187.7 21.0187.9
       3.5 22.0188.4 23.0188.7 24.0189.5 25.0189.8 26.0190.2 27.0190.5
       3.5 28.0190.8 29.0191.1 30.0191.1 31.0191.2 32.0191.3 33.0191.3
       3.5 34.0191.4 35.0191.5 36.0191.5 37.0191.6 39.0191.6 41.0191.6
       3.5 44.0191.7 47.0191.7 48.0191.6 49.0191.6 51.0191.5 53.0191.3
       3.5 55.0191.3 56.0191.7 61.0191.6 63.0192.3 65.0192.0 69.0193.2
       3.5 71.0193.6
NS     3.5 0.0010.90 0.0010.90 0.0012.60 0.0032.60 0.0032.70 0.0032.70
NS     3.5 0.0064.60 0.0065.80 0.0065.80 0.0065.70 0.0065.70 0.0065.70
NS     3.5 0.0065.70 0.0054.60 0.0054.60 0.0043.80 0.0043.80 0.0043.80
NS     3.5 0.0043.80 0.0043.80 0.0034.60 0.0034.60 0.0034.60 0.0034.60
NS     3.5 0.0043.70 0.0043.70 0.0034.70 0.0034.70 0.0034.70 0.0034.60
NS     3.5 0.0034.60 0.0034.60 0.0034.60 0.0034.60 0.0034.60 0.0034.70
NS     3.5 0.0046.80 0.0046.60 0.0046.60 0.0065.80 0.0065.80 0.0065.80
NS     3.5 0.0065.80
CAL1   3.5   191.07      22.46      22.46
VEL1   3.5
VEL1   3.5
VEL1   3.5
VEL1   3.5
CAL2   3.5   191.585    135.00     130.00
VEL2   3.5                1.52 1.70 2.12 2.42 2.45 2.15 1.87 1.60 1.50
VEL2   3.5 1.20  .92  .55  .20  .30  .45  .25  .25  .15  .15  .10  .10
VEL2   3.5  .10  .05 0.00 0.00 0.00                0.00 0.00  .75 1.40
VEL2   3.5  .90
XSEC   4.0       20.0 .50    190.00    .00250
       4.0  0.0196.3  5.0193.4 10.0193.2 19.0192.8 21.5192.1 23.0191.6
       4.0 25.0191.1 27.0190.5 29.0190.3 32.0188.7 35.0188.0 37.0189.1
       4.0 39.0189.4 41.0190.0 43.0190.1 45.0190.1 47.0190.1 49.0190.1
       4.0 51.0190.1 53.0190.1 55.0190.2 57.0189.7 59.0189.3 61.0189.7
       4.0 63.0189.7 65.0189.9 67.0190.1 69.0190.4 71.0190.9 75.0191.6
       4.0 77.0191.6 80.0191.3 81.5192.1 84.6192.8 85.0192.9 90.0193.2
       4.0100.0193.1110.0194.2
NS     4.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0055.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80
CAL1   4.0    191.08     31.65      35.00
VEL1   4.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .10  .20  .10  .50  .50
VEL1   4.0  .65  .60  .60  .80  .80 1.00 1.10 1.20 1.10 1.10 1.00  .90
VEL1   4.0  .60  .40  .33  .30 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   4.0 0.00 0.00
CAL2   4.0    191.77     224.00     224.00
VEL2   4.0
VEL2   4.0
VEL2   4.0
VEL2   4.0
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 XSEC    4.5       15.0 .50     190.00     .00250
         4.5  0.0194.5  7.0193.8 11.0191.7 15.0191.2 20.0191.3 25.0191.4
         4.5 30.0191.7 37.0192.5 40.0191.7 41.0191.3 42.0191.0 43.0190.7
         4.5 44.0190.2 45.0190.2 46.0190.2 47.0190.2 48.0190.3 49.0190.4
         4.5 50.0190.5 51.0190.6 52.0190.5 53.0190.6 54.0190.5 55.0190.4
         4.5 56.0190.5 57.0190.3 58.0190.4 59.0190.3 60.0190.3 61.0190.2
         4.5 62.0190.0 63.0189.8 64.0189.6 65.0189.4 66.0189.0 67.0188.8
         4.5 68.0188.3 69.0188.0 70.0187.8 71.0187.1 73.0187.1 75.0187.1
         4.5 76.0187.3 77.0188.3 77.5191.7 78.0193.0
 NS      4.5 0.0010.90 0.0010.90 0.0010.90 0.0012.50 0.0012.50 0.0010.70
 NS      4.5 0.0010.70 0.0023.60 0.0034.60 4.0034.60 0.0043.70 0.0043.70
 NS      4.5 0.0054.60 0.0054.60 0.0054.70 0.0054.70 0.0054.70 0.0054.70
 NS      4.5 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80
 NS      4.5 0.0056.60 0.0056.60 0.0065.60 0.0065.60 0.0056.60 0.0056.60
 NS      4.5 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
 NS      4.5 0.0062.30 0.3065.80 0.0060.60 0.0060.60 0.0062.70 0.0062.30
 CAL1    4.5   191.075     22.46     22.46
 VEL1    4.5
 VEL1    4.5
 VEL1    4.5
 VEL1    4.5
 CAL2    4.5   191.655    135.00    135.00
 VEL2    4.5                0.00 0.00 0.00
 VEL2    4.5 1.45 1.25 1.40 1.10 1.10 1.00  .75  .90  .90  .95 1.00 1.00
 VEL2    4.5  .95 1.15 1.40 1.60 1.80 1.60 1.50 1.65 2.05 2.40 2.22 2.25
 VEL2    4.5 2.22 2.20 1.75 2.52 2.72 2.37 1.52 0.00
 XSEC    5.0     111.0 .00    190.10    .00250
         5.0  0.0196.2 10.0196.2 20.0195.6 30.0194.5 46.0195.7 50.0193.2
         5.0 51.0192.7 53.0192.1 55.0190.9 57.0190.4 59.0190.2 61.0190.1
         5.0 64.0190.2 66.0190.3 68.0190.6 70.0190.7 72.0190.9 74.0190.9
         5.0 76.0190.7 78.0191.0 80.0191.0 82.0191.4 84.0191.6 86.0191.9
         5.0 88.0191.9 90.0192.2 92.0192.3 94.0192.3 96.0192.4 97.0192.7
         5.0 99.0193.3101.0196.3105.0196.2120.0196.3130.0196.2141.0195.7
 NS      5.0 0.0057.80 0.0057.80 0.0057.80 0.0057.80 0.0057.80 0.0057.80
 NS      5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
 NS      5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
 NS      5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
 NS      5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
 NS      5.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
 CAL1    5.0    191.47     31.65     36.61
 VEL1    5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.30 1.70 1.60 1.90
 VEL1    5.0 2.20 1.70 1.40 1.00 1.60 1.00 1.40 1.30  .50  .00 0.00 0.00
 VEL1    5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL2    5.0    192.47    224.00    224.00
 VEL2    5.0
 VEL2    5.0
 VEL2    5.0
```

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XSEC   6.0       28.0 .50     190.10     .00250
       6.0  0.0196.3 15.0195.9 32.0196.1 35.0193.4 36.0192.9 37.0191.4
       6.0 39.0191.4 41.0190.6 43.0190.4 45.0189.9 50.0189.9 53.0190.3
       6.0 55.0190.5 57.0190.5 59.0190.8 61.0190.8 63.0191.1 65.0191.5
       6.0 67.0191.9 69.0192.0 71.0192.4 73.0192.4 75.0192.4 77.0192.7
       6.0 79.0192.6 80.0192.9 81.7193.4 85.0196.2 86.0197.4100.0197.3
       6.0105.0197.4115.0197.2
NS     6.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0010.90 0.0010.99 0.0010.90 0.0010.90
NS     6.0 0.0010.90 0.0010.90
CAL1   6.0     191.54      31.65      31.56
VEL1   6.0 0.00 0.00 0.00 0.00 0.00 0.00  .80  .90 0.95 1.40 1.50 1.30
VEL1   6.0 1.20 0.90  .90  .80 0.30 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   6.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL2   6.0     192.65     224.00     224.00
VEL2   6.0
VEL2   6.0
VEL2   6.0
XSEC   7.0      136.0 .00     192.90     .00250
       7.0  0.0196.8 10.0197.6 15.0196.5 19.0194.8 21.0194.2 23.0193.8
       7.0 25.0193.5 28.0193.3 31.0193.3 34.0193.2 37.0193.3 40.0193.7
       7.0 43.0193.7 46.0193.5 49.0193.5 52.0193.6 55.0193.5 58.0193.5
       7.0 61.0193.4 64.0193.1 67.0192.9 70.0192.7 73.0193.0 76.0193.2
       7.0 79.0193.5 82.0193.0 85.0193.4 87.0194.1 89.0194.8 90.0194.9
       7.0 91.4195.2100.0196.0140.0197.1150.0196.2160.0196.1170.0196.6
       7.0180.0198.9185.0198.9
NS     7.0 0.0010.90 0.0010.90 0.0010.90 0.0045.90 0.0045.90 0.0065.60
NS     7.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     7.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.50 0.0065.50
NS     7.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     7.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0056.90
NS     7.0 0.0056.90 0.0056.90 0.0056.90 0.0010.90 0.0010.90 0.0010.90
NS     7.0 0.0010.90 0.0010.90
CAL1   7.0     193.71      31.65      29.27
VEL1   7.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .40 1.30 2.20 1.00  .01
VEL1   7.0  .01  .80  .80  .50  .50 1.20 1.00 1.40 1.50 1.60 1.50 1.70
VEL1   7.0 1.30 1.10  .60 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   7.0 0.00 0.00
CAL2   7.0     194.55     224.00     224.00
VEL2   7.0
VEL2   7.0
VEL2   7.0
VEL2   7.0
```

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XSEC    8.0       65.0 .50    192.90     .00250
        8.0  0.0198.5  8.0197.2 10.0196.0 46.0195.4 54.0195.0 56.0194.8
        8.0 58.0194.6 60.0194.6 62.0194.6 64.0194.3 66.0193.8 68.0193.2
        8.0 70.0192.8 72.0193.5 74.0194.0 76.0194.0 78.0194.0 80.0194.0
        8.0 82.0193.5 84.0193.3 86.0193.1 88.0193.3 90.0193.0 92.0193.0
        8.0 94.0192.8 96.0192.6 98.0192.4100.0192.6102.0193.0104.0193.3
        8.0106.0193.4108.0193.5110.0193.6112.0193.1113.5195.0114.5195.4
        8.0115.0195.7116.0196.3125.0196.6135.0196.7145.0195.8155.0195.8
        8.0165.0195.8175.0197.6180.0198.5182.9200.2
NS      8.0 0.0010.90 0.0010.90 0.0010.90 0.0045.60 0.0045.60 0.0045.60
NS      8.0 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60
NS      8.0 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60
NS      8.0 0.0045.60 0.0045.60 0.0067.50 0.0067.50 0.0067.50 0.0067.50
NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50
NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50
NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0010.90 0.0010.90
NS      8.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90
CAL1    8.0    193.96     31.65     28.90
VEL1    8.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .20
VEL1    8.0  .10  .05  .00  .00  .00  .00  .10  .50 1.00 1.10 1.30 1.20
VEL1    8.0 1.40 1.50 1.20 1.30 1.10  .90  .90  .60  .40  .10 0.00 0.00
VEL1    8.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL2    8.0    194.77    224.00    224.00
VEL2    8.0
VEL2    8.0
VEL2    8.0
VEL2    8.0
ENDJ
^Z
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FILE = MAINM1B.IN4

DUNGENESS RIVER,IFG4,UPPER SITE RM.4.1 MED.FLOW 305 CFS ON 7/25/88,
MED.FLOW 224 CFS ON 10/17/88, LOW FLOW 37.0 CFS ON 9/13/88 , USFWS
IOC       1100000201001000000
QARD  10.0
QARD  20.0
QARD  30.0
QARD  40.0
QARD  50.0
QARD  60.0
QARD  70.0
QARD  80.0
QARD  90.0
QARD 100.0
QARD 110.0
QARD 120.0
QARD 130.0
QARD 140.0
QARD 150.0
QARD 160.0
QARD 170.0
QARD 180.0
QARD 190.0
QARD 200.0
QARD 220.0
QARD 240.0
QARD 260.0
QARD 280.0
QARD 300.0
QARD 330.0
QARD 360.0
XSEC   1.0        0.0 .50    188.2     .00250
       1.0  0.0193.1 10.0192.1 20.0192.3 30.0191.3 30.5190.5 32.5189.3
       1.0 36.5189.1 40.5189.0 44.5189.7 48.5190.0 52.5190.0 56.5190.1
       1.0 60.5189.7 64.5189.7 68.5189.9 72.5190.0 76.5189.9 80.5190.3
       1.0 84.5190.5 88.5190.5 92.5190.5 96.5190.5100.5190.5104.5190.3
       1.0108.5190.2112.5189.8116.5189.7120.5189.3124.5188.8128.5188.4
       1.0132.5188.2136.5188.2140.5188.9144.5189.3148.5190.1149.5190.5
       1.0150.0190.5151.7190.8154.0192.0164.0192.7174.0193.0184.0194.0
       1.0185.0194.0
NS     1.0 0.0010.90 0.0010.90 0.0010.90 0.0034.60 0.0034.60 0.0034.60
NS     1.0 0.0076.70 0.0076.70 0.0076.70 0.0076.70 0.0076.70 0.0076.60
NS     1.0 0.0076.60 0.0076.60 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0076.50 0.0076.50
NS     1.0 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50
NS     1.0 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0075.60
CAL1   1.0    190.30    224.00    224.00
VEL1   1.0
VEL1   1.0
VEL1   1.0
VEL1   1.0
CAL2   1.0    190.51    325.83    330.81
VEL2   1.0 0.00 0.00 0.00 0.00 0.00 1.00 1.40 3.60 3.10 3.10 3.60 3.10
```

```
VEL2   1.0 2.10 3.40 3.10 3.20 2.70  .90 0.00 0.00 0.00 0.00 0.00  .50
VEL2   1.0  .30 1.60 2.70 3.20 4.50 4.70 5.80 6.00 3.20 1.40  .30 0.00
VEL2   1.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00
XSEC   2.0      124.0 .50    189.9      .00250
       2.0  0.0193.1   .1192.1  2.0191.7  6.0190.3 10.0190.2 14.0190.3
       2.0 18.0190.5 22.0190.3 26.0190.7 30.0190.8 34.0190.7 38.0190.8
       2.0 42.0190.6 46.0190.3 50.0190.2 54.0190.4 58.0190.4 62.0190.6
       2.0 66.0190.7 70.0190.9 74.0191.2 78.0191.1 82.0191.1 86.0191.1
       2.0 90.0190.8 94.0190.2 98.0189.9102.0190.3106.0190.8110.0191.1
       2.0112.0191.7115.5194.2130.0194.5140.0193.9150.0193.2160.0192.4
       2.0170.0192.6175.0192.8
NS     2.0 0.0013.90 0.0013.90 0.0013.90 0.0013.90 0.0013.90 0.0054.80
NS     2.0 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80
NS     2.0 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80
NS     2.0 0.0054.80 0.0054.80 0.0054.80 0.0052.50 0.0052.50 0.0052.50
NS     2.0 0.0052.50 0.0052.50 0.0052.50 0.0052.50 0.0052.50 0.0052.50
NS     2.0 0.0060.80 0.0060.80 0.0060.80 0.0060.80 0.0060.80 0.0021.90
NS     2.0 0.0021.90 0.0021.90
CAL1   2.0    191.40    224.00    224.00
VEL1   2.0
VEL1   2.0
VEL1   2.0
VEL1   2.0
CAL2   2.0    191.72    325.83    369.70
VEL2   2.0 0.00 0.00 0.00 1.30 3.00 4.20 4.10 3.00 4.20 3.80 3.90 4.80
VEL2   2.0 3.50 4.20 3.90 3.80 2.80 3.10 3.30 2.70 2.70 2.40 2.20 1.70
VEL2   2.0 2.20 2.40 3.10 2.40 1.40  .90 0.00 0.00 0.00 0.00 0.00 0.00
VEL2   2.0 0.00 0.00
XSEC   3.0      55.0 .50    190.0      .00250
       3.0  0.0196.0   .1195.0  3.0194.0  5.0192.9  8.2192.0 11.0191.0
       3.0 14.0190.6 17.0190.5 20.0190.5 23.0190.3 26.0190.0 29.0190.0
       3.0 32.0190.0 35.0190.2 38.0190.3 41.0190.4 44.0190.3 47.0190.3
       3.0 50.0190.4 53.0190.5 56.0190.7 59.0190.7 62.0190.9 65.0190.8
       3.0 68.0190.7 71.0190.7 74.0190.6 77.0191.3 77.5192.0 78.0192.3
       3.0 80.0195.2 85.0194.8 88.0196.7
NS     3.0 0.0030.90 0.0030.90 0.0030.90 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70
CAL1   3.0    191.65    224.00    224.00
VEL1   3.0
VEL1   3.0
VEL1   3.0
CAL2   3.0    192.01    325.83    384.08
VEL2   3.0 0.00 0.00 0.00 0.00 0.00  .90 2.30 3.50 3.60 4.10 4.50 4.60
VEL2   3.0 4.90 5.10 4.60 4.50 3.50 4.10 4.00 3.10 3.80 3.40 3.30 3.10
VEL2   3.0 3.20 3.10 3.00 2.10 0.00 0.00 0.00 0.00 0.00
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 XSEC   3.5       85.0 .50     190.00    .00250
        3.5  0.0195.0  7.0193.6  9.0191.6 10.0187.5 11.0186.6 12.5185.4
        3.5 15.0185.9 16.0186.4 18.0186.9 19.0187.1 20.0187.7 21.0187.9
        3.5 22.0188.4 23.0188.7 24.0189.5 25.0189.8 26.0190.2 27.0190.5
        3.5 28.0190.8 29.0191.1 30.0191.1 31.0191.2 32.0191.3 33.0191.3
        3.5 34.0191.4 35.0191.5 36.0191.5 37.0191.6 39.0191.6 41.0191.6
        3.5 44.0191.7 47.0191.7 48.0191.6 49.0191.6 51.0191.5 53.0191.3
        3.5 55.0191.3 56.0191.7 61.0191.6 63.0192.3 65.0192.0 69.0193.2
        3.5 71.0193.6
 NS     3.5 0.0010.90 0.0010.90 0.0012.60 0.0032.60 0.0032.70 0.0032.70
 NS     3.5 0.0064.60 0.0065.80 0.0065.80 0.0065.70 0.0065.70 0.0065.70
 NS     3.5 0.0065.70 0.0054.60 0.0054.60 0.0043.80 0.0043.80 0.0043.80
 NS     3.5 0.0043.80 0.0043.80 0.0034.60 0.0034.60 0.0034.60 0.0034.60
 NS     3.5 0.0043.70 0.0043.70 0.0034.70 0.0034.70 0.0034.70 0.0034.60
 NS     3.5 0.0034.60 0.0034.60 0.0034.60 0.0034.60 0.0034.60 0.0034.70
 NS     3.5 0.0046.80 0.0046.60 0.0046.60 0.0065.80 0.0065.80 0.0065.80
 NS     3.5 0.0065.80
 CAL1   3.5   191.07      22.46     22.46
 VEL1   3.5
 VEL1   3.5
 VEL1   3.5
 VEL1   3.5
 CAL2   3.5   191.585    135.00    130.00
 VEL2   3.5                1.52 1.70 2.12 2.42 2.45 2.15 1.87 1.60 1.50
 VEL2   3.5 1.20  .92  .55  .20  .30  .45  .25  .25  .15  .15  .10  .10
 VEL2   3.5  .10  .05 0.00 0.00 0.00                0.00 0.00  .75 1.40
 VEL2   3.5  .90
 XSEC   4.0      20.0 .50    190.0     .00250
        4.0  0.0196.3  5.0193.4 10.0193.2 19.0192.8 21.5192.1 23.0191.6
        4.0 25.0191.1 27.0190.5 29.0190.3 32.0188.7 35.0188.0 37.0189.1
        4.0 39.0189.4 41.0190.0 43.0190.1 45.0190.1 47.0190.1 49.0190.1
        4.0 51.0190.1 53.0190.1 55.0190.2 57.0189.7 59.0189.3 61.0189.7
        4.0 63.0189.7 65.0189.9 67.0190.1 69.0190.4 71.0190.9 75.0191.6
        4.0 77.0191.6 80.0191.3 81.5192.1 84.6192.8 85.0192.9 90.0193.2
        4.0100.0193.1110.0194.2
 NS     4.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0065.80 0.0065.80
 NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
 NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
 NS     4.0 0.0065.80 0.0065.80 0.0055.80 0.0065.80 0.0065.80 0.0065.80
 NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
 NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
 NS     4.0 0.0065.80 0.0065.80
 CAL1   4.0    191.77     224.00    224.00
 VEL1   4.0
 VEL1   4.0
 VEL1   4.0
 VEL1   4.0
 CAL2   4.0    192.02     325.83    307.00
 VEL2   4.0 0.00 0.00 0.00 0.00 0.00  .50  .40  .80 1.20 2.00 2.00 2.30
 VEL2   4.0 3.20 3.10 3.20 2.90 3.50 4.00 4.50 3.60 4.20 4.56 4.35 5.30
 VEL2   4.0 4.60 2.80 1.60 1.00 1.00 1.00  .70  .50 0.00 0.00 0.00 0.00
 VEL2   4.0 0.00 0.00
```

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XSEC   4.5      15.0 .50    190.00     .00250
       4.5  0.0194.5  7.0193.8 11.0191.7 15.0191.2 20.0191.3 25.0191.4
       4.5 30.0191.7 37.0192.5 40.0191.7 41.0191.3 42.0191.0 43.0190.7
       4.5 44.0190.2 45.0190.2 46.0190.2 47.0190.2 48.0190.3 49.0190.4
       4.5 50.0190.5 51.0190.6 52.0190.5 53.0190.6 54.0190.5 55.0190.4
       4.5 56.0190.5 57.0190.3 58.0190.4 59.0190.3 60.0190.3 61.0190.2
       4.5 62.0190.0 63.0189.8 64.0189.6 65.0189.4 66.0189.0 67.0188.8
       4.5 68.0188.3 69.0188.0 70.0187.8 71.0187.1 73.0187.1 75.0187.1
       4.5 76.0187.3 77.0188.3 77.5191.7 78.0193.0
NS     4.5 0.0010.90 0.0010.90 0.0010.90 0.0012.50 0.0012.50 0.0010.70
NS     4.5 0.0010.70 0.0023.60 0.0034.60 4.0034.60 0.0043.70 0.0043.70
NS     4.5 0.0054.60 0.0054.60 0.0054.70 0.0054.70 0.0054.70 0.0054.70
NS     4.5 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80
NS     4.5 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0056.60 0.0056.60
NS     4.5 0.0056.60 0.0056.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     4.5 0.0065.60 0.0065.60 0.0065.60 0.0062.70 0.0062.70 0.0062.30
NS     4.5 0.0062.30 0.3065.80 0.0060.60 0.0060.60
CAL1   4.5   191.075     22.46     22.46
VEL1   4.5
VEL1   4.5
VEL1   4.5
VEL1   4.5
CAL2   4.5   191.655    135.00    135.00
VEL2   4.5                0.00 0.00 0.00                    .30  .65  .85
VEL2   4.5 1.45 1.25 1.40 1.10 1.10 1.00  .75  .90  .90  .95 1.00 1.00
VEL2   4.5  .95 1.15 1.40 1.60 1.80 1.60 1.50 1.65 2.05 2.40 2.22 2.25
VEL2   4.5 2.22 2.20 1.75 2.52 2.72 2.37 1.52 0.00
XSEC   5.0     111.0 .00    190.1     .00250
       5.0  0.0196.2 10.0196.2 20.0195.6 30.0194.5 46.0195.7 50.0193.2
       5.0 51.0192.7 53.0192.1 55.0190.9 57.0190.4 59.0190.2 61.0190.1
       5.0 64.0190.2 66.0190.3 68.0190.6 70.0190.7 72.0190.9 74.0190.9
       5.0 76.0190.7 78.0191.0 80.0191.6 82.0191.4 84.0191.6 86.0191.9
       5.0 88.0191.9 90.0192.2 92.0192.3 94.0192.3 96.0192.4 97.0192.7
       5.0 99.0193.3101.0196.3105.0196.2120.0196.3130.0196.2141.0195.7
NS     5.0 0.0057.80 0.0057.80 0.0057.80 0.0057.80 0.0057.80 0.0057.80
NS     5.0 0.2057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
CAL1   5.0    192.47    224.00    224.00
VEL1   5.0
VEL1   5.0
VEL1   5.0
CAL2   5.0    192.73    325.83    311.29
VEL2   5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 3.30 2.50 3.80 5.90 5.45
VEL2   5.0 5.90 5.70 4.50 4.70 4.90 4.60 4.60 4.90 4.30 4.40 3.80 2.60
VEL2   5.0 2.70 1.80 1.00  .60 1.20 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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XSEC   6.0      28.0 .50    190.1     .00250
       6.0  0.0196.3 15.0195.9 32.0196.1 35.0193.4 36.0192.9 37.0191.4
       6.0 39.0191.4 41.0190.6 43.0190.4 45.0189.9 50.0189.9 53.0190.3
       6.0 55.0190.5 57.0190.5 59.0190.8 61.0190.8 63.0191.1 65.0191.5
       6.0 67.0191.9 69.0192.0 71.0192.4 73.0192.4 75.0192.4 77.0192.7
       6.0 79.0192.6 80.0192.9 81.7193.4 85.0196.2 86.0197.4100.0197.3
       6.0105.0197.4115.0197.2
NS     6.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0010.90 0.0010.99 0.0010.90 0.0010.90
NS     6.0 0.0010.90 0.0010.90
CAL1   6.0    192.65    224.00    224.00
VEL1   6.0
VEL1   6.0
VEL1   6.0
CAL2   6.0    192.94    325.83    297.84
VEL2   6.0 0.00 0.00 0.00 0.00 0.00 1.50 2.30 3.10 4.10 5.75 4.65 4.30
VEL2   6.0 4.50 4.50 4.00 3.60 3.06 2.50 1.80 2.10 1.70 1.50 1.30  .40
VEL2   6.0  .70 0.00 0.00 0.00 0.00 0.00 0.00 0.00
XSEC   7.0     136.0 .00    192.9     .00250
       7.0  0.0196.8 10.0197.6 15.0196.5 19.0194.8 21.0194.2 23.0193.8
       7.0 25.0193.5 28.0193.3 31.0193.3 34.0193.2 37.0193.3 40.0193.8
       7.0 43.0193.9 46.0194.2 49.0193.9 52.0193.8 55.0193.5 58.0193.5
       7.0 61.0193.4 64.0193.1 67.0192.9 70.0192.7 73.0193.0 76.0193.2
       7.0 79.0193.5 82.0193.0 85.0193.4 87.0194.1 89.0194.8 90.0194.9
       7.0 91.4195.2100.0196.0140.0197.1150.0196.2160.0196.1170.0196.6
       7.0180.0198.9185.0198.9
NS     7.0 0.0010.90 0.0010.90 0.0010.90 0.0045.90 0.0045.90 0.0065.60
NS     7.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     7.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.50 0.0065.50
NS     7.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     7.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0056.90
NS     7.0 0.0056.90 0.0056.90 0.0056.90 0.0010.90 0.0010.90 0.0010.90
NS     7.0 0.0010.90 0.0010.90
CAL1   7.0    194.55    224.00    224.00
VEL1   7.0
VEL1   7.0
VEL1   7.0
VEL1   7.0
CAL2   7.0    194.75    325.83    303.12
VEL2   7.0 0.00 0.00 0.00 0.00 1.50 2.60 2.90 2.80 2.70 2.90 3.60 3.40
VEL2   7.0 3.70 3.30 3.70 3.70 3.30 4.10 3.70 3.55 4.20 4.60 3.90 4.60
VEL2   7.0 4.00 2.80 1.90  .90 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL2   7.0 0.00 0.00
```

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XSEC    8.0       65.0 .50     192.9      .00250
        8.0  0.0198.5  8.0197.2 10.0196.0 46.0195.4 54.0195.0 56.0194.8
        8.0 58.0194.6 60.0194.6 62.0194.6 64.0194.3 66.0193.8 68.0193.2
        8.0 70.0192.8 72.0193.5 74.0194.0 76.0194.4 78.0194.3 80.0194.0
        8.0 82.0193.5 84.0193.3 86.0193.1 88.0193.3 90.0193.0 92.0193.0
        8.0 94.0192.8 96.0192.6 98.0192.4100.0192.6102.0193.0104.0193.3
        8.0106.0193.4108.0193.5110.0193.6112.0193.1113.5195.0114.5195.4
        8.0115.0195.7116.0196.3125.0196.6135.0196.7145.0195.8155.0195.8
        8.0165.0195.8175.0197.6180.0198.5182.9200.2
NS      8.0 0.0010.90 0.0010.90 0.0010.90 0.0045.60 0.2045.60 0.0045.60
NS      8.0 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60
NS      8.0 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60
NS      8.0 0.0045.60 0.0045.60 0.0067.50 0.0067.50 0.0067.50 0.0067.50
NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50
NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50
NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0010.90 0.0010.90
NS      8.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90
CAL1    8.0     194.77     224.00     224.00
VEL1    8.0
VEL1    8.0
VEL1    8.0
VEL1    8.0
CAL2    8.0     195.03     328.50     328.50
VEL2    8.0 0.00 0.00 0.00 0.00 0.00  .90  .90  .40  .70 1.00 2.20 2.90
VEL2    8.0 2.10 1.60 2.80 2.50 1.80 2.40 3.60 4.40 4.50 4.40 4.90 4.00
VEL2    8.0 4.50 5.20 4.85 4.70 5.10 3.40 4.40 2.70 2.30 1.30 0.00 0.00
VEL2    8.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
ENDJ
^Z
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FILE = MAINMED3.IN4

DUNGENESS RIVER,IFG4,UPPER SITE RM.4.1 MED.FLOW 305 CFS ON 7/25/88,
MED.FLOW 224 CFS ON 10/17/88, LOW FLOW 37.0 CFS ON 9/13/88 , USFWS
IOC       1100000201001000000
QARD 300.0
QARD 325.0
QARD 350.0
QARD 375.0
QARD 400.0
QARD 425.0
QARD 450.0
QARD 475.0
QARD 500.0
QARD 525.0
QARD 550.0
QARD 575.0
QARD 600.0
QARD 625.0
QARD 650.0
QARD 675.0
QARD 700.0
QARD 725.0
QARD 750.0
XSEC   1.0        0.0 .50    188.2      .00250
       1.0  0.0193.1 10.0192.1 20.0192.3 30.0191.3 30.5190.5 32.5189.3
       1.0 36.5189.1 40.5189.0 44.5189.7 48.5190.0 52.5190.0 56.5190.1
       1.0 60.5189.7 64.5189.7 68.5189.9 72.5190.0 76.5189.9 80.5190.3
       1.0 84.5190.5 88.5190.5 92.5190.5 96.5190.5100.5190.5104.5190.3
       1.0108.5190.2112.5189.8116.5189.7120.5189.3124.5188.8128.5188.4
       1.0132.5188.2136.5188.2140.5188.9144.5189.3148.5190.1149.5190.5
       1.0150.0190.5151.7190.8154.0192.0164.0192.7174.0193.0184.0194.0
       1.0185.0194.0
NS     1.0 0.0010.90 0.0010.90 0.0010.90 0.0034.60 0.1034.60 0.0034.60
NS     1.0 0.0076.70 0.0076.70 0.0076.70 0.0076.70 0.0076.70 0.0076.60
NS     1.0 0.0076.60 0.0076.60 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0565.50 0.0565.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0076.50 0.0076.50
NS     1.0 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50
NS     1.0 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0075.60
NS     1.0 0.0075.60
CAL1   1.0     190.51     325.83     330.81
VEL1   1.0 0.00 0.00 0.00 0.00 0.00 1.00 1.40 3.60 3.10 3.10 3.60 3.10
VEL1   1.0 2.10 3.40 3.10 3.20 2.70  .90 0.00 0.00 0.00 0.00 0.00  .50
VEL1   1.0  .30 1.60 2.70 3.20 4.50 4.70 5.80 6.00 3.20 1.40  .30 0.00
VEL1   1.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL2   1.0     190.84     703.36     762.28
VEL2   1.0
VEL2   1.0
VEL2   1.0
VEL2   1.0
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 XSEC    2.0      124.0 .50     189.9      .00250
         2.0  0.0193.1    .1192.1  2.0191.7  6.0190.3 10.0190.2 14.0190.3
         2.0 18.0190.5 22.0190.3 26.0190.7 30.0190.8 34.0190.7 38.0190.8
         2.0 42.0190.6 46.0190.3 50.0190.2 54.0190.4 58.0190.4 62.0190.6
         2.0 66.0190.7 70.0190.9 74.0191.2 78.0191.1 82.0191.1 86.0191.1
         2.0 90.0190.8 94.0190.2 98.0189.9102.0190.3106.0190.8110.0191.1
         2.0112.0191.7115.5194.2130.0194.5140.0193.9150.0193.2160.0192.4
         2.0170.0192.6175.0192.8
 NS      2.0 0.0013.90 0.0013.90 0.0013.90 0.0013.90 0.0013.90 0.0054.80
 NS      2.0 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80
 NS      2.0 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80
 NS      2.0 0.0054.80 0.0054.80 0.0054.80 0.0052.50 0.0052.50 0.0052.50
 NS      2.0 0.0052.50 0.0052.50 0.0052.50 0.0052.50 0.0052.50 0.0052.50
 NS      2.0 0.0060.80 0.0060.80 0.0060.80 0.0060.80 0.0060.80 0.0021.90
 NS      2.0 0.0021.90 0.0021.90
 CAL1    2.0     191.72     325.83     369.70
 VEL1    2.0 0.00 0.00 0.00 1.30 3.00 4.20 4.10 3.00 4.20 3.80 3.90 4.80
 VEL1    2.0 3.50 4.20 3.90 3.80 2.80 3.10 3.30 2.70 2.70 2.40 2.20 1.70
 VEL1    2.0 2.20 2.40 3.10 2.40 1.40  .90 0.00 0.00 0.00 0.00 0.00 0.00
 VEL1    2.0 0.00 0.00
 CAL2    2.0     192.10     703.36     772.42
 VEL2    2.0
 VEL2    2.0
 VEL2    2.0
 VEL2    2.0
 XSEC    3.0       55.0 .50     190.0      .00250
         3.0  0.0196.0    .1195.0  3.0194.0  5.0192.9  8.2192.0 11.0191.0
         3.0 14.0190.6 17.0190.5 20.0190.5 23.0190.3 26.0190.0 29.0190.0
         3.0 32.0190.0 35.0190.2 38.0190.3 41.0190.4 44.0190.3 47.0190.3
         3.0 50.0190.4 53.0190.5 56.0190.7 59.0190.7 62.0190.9 65.0190.8
         3.0 68.0190.7 71.0190.7 74.0190.6 77.0191.3 77.5192.0 78.0192.3
         3.0 80.0195.2 85.0194.8 88.0196.7
 NS      3.0 0.0030.90 0.0030.90 0.0030.90 0.0046.70 0.0046.70 0.0046.70
 NS      3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
 NS      3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
 NS      3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
 NS      3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
 NS      3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.1046.70 0.0046.70
 CAL1    3.0     192.01     325.83     384.08
 VEL1    3.0 0.00 0.00 0.00 0.00 0.00  .90 2.30 3.50 3.60 4.10 4.50 4.60
 VEL1    3.0 4.90 5.10 4.60 4.50 3.50 4.10 4.00 3.10 3.80 3.40 3.30 3.10
 VEL1    3.0 3.20 3.10 3.00 2.10 0.00 0.00 0.00 0.00 0.00
 CAL2    3.0     192.25     703.36     683.20
 VEL2    3.0
 VEL2    3.0
 VEL2    3.0
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 XSEC    4.0      105.0 .50     190.0      .00250
         4.0  0.0196.3  5.0193.4 10.0193.2 19.0192.8 21.5192.1 23.0191.6
         4.0 25.0191.1 27.0190.5 29.0190.3 32.0188.7 35.0188.0 37.0189.1
         4.0 39.0189.4 41.0190.0 43.0190.1 45.0190.1 47.0190.1 49.0190.1
         4.0 51.0190.1 53.0190.1 55.0190.2 57.0189.7 59.0189.3 61.0189.7
         4.0 63.0189.7 65.0189.9 67.0190.1 69.0190.4 71.0190.9 75.0191.6
         4.0 77.0191.6 80.0191.3 81.5192.1 84.6192.8 85.0192.9 90.0193.2
         4.0100.0193.1110.0194.2
 NS      4.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0065.80 0.0065.80
 NS      4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
 NS      4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
 NS      4.0 0.0065.80 0.0065.80 0.0055.80 0.0065.80 0.0065.80 0.0065.80
 NS      4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
 NS      4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
 NS      4.0 0.0065.80 0.0065.80
 CAL1    4.0    192.02    325.83    307.00
 VEL1    4.0 0.00 0.00 0.00 0.00 0.00  .50  .40  .80 1.20 2.00 2.00 2.30
 VEL1    4.0 3.20 3.10 3.20 2.90 3.50 4.00 4.50 3.60 4.20 4.56 4.35 5.30
 VEL1    4.0 4.60 2.80 1.60 1.00 1.00 1.00  .70  .50 0.00 0.00 0.00 0.00
 VEL1    4.0 0.00 0.00
 CAL2    4.0    192.75    703.36    754.65
 VEL2    4.0
 VEL2    4.0
 VEL2    4.0
 VEL2    4.0
 XSEC    5.0      126.0 .00     190.1      .00250
         5.0  0.0196.2 10.0196.2 20.0195.6 30.0194.5 46.0195.7 50.0193.2
         5.0 51.0192.7 53.0192.1 55.0190.9 57.0190.4 59.0190.2 61.0190.1
         5.0 64.0190.2 66.0190.3 68.0190.6 70.0190.7 72.0190.9 74.0190.9
         5.0 76.0190.7 78.0191.0 80.0191.6 82.0191.4 84.0191.6 86.0191.9
         5.0 88.0191.9 90.0192.2 92.0192.3 94.0192.3 96.0192.4 97.0192.7
         5.0 99.0193.3101.0196.3105.0196.2120.0196.3130.0196.2141.0195.7
 NS      5.0 0.0057.80 0.0057.80 0.0057.80 0.0057.80 0.0057.80 0.0057.80
 NS      5.0 0.2057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
 NS      5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
 NS      5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
 NS      5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
 NS      5.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.2076.80
 CAL1    5.0    192.73    325.83    311.29
 VEL1    5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 3.30 2.50 3.80 5.90 5.45
 VEL1    5.0 5.90 5.70 4.50 4.70 4.90 4.60 4.60 4.90 4.30 4.40 3.80 2.60
 VEL1    5.0 2.70 1.80 1.00  .60 1.20 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL2    5.0    193.27    703.36    691.39
 VEL2    5.0
 VEL2    5.0
 VEL2    5.0
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XSEC   6.0       28.0 .50     190.1      .00250
       6.0  0.0196.3 15.0195.9 32.0196.1 35.0193.4 36.0192.9 37.0191.4
       6.0 39.0191.4 41.0190.6 43.0190.4 45.0189.9 50.0189.9 53.0190.3
       6.0 55.0190.5 57.0190.5 59.0190.8 61.0190.8 63.0191.1 65.0191.5
       6.0 67.0191.9 69.0192.0 71.0192.4 73.0192.4 75.0192.4 77.0192.7
       6.0 79.0192.6 80.0192.9 81.7193.4 85.0196.2 86.0197.4100.0197.3
       6.0105.0197.4115.0197.2
NS     6.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.2065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.2065.70 0.0010.90 0.0010.99 0.0010.90 0.0010.90
NS     6.0 0.0010.90 0.0010.90
CAL1   6.0     192.94     325.83     297.84
VEL1   6.0 0.00 0.00 0.00 0.00 0.00 1.50 2.30 3.10 4.10 5.75 4.65 4.30
VEL1   6.0 4.50 4.50 4.00 3.60 3.06 2.50 1.80 2.10 1.70 1.50 1.30  .40
VEL1   6.0  .70 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL2   6.0     193.40     703.36     663.43
VEL2   6.0
VEL2   6.0
VEL2   6.0
XSEC   7.0      136.0 .00     192.9      .00250
       7.0  0.0196.8 10.0197.6 15.0196.5 19.0194.8 21.0194.2 23.0193.8
       7.0 25.0193.5 28.0193.3 31.0193.3 34.0193.2 37.0193.3 40.0193.8
       7.0 43.0193.9 46.0194.2 49.0193.9 52.0193.8 55.0193.5 58.0193.5
       7.0 61.0193.4 64.0193.1 67.0192.9 70.0192.7 73.0193.0 76.0193.2
       7.0 79.0193.5 82.0193.0 85.0193.4 87.0194.1 89.0194.8 90.0194.9
       7.0 91.4195.2100.0196.0140.0197.1150.0196.2160.0196.1170.0196.6
       7.0180.0198.9185.0198.9
NS     7.0 0.0010.90 0.0010.90 0.0010.90 0.0045.90 0.0045.90 0.0065.60
NS     7.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     7.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.50 0.0065.50
NS     7.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     7.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0056.90
NS     7.0 0.0056.90 0.0056.90 0.0056.90 0.0010.90 0.0010.90 0.0010.90
NS     7.0 0.0010.90 0.0010.90
CAL1   7.0     194.75     325.83     302.76
VEL1   7.0 0.00 0.00 0.00 0.00 1.50 2.60 2.90 2.80 2.70 2.90 3.60 3.40
VEL1   7.0 3.70 3.30 3.70 3.70 3.30 4.10 3.70 3.55 4.20 4.60 3.90 4.60
VEL1   7.0 4.00 2.80 1.90  .90 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   7.0 0.00 0.00
CAL2   7.0     195.15     703.36     582.03
VEL2   7.0
VEL2   7.0
VEL2   7.0
VEL2   7.0
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 XSEC    8.0       65.0 .50     192.9      .00250
         8.0  0.0198.5  8.0197.2 10.0196.0 46.0195.4 54.0195.0 56.0194.8
         8.0 58.0194.6 60.0194.6 62.0194.6 64.0194.3 66.0193.8 68.0193.2
         8.0 70.0192.8 72.0193.5 74.0194.0 76.0194.4 78.0194.3 80.0194.0
         8.0 82.0193.5 84.0193.3 86.0193.1 88.0193.3 90.0193.0 92.0193.0
         8.0 94.0192.8 96.0192.6 98.0192.4100.0192.6102.0193.0104.0193.3
         8.0106.0193.4108.0193.5110.0193.6112.0193.1113.5195.0114.5195.4
         8.0115.0195.7116.0196.3125.0196.6135.0196.7145.0195.8155.0195.8
         8.0165.0195.8175.0197.6180.0198.5182.9200.2
 NS      8.0 0.0010.90 0.0010.90 0.0010.90 0.0045.60 0.2045.60 0.0045.60
 NS      8.0 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60
 NS      8.0 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60
 NS      8.0 0.0045.60 0.0045.60 0.0067.50 0.0067.50 0.0067.50 0.0067.50
 NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50
 NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50
 NS      8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0010.90 0.0010.90
 CAL1    8.0     195.03     325.83     303.12
 VEL1    8.0 0.00 0.00 0.00 0.00 0.00  .90  .90  .40  .70 1.00 2.20 2.90
 VEL1    8.0 2.10 1.60 2.80 2.50 1.80 2.40 3.60 4.40 4.50 4.40 4.90 4.00
 VEL1    8.0 4.50 5.20 4.85 4.70 5.10 3.40 4.40 2.70 2.30 1.30 0.00 0.00
 VEL1    8.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 CAL2    8.0     195.35     703.36     717.48
 VEL2    8.0
 VEL2    8.0
 VEL2    8.0
 VEL2    8.0
 ENDJ
 ^Z
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FILE = MAINHIGH.IN4

DUNGENESS UPPER SITE RM. 4.1,MAIN CHAN.,HIGH FLOW 720CFS ON 6/21/88,
305 CFS ON 7/25/88,TRANSECTS 1-8,USFWS
IOC       1100000201001000000
QARD 300.0
QARD 325.0
QARD 350.0
QARD 375.0
QARD 400.0
QARD 425.0
QARD 450.0
QARD 475.0
QARD 500.0
QARD 525.0
QARD 550.0
QARD 575.0
QARD 600.0
QARD 625.0
QARD 650.0
QARD 675.0
QARD 700.0
QARD 725.0
QARD 750.0
XSEC   1.0        0.0 .50    187.80     .00250
       1.0  0.0193.1 10.0192.1 20.0192.3 30.0191.3 30.5190.8 32.5189.4
       1.0 35.0189.6 37.5188.9 40.0189.0 42.5189.0 45.0189.3 47.5189.8
       1.0 50.0189.8 52.5189.9 55.0189.9 57.5189.9 60.0189.7 62.5189.7
       1.0 65.0189.7 67.5189.9 70.0190.0 72.5189.9 75.0189.9 77.5190.1
       1.0 80.0190.3 82.5190.5 85.0190.6 87.5190.6 90.0190.6 92.5190.7
       1.0 95.0190.7 97.5190.6100.0190.4102.5190.2105.0190.0107.5190.0
       1.0110.0189.8112.5189.5115.0189.3117.5189.3120.0188.9122.5188.9
       1.0125.0188.2127.5188.2130.0187.9132.5187.8135.0188.2137.5188.0
       1.0140.0188.2142.5188.8145.0189.2147.5189.8150.0190.5151.7190.8
       1.0154.0192.0164.0192.7174.0193.0184.0194.0185.0194.0
NS     1.0 0.0010.90 0.0010.90 0.0010.90 0.0034.60 0.0034.60 0.0034.60
NS     1.0 0.0076.70 0.0076.70 0.0076.70 0.0076.70 0.0076.70 0.0076.70
NS     1.0 0.0076.70 0.0076.70 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     1.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0076.50
NS     1.0 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50
NS     1.0 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50 0.0076.50
NS     1.0 0.0076.50 0.0076.50 0.0075.60 0.0075.60 0.0075.60
CAL1   1.0     190.51     325.83     330.81
VEL1   1.0
VEL1   1.0
VEL1   1.0
VEL1   1.0
VEL1   1.0
CAL2   1.0     190.84     703.40     762.28
VEL2   1.0 0.00 0.00 0.00 0.00 0.00  .90  .82 3.35 4.50 4.77 4.07 3.40
VEL2   1.0 4.36 4.31 4.57 4.32 4.78 3.28 3.65 3.66 4.79 4.35 3.77 3.60
VEL2   1.0 3.29 2.63 1.72  .97  .99 1.84  .10  .08  .63 1.29 1.39 1.60
VEL2   1.0 1.90 1.92 3.57 3.98 4.41 6.83 7.48 8.53 8.48 7.92 8.33 8.60
```

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VEL2   1.0 7.76 4.96 4.15 3.00  .10 0.00 0.00 0.00 0.00 0.00 0.00

XSEC   2.0     124.0 .50    190.10    .00250
       2.0  0.0193.1   .1192.1  2.5191.4  5.0190.9 10.0190.1 15.0190.6
       2.0 20.0190.6 25.0190.6 30.0190.6 35.0190.5 40.0190.4 45.0190.3
       2.0 50.0190.3 55.0190.4 60.0190.4 65.0190.3 70.0191.0 75.0191.0
       2.0 80.0191.1 85.0191.0 90.0190.9 95.0190.1100.0190.2105.0190.7
       2.0110.0191.1113.5192.1115.5194.2130.0194.5140.0193.9150.0193.2
       2.0160.0192.4170.0192.6175.0192.8
NS     2.0 0.0013.90 0.0013.90 0.0013.90 0.0013.90 0.0013.90 0.0054.80
NS     2.0 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80
NS     2.0 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0054.80 0.0052.50
NS     2.0 0.0052.50 0.0052.50 0.0052.50 0.0052.50 0.0052.50 0.0052.50
NS     2.0 0.0052.50 0.0060.80 0.0060.80 0.0060.80 0.0060.80 0.0060.80
NS     2.0 0.0021.90 0.0021.90 0.0021.90
CAL1   2.0    191.72    325.83    369.70
VEL1   2.0
VEL1   2.0
VEL1   2.0
CAL2   2.0    192.10    703.40    772.42
VEL2   2.0 0.00 0.00  .10  .20 2.80 4.47 5.14 4.95 4.90 5.79 5.87 4.90
VEL2   2.0 5.81 6.34 6.26 6.30 5.53 5.78 4.90 4.64 4.72 4.62 3.78 2.50
VEL2   2.0 1.44 0.00 0.00 0.00 0.00 0.00 0.00 0.00
XSEC   3.0      55.0 .50    190.10    .00250
       3.0  0.0196.0   .1195.0  3.0194.0  5.0192.9  8.2192.3 10.0191.4
       3.0 12.5190.6 15.0190.3 17.5190.5 20.0190.5 22.5190.1 25.0190.0
       3.0 27.5189.8 30.0190.0 32.5190.0 35.0190.1 37.5190.2 40.0190.2
       3.0 42.5190.3 45.0190.3 47.5190.3 50.0190.4 55.0190.4 60.0190.6
       3.0 65.0190.7 70.0190.6 75.0190.4 77.5192.0 78.0192.3 80.0195.2
       3.0 85.0194.8 88.0196.7
NS     3.0 0.0030.90 0.0030.90 0.0030.90 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0064.70 0.0046.70
NS     3.0 0.0046.70 0.0046.70
CAL1   3.0    192.01    325.83    384.08
VEL1   3.0
VEL1   3.0
VEL1   3.0
CAL2   3.0    192.25    703.40   683.20
VEL2   3.0 0.00 0.00 0.00 0.00 0.00 1.91 2.33 4.56 5.69 5.89 6.46 6.70
VEL2   3.0 6.73 7.36 7.33 6.93 6.51 5.89 5.50 5.25 5.94 4.95 5.42 4.40
VEL2   3.0 4.55 4.57 3.69 3.46 0.00 0.00 0.00 0.00
XSEC   4.0     105.0 .50    190.10    .00250
       4.0  0.0196.3  5.0193.4 10.0193.2 19.0192.8 22.0192.3 25.0191.6
       4.0 27.5191.0 30.0190.0 32.5189.4 35.0188.6 37.5188.6 40.0189.4
       4.0 42.5189.8 47.5190.0 50.0190.2 52.5190.1 55.0190.2 57.5190.0
       4.0 60.0189.7 62.5189.8 65.0190.0 67.5190.2 70.0190.6 72.5191.0
       4.0 75.0191.6 77.5191.4 80.0191.3 82.5192.1 84.6192.8 85.0192.9
       4.0 90.0193.2100.0193.1110.0194.2
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NS     4.0 0.0010.90 0.0010.90 0.0010.90 0.0065.80 0.2065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     4.0 0.0065.80 0.0065.80 0.0065.80
CAL1   4.0    192.02    325.83    307.00
VEL1   4.0
VEL1   4.0
VEL1   4.0
CAL2   4.0    192.75    703.40    754.65
VEL2   4.0 0.00 0.00 0.00 0.00 0.00  .84 1.01 1.71 3.14 3.71 4.14 5.90
VEL2   4.0 6.93 7.34 7.28 6.97 7.19 6.22 7.05 7.72 7.84 6.52 3.66 2.50
VEL2   4.0 1.50 1.00  .73  .30 0.00 0.00 0.00 0.00 0.00
XSEC   5.0     126.0 .00    190.10    .00250
       5.0  0.0196.2 10.0196.2 20.0195.6 30.0194.5 46.0195.7 49.7193.3
       5.0 50.0193.2 52.0192.2 55.0190.9 57.5190.3 60.0190.1 62.5190.3
       5.0 65.0190.4 67.5190.7 70.0190.7 72.5190.6 75.0190.7 77.5190.7
       5.0 80.0191.6 82.5191.3 85.0191.5 87.5191.8 90.0192.2 92.5192.0
       5.0 95.0191.9 97.5192.1 99.0193.3101.0196.3105.0196.2120.0196.3
       5.0130.0196.2141.0195.7
NS     5.0 0.0057.80 0.0057.80 0.0057.80 0.0057.80 0.0057.80 0.0057.80
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.66 0.0057.60 0.0057.60 0.0076.80 0.0076.80 0.0076.80
NS     5.0 0.0076.80 0.0076.80
CAL1   5.0    192.73    325.83    311.29
VEL1   5.0
VEL1   5.0
VEL1   5.0
CAL2   5.0    193.27    703.40    691.39
VEL2   5.0 0.00 0.00 0.00 0.00 0.00 0.00  .10 3.20 3.90 6.82 8.54 9.75
VEL2   5.0 9.55 8.95 8.40 7.80 8.08 7.51 7.34 6.57 4.70 4.88 4.59 2.71
VEL2   5.0 3.30 2.22 0.00 0.00 0.00 0.00 0.00 0.00
XSEC   6.0      28.0 .50    190.10    .00250
       6.0  0.0196.3 15.0195.9 32.0196.1 35.0193.4 37.5191.9 40.0190.6
       6.0 42.5189.8 45.0189.5 47.5189.3 50.0189.4 52.5189.9 55.0190.1
       6.0 57.5190.5 60.0190.6 62.5191.0 65.0191.5 67.5191.5 70.0192.1
       6.0 72.5192.3 75.0192.4 77.5192.6 80.0192.9 81.7193.4 85.0196.2
       6.0 86.0197.4100.0197.3105.0197.4115.0197.2
NS     6.0 0.0010.90 0.0010.90 0.0010.90 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     6.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.1565.70 0.0065.70
NS     6.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90
CAL1   6.0    192.94    325.83    297.84
VEL1   6.0
VEL1   6.0
VEL1   6.0
CAL2   6.0    193.40    703.40    663.43
VEL2   6.0 0.00 0.00 0.00 0.00  .76 1.73 3.83 6.95 8.70 7.95 6.91 7.20
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VEL2   6.0 7.12 7.00 7.04 7.07 6.50 7.22 5.00 3.40 3.21 2.62 0.00 0.00
VEL2   6.0 0.00 0.00 0.00 0.00
XSEC   7.0      136.0 .00    192.70    .00250
       7.0  0.0196.8 10.0197.6 15.0196.5 18.6195.2 20.0194.7 24.0194.0
       7.0 28.0193.8 32.0193.6 36.0193.3 40.0193.5 45.0193.7 50.0193.9
       7.0 55.0193.7 60.0193.4 65.0193.1 70.0192.7 75.0193.3 80.0193.0
       7.0 85.0193.4 90.0194.9 91.4195.2100.0196.0110.0195.2115.0195.6
       7.0120.0196.0125.0196.5130.0196.2132.9195.8140.0196.0150.0197.1
       7.0160.0196.2170.0196.2180.0196.6185.0198.9
NS     7.0 0.0010.90 0.0010.90 0.0045.90 0.0045.90 0.0065.60 0.0065.60
NS     7.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     7.0 0.0065.60 0.0065.60 0.0065.60 0.0065.50 0.0065.50 0.0065.50
NS     7.0 0.0056.90 0.0056.90 0.0056.90 0.0056.90 0.0056.90 0.0056.90
NS     7.0 0.0056.90 0.0056.90 0.0056.90 0.0056.90 0.0056.90 0.0010.90
NS     7.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90
CAL1   7.0    194.75    325.83    302.76
VEL1   7.0
VEL1   7.0
VEL1   7.0
CAL2   7.0    195.15    703.40    582.03
VEL2   7.0 0.00 0.00 0.00 0.00  .51 3.27 4.50 5.22 5.72 4.50 3.80 4.04
VEL2   7.0 5.21 5.40 7.03 6.34 5.76 6.14 4.62  .20 0.00 0.00 0.00 0.00
VEL2   7.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
XSEC   8.0      65.0 .50    192.70    .00250
       8.0  0.0199.0  8.0198.5 10.0197.2 36.0196.0 46.0195.4 50.0195.0
       8.0 55.0194.6 60.0194.4 65.0193.7 70.0192.6 75.0193.9 80.0193.9
       8.0 85.0193.0 87.0193.0 90.0192.6 92.0192.4 95.0192.2 97.5192.2
       8.0100.0192.1102.5192.8105.0192.8110.0193.3114.0194.7114.5195.4
       8.0115.0195.7116.0196.3125.0196.6135.0196.6145.0195.8155.0195.8
       8.0165.0195.8175.0197.6180.0198.5182.9200.2
NS     8.0 0.0010.90 0.0010.90 0.0010.90 0.0045.60 0.0045.60 0.0045.60
NS     8.0 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60 0.0045.60
NS     8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50
NS     8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0067.50
NS     8.0 0.0067.50 0.0067.50 0.0067.50 0.0067.50 0.0010.90 0.0010.90
NS     8.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90
CAL1   8.0    195.03    325.83    303.12
VEL1   8.0
VEL1   8.0
VEL1   8.0
CAL2   8.0    195.35    703.40    717.48
VEL2   8.0 0.00 0.00 0.00 0.00 0.00  .79 3.23 4.20 4.14 4.62 3.61 3.59
VEL2   8.0 6.92 6.93 7.00 7.64 8.17 7.11 6.40 8.70 6.87 4.35 2.41 0.00
VEL2   8.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
ENDJ
^Z
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FILE = UDNRCM1.IN4

DUNGENESS RIVER,IFG4,UPPER SITE,RM 4.1, TRANSECT 1 RIGHT SIDE CHANNEL
MED.FLOW= 8.1 ON 7/25/88,HIGH FLOW=49.4 ON 6/20/88, USFWS
IOC       1100000201001000000
QARD   2.0
QARD   4.0
QARD   6.0
QARD   8.0
QARD  10.0
QARD  12.0
QARD  14.0
QARD  16.0
QARD  18.0
QARD  20.0
QARD  22.0
QARD  24.0
QARD  26.0
QARD  28.0
QARD  30.0
QARD  32.0
QARD  34.0
QARD  36.0
QARD  38.0
QARD  40.0
QARD  42.0
QARD  44.0
QARD  46.0
QARD  48.0
QARD  50.0
QARD  52.0
QARD  54.0
QARD  56.0
QARD  58.0
QARD  60.0
XSEC   1.0       0.01.00     88.23     .00250
       1.0  0.0 90.6  2.090.55  4.589.65  5.0 89.3  7.589.13  8.088.83
       1.0  9.088.63 10.088.63 11.088.58 12.088.63 13.088.43 14.088.23
       1.0 15.088.33 16.088.28 17.088.38 18.088.38 19.088.58 20.088.73
       1.0 21.089.13 22.389.65 24.389.85 27.392.03 31.392.73 41.393.03
       1.0 46.093.97
NS     1.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS     1.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS     1.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS     1.0 0.0075.60 0.0075.60 0.0075.60 0.0045.90 0.0045.90 0.0010.90
NS     1.0 0.0010.90
CAL1   1.0     89.11       8.10       8.10
VEL1   1.0 0.00 0.00 0.00 0.00 0.00  .54  .88  .75 1.20 1.16  .81 1.54
VEL1   1.0 1.11 1.32 1.29 1.08  .22 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   1.0 0.00
CAL2   1.0     90.17      49.40      49.40
VEL2   1.0
VEL2   1.0
VEL2   1.0
```

```
XSEC    2.0      125.0 .50      88.23     .00250
        2.0  0.0 90.6  2.090.55  4.589.65  5.0 89.3  7.589.13  8.088.83
        2.0  9.088.63 10.088.63 11.088.58 12.088.63 13.088.43 14.088.23
        2.0 15.088.33 16.088.28 17.088.38 18.088.38 19.088.58 20.088.73
        2.0 21.089.13 22.389.65 24.389.85 27.392.03 31.392.73 41.393.03
        2.0 46.093.97
NS      2.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS      2.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS      2.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS      2.0 0.0075.60 0.0075.60 0.0075.60 0.0045.90 0.0045.90 0.0010.90
NS      2.0 0.0010.90
CAL1    2.0      89.11       8.10       8.10
VEL1    2.0 0.00 0.00 0.00 0.00 0.00  .54  .88  .75 1.20 1.16  .81 1.54
VEL1    2.0 1.11 1.32 1.29 1.08  .22 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1    2.0 0.00
CAL2    2.0      90.17      49.40      49.40
VEL2    2.0
VEL2    2.0
VEL2    2.0
ENDJ
^Z
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FILE = UDNRCH1.IN4

DUNGENESS RIVER,UPPER SITE RM.4.1,RIGHT SIDE CHANNEL TRANSECT 1
HIGH FLOW= 49.4 ON 6/20/88,MED.FLOW= 8.1 ON 7/25/88, USFWS
IOC       1100000201001000000
QARD   2.0
QARD   4.0
QARD   6.0
QARD   8.0
QARD  10.0
QARD  12.0
QARD  14.0
QARD  16.0
QARD  18.0
QARD  20.0
QARD  22.0
QARD  24.0
QARD  26.0
QARD  28.0
QARD  30.0
QARD  32.0
QARD  34.0
QARD  36.0
QARD  38.0
QARD  40.0
QARD  42.0
QARD  44.0
QARD  46.0
QARD  48.0
QARD  50.0
QARD  52.0
QARD  54.0
QARD  56.0
QARD  58.0
QARD  60.0
XSEC   1.0        0.001.0      88.05     .00250
       1.0  0.0 90.6  2.090.55  4.589.65  5.0 89.3  7.5 88.6 10.088.25
       1.0 12.588.05 15.088.35 17.588.15 20.088.95 22.389.65 24.389.85
       1.0 27.392.03 31.392.73 41.393.03 46.093.97
NS     1.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS     1.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS     1.0 0.0045.90 0.0045.90 0.0010.90 0.0010.90
CAL1   1.0      88.86       8.10       8.10
VEL1   1.0
VEL1   1.0
CAL2   1.0      89.65      49.40      49.40
VEL2   1.0 0.00 0.00 0.00  .31 2.20 2.49 3.92 3.75 1.53  .64 0.00 0.00
VEL2   1.0 0.00 0.00 0.00 0.00
```

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XSEC    2.0      125.0 0.5      88.05     .00250
        2.0  0.0 90.6  2.090.55  4.589.65  5.0 89.3  7.5 88.6 10.088.25
        2.0 12.588.05 15.088.35 17.588.15 20.088.95 22.389.65 24.389.85
        2.0 27.392.03 31.392.73 41.393.03 46.093.97
NS      2.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS      2.0 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60 0.0075.60
NS      2.0 0.0045.90 0.0045.90 0.0010.90 0.0010.90
CAL1    2.0      88.86       8.10       8.10
VEL1    2.0
VEL1    2.0
CAL2    2.0      89.65      49.40      49.40
VEL2    2.0 0.00 0.00 0.00  .31 2.20 2.49 3.92 3.75 1.53  .64 0.00 0.00
VEL2    2.0 0.00 0.00 0.00 0.00
ENDJ
^Z
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FILE = UDNRCH36.IN4

DUNGENESS RIVER,IFG4,UPPER SITE RM.4.1, RIGHT SIDE CHANNEL TRANSECTS 3-6
HIGH FLOW=23.7 ON 6/20/88,MEDIUM FLOW=0.3 ON 7/25/88, USFWS
IOC       1100000201001000000
QARD   2.0
QARD   4.0
QARD   6.0
QARD   8.0
QARD  10.0
QARD  12.0
QARD  14.0
QARD  16.0
QARD  18.0
QARD  20.0
QARD  22.0
QARD  24.0
QARD  26.0
QARD  28.0
QARD  30.0
QARD  32.0
QARD  34.0
QARD  36.0
QARD  38.0
QARD  40.0
QARD  42.0
QARD  44.0
QARD  46.0
QARD  48.0
QARD  50.0
QARD  52.0
QARD  54.0
QARD  56.0
QARD  58.0
QARD  60.0
XSEC   1.0        0.0 .50      91.03     .00250
       1.0  0.0 96.7  5.0 94.8  9.092.23 10.091.63 15.091.38 20.091.78
       1.0 25.091.43 30.091.28 35.091.18 40.091.43 45.091.43 50.091.23
       1.0 55.091.03 58.992.23 59.5 95.2 65.0 94.8 71.0 96.7
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0022.90 0.0022.90
NS     1.0 0.0022.90 0.0022.90 0.0022.90 0.0022.90 0.0022.90 0.0022.90
NS     1.0 0.0022.90 0.0022.90 0.0010.90 0.0010.90 0.0010.90
CAL1   1.0      91.63        .30        .30
VEL1   1.0
VEL1   1.0
CAL2   1.0      92.23      21.50      21.50
VEL2   1.0 0.00 0.00 0.00 3.59  .18  .31  .17  .43  .39  .53  .80  .61
VEL2   1.0  .18 0.00 0.00 0.00 0.00
```

```
XSEC   2.0      130.0 .50      91.03     .00250
       2.0  0.092.93  4.592.32  5.092.17  7.591.77 10.091.82 12.591.82
       2.0 15.092.17 17.592.17 20.092.27 21.392.32 26.792.32 30.092.27
       2.0 32.592.27 35.092.27 37.592.22 40.092.27 42.592.22 45.091.77
       2.0 47.591.42 50.091.02 52.591.67 55.090.92 57.591.72 59.492.32
       2.0 60.093.06 65.093.73 70.093.73 75.098.49
NS     2.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     2.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     2.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     2.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     2.0 0.0065.80 0.0065.80 0.0010.90 0.0010.90
CAL1   2.0      91.67        .30        .30
VEL1   2.0
VEL1   2.0
VEL1   2.0
CAL2   2.0      92.32      21.50      21.50
VEL2   2.0 0.00 0.00  .20 1.05 1.91  .32  .97 1.52  .05 0.00 0.00  .05
VEL2   2.0  .05  .05  .10  .10  .10  .55 1.00 2.28 2.44 2.05  .49 0.00
VEL2   2.0 0.00 0.00 0.00 0.00
XSEC   3.0      144.0 .50      92.50     .00250
       3.0  0.094.32  5.0 94.1 13.094.42 23.094.78 27.094.45 29.093.92
       3.0 33.693.44 34.093.39 35.393.24 36.693.24 37.993.14 39.293.24
       3.0 40.593.34 41.793.24 43.093.04 44.392.99 45.692.89 46.992.74
       3.0 48.292.69 49.592.64 50.892.59 52.192.64 53.492.54 54.792.59
       3.0 56.093.14 57.393.24 58.693.44 63.094.35 63.796.32
NS     3.0 0.0010.90 0.0010.90 0.0076.80 0.0076.80 0.0076.80 0.0076.80
NS     3.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
NS     3.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
NS     3.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
NS     3.0 0.0076.80 0.0076.80 0.0010.90 0.0010.90 0.0010.90
CAL1   3.0      92.81        .30        .30
VEL1   3.0
VEL1   3.0
VEL1   3.0
CAL2   3.0      93.44      21.50      21.50
VEL2   3.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .10 1.32 1.53 2.28 1.64
VEL2   3.0  .88  .05  .23 1.62 2.48 2.87 2.92 2.67 2.74 2.80 2.19 1.80
VEL2   3.0  .60  .10 0.00 0.00 0.00
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XSEC    4.0       22.0 .50      92.60     .00250
        4.0  0.095.78  2.094.41  9.094.48 17.0 94.7 22.094.27 27.0 94.1
        4.0 30.593.55 31.5 93.4 32.5 93.0 33.5 92.8 34.592.75 35.592.85
        4.0 36.5 92.6 37.592.65 38.592.75 39.5 92.8 40.592.85 41.5 92.9
        4.0 42.592.95 43.5 93.0 44.5 93.2 45.593.25 46.593.25 47.593.35
        4.0 48.593.45 49.593.45 50.593.55 51.093.56 54.093.69 61.095.63
NS      4.0 0.0010.90 0.0010.90 0.0010.90 0.0054.60 0.0054.60 0.0054.60
NS      4.0 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60
NS      4.0 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60
NS      4.0 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60
NS      4.0 0.0054.60 0.0054.60 0.0054.60 0.0010.90 0.0010.90 0.0010.90
CAL1    4.0      92.92        .30        .30
VEL1    4.0
VEL1    4.0
VEL1    4.0
CAL2    4.0      93.55      21.50      21.50
VEL2    4.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .10  .02 1.20 1.77 3.40
VEL2    4.0 2.99 2.46 3.19 2.32 1.82 2.26 1.83 1.06 1.60 1.04  .76  .10
VEL2    4.0  .05  .10 0.00 0.00 0.00 0.00
ENDJ
^Z
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FILE = UDNML58.IN4

UPPER DUNGENESS RIVER, RM.4.1, TRANSECTS 5-8, LEFT SIDE CHANNEL,
MEDIUM FLOW = 16.6 ON 7/25/88, USFWS
IOC       1100000201001000000
QARD   1.0
QARD   5.0
QARD  10.0
QARD  15.0
QARD  20.0
QARD  25.0
QARD  30.0
QARD  35.0
QARD  40.0
QARD  45.0
QARD  50.0
QARD  55.0
QARD  60.0
QARD  65.0
QARD  70.0
QARD  75.0
QARD  80.0
QARD  85.0
QARD  90.0
QARD  95.0
QARD 100.0
QARD 110.0
QARD 120.0
QARD 130.0
QARD 140.0
QARD 150.0
XSEC   1.0       0.0 .50     92.33    .00250
       1.0  0.098.28  1.096.31  3.093.24  3.593.17  5.093.05  7.093.05
       1.0 11.093.03 34.093.02 36.092.93 38.092.93 42.092.93 44.092.93
       1.0 46.092.93 48.092.83 50.092.63 52.092.51 54.092.33 56.092.33
       1.0 58.092.27 60.092.37 62.092.32 64.092.47 66.092.50 67.492.51
       1.0 69.693.17 74.096.49
NS     1.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0056.50 0.0056.50
NS     1.0 0.0056.50 1.0056.50 0.0056.50 0.0056.50 0.0056.50 0.0056.50
NS     1.0 0.0056.50 0.0056.50 0.0056.50 0.0056.50 0.0056.60 0.0056.60
NS     1.0 0.0056.60 0.0056.60 0.0056.60 0.0056.60 0.0056.60 0.4056.60
NS     1.0 1.0010.90 0.0010.90
CAL1   1.0     93.16     18.13     18.13
VEL1   1.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .10  .10  .10  .10
VEL1   1.0  .03 2.03  .86 1.90 2.30 3.34 1.71 1.27 2.07  .84  .93 0.00
VEL1   1.0 0.00 0.00
CAL2   1.0     93.26     75.30     75.30
VEL2   1.0
VEL2   1.0
VEL2   1.0
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XSEC   2.0      22.0 .50     92.57    .00250
       2.0  0.0 96.0  2.093.51  5.0 93.3  8.0 93.3 11.0 93.3 17.093.29
       2.0 20.093.11 22.093.27 24.093.22 26.0 93.0 28.0 92.9 30.0 92.9
       2.0 32.0 92.7 34.0 92.7 36.0 92.8 38.0 92.8 40.0 92.6 42.0 93.0
       2.0 44.093.01 46.093.01 48.093.01 50.093.12 52.093.12 54.093.17
       2.0 56.093.07 58.093.07 60.093.17 60.993.27 62.093.06 65.093.51
       2.0 72.896.64
NS     2.0 0.0068.60 0.0068.60 0.0083.60 0.0068.60 0.0068.60 0.0068.60
NS     2.0 0.0068.60 0.0068.60 0.0068.60 1.0068.60 0.0057.60 0.0057.60
NS     2.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0045.50
NS     2.0 0.0045.50 0.0045.50 0.0045.50 0.0045.50 0.0045.50 0.0045.50
NS     2.0 0.0045.50 1.0045.50 0.0045.50 0.0045.50 0.0045.50 0.0045.50
NS     2.0 0.0045.50
CAL1   2.0      93.35      18.13      18.13
VEL1   2.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .15  .55
VEL1   2.0  .70 1.43 1.87 1.63 2.03 2.78 2.21 1.67  .71 1.15 1.51  .34
VEL1   2.0  .03 0.46 0.00 0.00 0.00 0.00 0.00
CAL2   2.0      93.51      75.30      75.30
VEL2   2.0
VEL2   2.0
VEL2   2.0
XSEC   3.0      268.0 .50     93.89    .00250
       3.0  0.0 99.6  4.5 96.0  5.095.15  6.394.64  7.394.19  8.393.99
       3.0  9.394.24 10.394.24 11.394.44 12.3 94.0 13.3 94.1 14.3 94.2
       3.0 15.3 94.1 16.3 94.0 17.3 94.0 18.3 93.9 19.3 93.9 20.394.44
       3.0 21.3 94.5 22.394.09 23.394.24 24.394.34 25.394.17 26.094.64
       3.0 31.5 95.8
NS     3.0 0.0010.90 0.0010.90 0.0010.90 0.0076.80 0.0076.80 0.0076.80
NS     3.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
NS     3.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
NS     3.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
NS     3.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0010.90
NS     3.0 0.0010.90
CAL1   3.0      94.64      18.13      18.13
VEL1   3.0 0.00 0.00 0.00 0.00 2.48 1.63 1.12 3.30 2.87 3.23  .80 2.00
VEL1   3.0 3.22  .39 1.98 2.91 1.74 1.58 1.10 1.03 1.41  .65  .01 0.00
VEL1   3.0 0.00
CAL2   3.0      95.15      75.30      75.30
VEL2   3.0
VEL2   3.0
VEL2   3.0
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XSEC    4.0       7.0 .50     93.94    .00250
        4.0  0.0 99.1 10.0 96.5 14.5 95.4 14.8 95.3 15.095.15 16.194.74
        4.0 17.194.59 18.194.44 19.1 94.4 20.194.19 21.194.19 22.193.94
        4.0 23.194.04 24.194.09 25.194.04 26.194.24 27.194.19 28.194.29
        4.0 29.194.39 30.194.44 31.194.59 32.194.54 33.194.44 34.194.54
        4.0 35.194.59 37.394.74 40.095.25 40.7 95.3 43.7 95.9
NS      4.0 0.0010.90 0.0010.90 0.0074.60 0.0074.60 0.0074.60 0.3074.60
NS      4.0 0.0074.60 0.0074.60 0.0074.60 0.0074.60 0.0074.50 0.0074.50
NS      4.0 0.0074.50 0.0074.50 0.0074.50 0.0075.50 0.0075.50 0.0075.50
NS      4.0 0.0075.50 0.0075.50 0.0075.50 0.0075.50 0.0075.50 0.0075.50
NS      4.0 0.0075.50 0.3075.60 0.0075.60 0.0010.90 0.0010.90
CAL1    4.0     94.76     18.13     18.13
VEL1    4.0 0.00 0.00 0.00 0.00 0.00 0.00  .58 1.23 2.91 2.51 2.57 1.04
VEL1    4.0  .33 2.64 4.16 4.05 2.07 1.12  .84  .37 1.54  .58 1.65  .68
VEL1    4.0  .15 0.00 0.00 0.00 0.00
CAL2    4.0     95.30     75.30     75.30
VEL2    4.0
VEL2    4.0
VEL2    4.0
ENDJ
^Z
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FILE = UDNHLC58.IN4

DUNGENESS RIVER,IFG4,UPPER SITE RM.4.1,TRANSECTS 5-8 LEFT S.CHANNEL-HIGH FLOW
=75.3 CFS ON 6/20/88 ,MED.FLOW=16.6 CFS ON 7/25/88,USFWS
IOC       1100000201001000000
QARD   5.0
QARD  10.0
QARD  15.0
QARD  20.0
QARD  25.0
QARD  30.0
QARD  35.0
QARD  40.0
QARD  45.0
QARD  50.0
QARD  55.0
QARD  60.0
QARD  65.0
QARD  70.0
QARD  75.0
QARD  80.0
QARD  85.0
QARD  90.0
QARD  95.0
QARD 100.0
QARD 110.0
QARD 120.0
QARD 130.0
QARD 140.0
QARD 150.0
QARD 160.0
QARD 170.0
QARD 180.0
QARD 190.0
QARD 200.0
XSEC   1.0        0.0 .50     91.87     .00250
       1.0  0.098.28  1.096.31  3.093.24  3.593.17  5.092.62  7.592.72
       1.0 10.092.82 12.593.12 15.093.12 17.592.92 20.092.87 22.593.07
       1.0 25.092.97 27.592.87 30.093.12 32.592.92 35.092.67 37.592.67
       1.0 40.092.67 42.592.87 45.092.92 47.592.42 50.092.22 52.591.87
       1.0 55.091.87 57.592.37 60.092.22 62.592.17 65.092.32 67.592.67
       1.0 69.693.17 74.096.49
NS     1.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0056.50 0.0056.50
NS     1.0 0.0056.50 0.0056.50 0.0056.50 0.0056.50 0.0056.50 0.0056.50
NS     1.0 0.0056.50 0.0056.50 0.0056.50 0.0056.50 0.0056.50 0.0056.50
NS     1.0 0.0056.50 0.0056.50 0.0056.50 0.0056.50 0.0056.50 0.0056.50
NS     1.0 0.0056.60 0.0056.60 0.0056.60 0.0056.60 0.0056.60 0.0056.60
NS     1.0 0.4010.90 0.0010.90
CAL1   1.0     93.03     16.60     15.10
VEL1   1.0
VEL1   1.0
VEL1   1.0
CAL2   1.0     93.26     75.30     75.30
VEL2   1.0 0.00 0.00 0.00 0.00 2.82 2.55  .91  .10  .66  .57  .15  .10
VEL2   1.0  .10  .53  .10  .12 1.44 1.47 1.28 1.88 3.55 2.99 2.93 3.79
VEL2   1.0 4.50 4.81 2.78 2.83 1.22 2.34 0.00 0.00
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 XSEC   2.0       22.0 .50      92.46     .00250
        2.0  0.0 96.0    .1 95.9  2.093.51  5.093.01  8.093.01 11.092.91
        2.0 14.093.16 17.093.21 20.093.11 23.093.06 26.093.01 29.092.81
        2.0 31.092.66 35.092.61 38.092.56 41.092.51 44.092.46 47.092.71
        2.0 50.093.01 53.092.81 56.092.81 59.092.71 62.093.06 65.093.51
        2.0 72.896.64
 NS     2.0 0.0068.60 0.0068.60 0.0068.60 0.0068.60 0.0068.60 0.0068.60
 NS     2.0 0.0068.60 0.0068.60 0.0068.60 0.0068.60 0.0057.60 0.0057.60
 NS     2.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0045.50
 NS     2.0 0.0045.50 0.0045.50 0.0045.50 0.0045.50 0.0045.50 0.0045.50
 NS     2.0 0.0045.50
 CAL1   2.0      93.27      16.60      18.40
 VEL1   2.0
 VEL1   2.0
 VEL1   2.0
 CAL2   2.0      93.51      75.30      75.30
 VEL2   2.0 0.00 0.00 0.00 1.06  .51 1.78 1.89  .37  .74 1.74  .80 2.60
 VEL2   2.0 1.54 2.46 3.22 1.39 3.76 3.37 2.67 1.56 1.55 1.80 1.61 0.00
 VEL2   2.0 0.00
 XSEC   3.0      268.0 .50      94.00     .00250
        3.0  0.0 99.6  4.5 96.0  5.095.15  7.594.05 10.0 94.0 12.594.25
        3.0 15.094.05 17.594.15 20.094.35 22.594.24 25.094.95 26.795.15
        3.0 31.5 95.3
 NS     3.0 0.0010.90 0.0010.90 0.0010.90 0.0076.80 0.0076.80 0.0076.80
 NS     3.0 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80 0.0076.80
 NS     3.0 0.0010.90
 CAL1   3.0      94.64      16.60      18.00
 VEL1   3.0
 VEL1   3.0
 CAL2   3.0      95.15      75.30      75.30
 VEL2   3.0 0.00 0.00 0.00 2.99 4.92 1.61 5.11 4.76 4.28 4.25 1.37 0.00
 VEL2   3.0 0.00
 XSEC   4.0        7.0 .50      94.00     .00250
        4.0  0.0 99.1 10.0 96.5 14.5 95.4 14.8 95.3 15.095.15 17.594.45
        4.0 20.0 94.0 22.5 93.7 25.0 94.1 27.5 94.3 30.0 94.6 32.5 94.5
        4.0 35.0 95.0 37.595.05 40.095.25 40.7 95.3 43.7 95.6
 NS     4.0 0.0010.90 0.0010.90 0.0074.60 0.0074.60 0.0074.60 0.0074.60
 NS     4.0 0.0074.50 0.0074.50 0.0074.50 0.0075.60 0.0075.60 0.0075.60
 NS     4.0 0.0075.60 0.0075.60 0.0075.60 0.0010.90 0.0010.90
 CAL1   4.0      94.74      16.60      14.90
 VEL1   4.0
 VEL1   4.0
 CAL2   4.0      95.30      75.30      75.30
 VEL2   4.0 0.00 0.00 0.00 0.00  .10 3.37 5.77 1.78 5.40 2.10 2.34 4.33
 VEL2   4.0 1.61 2.09  .10 0.00 0.00
 ENDJ
 ^Z
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FILE = UDNMCH78.IN4

DUNGENESS RIVER IFG4,UPPER SITE RM. 4.1, TRANSECTS 7 & 8 MIDDLE CHANNEL
HIGH FLOW = 3.2 CFS ON 6/20/88, MED. FLOW = 0.8 CFS ON 7/25/88, USFWS
IOC       1100000201001000000
QARD   0.25
QARD   0.50
QARD   0.75
QARD   1.00
QARD   1.25
QARD   1.50
QARD   1.75
QARD   2.00
QARD   2.25
QARD   2.50
QARD   2.75
QARD   3.00
QARD   3.25
QARD   4.00
QARD   4.25
QARD   4.50
QARD   4.75
QARD   5.00
QARD   5.25
QARD   5.50
QARD   5.75
QARD   6.00
QARD   6.25
QARD   6.50
QARD   6.75
QARD   7.00
QARD   7.25
QARD   7.50
QARD   7.75
QARD   8.00
XSEC   1.0        0.0 .50     94.58     .00780
       1.0  0.0 94.9  2.294.88  2.594.83  5.094.68  7.594.78 10.094.88
       1.0 12.594.58 15.094.58 17.594.63 20.094.78 22.594.68 25.094.88
       1.0 27.7 95.1
NS     1.0 0.0010.90 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0054.50
NS     1.0 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0054.50
NS     1.0 0.0010.90
CAL1   1.0      94.86        .80        .80
VEL1   1.0
VEL1   1.0
CAL2   1.0      94.88       2.71       2.71
VEL2   1.0 0.00 0.00  .10  .96  .24 0.00  .71  .71  .67  .40  .91 0.00
VEL2   1.0 0.00
```

```
XSEC    2.0       60.0 .50      94.75     .00780
        2.0  0.0 95.9  1.9 95.9  3.095.35  4.4 95.0  6.994.95  9.4 95.1
        2.0 11.994.75 14.494.95 17.794.95 19.095.35 19.4 96.5 25.9 99.3
NS      2.0 0.0010.90 0.0010.90 0.0074.60 0.0074.60 0.0074.60 0.0074.60
NS      2.0 0.0074.60 0.0074.60 0.0074.60 0.0074.60 0.0010.90 0.0010.90
CAL1    2.0      95.00        .70        .70
VEL1    2.0
CAL2    2.0      95.35       2.71       2.71
VEL2    2.0 0.00 0.00 0.00  .15 1.16  .31  .18  .10 1.97 0.00 0.00 0.00
ENDJ
^Z
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FILE = LDUNL.IN4

DUNGENESS RIVER, RM. 2.3, LOWER SITE, MEDIUM FLOW AT 305 CFS ON 7/25/88
LOW FLOW AT 37 CFS ON 9/13/88, USFWS
IOC       1100000201001000000
QARD  10.0
QARD  20.0
QARD  30.0
QARD  40.0
QARD  50.0
QARD  60.0
QARD  70.0
QARD  80.0
QARD  90.0
QARD 100.0
QARD 120.0
QARD 140.0
QARD 160.0
QARD 180.0
QARD 200.0
QARD 220.0
QARD 240.0
QARD 260.0
QARD 280.0
QARD 300.0
QARD 320.0
QARD 340.0
QARD 360.0
XSEC   1.0        0.0 .50    194.90    .00250
       1.0  0.0198.9   .1198.2   .5196.8  3.0195.7  7.0195.3 11.0195.2
       1.0 15.0195.0 19.0194.9 23.0194.9 27.0195.0 31.0195.0 35.0195.2
       1.0 39.0195.4 43.0195.5 47.0195.7 50.0195.7 53.0195.9 56.0195.9
       1.0 59.0195.8 62.0195.8 65.0195.9 68.0195.7 71.0195.5 74.0195.3
       1.0 77.0195.1 80.0195.5 83.0196.8 84.0197.7
NS     1.0 0.0020.90 0.0020.90 0.0020.90 0.0065.60 0.0065.60 0.0065.60
NS     1.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0020.90
CAL1   1.0    195.75     35.50     35.50
VEL1   1.0 0.00 0.00 0.00  .06 1.50  .40 1.80 2.00 1.20 2.00 1.50 1.12
VEL1   1.0  .40  .40  .05  .01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   1.0 0.00 0.00 0.00 0.00
CAL2   1.0    196.78    351.00    351.00
XSEC   2.0      94.0 .50    195.40    .00250
       2.0  0.0201.7  1.0200.4  6.0200.6 12.0200.6 15.0199.6 18.0197.6
       2.0 19.0197.1 20.0195.7 24.0195.6 28.0195.5 32.0195.5 36.0195.5
       2.0 40.0195.6 44.0195.6 48.0195.5 52.0195.4 55.0195.6 58.0195.6
       2.0 61.0195.4 64.0195.5 67.0195.5 70.0195.6 73.0195.6 76.0195.6
       2.0 79.0195.6 82.0195.6 85.0195.7 88.0196.1 91.0196.1 94.0196.1
       2.0 97.0196.3100.0196.2103.0197.1103.5197.6104.0198.6
NS     2.0 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90
NS     2.0 0.0020.90 0.0056.60 0.0056.60 0.0056.60 0.0056.60 0.0056.60
NS     2.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
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NS     2.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     2.0 0.0065.50 0.0043.50 0.0043.50 0.0043.50 0.0043.50 0.0043.50
NS     2.0 0.0043.50 0.0043.50 0.0020.90 0.0020.90 0.0020.90
CAL1   2.0    196.05     35.50     35.50
VEL1   2.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .10 1.10 2.50 1.50
VEL1   2.0 1.20 2.90 1.90 2.20 1.70 1.20 1.80 1.60 1.30  .70 1.00  .70
VEL1   2.0  .10  .20 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
CAL2   2.0    197.09    351.00    351.00
XSEC   3.0     102.0 .50    195.40    .00250
       3.0  0.0201.9   .1200.7  5.0198.8  9.5197.7 10.5197.5 12.0197.2
       3.0 15.0196.8 18.0196.7 21.0196.4 24.0196.5 27.0196.3 30.0196.2
       3.0 33.0196.0 36.0196.0 39.0195.8 42.0195.7 45.0195.6 48.0195.4
       3.0 51.0195.2 54.0195.2 57.0195.2 60.0195.4 63.0195.5 66.0195.7
       3.0 69.0195.7 72.0195.7 75.0195.8 78.0195.8 81.0196.0 84.0196.0
       3.0 85.5197.5 89.5199.8 95.5201.2
NS     3.0 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0065.70
NS     3.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     3.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0056.80
NS     3.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     3.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     3.0 0.0056.80 0.0020.90 0.0020.90
CAL1   3.0    196.37     35.50     35.50
VEL1   3.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   3.0  .20  .40  .60  .60 1.10 1.00 1.20 1.20 1.30 1.10  .90  .80
VEL1   3.0  .70  .70  .70  .80  .50  .10 0.00 0.00 0.00
CAL2   3.0    197.47    351.00    351.00
XSEC   4.0     129.0 .50    195.40    .00250
       4.0  0.0204.3   .1203.5 10.0201.3 25.0198.2 32.5197.9 34.0197.7
       4.0 38.0197.6 41.0197.4 44.0197.2 47.0196.8 50.0196.4 53.0196.5
       4.0 56.0196.2 59.0196.3 62.0196.3 65.0196.1 68.0195.8 71.0195.9
       4.0 74.0196.0 77.0196.1 80.0195.7 83.0194.7 87.0193.7 90.0193.3
       4.0 93.0194.7 96.0197.7101.0199.5
NS     4.0 0.0010.90 0.0054.90 0.0054.90 0.0054.90 0.0065.70 0.0065.70
NS     4.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     4.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0054.50 0.0054.50
NS     4.0 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0020.50 0.0020.50
NS     4.0 0.0020.50 0.0020.50 0.0010.50
CAL1   4.0    196.51     35.50     35.50
VEL1   4.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .01  .01
VEL1   4.0 1.30 1.00  .40 2.40 1.00 3.30 2.50 3.40 1.30  .40 1.35 1.30
VEL1   4.0  .60 0.00 0.00
CAL2   4.0    197.71    351.00    351.00
XSEC   5.0     134.0 .50    195.40    .00250
       5.0  0.0204.0   .1202.0 10.0199.5 12.0198.0 13.0197.7 15.0197.3
       5.0 18.0197.6 20.0197.9 23.0198.0 37.0198.0 38.0197.9 40.0197.8
       5.0 42.0197.7 44.0197.1 46.0196.8 48.0196.7 50.0196.4 52.0196.4
       5.0 54.0195.9 56.0195.3 58.0194.9 60.0194.3 62.0193.8 64.0193.3
       5.0 66.0192.9 68.0192.8 72.0192.7 74.0192.5 76.0192.6 78.0194.0
       5.0 80.0193.5 82.0194.1 84.0195.2 85.0198.0 90.0201.3100.0201.2
       5.0105.0201.8
NS     5.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0020.50 0.0020.50
NS     5.0 0.0020.50 0.0020.50 0.0056.80 0.0056.80 0.0056.80 0.0056.80
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NS     5.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0061.60 0.0061.60
NS     5.0 0.0061.60 0.0061.60 0.0061.60 3.0061.60 0.0061.60 0.0061.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 2.0057.60 0.0057.60 0.0010.90 0.0010.90
NS     5.0 0.0010.90
CAL1   5.0    197.06     35.50     35.50
VEL1   5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .20  .25
VEL1   5.0  .35  .60  .70  .70  .70  .70  .70  .50 0.00 0.00 0.00 0.00
VEL1   5.0 0.00
CAL2   5.0    198.04    351.00    351.00
XSEC   6.0     153.0 .50    195.40    .00250
       6.0  0.0205.4   .1203.4  7.0203.0 15.0201.2 22.5198.9 23.0198.3
       6.0 24.0198.1 27.0198.0 30.0197.9 33.0198.1 36.0198.2 39.0198.2
       6.0 42.0198.2 45.0198.2 48.0198.2 51.0198.2 54.0198.1 57.0198.2
       6.0 60.0197.8 63.0197.6 66.0197.6 69.0197.3 72.0197.2 75.0196.6
       6.0 78.0196.4 81.0196.3 84.0196.0 87.0195.9 90.0195.9 93.0195.4
       6.0 97.0195.1 99.0194.9100.5198.3105.0200.6
NS     6.0 0.0021.60 0.0021.60 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0056.70 0.0055.50
CAL1   6.0    197.10     35.50     35.50
VEL1   6.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   6.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   6.0  .10  .20  .40 1.20  .90 1.40 2.20 2.30 0.00 0.00
CAL2   6.0    198.30    351.00    351.00
XSEC   7.0     104.0 .50    197.10    .00250
       7.0  0.0208.8  9.0203.7 16.5199.3 18.0198.2 22.0197.9 26.0198.1
       7.0 30.0198.0 34.0197.9 38.0197.9 42.0197.4 46.0197.1 50.0197.1
       7.0 54.0197.3 58.0197.4 62.0198.0 66.0198.0 70.0198.2 74.0198.8
       7.0 78.0199.0 82.0199.1 86.0199.1 90.0199.0 94.0198.7100.0199.3
       7.0105.0203.2
NS     7.0 0.0012.90 0.0012.90 0.0012.90 0.0012.90 0.0054.60 0.0054.60
NS     7.0 2.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60
NS     7.0 0.0054.60 0.0056.70 0.0056.70 0.0056.70 0.5056.70 0.0056.70
NS     7.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0020.80
NS     7.0 0.0020.80
CAL1   7.0    198.24     35.50     35.50
VEL1   7.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .50 1.10 1.60 1.90 2.00
VEL1   7.0  .80 1.40  .60  .10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   7.0 0.00
CAL2   7.0    199.33    351.00    351.00
XSEC   8.0     108.0 .50    197.10    .00250
       8.0  0.0208.0   .1207.1  5.0203.7  8.5200.9  9.1199.4 12.0197.4
       8.0 15.0196.9 18.0196.7 21.0197.1 24.0197.2 27.0197.5 30.0197.5
       8.0 33.0197.8 36.0197.6 39.0197.8 43.0198.0 47.0198.2 51.0198.4
       8.0 55.0198.5 59.0198.6 63.0198.8 67.0199.2 71.0199.2 75.0199.3
       8.0 79.0199.3 83.0198.6 87.0198.8 90.0199.4 96.0199.7111.0199.6
       8.0114.0198.6117.0197.5120.0196.9124.0197.2128.0197.6131.0198.3
       8.0133.0198.5135.0198.8136.0199.4144.0202.5
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NS     8.0 0.0026.60 0.0026.60 0.0026.60 0.0026.60 0.0026.60 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0055.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0021.80 0.0021.80
NS     8.0 0.0021.80 0.0011.90 0.0011.90 0.0011.90 0.0011.90 0.0011.90
NS     8.0 0.0011.90 0.0011.90 0.0011.90 0.0010.90
CAL1   8.0    198.60     35.50     35.50
VEL1   8.0 0.00 0.00 0.00 0.00 0.00  .10 2.00 2.80 2.70 2.20 1.50 1.70
VEL1   8.0 1.50  .80  .60  .01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   8.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   8.0 0.00 0.00 0.00 0.00
CAL2   8.0    199.39    351.00    351.00
ENDJ
^Z
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FILE = LDUNM.IN4

DUNGENESS RIVER, RM. 2.3, LOWER SITE, MEDIUM FLOW AT 305 CFS ON 7/25/88
LOW FLOW AT 37 CFS ON 9/13/88, USFWS
IOC       1100000201001000000
QARD  10.0
QARD  20.0
QARD  30.0
QARD  40.0
QARD  50.0
QARD  60.0
QARD  70.0
QARD  80.0
QARD  90.0
QARD 100.0
QARD 120.0
QARD 140.0
QARD 160.0
QARD 180.0
QARD 200.0
QARD 220.0
QARD 240.0
QARD 260.0
QARD 280.0
QARD 300.0
QARD 320.0
QARD 340.0
QARD 360.0
XSEC   1.0       0.0 .50    194.90    .00250
       1.0  0.0198.9   .1198.2   .5196.8  3.0195.7  7.0195.3 11.0195.2
       1.0 15.0195.0 19.0194.9 23.0194.9 27.0195.0 31.0195.0 35.0195.2
       1.0 39.0195.4 43.0195.5 47.0195.7 50.0195.7 53.0195.9 56.0195.9
       1.0 59.0195.8 62.0195.8 65.0195.9 68.0195.7 71.0195.5 74.0195.3
       1.0 77.0195.1 80.0195.5 82.0196.3 83.0196.8 84.0197.7
NS     1.0 0.0020.90 0.0020.90 0.0020.90 0.0065.60 0.0065.60 0.0065.60
NS     1.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0020.90
CAL1   1.0    195.75     35.50     35.50
VEL1   1.0
VEL1   1.0
VEL1   1.0
CAL2   1.0    196.78    351.00    351.00
VEL2   1.0 0.00 0.00 0.00 2.60 2.60 4.40 3.90 3.70 4.30 4.10 4.30 3.40
VEL2   1.0 3.20 2.90 3.70 3.00 3.00 3.10 3.50 3.70 3.60 2.90 1.50  .90
VEL2   1.0 1.20  .60  .90 0.00 0.00
XSEC   2.0      94.0 .50    195.40    .00250
       2.0  0.0201.7  1.0200.4  6.0200.6 12.0200.6 15.0199.6 18.0197.6
       2.0 19.0197.1 20.0195.7 24.0195.6 28.0195.5 32.0195.5 36.0195.5
       2.0 40.0195.6 44.0195.6 48.0195.5 52.0195.4 55.0195.6 58.0195.6
       2.0 61.0195.4 64.0195.5 67.0195.5 70.0195.6 73.0195.6 76.0195.6
       2.0 79.0195.6 82.0195.6 85.0195.7 88.0196.1 91.0196.1 94.0196.1
       2.0 97.0196.3100.0196.2103.0197.1103.5197.6104.0198.6
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NS     2.0 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90
NS     2.0 0.0020.90 0.0056.60 0.0056.60 0.0056.60 0.0056.60 0.0056.60
NS     2.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     2.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     2.0 0.0065.50 0.0043.50 0.0043.50 0.0043.50 0.0043.50 0.0043.50
NS     2.0 0.0043.50 0.0043.50 0.0020.90 0.0020.90 0.0020.90
CAL1   2.0    196.05     35.50     35.50
VEL1   2.0
VEL1   2.0
VEL1   2.0
CAL2   2.0    197.09    351.00    351.00
VEL2   2.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .70 2.20 2.90 3.70 3.10
VEL2   2.0 3.60 3.60 3.20 4.50 4.30 4.10 4.30 4.40 3.40 4.30 3.90 3.00
VEL2   2.0 3.70 3.40 3.60 3.50 2.80 2.30 2.70 1.90 0.00 0.00 0.00
XSEC   3.0     102.0 .50    195.40    .00250
       3.0  0.0201.9   .1200.7  5.0198.8  9.5197.7 10.5197.5 12.0197.2
       3.0 15.0196.8 18.0196.7 21.0196.4 24.0196.5 27.0196.3 30.0196.2
       3.0 33.0196.0 36.0196.0 39.0195.8 42.0195.7 45.0195.6 48.0195.4
       3.0 51.0195.2 54.0195.2 57.0195.2 60.0195.4 63.0195.5 66.0195.7
       3.0 69.0195.7 72.0195.7 75.0195.8 78.0195.8 81.0196.0 84.0196.0
       3.0 85.5197.5 89.5199.8 95.5201.2
NS     3.0 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0065.70
NS     3.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     3.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0056.80
NS     3.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     3.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     3.0 0.0056.80 0.0020.90 0.0020.90
CAL1   3.0    196.37     35.50     35.50
VEL1   3.0
VEL1   3.0
VEL1   3.0
CAL2   3.0    197.47    351.00    351.00
VEL2   3.0 0.00 0.00 0.00 0.00 0.00  .40 1.30 1.50 1.60 1.90 2.00 2.30
VEL2   3.0 2.30 2.50 3.10 3.20 4.20 3.30 4.00 4.50 3.80 2.70 3.50 3.10
VEL2   3.0 3.10 3.10 3.10 2.50 1.00  .10 0.00 0.00 0.00
XSEC   4.0     129.0 .50    195.40    .00250
       4.0  0.0204.3   .1203.5 10.0201.3 25.0198.2 32.5197.9 34.0197.7
       4.0 38.0197.6 41.0197.4 44.0197.2 47.0196.8 50.0196.4 53.0196.5
       4.0 56.0196.2 59.0196.3 62.0196.3 65.0196.1 68.0195.8 71.0195.9
       4.0 74.0196.0 77.0196.1 80.0195.7 83.0194.7 87.0193.7 90.0193.3
       4.0 93.0194.7 96.0197.7101.0199.5
NS     4.0 0.0010.90 0.0054.90 0.0054.90 0.0054.90 0.0065.70 0.0065.70
NS     4.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     4.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0054.50 0.0054.50
NS     4.0 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0020.50 0.0020.50
NS     4.0 0.0020.50 0.0020.50 0.0010.50
CAL1   4.0    196.51     35.50     35.50
VEL1   4.0
VEL1   4.0
VEL1   4.0
CAL2   4.0    197.71    351.00    351.00
VEL2   4.0 0.00 0.00 0.00 0.00 0.00 0.00  .30  .40 1.60 2.80 3.30 3.20
VEL2   4.0 3.20 3.80 4.40 3.80 4.10 4.20 3.60 4.40 3.40 3.60 4.70 5.30
VEL2   4.0 1.15 0.00 0.00
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XSEC   5.0      134.0 .50    195.40    .00250
       5.0  0.0204.0   .1202.0 10.0199.5 12.0198.0 13.0197.7 15.0197.3
       5.0 18.0197.6 20.0197.9 23.0198.0 37.0198.0 38.0197.9 40.0197.8
       5.0 42.0197.7 44.0197.1 46.0196.8 48.0196.7 50.0196.4 52.0196.4
       5.0 54.0195.9 56.0195.3 58.0194.9 60.0194.3 62.0193.8 64.0193.3
       5.0 66.0192.9 68.0192.8 72.0192.7 74.0192.5 76.0192.6 78.0194.0
       5.0 80.0193.5 82.0194.1 84.0195.2 85.0198.0 90.0201.3100.0201.2
       5.0105.0201.8
NS     5.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0020.50 0.0020.50
NS     5.0 0.0020.50 0.0020.50 0.0056.80 0.0056.80 0.5056.80 0.0056.80
NS     5.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0061.60 0.0061.60
NS     5.0 0.0061.60 0.0061.60 0.0061.60 0.0061.60 0.0061.60 0.0061.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0010.90 0.0010.90
NS     5.0 0.0010.90
CAL1   5.0    197.06     35.50     35.50
VEL1   5.0
VEL1   5.0
VEL1   5.0
VEL1   5.0
CAL2   5.0    198.04    351.00    351.00
VEL2   5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .40
VEL2   5.0  .60 1.40 1.10 1.10 1.20 1.30 1.30 1.05 1.40 1.60 2.10 2.00
VEL2   5.0 3.30 3.70 4.00 4.30 3.00 1.10  .50 1.40  .10 0.00 0.00 0.00
VEL2   5.0 0.00
XSEC   6.0      153.0 .50    195.40    .00250
       6.0  0.0205.4   .1203.4  7.0203.0 15.0201.2 22.5198.9 23.0198.3
       6.0 24.0198.1 27.0198.0 30.0197.9 33.0198.1 36.0198.2 39.0198.2
       6.0 42.0198.2 45.0198.2 48.0198.2 51.0198.2 54.0198.1 57.0198.2
       6.0 60.0197.8 63.0197.6 66.0197.6 69.0197.3 72.0197.2 75.0196.6
       6.0 78.0196.4 81.0196.3 84.0196.0 87.0195.9 90.0195.9 93.0195.4
       6.0 97.0195.1 99.0194.9100.5198.3105.0200.6
NS     6.0 0.0021.60 0.0021.60 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0056.70 0.0055.50
CAL1   6.0    197.10     35.50     35.50
VEL1   6.0
VEL1   6.0
VEL1   6.0
CAL2   6.0    198.30    351.00    351.00
VEL2   6.0 0.00 0.00 0.00 0.00 0.00 0.00  .60  .30  .60  .70  .50  .40
VEL2   6.0  .50  .40  .40  .40  .40  .40 1.00 1.10 1.40 2.40 3.40 5.30
VEL2   6.0 4.70 5.00 6.00 4.91 3.96 4.25 3.21 3.55 0.00 0.00
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XSEC    7.0      104.0 .50    197.10     .00250
        7.0  0.0208.8  9.0203.7 16.5199.3 18.0198.2 22.0197.9 26.0198.1
        7.0 30.0198.0 34.0197.9 38.0197.9 42.0197.4 46.0197.1 50.0197.1
        7.0 54.0197.3 58.0197.4 62.0198.0 66.0198.0 70.0198.2 74.0198.8
        7.0 78.0199.0 82.0199.1 86.0199.1 90.0199.0 94.0198.7100.0199.3
        7.0105.0203.2
NS      7.0 0.0012.90 0.0012.90 0.0012.90 0.0012.90 0.0054.60 0.0054.60
NS      7.0 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60
NS      7.0 0.0054.60 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS      7.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0020.80
NS      7.0 0.0020.80
CAL1    7.0    198.24     35.50     35.50
VEL1    7.0
VEL1    7.0
VEL1    7.0
CAL2    7.0    199.33    351.00    351.00
VEL2    7.0 0.00 0.00 0.00 1.06 2.18 2.80 3.34 4.75 5.15 4.80 4.60 4.84
VEL2    7.0 4.72 3.83 4.02 3.40 3.15 2.10 2.42 1.84  .93  .23 1.00 0.00
VEL2    7.0 0.00
XSEC    8.0      108.0 .50    197.10     .00250
        8.0  0.0208.0   .1207.1  5.0203.7  8.5200.9  9.1199.4 12.0197.4
        8.0 15.0196.9 18.0196.7 21.0197.1 24.0197.2 27.0197.5 30.0197.5
        8.0 33.0197.8 36.0197.6 39.0197.8 43.0198.0 47.0198.2 51.0198.4
        8.0 55.0198.5 59.0198.6 63.0198.8 67.0199.2 71.0199.2 75.0199.3
        8.0 79.0199.3 83.0198.6 87.0198.8 90.0199.4 96.0199.7111.0199.6
        8.0114.0198.6117.0197.5120.0196.9124.0197.2128.0197.6131.0198.3
        8.0133.0198.5135.0198.8136.0199.4144.0202.5
NS      8.0 0.0026.60 0.0026.60 0.0026.60 0.0026.60 0.0026.60 0.0065.80
NS      8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS      8.0 0.0065.80 0.0065.80 0.0055.80 0.0065.80 0.0065.80 0.0065.80
NS      8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS      8.0 0.0065.80 0.0065.80 1.0065.80 0.0065.80 0.0021.80 0.0021.80
NS      8.0 3.0021.80 0.0011.90 0.0011.90 0.0011.90 0.0011.90 0.0011.90
NS      8.0 0.0011.90 0.0011.90 0.0011.90 0.0010.90
CAL1    8.0    198.60     35.50     35.50
VEL1    8.0
VEL1    8.0
VEL1    8.0
VEL1    8.0
CAL2    8.0    199.39    351.00    351.00
VEL2    8.0 0.00 0.00 0.00 0.00 0.00 1.11 3.84 5.05 4.29 4.79 5.00 4.74
VEL2    8.0 4.66 4.57 4.23 4.38 2.88 3.80 2.92 2.70 1.69  .82 1.18 0.00
VEL2    8.0 0.00  .14  .96 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL2    8.0 0.00 0.00 0.00 0.00
ENDJ
^Z
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FILE = LDUNMH.IN4

DUNGENESS RIVER, RM. 2.3, LOWER SITE, MEDIUM FLOW AT 305 CFS ON 7/25/88
HIGH FLOW AT 441 CFS ON 6/29/88, USFWS
IOC       1100000201001000000
QARD 300.0
QARD 310.0
QARD 320.0
QARD 330.0
QARD 340.0
QARD 350.0
QARD 360.0
QARD 370.0
QARD 380.0
QARD 390.0
QARD 400.0
QARD 410.0
QARD 420.0
QARD 430.0
QARD 440.0
QARD 450.0
QARD 460.0
QARD 470.0
QARD 480.0
QARD 490.0
QARD 500.0
XSEC   1.0       0.0 .50    194.90    .00250
       1.0  0.0198.9   .1198.2   .5196.8  3.0195.7  7.0195.3 11.0195.2
       1.0 15.0195.0 19.0194.9 23.0194.9 27.0195.0 31.0195.0 35.0195.2
       1.0 39.0195.4 43.0195.5 47.0195.7 50.0195.7 53.0195.9 56.0195.9
       1.0 59.0195.8 62.0195.8 65.0195.9 68.0195.7 71.0195.5 74.0195.3
       1.0 77.0195.1 80.0195.5 82.0196.3 83.0196.8 84.0197.7
NS     1.0 0.0020.90 0.0020.90 0.0020.90 0.0065.60 0.0065.60 0.0065.60
NS     1.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0020.90
CAL1   1.0    196.78    351.00    351.00
VEL1   1.0 0.00 0.00 0.00 2.60 2.60 4.40 3.90 3.70 4.30 4.10 4.30 3.40
VEL1   1.0 3.20 2.90 3.70 3.00 3.00 3.10 3.50 3.70 3.60 2.90 1.50  .90
VEL1   1.0 1.20  .60  .90 0.00 0.00
CAL2   1.0    196.96    441.00    489.60
VEL2   1.0
VEL2   1.0
VEL2   1.0
XSEC   2.0      94.0 .50    195.40    .00250
       2.0  0.0201.7  1.0200.4  6.0200.6 12.0200.6 15.0199.6 18.0197.6
       2.0 19.0197.1 20.0195.7 24.0195.6 28.0195.5 32.0195.5 36.0195.5
       2.0 40.0195.6 44.0195.6 48.0195.5 52.0195.4 55.0195.6 58.0195.6
       2.0 61.0195.4 64.0195.5 67.0195.5 70.0195.6 73.0195.6 76.0195.6
       2.0 79.0195.6 82.0195.6 85.0195.7 88.0196.1 91.0196.1 94.0196.1
       2.0 97.0196.3100.0196.2103.0197.1103.5197.6104.0198.6
NS     2.0 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90
NS     2.0 0.0020.90 0.0056.60 0.0056.60 0.0056.60 0.0056.60 0.0056.60
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NS     2.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     2.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
NS     2.0 0.0065.50 0.0043.50 0.0043.50 0.0043.50 0.0043.50 0.0043.50
NS     2.0 0.0043.50 0.0043.50 0.0020.90 0.0020.90 0.0020.90
CAL1   2.0    197.09    351.00    351.00
VEL1   2.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .70 2.20 2.90 3.70 3.10
VEL1   2.0 3.60 3.60 3.20 4.50 4.30 4.10 4.30 4.40 3.40 4.30 3.90 3.00
VEL1   2.0 3.70 3.40 3.60 3.50 2.80 2.30 2.70 1.90 0.00 0.00 0.00
CAL2   2.0    197.30    441.00    484.60
VEL2   2.0
VEL2   2.0
VEL2   2.0
XSEC   3.0     102.0 .50    195.40    .00250
       3.0  0.0201.9   .1200.7  5.0198.8  9.5197.7 10.5197.5 12.0197.2
       3.0 15.0196.8 18.0196.7 21.0196.4 24.0196.5 27.0196.3 30.0196.2
       3.0 33.0196.0 36.0196.0 39.0195.8 42.0195.7 45.0195.6 48.0195.4
       3.0 51.0195.2 54.0195.2 57.0195.2 60.0195.4 63.0195.5 66.0195.7
       3.0 69.0195.7 72.0195.7 75.0195.8 78.0195.8 81.0196.0 84.0196.0
       3.0 85.5197.5 89.5199.8 95.5201.2
NS     3.0 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0065.70
NS     3.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     3.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0056.80
NS     3.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     3.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     3.0 0.0056.80 0.0020.90 0.0020.90
CAL1   3.0    197.47    351.00    351.00
VEL1   3.0 0.00 0.00 0.00 0.00 0.00  .40 1.30 1.50 1.60 1.90 2.00 2.30
VEL1   3.0 2.30 2.50 3.10 3.20 4.20 3.30 4.00 4.50 3.80 2.70 3.50 3.10
VEL1   3.0 3.10 3.10 3.10 2.50 1.00  .10 0.00 0.00 0.00
CAL2   3.0    197.62    441.0     419.50
VEL2   3.0
VEL2   3.0
VEL2   3.0
XSEC   4.0     129.0 .50    195.40    .00250
       4.0  0.0204.3   .1203.5 10.0201.3 25.0198.2 32.5197.9 34.0197.7
       4.0 38.0197.6 41.0197.4 44.0197.2 47.0196.8 50.0196.4 53.0196.5
       4.0 56.0196.2 59.0196.3 62.0196.3 65.0196.1 68.0195.8 71.0195.9
       4.0 74.0196.0 77.0196.1 80.0195.7 83.0194.7 87.0193.7 90.0193.3
       4.0 93.0194.7 96.0197.7101.0199.5
NS     4.0 0.0010.90 0.0054.90 0.0054.90 0.0054.90 0.0065.70 0.0065.70
NS     4.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     4.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0054.50 0.0054.50
NS     4.0 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0020.50 0.0020.50
NS     4.0 0.0020.50 0.0020.50 0.0010.50
CAL1   4.0    197.71    351.00    351.00
VEL1   4.0 0.00 0.00 0.00 0.00 0.00 0.00  .30  .40 1.60 2.80 3.30 3.20
VEL1   4.0 3.20 3.80 4.40 3.80 4.10 4.20 3.60 4.40 3.40 3.60 4.70 5.30
VEL1   4.0 1.15 0.00 0.00
CAL2   4.0    197.81    441.00    395.70
VEL2   4.0
VEL2   4.0
VEL2   4.0
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XSEC   5.0      134.0 .50     195.40     .00250
       5.0  0.0204.0    .1202.0 10.0199.5 12.0198.0 13.0197.7 15.0197.3
       5.0 18.0197.6 20.0197.9 23.0198.0 37.0198.0 38.0197.9 40.0197.8
       5.0 42.0197.7 44.0197.1 46.0196.8 48.0196.7 50.0196.4 52.0196.4
       5.0 54.0195.9 56.0195.3 58.0194.9 60.0194.3 62.0193.8 64.0193.3
       5.0 66.0192.9 68.0192.8 72.0192.7 74.0192.5 76.0192.6 78.0194.0
       5.0 80.0193.5 82.0194.1 84.0195.2 85.0198.0 90.0201.3100.0201.2
       5.0105.0201.8
NS     5.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0020.50 0.0020.50
NS     5.0 0.0020.50 0.0020.50 0.0056.80 0.0056.80 0.5056.80 0.0056.80
NS     5.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0061.60 0.0061.60
NS     5.0 0.0061.60 0.0061.60 0.0061.60 0.0061.60 0.0061.60 0.0061.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0010.90 0.0010.90
NS     5.0 0.0010.90
CAL1   5.0    198.04    351.00    351.00
VEL1   5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  .40
VEL1   5.0  .60 1.40 1.10 1.10 1.20 1.30 1.30 1.05 1.40 1.60 2.10 2.00
VEL1   5.0 3.30 3.70 4.00 4.30 3.00 1.10  .50 1.40  .10 0.00 0.00 0.00
VEL1   5.0 0.00
CAL2   5.0    198.40    441.00    452.80
VEL2   5.0
VEL2   5.0
VEL2   5.0
VEL2   5.0
XSEC   6.0     153.0 .50     195.40     .00250
       6.0  0.0205.4    .1203.4  7.0203.0 15.0201.2 22.5198.9 23.0198.3
       6.0 24.0198.1 27.0198.0 30.0197.9 33.0198.1 36.0198.2 39.0198.2
       6.0 42.0198.2 45.0198.2 48.0198.2 51.0198.2 54.0198.1 57.0198.2
       6.0 60.0197.8 63.0197.6 66.0197.6 69.0197.3 72.0197.2 75.0196.6
       6.0 78.0196.4 81.0196.3 84.0196.0 87.0195.9 90.0195.9 93.0195.4
       6.0 97.0195.1 99.0194.9100.5198.3105.0200.6
NS     6.0 0.0021.60 0.0021.60 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0056.70 0.0055.50
CAL1   6.0    198.30    351.00    351.00
VEL1   6.0 0.00 0.00 0.00 0.00 0.00 0.00  .60  .30  .60  .70  .50  .40
VEL1   6.0  .50  .40  .40  .40  .40  .40 1.00 1.10 1.40 2.40 3.40 5.30
VEL1   6.0 4.70 5.00 6.00 4.91 3.96 4.25 3.21 3.55 0.00 0.00
CAL2   6.0    198.80    441.00    403.60
VEL2   6.0
VEL2   6.0
VEL2   6.0
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XSEC   7.0      104.0 .50    197.10     .00250
       7.0  0.0208.8  9.0203.7 16.5199.3 18.0198.2 22.0197.9 26.0198.1
       7.0 30.0198.0 34.0197.9 38.0197.9 42.0197.4 46.0197.1 50.0197.1
       7.0 54.0197.3 58.0197.4 62.0198.0 66.0198.0 70.0198.2 74.0198.8
       7.0 78.0199.0 82.0199.1 86.0199.1 90.0199.0 94.0198.7100.0199.3
       7.0105.0203.2
NS     7.0 0.0012.90 0.0012.90 0.0012.90 0.0012.90 0.0054.60 0.0054.60
NS     7.0 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60
NS     7.0 0.0054.60 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     7.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0020.80
NS     7.0 0.0020.80
CAL1   7.0     199.33     351.00     351.00
VEL1   7.0 0.00 0.00 0.00 1.06 2.18 2.80 3.34 4.75 5.15 4.80 4.60 4.84
VEL1   7.0 4.72 3.83 4.02 3.40 3.15 2.10 2.42 1.84  .93  .23 1.00 0.00
VEL1   7.0 0.00
CAL2   7.0     199.50     441.00     443.20
VEL2   7.0
VEL2   7.0
VEL2   7.0
XSEC   8.0      108.0 .50    197.10     .00250
       8.0  0.0208.0   .1207.1  5.0203.7  8.5200.9  9.1199.4 12.0197.4
       8.0 15.0196.9 18.0196.7 21.0197.1 24.0197.2 27.0197.5 30.0197.5
       8.0 33.0197.8 36.0197.6 39.0197.8 43.0198.0 47.0198.2 51.0198.4
       8.0 55.0198.5 59.0198.6 63.0198.8 67.0199.2 71.0199.2 75.0199.3
       8.0 79.0199.3 83.0198.6 87.0198.8 90.0199.4 96.0199.7111.0199.6
       8.0114.0198.6117.0197.5120.0196.9124.0197.2128.0197.6131.0198.3
       8.0133.0198.5135.0198.8136.0199.4144.0202.5
NS     8.0 0.0026.60 0.0026.60 0.0026.60 0.0026.60 0.0026.60 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0055.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 1.0065.80 0.0065.80 0.0021.80 0.0021.80
NS     8.0 4.0021.80 0.0011.90 0.0011.90 0.0011.90 0.0011.90 0.0011.90
NS     8.0 0.0011.90 0.0011.90 0.0011.90 0.0010.90
CAL1   8.0     199.39     351.00     351.00
VEL1   8.0 0.00 0.00 0.00 0.00 0.00 1.11 3.84 5.05 4.29 4.79 5.00 4.74
VEL1   8.0 4.66 4.57 4.23 4.38 2.88 3.80 2.92 2.70 1.69  .82 1.18 0.00
VEL1   8.0 0.00  .14  .96 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL1   8.0 0.00 0.00 0.00 0.00
CAL2   8.0     200.10     441.00     439.00
VEL2   8.0
VEL2   8.0
VEL2   8.0
VEL2   8.0
ENDJ
^Z
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FILE = LDUNHIGH.IN4

DUNGENESS RIVER, LOWER SITE RM. 2.3 ,HIGH FLOW 441 CFS ON 6/29/88
MED.FLOW 305 CFS ON 7/26/88, USFWS
IOC       1100000201001000000
QARD 300.0
QARD 310.0
QARD 320.0
QARD 330.0
QARD 340.0
QARD 350.0
QARD 360.0
QARD 370.0
QARD 380.0
QARD 390.0
QARD 400.0
QARD 410.0
QARD 420.0
QARD 430.0
QARD 440.0
QARD 450.0
QARD 460.0
QARD 470.0
QARD 480.0
QARD 490.0
QARD 500.0
XSEC   1.0        0.0 .50      94.91     .00250
       1.0  0.098.92    .1 98.2  1.596.96  3.595.86  5.595.56  8.595.36
       1.0 12.595.16 16.594.96 19.594.91 22.595.06 26.594.96 29.595.06
       1.0 32.595.16 35.595.16 38.595.36 42.595.46 46.595.66 50.595.81
       1.0 54.595.86 58.595.76 62.595.76 66.595.81 70.595.46 74.595.16
       1.0 78.595.11 81.595.81 83.596.96 84.097.72
NS     1.0 0.0020.90 0.0020.90 0.0020.90 0.0065.60 0.0065.60 0.0065.60
NS     1.0 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60 0.0065.60
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70 0.0046.70
NS     1.0 0.0046.70 0.0046.70 0.0046.70 0.0020.90
CAL1   1.0      96.78     351.50     351.50
VEL1   1.0
VEL1   1.0
VEL1   1.0
CAL2   1.0      96.96     441.00     441.00
VEL2   1.0 0.00 0.00 0.00 2.77 2.05 5.02 4.61 5.45 5.09 4.97 5.27 4.50
VEL2   1.0 4.67 4.31 4.54 3.57 3.88 4.06 3.80 3.91 4.01 4.55 1.34 1.42
VEL2   1.0 2.00 1.36 0.00 0.00
XSEC   2.0       94.0 .50      95.40     .00250
       2.0  0.0101.7  1.0100.7  6.0100.6 12.0100.6 15.0 99.6 18.0 97.3
       2.0 19.095.75 23.0 95.7 24.0 95.6 31.0 95.8 35.0 95.6 39.095.45
       2.0 43.0 95.5 47.0 95.4 51.0 95.4 55.0 95.4 59.0 95.4 63.0 95.6
       2.0 67.0 95.7 71.0 95.7 75.0 95.9 79.0 96.0 83.0 96.1 87.0 96.1
       2.0 91.0 96.1 95.0 96.2 99.0 96.3103.0 97.3104.0 98.5
NS     2.0 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0020.90
NS     2.0 0.0020.90 0.0056.60 0.0056.60 0.0056.60 0.0056.60 0.0065.50
NS     2.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0065.50
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NS     2.0 0.0065.50 0.0065.50 0.0065.50 0.0065.50 0.0043.50 0.0043.50
NS     2.0 0.0043.50 0.0043.50 0.0043.50 0.0020.90 0.0020.90
CAL1   2.0     97.09    351.50    351.50
VEL1   2.0
VEL1   2.0
VEL1   2.0
CAL2   2.0     97.30    441.00    441.00
VEL2   2.0 0.00 0.00 0.00 0.00 0.00 0.00  .50 2.66 3.13 3.56 3.54 3.61
VEL2   2.0 4.09 4.47 4.31 4.66 4.55 4.81 4.68 4.43 4.05 3.66 3.68 3.19
VEL2   2.0 3.15 2.80 3.22 0.00 0.00
XSEC   3.0     102.0 .50     95.40    .00250
       3.0  0.0101.9   .1100.7  5.098.76  9.597.62 11.5 95.8 13.5 95.7
       3.0 17.5 95.6 21.5 95.5 25.5 95.5 29.5 95.4 33.5 95.5 37.5 95.2
       3.0 41.5 95.3 45.5 95.3 49.5 95.5 53.5 95.7 57.5 95.8 61.5 96.1
       3.0 65.596.35 69.5 96.4 73.5 96.7 77.597.05 81.597.25 85.597.62
       3.0 90.0 99.8 95.5101.2
NS     3.0 0.0020.90 0.0020.90 0.0020.90 0.0020.90 0.0065.70 0.0065.70
NS     3.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     3.0 0.0065.70 0.0065.70 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     3.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     3.0 0.0020.90 0.0020.90
CAL1   3.0     97.47    351.50    351.50
VEL1   3.0
VEL1   3.0
VEL1   3.0
CAL2   3.0     97.62    441.00    441.00
VEL2   3.0 0.00 0.00 0.00 0.00  .33  .98 1.72 1.61 2.17 2.21 2.48 3.22
VEL2   3.0 4.00 4.20 3.84 4.19 3.90 3.89 4.09 3.71 3.26 3.02 1.10 0.00
VEL2   3.0 0.00 0.00
XSEC   4.0     129.0 .50     95.40    .00250
       4.0  0.0104.3 10.0101.0 25.0 98.2 32.597.81 34.597.65 37.0 97.7
       4.0 39.597.45 42.097.35 44.5 97.1 47.0 97.0 49.5 96.7 52.0 96.5
       4.0 54.5 96.6 57.0 96.4 59.596.25 62.0 96.0 64.5 95.9 67.0 95.9
       4.0 69.5 96.0 72.0 95.9 74.5 95.9 77.0 96.0 79.5 95.5 82.0 94.9
       4.0 84.5 94.1 89.5 93.6 92.0 94.4 94.5 95.5 96.0 97.2 96.997.81
       4.0101.099.51
NS     4.0 0.0010.90 0.0054.90 0.0054.90 0.0054.90 0.0065.70 0.0065.70
NS     4.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0065.70
NS     4.0 0.0065.70 0.0065.70 0.0065.70 0.0065.70 0.0054.50 0.0054.50
NS     4.0 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0054.50
NS     4.0 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0054.50 0.0054.50
NS     4.0 0.0020.50
CAL1   4.0     97.71    351.50    351.50
VEL1   4.0
VEL1   4.0
VEL1   4.0
CAL2   4.0     97.81    441.00    441.00
VEL2   4.0 0.00 0.00 0.00 0.00  .10  .40  .83 1.76 2.42 3.05 2.82 4.33
VEL2   4.0 4.39 3.79 4.09 4.17 3.81 4.86 4.84 4.87 4.97 4.98 3.94 4.43
VEL2   4.0 4.66 3.61 2.95  .52  .10 0.00 0.00
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XSEC   5.0     134.0 .50     95.40    .00250
       5.0  0.0104.0   .1102.0 10.0 99.5 12.0 98.4 14.097.85 16.5 97.6
       5.0 19.097.75 21.598.05 24.0 98.2 26.4 98.4 35.8 98.4 39.0 98.1
       5.0 41.5 98.0 44.097.65 46.597.25 49.0 96.9 51.5 96.7 54.096.45
       5.0 56.5 95.9 59.0 95.4 61.5 94.6 64.0 94.0 66.5 93.7 69.0 93.1
       5.0 71.5 92.8 74.0 92.7 76.592.45 79.0 92.7 81.5 93.1 84.0 94.6
       5.0 85.5 98.4 90.5101.3100.5101.2105.0101.8
NS     5.0 0.0010.90 0.0010.90 0.0010.90 0.0010.90 0.0020.50 0.0020.50
NS     5.0 0.0020.50 0.0020.50 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     5.0 0.0056.80 0.0056.80 0.0056.80 0.0061.60 0.0061.60 0.0061.60
NS     5.0 0.0061.60 0.0061.60 0.0061.60 0.0061.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60 0.0057.60
NS     5.0 0.0057.60 0.0010.90 0.0010.90 0.0010.90
CAL1   5.0     98.04    351.50    351.50
VEL1   5.0
VEL1   5.0
VEL1   5.0
CAL2   5.0     98.40    441.00    441.00
VEL2   5.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL2   5.0  .05  .09  .17  .45  .57  .76 1.13 1.88 2.60 3.43 4.46 4.99
VEL2   5.0 5.35 5.81 3.84 1.00  .80  .20 0.00 0.00 0.00 0.00
XSEC   6.0     153.0 .50     95.40    .00250
       6.0  0.0105.4   .1103.4  7.0103.0 15.0101.2 22.3 98.8 25.098.75
       6.0 27.598.55 30.0 98.4 32.598.45 35.098.35 37.5 98.5 39.0 98.7
       6.0 44.0 98.7 49.0 98.7 54.0 98.5 56.5 98.5 59.0 98.4 61.5 98.0
       6.0 64.0 98.0 66.5 97.9 69.0 97.9 71.5 97.5 74.0 96.9 76.5 96.8
       6.0 79.0 96.8 81.5 96.7 84.0 96.7 86.5 96.5 89.0 96.4 91.5 96.4
       6.0 94.0 96.2 96.5 95.9 99.0 95.0101.0 98.7102.9 98.8105.0100.6
NS     6.0 0.0021.60 0.0021.60 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80
NS     6.0 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.80 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0065.70 0.0056.70 0.0056.70 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     6.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0055.50 0.0055.50
CAL1   6.0     98.30    351.50    351.50
VEL1   6.0
VEL1   6.0
VEL1   6.0
CAL2   6.0     98.80    441.00    441.00
VEL2   6.0 0.00 0.00 0.00 0.00 0.00 0.00  .94  .97 1.08 1.01  .74  .01
VEL2   6.0  .75  .01  .35  .57 1.57 1.82 1.87 2.49 3.52 3.84 4.88 5.34
VEL2   6.0 5.76 7.06 6.61 6.58 6.71 7.04 6.32 5.87 4.97 0.00 0.00 0.00
XSEC   7.0     104.0 .50     97.10    .00250
       7.0  0.0108.8  9.5103.7 16.5 99.7 17.1 99.5 18.098.25 20.5 97.7
       7.0 23.0 98.0 25.5 98.2 28.0 98.5 30.5 98.1 33.0 98.1 35.5 97.9
       7.0 38.0 97.7 40.5 97.7 43.0 97.4 45.5 97.2 48.0 97.1 50.5 97.2
       7.0 53.0 97.2 55.597.45 58.0 97.5 60.5 97.7 63.0 97.9 65.5 98.1
       7.0 68.0 98.4 70.5 98.5 73.098.65 75.5 99.0 78.098.95 80.599.05
       7.0 83.0 99.1 85.5 99.0 88.099.15 90.5 98.7 93.098.55 95.598.45
       7.0 98.0 98.4100.3 99.5105.0103.2
NS     7.0 0.0012.90 0.0012.90 0.0012.90 0.0012.90 0.0012.90 0.0054.60
NS     7.0 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60
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NS     7.0 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60 0.0054.60
NS     7.0 0.0054.60 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     7.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     7.0 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70 0.0056.70
NS     7.0 0.0056.70 0.0056.70 0.0020.80
CAL1   7.0     99.33    351.50    351.50
VEL1   7.0
VEL1   7.0
VEL1   7.0
VEL1   7.0
CAL2   7.0     99.50    441.00    441.00
VEL2   7.0 0.00 0.00 0.00 0.00  .99 2.15 3.46 3.21 3.74 4.00 4.47 5.28
VEL2   7.0 5.74 5.27 5.43 5.53 5.39 5.79 5.18 4.95 4.58 3.91 3.75 3.84
VEL2   7.0 3.64 3.13 2.84 2.86 2.76 2.12  .90  .93 1.14  .80 1.59 1.60
VEL2   7.0  .76 0.00 0.00
XSEC   8.0     108.0 .50     97.00    .00250
       8.0  0.0108.0   .1107.1  5.0103.7  8.5100.9  9.1 99.9 10.0 99.2
       8.0 12.598.35 14.5 97.3 17.0 97.0 19.5 97.1 21.0 97.5 23.5 97.8
       8.0 26.0 97.8 28.5 97.9 31.0 98.0 33.5 97.9 36.0 97.8 38.5 98.5
       8.0 41.0 98.4 43.5 98.4 46.098.85 48.5 98.5 51.0 98.8 53.5 98.9
       8.0 56.0 98.8 58.5 98.8 61.099.45 63.5 99.2 66.0 99.4 68.5 99.4
       8.0 71.0 99.5 73.5 99.7 76.0100.0 78.5 99.6 81.0 99.2 84.598.85
       8.0 86.098.85 88.099.35 90.5100.1 97.0100.5103.5100.2108.9100.1
       8.0109.0 99.2111.5 98.6114.0 98.3116.5 97.4119.0 97.8121.5 97.0
       8.0124.097.00126.5 97.2129.0 98.2131.5 99.0134.0100.0136.0100.1
       8.0144.0102.5
NS     8.0 0.0026.60 0.0026.60 0.0026.60 0.0026.60 0.0026.60 2.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80 0.0065.80
NS     8.0 0.0065.80 0.0065.80 0.0021.80 0.0021.80 0.0021.80 5.0021.80
NS     8.0 0.0021.80 0.0021.80 0.0021.80 0.0011.90 0.0011.90 0.0011.90
NS     8.0 0.0011.90 0.0011.90 0.0011.90 0.0011.90 0.0011.90 0.0011.90
NS     8.0 0.0010.90
CAL1   8.0     99.89    351.50    351.50
VEL1   8.0
VEL1   8.0
VEL1   8.0
VEL1   8.0
VEL1   8.0
CAL2   8.0    100.19    441.00    441.00
VEL2   8.0 0.00 0.00 0.00 0.00 0.00 0.00 1.07 2.58 4.78 5.06 4.27 5.43
VEL2   8.0 5.08 5.20 5.57 5.32 5.23 4.63 4.04 4.20 3.81 3.60 3.43 3.64
VEL2   8.0 3.39 3.06 3.28 2.62 1.60 2.31 1.89  .61 0.10  .16 0.90 2.02
VEL2   8.0 2.43  .28 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
VEL2   8.0 0.00 0.00 0.00 0.00 0.00 0.00 0.00
ENDJ
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APPENDIX C. Preference Curve Verification Methods

We determined habitat availability by using hydraulic model calibration measurements at the same site as the preference curve study. We used the hydraulic model to estimate habitat availability when utilization measurements were made at a flow different from the calibration flow. We ran HABTAT (with a dummy preference curve) for the flows at which we measured utilization, and generated a matrix of depth and velocity availability at the utilization study flows.

In the case of charr (Dolly Varden/bull trout), fish density was low, so we needed to sample a greater length of stream to obtain a reasonable number of observations. We assumed that habitat availability at the upper IFIM study site was proportionally representative of the several miles between the site and the Hwy 101 bridge; this was a criterion in selecting the hydraulic model site, so the assumption was reasonable.

We determined habitat utilization by snorkeling through a study site, marking fish positions, and measuring depth, velocity and substrate at the fish position. In most cases field crew snorkelled upstream, carefully determining fish position and bevavior to avoid measuring at positions taken up by fish that have been disturbed. In the case of charr, with low fish density, the field crew worked downstream with the current to cover large distances to obtain an adequate sample size.

We measured depth with a top-setting wading rod. We measured mean column velocity at 0.6 depth using a Swoffer propeller current meter or a rotating cup current meter of a size suited to the stream.

For each study we tabulated the following in each range of depth and velocity: number of fish observed (O), proportion of total habitat (f[H]), and expected number of fish (E) if fish were distributed in proportion to habitat availability (i.e., randomly with respect to depth and velocity). We calculated expected number of fish as the proportion of total habitat that occurred within a range multiplied by the total number of fish observed (E=f[H] x sum[O]). Initially we used ranges of 0.5 ft and 0.4 fps or less for tabulation (e.g., 0.00-0.39fps, 1.00-1.49 ft). The HABTAT program generated ranges when we specified limits for the matrix of available depths and velocities at the utilization study flow. Then we combined ranges until E for the combined range was at least 1, and in most cases at least 5.

For each site, in ranges meeting the minimum E criterion, we divided number of fish observed by number expected (O/E), then determined the maximum value of O/E for a site and habitat attribute. All values of O/E at a site and habitat attribute were then divided by the maximum value of O/E to determine preference values (P) ranging from 0 to 1.0: $P=(O/E)/(O/E)max$.

We tabulated preferences for different ranges of depth and velocity in a spreadsheet, using a column for each study (in some cases there were several studies at one site). Where several ranges have been combined (e.g., 0.5-0.79 ft, or 1.30 fps and greater), the preference for that combined range was entered in each cell corresponding to the component range. For example, if

the preference for 0.5-0.79 were 0.3, then 0.3 would be entered in cells corresponding to 0.50-0.59, 0.60-0.69, and 0.7-0.79.

For each study, we tabulated number of fish observed (N). Number of observations (N) was the weighting factor applied to each study in developing the habitat preference curves. For each component range, we added the products of the sample size and preference (sum[NP]) to yield a cumulative weighted preference factor (CWPF). The cumulative weighted preference factor was then normalized by dividing each CWPF by the maximum CWPF to produce a composite preference factor with a value between 0.00 and 1.00. The upper tails of curves were weighted differently. Sites were only weighted up through the highest range where either the number of fish expected or observed was greater than 0.