

## 12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY

LOCATION.--Lat 48°59'44", long 115°10'43" (NAD 27), in NE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.1, T.37 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, 0.3 mi south of international boundary, in middle of old channel 1.9 mi upstream from Young Creek, and 6.4 mi north of Rexford.

PERIOD OF RECORD.--Water years 1972 to 2004 (discontinued).

REMARKS.--Specific conductance probe malfunctioned during profile readings on June 16.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Incident light remain- ing at depth, percent (00031)
OCT						
16...	.5	9.4	8.1	240	13.8	76.3
16...	2	9.4	8.2	244	13.8	61.1
16...	4	9.3	8.3	247	13.8	43.8
16...	6	9.3	8.4	249	13.8	25.7
16...	8	9.3	8.4	252	13.8	13.9
16...	10	9.3	8.4	250	13.8	10.3
16...	13	9.3	8.4	252	13.8	7.00
16...	16	9.3	8.4	252	13.8	--
16...	20	9.3	8.5	251	13.8	--
16...	25	9.3	8.5	252	13.8	--
16...	30	9.2	8.5	252	13.8	--
16...	34	9.2	8.5	252	13.8	--
16...	40	9.2	8.5	252	13.8	--
16...	50	9.2	8.5	253	13.8	--
16...	60	9.1	8.5	253	13.8	--
16...	69	9.1	8.5	253	13.8	--
16...	79	9.0	8.5	263	13.6	--
16...	88	8.8	8.4	275	13.4	--
16...	98	5.8	8.0	254	9.0	--
16...	106	5.2	7.9	254	7.9	--
JUN						
16...	.5	10.1	7.5	--	16.0	71.2
16...	2	10.3	7.6	--	14.2	56.9
16...	5	10.4	7.6	--	13.5	33.9
16...	10	10.4	7.6	225	13.0	15.7
16...	15	10.5	7.6	--	12.9	6.84
16...	20	10.5	7.6	--	12.8	3.07
16...	25	10.5	7.6	--	12.8	1.37
16...	30	10.5	7.6	--	12.8	.67
16...	35	10.4	7.6	--	12.8	.33
16...	40	10.4	7.6	--	12.7	--
16...	45	10.4	7.6	--	12.7	--
16...	50	10.4	7.6	--	12.3	--
16...	55	10.4	7.6	--	12.2	--
16...	60	10.4	7.6	--	12.1	--
16...	70	10.5	7.6	--	11.9	--
16...	80	10.5	7.6	--	11.3	--
16...	90	10.5	7.6	--	11.0	--
16...	100	10.5	7.6	--	11.0	--
16...	110	10.5	7.6	--	10.9	--
16...	120	10.5	7.6	--	10.9	--
16...	125	10.5	7.6	200	10.9	--
JUL						
14...	.5	9.4	8.0	200	18.5	49.1
14...	2	9.3	8.0	200	18.5	40.2
14...	5	9.3	8.0	200	18.4	24.0
14...	10	9.3	8.0	200	18.3	12.7
14...	15	9.3	8.1	198	18.0	6.05
14...	20	9.3	8.1	198	17.0	3.32
14...	25	9.2	8.1	203	16.8	1.78
14...	30	9.1	8.1	195	16.5	1.06
14...	35	8.9	8.1	181	15.2	.63
14...	40	8.8	8.1	181	15.2	.36
14...	45	8.8	8.1	181	14.9	--
14...	50	8.8	8.0	180	14.6	--
14...	60	8.8	8.0	181	13.9	--
14...	70	8.7	8.0	195	13.5	--
14...	80	8.7	8.0	205	12.4	--
14...	90	8.8	7.9	213	10.2	--
14...	100	8.9	8.2	240	8.2	--
14...	110	8.5	7.9	253	7.1	--
14...	120	8.4	7.8	255	6.8	--
14...	130	8.3	7.8	255	6.7	--
14...	132	8.3	7.8	256	6.7	--

## 12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Incident light remain- ing at depth, percent (00031)
AUG						
27...	.5	8.0	7.0	233	19.6	69.97
27...	2	8.0	7.1	232	19.6	58.02
27...	5	8.0	7.1	232	19.6	37.03
27...	10	7.9	7.2	232	19.6	21.31
27...	15	7.9	7.2	232	19.6	12.83
27...	20	7.9	7.3	231	19.6	8.51
27...	25	7.8	7.3	231	19.6	5.19
27...	30	7.8	7.4	231	19.6	3.21
27...	35	7.8	7.4	231	19.6	2.04
27...	40	7.8	7.4	231	19.6	1.28
27...	45	7.8	7.5	231	19.6	.82
27...	50	7.7	7.5	231	19.5	.50
27...	55	7.6	7.5	235	19.4	--
27...	60	7.4	7.5	242	10.0	--
27...	65	7.3	7.5	259	17.8	--
27...	70	6.5	7.4	251	16.0	--
27...	75	6.1	7.3	234	14.2	--
27...	80	6.9	7.4	215	12.7	--
27...	85	7.0	7.4	218	11.9	--
27...	90	7.0	7.4	221	11.3	--
27...	95	6.8	7.3	226	10.9	--
27...	100	6.6	7.3	232	10.1	--
27...	105	6.4	7.3	237	9.8	--
27...	110	6.2	7.3	248	9.0	--
27...	115	5.8	7.3	254	8.6	--
27...	120	5.7	7.2	260	8.2	--
27...	124	5.6	7.2	262	8.0	--
SEP						
23...	.5	8.6	8.1	232	15.8	47.64
23...	2.0	8.5	8.1	231	15.8	42.36
23...	5.0	8.5	8.1	231	15.8	27.26
23...	10	8.5	8.1	231	15.8	13.21
23...	15	8.5	8.1	231	15.8	6.98
23...	20	8.5	8.1	231	15.8	4.36
23...	25	8.5	8.1	230	15.8	2.63
23...	30	8.5	8.1	230	15.8	1.65
23...	35	8.5	8.2	230	15.8	1.02
23...	40	8.4	8.2	231	15.8	.67
23...	45	8.4	8.2	230	15.8	.44
23...	50	8.4	8.2	230	15.8	--
23...	55	8.4	8.2	230	15.8	--
23...	60	8.4	8.2	231	15.7	--
23...	65	8.4	8.2	231	15.6	--
23...	70	8.4	8.2	231	15.6	--
23...	80	8.4	8.2	232	15.2	--
23...	90	8.6	8.2	237	13.5	--
23...	100	8.7	8.2	238	12.7	--
23...	110	8.7	8.2	238	12.6	--
23...	120	8.0	8.1	240	11.8	--
23...	127	5.8	8.0	243	10.1	--

12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Time	Sam- pling depth, feet (00003)	Cloud cover, percent (00032)	Depth to 1% of surface light, feet (00034)	Incident light intensity 400- 700 nm, uE/m2/s (00200)	Light attenu- ation coeffi- cient, alpha/m (70971)	Trans- parency water unfltrd secchi disc feet (49701)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	Temper- ature, air, deg C (00020)
OCT											
16...	0930	10	100	20.0	82.8	.21	11.0	691	9.3	99	12.0
16...	1000	106	--	--	--	--	--	--	5.2	--	--
JUN											
16...	1200	10	20	27.0	1,960	.16	8.5	699	10.4	108	17.5
16...	1230	125	--	--	--	--	--	--	10.5	--	--
JUL											
14...	0945	10	0	30.5	1,870	.12	14.4	695	9.3	109	20.0
14...	1015	132	--	--	--	--	--	--	8.3	--	--
AUG											
27...	0945	10	90	43.0	343	.10	10.5	698	7.9	94	17.0
27...	1015	124	--	--	--	--	--	--	5.6	--	--
SEP											
23...	0930	10	50	35.5	1,060	.11	12.4	695	8.5	94	16.0
23...	1000	127	--	--	--	--	--	--	5.8	--	--

Date	Silica, water, fltrd, mg/L (00955)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)
OCT						
16...	2.9	E.10	<.010	E.012	<.006	.006
16...	2.8	E.08	<.010	E.012	<.006	.006
JUN						
16...	4.3	.13	<.010	.106	<.006	.012
16...	4.1	E.05	E.006	.128	<.006	.008
JUL						
14...	3.9	.11	<.010	.043	<.006	E.002
14...	5.3	E.07	E.005	.156	<.006	E.004
AUG						
27...	3.5	E.08	E.007	.022	<.006	.007
27...	5.8	E.06	<.010	.195	<.006	E.003
SEP						
23...	3.6	.11	<.010	.039	<.006	.005
23...	4.4	.11	E.007	.109	<.006	.008

Date	Time	Sam- pling depth, feet (00003)	Hard- ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium adsorp- tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)
JUN									
16...	1200	10.0	110	32.4	8.10	.45	.1	2.97	94
16...	1230	125	100	29.8	7.05	.34	.1	1.87	88
AUG									
27...	0945	10.0	120	32.8	8.21	.38	.1	2.58	97
27...	1015	124	130	38.1	9.25	.48	.1	3.62	110

E--Estimated.

## 12300110 LAKE KOOCANUSA AT INTERNATIONAL BOUNDARY—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)
JUN					
16...	2.48	<.2	18.6	126	.17
16...	1.63	<.2	13.9	112	.15
AUG					
27...	1.89	<.2	18.5	126	.17
27...	2.46	<.2	21.9	148	.20

Date	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a, phytoplankton, ug/L (70953)	Date	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a, phytoplankton, ug/L (70953)
JUN		AUG			
16...	.5	1.4	27...	.5	1.1
JUL		SEP			
14...	.3	.6	23...	.6	1.2

12301300 TOBACCO RIVER NEAR EUREKA, MT

LOCATION.--Lat 48°53'37", long 115°05'13" (NAD 27), in NW¼SE¼SE¼ sec.9, T.36 N., R.27 W., Lincoln County, Hydrologic Unit 17010101, on right bank 0.2 mi upstream from Indian Creek, 1.8 mi northwest of Eureka, and 2.8 mi upstream from Lake Koocanusa flow line.

DRAINAGE AREA.--440 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1958 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,518.85 ft (NGVD 29).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Diversions for irrigation of about 4,500 acres upstream from station. U. S. Geological Survey satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948, reached a discharge of 2,810 ft<sup>3</sup>/s, from slope-area measurement of peak flow at site 1.5 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	83	69	60	66	66	316	405	452	309	92	222
2	65	90	79	56	59	64	277	426	427	333	85	211
3	64	85	79	e56	65	58	254	525	426	303	86	205
4	64	70	72	e49	62	64	271	590	458	302	90	195
5	64	67	76	e46	66	62	335	589	524	309	85	188
6	63	65	82	e45	62	61	392	520	606	278	110	177
7	62	58	81	e46	59	59	431	477	641	263	133	174
8	63	62	76	e50	57	64	491	471	562	271	127	171
9	61	71	75	e50	56	80	627	486	498	253	116	162
10	61	65	66	e50	56	84	578	467	452	236	79	156
11	62	77	e50	e52	54	82	499	439	431	222	73	160
12	64	75	65	e52	57	83	478	402	425	211	71	180
13	65	72	74	61	e55	84	508	368	413	197	63	193
14	65	69	78	61	e57	84	642	341	399	193	60	238
15	65	71	75	64	e60	82	814	320	378	192	56	329
16	69	72	72	65	59	82	681	313	355	183	53	361
17	78	74	71	63	56	87	566	317	339	175	47	370
18	74	77	63	62	62	97	494	331	322	170	44	410
19	70	98	63	62	67	114	449	358	309	191	51	443
20	70	106	56	61	64	118	417	396	300	176	59	414
21	97	95	70	59	64	121	390	477	291	156	53	369
22	97	62	69	59	59	119	366	501	282	147	54	331
23	88	77	65	59	57	130	350	483	284	137	94	300
24	81	87	62	60	60	158	355	421	284	128	142	277
25	77	83	66	55	61	183	353	380	285	121	284	258
26	73	80	66	57	74	199	349	440	298	114	385	242
27	71	75	64	59	82	201	379	496	298	110	331	228
28	77	77	60	57	75	187	450	530	286	106	299	219
29	123	82	60	61	69	180	465	577	297	104	287	209
30	99	82	e60	77	---	199	426	530	318	101	263	202
31	77	---	59	78	---	269	---	488	---	97	240	---
TOTAL	2,273	2,307	2,123	1,792	1,800	3,521	13,403	13,864	11,640	6,088	4,012	7,594
MEAN	73.3	76.9	68.5	57.8	62.1	114	447	447	388	196	129	253
MAX	123	106	82	78	82	269	814	590	641	333	385	443
MIN	61	58	50	45	54	58	254	313	282	97	44	156
AC-FT	4,510	4,580	4,210	3,550	3,570	6,980	26,580	27,500	23,090	12,080	7,960	15,060
CFSM	0.17	0.17	0.16	0.13	0.14	0.26	1.02	1.02	0.88	0.45	0.29	0.58
IN.	0.19	0.20	0.18	0.15	0.15	0.30	1.13	1.17	0.98	0.51	0.34	0.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2004, BY WATER YEAR (WY)

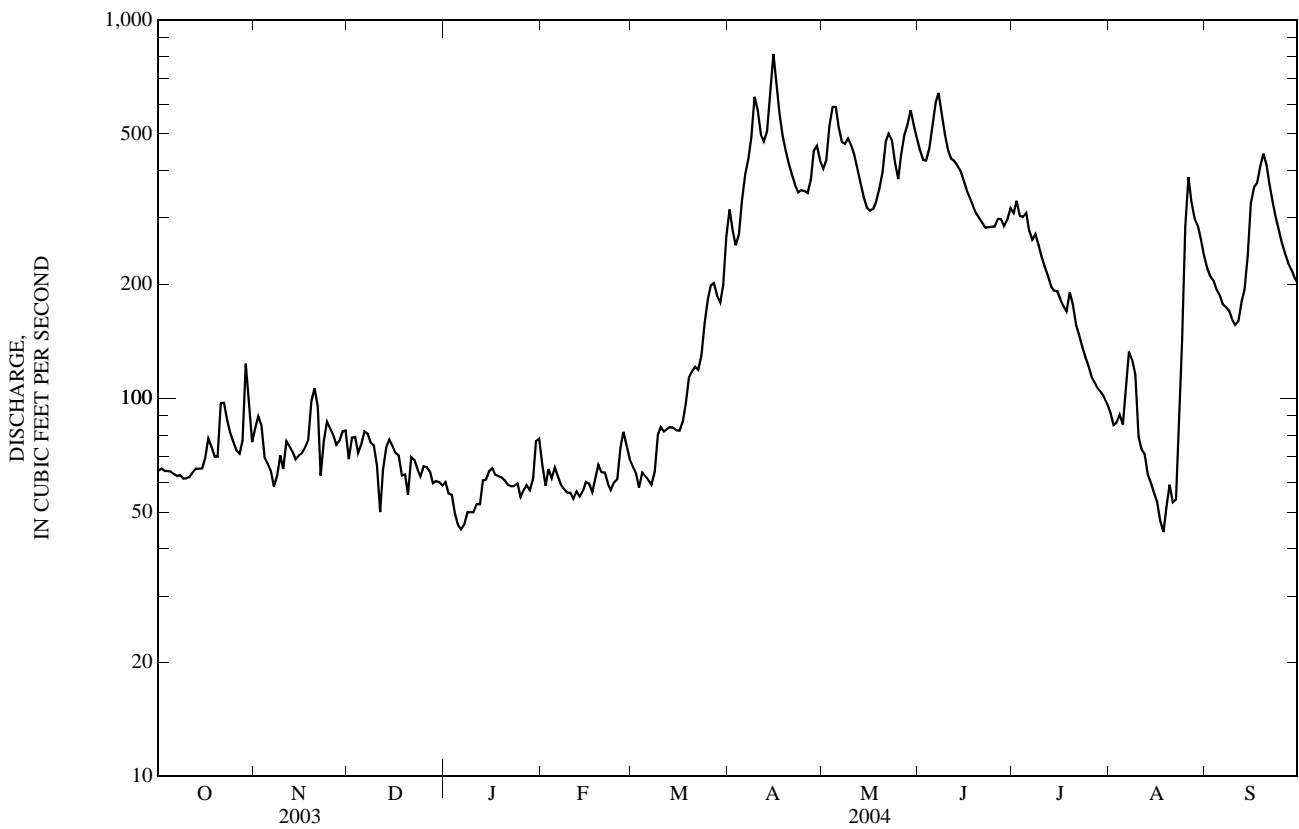
MEAN	112	130	113	100	109	155	424	763	730	305	126	110
MAX	343	368	415	248	492	422	883	1,469	1,498	576	235	253
(WY)	(1960)	(1990)	(1996)	(1974)	(1996)	(1972)	(1996)	(1997)	(1974)	(1974)	(1993)	(2004)
MIN	50.7	56.3	60.3	53.5	49.9	66.6	140	371	196	79.7	36.7	28.9
(WY)	(1995)	(1995)	(2002)	(1989)	(1988)	(2001)	(1970)	(2001)	(1992)	(1977)	(1988)	(2001)

KOOTENAI RIVER BASIN

12301300 TOBACCO RIVER NEAR EUREKA, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1959 - 2004	
ANNUAL TOTAL	65,290		70,417			
ANNUAL MEAN	179		192		265	
HIGHEST ANNUAL MEAN					496	1996
LOWEST ANNUAL MEAN					109	2001
HIGHEST DAILY MEAN	860	May 30	814	Apr 15	2,510	May 13, 1991
LOWEST DAILY MEAN	33	Sep 7	44	Aug 18	20	Jan 11, 1963
ANNUAL SEVEN-DAY MINIMUM	36	Sep 2	48	Jan 4	23	Sep 6, 1988
MAXIMUM PEAK FLOW			857	Apr 15	3,180	May 13, 1991
MAXIMUM PEAK STAGE			4.17	Apr 15	7.16	May 13, 1991
INSTANTANEOUS LOW FLOW			a32	Dec 11	22	Feb 7, 2001
ANNUAL RUNOFF (AC-FT)	129,500		139,700		191,900	
ANNUAL RUNOFF (CFSM)	0.407		0.437		0.602	
ANNUAL RUNOFF (INCHES)	5.52		5.95		8.18	
10 PERCENT EXCEEDS	503		451		699	
50 PERCENT EXCEEDS	76		97		130	
90 PERCENT EXCEEDS	51		59		67	

a--May have been lower during periods of ice affect.  
 e--Estimated.



## 12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT

LOCATION.--Lat 48°35'06", long 115°13'52" (NAD 27), in NW¼NE¼NW¼ sec.33, T.33 N., R.28 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel at Tenmile Creek, and 20.1 mi northeast of Libby.

PERIOD OF RECORD.--Water years 1972 to 2004 (discontinued).

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Incident light remain- ing at depth, percent (00031)
OCT						
15...	.5	9.4	8.1	225	14.0	99.04
15...	2	9.4	8.2	227	14.0	77.99
15...	5	9.4	8.2	227	14.0	54.07
15...	10	9.4	8.3	227	14.0	36.36
15...	15	9.3	8.3	231	14.0	24.40
15...	20	9.3	8.3	228	14.0	17.18
15...	25	9.3	8.4	227	14.0	10.93
15...	30	9.3	8.4	225	14.0	7.42
15...	35	9.3	8.4	226	14.0	4.90
15...	40	9.3	8.4	226	14.0	3.52
15...	45	9.2	8.4	227	14.0	2.37
15...	50	9.2	8.4	228	14.0	1.70
15...	55	9.2	8.5	227	14.0	1.20
15...	60	9.2	8.5	226	14.0	.89
15...	65	8.3	8.3	228	12.6	.62
15...	70	8.1	8.2	218	11.6	--
15...	80	7.9	8.1	220	10.4	--
15...	90	7.9	8.1	229	9.4	--
15...	100	8.2	8.0	236	8.4	--
15...	110	8.3	8.0	239	8.1	--
15...	120	8.1	8.0	241	7.7	--
15...	130	8.1	8.0	254	7.3	--
15...	140	8.1	8.0	256	7.0	--
15...	150	8.1	8.0	258	6.8	--
15...	165	8.2	8.0	260	6.3	--
15...	180	8.5	8.0	263	5.7	--
15...	195	8.6	8.0	263	5.2	--
15...	210	8.6	8.0	263	5.0	--
15...	225	8.6	8.0	263	4.8	--
15...	233	8.5	7.9	263	4.8	--
MAY						
18...	.5	9.7	7.8	271	11.7	96.47
18...	2	9.7	7.8	271	11.6	60.07
18...	5	9.7	7.9	270	11.6	31.80
18...	10	9.7	7.9	269	11.4	15.72
18...	15	9.8	7.9	269	11.2	5.92
18...	20	9.7	7.9	264	10.5	3.71
18...	25	9.6	7.9	266	10.3	1.94
18...	30	9.6	7.9	266	9.9	.97
18...	35	9.7	7.9	264	9.6	.48
18...	40	9.9	7.9	263	9.2	.20
18...	45	10.0	7.9	263	8.8	--
18...	50	10.0	7.9	263	8.5	--
18...	60	10.0	7.9	265	7.9	--
18...	70	10.2	7.9	264	7.7	--
18...	80	10.4	7.9	264	6.6	--
18...	90	10.4	7.9	263	6.3	--
18...	100	10.4	7.9	264	6.1	--
18...	110	10.4	7.9	263	5.8	--
18...	120	10.4	7.9	265	5.6	--
18...	130	10.4	7.9	265	4.9	--
18...	140	10.4	7.9	265	4.6	--
18...	150	10.3	7.9	269	4.6	--
18...	160	10.3	7.9	271	4.4	--
18...	170	10.2	7.9	272	4.2	--
18...	180	10.2	7.8	273	4.2	--
18...	190	10.2	7.8	273	4.1	--

## 12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Incident light remain- ing at depth, percent (00031)
JUN						
15...	.5	11.6	7.7	254	13.1	67.39
15...	2	11.6	7.8	254	13.1	56.22
15...	5	11.6	7.8	253	13.1	33.87
15...	10	11.6	7.8	253	13.0	18.02
15...	15	11.2	7.8	250	12.7	8.86
15...	20	10.8	7.8	249	12.5	5.12
15...	25	11.0	7.8	246	11.9	3.21
15...	30	10.8	7.8	245	11.6	2.0
15...	35	10.8	7.8	244	11.5	.34
15...	40	10.7	7.8	244	10.8	.86
15...	45	10.7	7.8	245	10.6	.54
15...	50	10.7	7.8	245	10.5	.36
15...	60	10.6	7.8	245	10.2	--
15...	70	11.0	7.8	249	9.8	--
15...	80	11.2	7.7	256	8.9	--
15...	90	11.5	7.7	259	7.9	--
15...	100	11.6	7.7	259	7.7	--
15...	110	11.8	7.7	260	7.0	--
15...	120	11.9	7.7	261	6.7	--
15...	130	11.9	7.7	262	6.4	--
15...	140	11.9	7.7	263	6.0	--
15...	150	11.9	7.7	264	5.8	--
15...	160	11.9	7.7	265	5.4	--
15...	170	11.9	7.7	264	5.2	--
15...	180	12.0	7.7	266	4.8	--
15...	190	11.9	7.7	267	4.6	--
15...	200	11.9	7.7	268	4.5	--
15...	210	11.9	7.7	268	4.4	--
15...	220	11.8	7.6	269	4.4	--
15...	230	11.7	7.6	270	4.2	--
15...	240	11.6	7.6	269	4.2	--
15...	250	11.6	7.6	270	4.1	--
15...	260	11.6	7.6	270	4.1	--
15...	262	11.5	7.6	270	4.1	--
JUL						
13...	.5	9.7	7.5	229	17.4	37.45
13...	2	9.5	7.6	229	17.4	20.33
13...	5	9.6	7.6	229	17.4	13.12
13...	10	9.6	7.6	229	17.4	10.41
13...	15	9.6	7.7	229	17.3	7.49
13...	20	9.3	7.7	228	17.2	5.16
13...	25	9.3	7.8	221	16.6	3.64
13...	30	9.3	7.8	217	16.0	2.33
13...	35	9.4	7.8	208	15.1	1.48
13...	40	9.2	7.8	202	14.0	.93
13...	45	9.2	7.8	202	13.7	.61
13...	50	9.2	7.7	202	13.0	--
13...	60	9.1	7.7	201	12.3	--
13...	70	9.1	7.7	202	11.8	--
13...	80	9.1	7.7	213	11.5	--
13...	90	9.0	7.7	219	11.1	--
13...	100	9.1	7.7	235	10.5	--
13...	115	9.4	7.6	244	9.5	--
13...	130	9.9	7.6	248	8.3	--
13...	145	10.1	7.6	250	7.3	--
13...	160	10.1	7.6	254	6.3	--
13...	175	10.1	7.6	255	5.8	--
13...	190	10.4	7.6	255	5.1	--
13...	205	10.4	7.6	255	4.8	--
13...	220	10.3	7.6	257	4.6	--
13...	235	10.1	7.6	259	4.3	--
13...	250	10.0	7.6	260	4.3	--
13...	265	10.0	7.6	260	4.2	--
13...	278	9.9	7.6	260	4.3	--



## 12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Incident light remain- ing at depth, percent (00031)
AUG						
26...	.5	8.4	7.8	221	19.7	70.53
26...	2	8.3	7.8	221	19.7	60.0
26...	5	8.3	7.8	221	19.7	49.05
26...	10	8.3	7.9	221	19.7	30.79
26...	15	8.3	7.9	221	19.7	21.74
26...	20	8.2	7.9	221	19.5	18.37
26...	25	8.0	7.9	220	19.0	13.0
26...	30	7.9	7.9	219	16.5	9.53
26...	35	7.8	7.9	218	16.2	6.84
26...	40	7.8	7.8	216	15.5	5.05
26...	45	8.0	7.8	213	14.6	3.58
26...	50	8.0	7.8	210	14.1	2.58
26...	60	8.0	7.8	211	13.1	1.21
26...	70	7.8	7.8	220	12.0	.63
26...	80	7.7	7.7	225	11.3	--
26...	90	7.8	7.7	232	10.8	--
26...	100	7.9	7.7	248	9.9	--
26...	110	8.2	7.7	252	9.0	--
26...	120	8.4	7.7	260	8.0	--
26...	130	8.6	7.7	263	7.4	--
26...	140	8.6	7.7	265	6.8	--
26...	150	8.7	7.7	266	6.6	--
26...	160	8.8	7.7	268	6.2	--
26...	170	8.8	7.7	269	5.9	--
26...	180	8.9	7.7	272	5.3	--
26...	190	8.9	7.7	272	5.1	--
26...	200	9.0	7.6	273	5.0	--
26...	210	8.9	7.6	273	4.8	--
26...	220	8.8	7.6	273	4.6	--
26...	230	8.8	7.6	274	4.6	--
26...	240	8.8	7.6	275	4.6	--
26...	250	8.8	7.6	275	4.5	--
26...	260	8.8	7.6	275	4.5	--
26...	266	8.8	7.6	275	4.5	--
SEP						
22...	.5	8.7	7.6	220	15.7	35.71
22...	2.0	8.7	7.7	220	15.7	43.47
22...	5	8.6	7.7	220	15.7	17.33
22...	10	8.6	7.8	220	15.7	15.81
22...	15	8.6	7.8	220	15.7	13.56
22...	20	8.6	7.8	220	15.7	10.93
22...	25	8.6	7.8	220	15.7	8.97
22...	30	8.6	7.8	220	15.7	6.98
22...	35	8.6	7.8	220	15.7	4.51
22...	40	8.5	7.9	220	15.7	3.30
22...	45	8.4	7.9	222	15.6	3.07
22...	50	7.6	7.8	228	14.4	1.52
22...	55	7.7	7.8	237	14.0	1.03
22...	60	7.6	7.7	238	13.9	.76
22...	70	7.4	7.7	229	13.5	.49
22...	80	7.3	7.7	218	12.7	--
22...	90	7.4	7.7	217	12.1	--
22...	100	7.5	7.7	224	11.2	--
22...	110	7.7	7.7	237	10.1	--
22...	120	8.0	7.7	248	9.2	--
22...	130	8.1	7.7	253	8.2	--
22...	140	8.2	7.7	256	7.6	--
22...	150	8.5	7.7	261	6.7	--
22...	160	8.6	7.6	262	6.4	--
22...	170	8.6	7.6	264	6.2	--
22...	180	8.7	7.6	265	5.7	--
22...	190	8.7	7.6	267	5.5	--
22...	200	8.7	7.6	267	5.4	--
22...	210	8.8	7.6	267	5.2	--
22...	220	8.8	7.6	268	5.1	--
22...	230	8.8	7.6	269	5.0	--
22...	240	8.7	7.6	269	4.9	--
22...	250	8.7	7.6	268	4.8	--
22...	260	8.6	7.6	269	4.7	--
22...	268	8.6	7.6	270	4.7	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Time	Sam-pling depth, feet (00003)	Cloud cover, percent (00032)	Depth to 1% of surface light, feet (00034)	Incident light intensity 400-700 nm, uE/m2/s (00200)	Light attenuation coefficient, alpha/m (70971)	Trans-parency water unfltrd secchi disc feet (49701)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of saturation (00301)	Temper-ature, air, deg C (00020)
OCT											
15...	1130	10	100	58.0	418	.08	23.5	691	9.4	101	12.0
15...	1200	233	--	--	--	--	--	--	8.5	--	--
MAY											
18...	0915	10	30	30.0	1,130	.15	9.5	691	9.7	98	17.5
18...	0945	190	--	--	--	--	--	--	10.2	--	--
JUN											
15...	0930	10	90	38.0	555	.10	9.6	698	11.6	120	14.0
15...	1000	262	--	--	--	--	--	--	11.5	--	--
JUL											
13...	1145	10	90	39.0	1,400	.08	14.2	692	9.6	111	21.5
13...	1215	278	--	--	--	--	--	--	9.9	--	--
AUG											
26...	1100	10	100	63.0	190	.07	16.3	694	8.3	100	15.0
26...	1139	266	--	--	--	--	--	--	8.8	--	--
SEP											
22...	1130	10	85	55.5	658	.06	20.0	697	8.6	95	15.0
22...	1205	268	--	--	--	--	--	--	8.6	--	--

Date	Silica, water, fltrd, mg/L (00955)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)
OCT						
15...	2.6	E.09	<.010	E.013	<.006	.006
15...	4.7	E.07	<.010	.146	<.006	E.004
MAY						
18...	4.4	.11	<.010	.110	<.006	.006
18...	4.3	E.07	E.007	.115	<.006	E.003
JUN						
15...	4.0	.10	<.010	.060	<.006	E.003
15...	4.8	E.06	<.010	.133	<.006	E.002
JUL						
13...	4.0	E.08	<.010	.048	<.006	E.003
13...	4.8	E.06	<.010	.138	<.006	E.003
AUG						
26...	3.4	E.09	<.010	E.009	<.006	E.003
26...	5.1	<.10	<.010	.151	<.006	E.004
SEP						
22...	3.6	.12	<.010	.023	<.006	E.003
22...	5.4	E.10	<.010	.154	<.006	E.003

Date	Time	Sam-pling depth, feet (00003)	Hard-ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd end lab, mg/L as CaCO3 (29801)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)
MAY													
18...	0915	10	130	36.6	9.31	.48	.1	3.60	109	3.42	<.2	23.5	147
18...	0945	190	140	38.4	10.6	.52	.1	3.81	114	3.48	<.2	24.5	155
AUG													
26...	1100	10	110	31.4	7.77	.36	.1	2.52	93	1.78	<.2	17.1	120
26...	1139	266	150	40.1	11.1	.55	.2	4.58	115	3.14	<.2	26.4	161

E--Estimated.

12301830 LAKE KOOCANUSA AT TENMILE CREEK, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Residue water, fltrd, tons/ acre-ft (70303)	Alum-inum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Lead, water, fltrd, ug/L (01049)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Zinc, water, fltrd, ug/L (01090)
MAY 18...	.20	3	.4	<.04	1.0	.6	<.08	E.02	.97	.8
MAY 18...	.21	<2	.4	<.04	<.8	.5	<.08	E.01	.96	E.4
AUG 26...	.16	2	.3	<.04	<.8	.4	<.08	E.01	.53	<.6
AUG 26...	.22	<2	.4	<.04	<.8	.4	<.08	E.01	.66	<.6

Date	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a, phyto-plank-ton, ug/L (70953)
OCT 15...	1.0	2.3
MAY 18...	.8	2.2
JUN 15...	1.0	2.8

Date	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a, phyto-plank-ton, ug/L (70953)
JUL 13...	.5	1.7
AUG 26...	.7	1.4
SEP 22...	.6	1.4

E--Estimated.

## KOOTENAI RIVER BASIN

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT

LOCATION.--Lat 48°24'43", long 115°18'33" (NAD 27), in SW $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, in middle of old channel 0.2 mi upstream from Libby Dam, and 11.6 mi east of Libby.

PERIOD OF RECORD.--Water years 1972 to 2004 (discontinued).

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Incident light remain- ing at depth, percent (00031)
OCT						
15...	.5	9.1	7.8	224	13.6	71.05
15...	2	9.0	8.0	224	13.6	60.53
15...	5	9.0	8.1	223	13.6	41.15
15...	10	8.9	8.1	223	13.6	25.84
15...	15	8.9	8.1	223	13.6	17.27
15...	20	8.9	8.2	221	13.6	11.17
15...	25	8.9	8.2	222	13.6	7.15
15...	--	8.9	8.2	223	13.6	4.67
15...	35	8.8	8.2	221	13.6	3.01
15...	40	8.8	8.3	225	13.6	2.01
15...	45	8.8	8.3	224	13.6	1.36
15...	50	8.8	8.3	224	13.6	.84
15...	55	8.0	8.2	227	12.3	.55
15...	60	7.8	8.1	219	11.7	.36
15...	65	7.7	8.0	204	11.4	--
15...	70	7.7	8.0	219	10.8	--
15...	80	7.8	8.0	216	10.3	--
15...	90	8.0	7.9	230	9.6	--
15...	100	8.3	7.9	243	8.8	--
15...	115	8.7	7.9	254	7.7	--
15...	130	9.0	7.9	255	7.1	--
15...	145	9.1	7.9	254	6.6	--
15...	160	9.1	7.9	262	6.3	--
15...	175	9.2	7.9	259	5.7	--
15...	190	9.2	7.9	259	5.0	--
15...	205	9.1	7.9	259	4.7	--
15...	220	9.0	7.9	263	4.5	--
15...	235	9.0	7.9	263	4.3	--
15...	250	8.9	7.9	267	4.2	--
15...	265	8.8	7.9	265	4.2	--
15...	280	8.6	7.8	265	4.1	--
15...	295	8.3	7.8	266	4.1	--
15...	305	8.0	7.8	266	4.1	--
MAY						
18...	.5	9.4	7.0	257	11.6	71.80
18...	2	9.4	7.0	257	11.6	56.66
18...	5	9.5	7.0	257	11.6	41.47
18...	10	9.7	7.0	256	11.1	23.82
18...	15	9.8	7.1	256	10.6	13.52
18...	20	9.9	7.1	256	9.6	9.01
18...	25	9.9	7.1	255	9.5	5.19
18...	30	9.9	7.1	255	9.3	3.22
18...	35	9.9	7.1	255	9.1	2.07
18...	40	9.9	7.2	256	9.1	1.45
18...	45	9.9	7.2	256	8.9	1.02
18...	50	9.9	7.2	256	8.9	.74
18...	60	10.1	7.2	256	7.7	.34
18...	70	10.1	7.2	256	7.5	.17
18...	80	10.2	7.2	254	6.8	.08
18...	90	10.2	7.2	255	6.3	--
18...	100	10.2	7.2	255	5.6	--
18...	110	10.2	7.2	255	5.3	--
18...	120	10.3	7.3	257	4.9	--
18...	130	10.2	7.3	257	4.7	--
18...	140	10.1	7.3	259	4.4	--
18...	150	10.1	7.3	264	4.0	--
18...	160	10.0	7.2	266	3.9	--
18...	170	9.9	7.2	267	3.8	--
18...	180	9.9	7.2	268	3.8	--
18...	195	9.9	7.3	269	3.7	--
18...	210	9.9	7.3	270	3.7	--
18...	225	9.8	7.3	270	3.7	--
18...	240	9.8	7.3	271	3.7	--
18...	255	9.8	7.3	271	3.7	--
18...	270	9.8	7.3	271	3.7	--
18...	285	9.7	7.3	272	3.7	--
18...	288	9.7	7.3	272	3.7	--

## 12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Incident light remain- ing at depth, percent (00031)
JUN						
15...	.5	11.5	7.8	254	11.7	73.47
15...	2	11.4	7.8	254	11.5	60.65
15...	5	11.4	7.8	253	11.3	43.46
15...	10	11.2	7.9	252	11.2	25.91
15...	15	11.1	7.9	253	10.9	14.78
15...	20	11.1	7.9	253	10.8	9.39
15...	25	11.0	7.9	253	10.6	5.95
15...	30	11.0	7.9	254	10.6	3.67
15...	35	11.0	7.9	254	10.4	2.29
15...	40	10.9	7.9	254	10.3	1.55
15...	45	10.9	7.9	255	10.1	1.02
15...	50	11.0	7.9	255	9.9	.68
15...	55	11.0	7.9	255	9.8	.46
15...	60	11.0	7.9	255	9.8	--
15...	70	11.1	7.9	255	9.6	--
15...	80	11.2	7.9	256	9.1	--
15...	90	11.5	7.9	257	8.1	--
15...	100	11.8	7.9	257	7.1	--
15...	115	12.0	7.9	257	6.5	--
15...	130	12.1	7.8	257	6.1	--
15...	145	12.1	7.8	257	5.7	--
15...	160	12.2	7.8	257	5.1	--
15...	175	12.2	7.8	262	4.4	--
15...	190	12.1	7.8	263	4.2	--
15...	205	12.0	7.8	266	4.0	--
15...	220	11.9	7.8	268	3.9	--
15...	235	11.8	7.8	271	3.8	--
15...	250	11.7	7.8	272	3.8	--
15...	265	11.7	7.8	272	3.8	--
15...	280	11.6	7.9	272	3.8	--
15...	295	11.5	7.8	273	3.8	--
15...	310	11.3	7.8	274	3.8	--
15...	320	10.6	7.7	277	3.8	--
JUL						
13...	.5	9.3	8.1	234	17.9	53.43
13...	2	9.3	8.1	234	17.9	32.62
13...	5	9.4	8.1	234	17.7	19.09
13...	10	9.5	8.1	233	17.3	12.64
13...	15	9.6	8.1	232	16.7	7.62
13...	20	9.7	8.1	229	15.5	4.88
13...	25	9.7	8.1	228	15.4	4.46
13...	30	9.7	8.1	226	14.7	4.19
13...	35	9.7	8.1	226	14.3	1.76
13...	40	9.6	8.1	226	14.0	1.13
13...	45	9.6	8.1	227	13.7	.45
13...	50	9.5	8.1	223	13.1	--
13...	60	9.2	8.0	225	12.4	--
13...	75	9.1	8.0	232	11.6	--
13...	90	9.0	8.0	239	10.9	--
13...	105	9.3	8.0	245	9.8	--
13...	120	10.2	7.9	248	7.5	--
13...	135	10.4	7.9	248	6.5	--
13...	150	10.4	7.9	249	6.0	--
13...	165	10.5	7.9	249	5.5	--
13...	180	10.6	7.9	251	4.9	--
13...	195	10.6	7.9	252	4.5	--
13...	210	10.6	7.9	256	4.2	--
13...	225	10.6	7.9	259	4.1	--
13...	240	10.4	7.9	262	4.0	--
13...	255	10.2	7.9	262	3.9	--
13...	270	10.1	7.9	262	3.9	--
13...	285	10.1	7.9	263	3.9	--
13...	300	9.9	7.8	263	3.9	--
13...	315	9.8	7.8	263	3.9	--
13...	326	9.7	7.8	264	3.9	--

## 12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sam- pling depth, feet (00003)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, water, unfltrd uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Incident light remain- ing at depth, percent (00031)
AUG						
26...	.5	9.1	8.0	217	18.1	69.03
26...	2	9.1	8.0	217	18.1	47.77
26...	5	9.1	8.1	217	18.0	21.04
26...	10	9.1	8.0	217	17.8	18.26
26...	15	9.1	8.0	216	17.4	15.27
26...	20	9.0	8.1	216	17.0	10.01
26...	25	9.1	8.1	215	16.7	5.55
26...	30	9.0	8.1	215	16.5	4.28
26...	35	9.0	8.0	215	16.2	2.76
26...	40	8.8	8.0	213	15.2	2.0
26...	45	8.7	8.0	213	14.5	1.44
26...	50	8.4	8.0	212	13.8	1.18
26...	60	8.2	8.0	223	12.8	.82
26...	70	7.9	7.9	230	12.1	--
26...	80	7.8	7.9	236	11.6	--
26...	90	7.8	7.9	246	11.1	--
26...	100	7.9	7.9	252	10.6	--
26...	115	8.2	7.8	257	9.7	--
26...	130	8.9	7.8	262	8.0	--
26...	145	9.2	7.8	263	7.2	--
26...	160	9.5	7.8	264	6.3	--
26...	175	9.5	7.8	266	5.9	--
26...	190	9.5	7.8	268	5.4	--
26...	205	9.5	7.8	269	5.0	--
26...	220	9.5	7.8	272	4.6	--
26...	235	9.5	7.8	272	4.4	--
26...	250	9.4	7.8	274	4.2	--
26...	265	9.3	7.8	276	4.1	--
26...	280	9.2	7.8	277	4.0	--
26...	295	9.0	7.8	278	4.0	--
26...	310	8.7	7.8	280	4.0	--
26...	316	8.4	7.7	281	4.0	--
SEP						
22...	.5	8.6	8.0	217	15.5	95.21
22...	2.0	8.6	8.1	217	15.5	52.10
22...	5.0	8.5	8.1	217	15.4	33.96
22...	10	8.5	8.1	217	15.4	15.53
22...	15	8.5	8.1	217	15.4	12.93
22...	20	8.5	8.1	216	15.3	9.99
22...	25	8.5	8.1	217	15.3	7.58
22...	30	7.7	8.0	216	14.8	5.66
22...	35	7.3	8.0	216	14.7	3.88
22...	40	7.4	8.0	215	14.6	2.45
22...	45	7.2	7.9	216	14.5	1.76
22...	50	7.3	7.9	214	14.2	1.23
22...	60	7.4	7.9	210	13.9	.67
22...	70	7.5	7.9	211	13.1	--
22...	80	7.6	7.9	214	12.7	--
22...	90	7.5	7.9	220	12.1	--
22...	100	7.5	7.8	233	11.2	--
22...	115	7.8	7.8	249	10.2	--
22...	130	8.4	7.8	257	8.7	--
22...	145	9.0	7.8	259	7.6	--
22...	160	9.3	7.8	260	6.8	--
22...	175	9.4	7.8	262	6.3	--
22...	190	9.4	7.8	264	5.7	--
22...	205	9.4	7.8	266	5.1	--
22...	220	9.3	7.8	267	4.9	--
22...	235	9.3	7.8	269	4.5	--
22...	250	9.2	7.8	270	4.3	--
22...	265	9.2	7.8	273	4.2	--
22...	280	9.2	7.8	272	4.1	--
22...	295	9.0	7.8	274	4.1	--
22...	310	8.7	7.8	275	4.0	--
22...	318	8.4	7.8	276	4.0	--

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Time	Sam- pling depth, feet (00003)	Cloud cover, percent (00032)	Depth to 1% of surface light, feet (00034)	Incident light intensity 400- 700 nm, uE/m2/s (00200)	Light attenu- ation coeffi- cient, alpha/m (70971)	Trans- parency water unfltrd secchi disc feet (49701)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	Temper- ature, air, deg C (00020)
OCT											
15...	1400	10	100	48.0	418	.09	16.3	690	8.9	95	12.0
15...	1430	305	--	--	--	--	--	--	8.0	--	--
MAY											
18...	1200	10	80	45.0	1,550	.09	17.0	691	9.7	97	17.5
18...	1230	288	--	--	--	--	--	--	9.7	--	--
JUN											
15...	1130	10	75	45.5	1,950	.09	17.8	698	11.2	112	15.0
15...	1200	320	--	--	--	--	--	--	10.6	--	--
JUL											
13...	1400	10	100	41.0	1,460	.09	16.1	693	9.5	109	23.5
13...	1430	326	--	--	--	--	--	--	9.7	--	--
AUG											
26...	1400	10	80	52.0	1,370	.07	--	695	9.1	105	20.5
26...	1430	316	--	--	--	--	--	--	8.4	--	--
SEP											
22...	1330	10	70	53.5	689	.08	17.0	696	8.5	93	18.5
22...	1400	318	--	--	--	--	--	--	8.4	--	--

Date	Silica, water, fltrd, mg/L (00955)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)
OCT						
15...	2.8	E.08	<.010	.024	<.006	E.004
15...	4.7	.17	<.010	.154	<.006	.006
MAY						
18...	4.3	E.09	<.010	.079	<.006	.006
18...	4.5	E.06	E.009	.125	<.006	<.004
JUN						
15...	4.4	E.08	E.008	.094	<.006	<.004
15...	4.9	<.10	E.008	.138	<.006	E.004
JUL						
13...	4.0	.12	<.010	.054	<.006	E.002
13...	4.9	E.08	<.010	.142	<.006	E.003
AUG						
26...	3.5	E.08	E.005	.038	<.006	.004
26...	5.3	<.10	E.006	.157	<.006	E.003
SEP						
22...	3.6	E.10	<.010	.035	<.006	.004
22...	5.0	.13	<.010	.150	<.006	E.002

Date	Time	Sam- pling depth, feet (00003)	Hard- ness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes- ium, water, fltrd, mg/L (00925)	Potas- sium, water, fltrd, mg/L (00935)	Sodium adsorp- tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water, fltrd fxd end lab, mg/L as CaCO3 (29801)
MAY									
18...	1200	10	120	34.8	9.06	.53	.1	3.76	109
18...	1230	288	140	39.3	10.9	.55	.1	4.07	116
AUG									
26...	1400	10	110	30.7	7.55	.28	.1	2.35	92
26...	1430	316	140	39.2	11.1	.53	.2	4.49	118

E--Estimated.

## KOOTENAI RIVER BASIN

12301919 LAKE KOOCANUSA AT FOREBAY, NEAR LIBBY, MT—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)
MAY					
18...	3.24	<.2	22.6	144	.20
18...	3.70	<.2	25.3	158	.22
AUG					
26...	1.70	<.2	16.7	118	.16
26...	3.28	<.2	27.3	162	.22

Date	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a, phytoplankton, ug/L (70953)	Date	Pheophytin a, phytoplankton, ug/L (62360)	Chlorophyll a, phytoplankton, ug/L (70953)
OCT			JUL		
15...	.6	1.9	13...	1.5	E1.8
MAY			AUG		
18...	.6	1.7	26...	.7	1.4
JUN			SEP		
15...	.5	1.1	22...	.5	1.4

E--Estimated.



12301920 LAKE KOOCANUSA NEAR LIBBY, MT

LOCATION.--Lat 48°24'38", long 115°18'47" (NAD 27), in NW¼ sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, in block 18 of Libby Dam on Kootenai River, 11 mi east of Libby and at river mile 221.8.

DRAINAGE AREA.--8,985 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,201.5 (NGVD 29) (levels by U.S. Army Corps of Engineers). Prior to July 2, 1973, nonrecording gage on upstream face of dam at same elevation.

REMARKS.--Reservoir and flow completely controlled by gravity type dam with taintor gated spillway; construction began in 1967; completed in 1973.

Storage began Mar. 21, 1972. Usable capacity, 5,748,000 acre-ft between elevation 2,201.5 ft, bottom of sluice gate, and 2,459 ft, controlled spillway elevation. Dead storage, 121,200 acre-ft below elevation 2,201.5 ft. Minimum operating level, 768,700 acre-ft, elevation 2,287.0 ft for on-site power generation. All elevations are referenced to the National Geodetic Vertical Datum of 1929. Figures given herein represent usable contents. Water is used for power production, flood control, irrigation, and recreation.

COOPERATION.--Capacity table and elevations provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,753,000 acre-ft, Aug. 6, 1976 and Aug. 16, 1982, maximum elevation, 2,459.12 ft, Aug. 16, 1982; minimum contents observed since normal low operating level reached in May 1972, 139,600 acre-ft, Dec. 16-21, 1972, elevation, 2,226.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 5,352,000 acre-ft, July 22, elevation, 2,450.33 ft; minimum, 3,313,000 acre-ft, Mar. 24, elevation, 2,398.34 ft.

CAPACITY TABLE (ELEVATION, IN FEET, AND CONTENTS, IN ACRE-FEET)

Elevation	Contents
2,360	2,232,000
2,380	2,765,000
2,400	3,367,000
2,420	4,085,000
2,440	4,899,000
2,460	5,795,000

ELEVATION ABOVE NGVD 1929, FEET, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,433.76	2,436.64	2,429.41	2,410.56	2,402.57	2,399.76	2,398.80	2,410.60	2,431.59	2,446.54	2,448.87	2,444.98
2	2,433.72	2,436.73	2,428.52	2,410.08	2,402.50	2,399.66	2,398.93	2,411.31	2,431.77	2,446.99	2,448.65	2,444.87
3	2,433.63	2,436.78	2,427.72	2,409.66	2,402.35	2,399.55	2,399.02	2,412.15	2,431.96	2,447.43	2,448.48	2,444.84
4	2,433.60	2,436.72	2,426.96	2,409.23	2,402.30	2,399.50	2,399.14	2,413.16	2,432.24	2,447.86	2,448.26	2,444.88
5	2,433.55	2,436.75	2,426.11	2,408.67	2,402.15	2,399.36	2,399.32	2,414.21	2,432.83	2,448.19	2,448.00	2,444.94
6	2,433.51	2,436.72	2,425.30	2,408.04	2,402.04	2,399.31	2,399.47	2,415.24	2,433.60	2,448.48	2,447.85	2,444.91
7	2,433.48	2,436.67	2,424.54	2,407.52	2,401.93	2,399.14	2,399.73	2,416.12	2,434.70	2,448.72	2,447.61	2,444.82
8	2,433.38	2,436.66	2,423.66	2,406.93	2,401.85	2,399.05	2,400.10	2,416.86	2,435.47	2,449.14	2,447.43	2,444.76
9	2,433.32	2,436.54	2,422.84	2,406.39	2,401.76	2,398.98	2,400.48	2,417.70	2,436.18	2,449.43	2,447.27	2,444.66
10	2,433.26	2,436.52	2,421.99	2,405.78	2,401.70	2,398.96	2,400.84	2,418.54	2,436.73	2,449.62	2,447.20	2,444.68
11	2,433.23	2,436.53	2,421.10	2,405.28	2,401.60	2,398.90	2,401.16	2,419.22	2,437.36	2,449.73	2,446.89	2,444.72
12	2,433.10	2,436.56	2,420.14	2,404.75	2,401.51	2,398.86	2,401.53	2,419.83	2,438.12	2,449.86	2,446.68	2,444.75
13	2,433.09	2,436.58	2,419.30	2,404.41	2,401.41	2,398.78	2,401.98	2,420.44	2,438.90	2,449.94	2,446.40	2,444.83
14	2,433.02	2,436.59	2,418.40	2,404.14	2,401.26	2,398.76	2,402.65	2,420.96	2,439.64	2,450.01	2,446.14	2,444.74
15	2,432.96	2,436.52	2,417.59	2,403.93	2,401.16	2,398.67	2,403.40	2,421.42	2,440.24	2,450.04	2,445.87	2,444.77
16	2,432.85	2,436.47	2,416.95	2,403.78	2,401.07	2,398.59	2,404.09	2,421.74	2,440.85	2,450.04	2,445.59	2,444.84
17	2,432.84	2,436.30	2,416.36	2,403.66	2,400.97	2,398.56	2,404.61	2,422.25	2,440.98	2,450.07	2,445.32	2,445.02
18	2,432.86	2,435.94	2,415.90	2,403.60	2,400.86	2,398.45	2,405.09	2,422.71	2,441.22	2,450.07	2,445.05	2,445.45
19	2,432.91	2,435.28	2,415.51	2,403.56	2,400.77	2,398.55	2,405.45	2,423.32	2,441.42	2,450.15	2,444.77	2,445.76
20	2,433.00	2,434.63	2,415.05	2,403.50	2,400.70	2,398.54	2,405.89	2,423.99	2,441.64	2,450.20	2,444.57	2,446.04
21	2,433.34	2,433.81	2,414.72	2,403.42	2,400.70	2,398.50	2,406.21	2,424.84	2,441.87	2,450.28	2,444.34	2,446.24
22	2,433.94	2,433.00	2,414.35	2,403.31	2,400.53	2,398.45	2,406.50	2,425.80	2,442.20	2,450.33	2,444.05	2,446.41
23	2,434.54	2,432.19	2,413.93	2,403.27	2,400.43	2,398.42	2,406.86	2,426.65	2,442.76	2,450.27	2,443.89	2,446.54
24	2,435.05	2,431.63	2,413.60	2,403.22	2,400.29	2,398.39	2,407.18	2,427.35	2,443.15	2,450.16	2,443.95	2,446.65
25	2,435.35	2,431.20	2,413.22	2,403.16	2,400.21	2,398.47	2,407.48	2,427.86	2,443.80	2,450.06	2,444.08	2,446.72
26	2,435.65	2,430.82	2,412.82	2,403.03	2,400.12	2,398.46	2,407.84	2,428.43	2,444.26	2,449.92	2,444.36	2,446.81
27	2,435.79	2,430.54	2,412.50	2,403.07	2,400.03	2,398.48	2,408.24	2,429.14	2,444.73	2,449.81	2,444.56	2,446.81
28	2,436.00	2,430.36	2,412.14	2,402.89	2,399.96	2,398.52	2,408.87	2,429.81	2,445.20	2,449.63	2,444.75	2,446.81
29	2,436.39	2,430.27	2,411.75	2,402.72	2,399.88	2,398.56	2,409.49	2,430.53	2,445.70	2,449.48	2,444.88	2,446.84
30	2,436.46	2,430.05	2,411.34	2,402.66	---	2,398.55	2,410.06	2,430.96	2,446.08	2,449.26	2,444.93	2,446.84
31	2,436.57	---	2,410.91	2,402.61	---	2,398.66	---	2,431.32	---	2,449.08	2,444.99	---
MEAN	2,434.01	2,434.73	2,418.54	2,405.06	2,401.19	2,398.82	2,403.68	2,421.76	2,439.24	2,449.38	2,445.99	2,445.53
MAX	2,436.57	2,436.78	2,429.41	2,410.56	2,402.57	2,399.76	2,410.06	2,431.32	2,446.08	2,450.33	2,448.87	2,446.84
MIN	2,432.84	2,430.05	2,410.91	2,402.61	2,399.88	2,398.39	2,398.80	2,410.60	2,431.59	2,446.54	2,443.89	2,444.66
CONTENTS IN THOUSANDS OF ACRE-FEET, AT END OF MONTH												
	4,754	4,484	3,744	3,454	3,366	3,323	3,714	4,536	5,163	5,296	5,115	5,197
CHANGE IN CONTENTS IN ACRE-FEET												
	+114,000	-270,000	-740,000	-290,000	-88,000	-43,000	+391,000	+822,000	+672,000	+133,000	-181,000	+82,000
CALENDAR YEAR 2003 . . . . . -8,000												
WATER YEAR 2004 . . . . . +557,000												

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT

LOCATION.--Lat 48°24'03", long 115°19'11" (NAD 27), in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.33, T.31 N., R.29 W., Lincoln County, Hydrologic Unit 17010101, Kootenai National Forest, on right bank 0.7 mi downstream from Libby Dam, 2.8 mi upstream from Fisher River, 11 mi east of Libby, and at river mile 221.4.

DRAINAGE AREA.--8,985 mi<sup>2</sup>, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,100 ft (NGVD 29) (U.S. Army Corps of Engineers bench mark). Prior to Feb. 13, 1974, nonrecording gage at site 0.4 mi upstream at same elevation.

REMARKS.--Water-discharge records good. Flow completely regulated by Lake Koocanusa since Mar. 21, 1972. Diversions for irrigation of about 13,000 acres, from tributaries upstream from station in Canada and the United States. U.S. Army Corps of Engineers satellite telemetry at station.

AVERAGE DISCHARGE.--33 years, 11,000 ft<sup>3</sup>/s, 16.62 in/yr, 7,970,000 acre-ft/yr, adjusted for change in contents in Lake Koocanusa since Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,200 ft<sup>3</sup>/s, Aug. 5, 1974, gage height, 27.50 ft; minimum daily, 1,900 ft<sup>3</sup>/s, Jan. 29, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,700 ft<sup>3</sup>/s, Dec. 1, gage height, 22.88 ft; minimum daily, 3,940 ft<sup>3</sup>/s, Jan 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,020	4,650	17,400	10,100	4,050	4,000	3,990	4,000	13,100	12,400	12,700	12,400
2	4,530	4,640	20,200	10,000	4,020	4,000	3,950	4,000	13,400	12,400	12,700	12,400
3	4,600	4,650	20,200	10,000	4,010	4,000	3,940	4,040	13,100	12,400	12,700	12,400
4	4,590	4,650	20,200	10,100	4,010	3,990	4,030	4,020	13,000	12,400	12,700	10,600
5	4,500	4,640	20,200	11,600	4,020	3,960	4,050	4,010	13,100	12,500	12,700	11,200
6	4,130	4,660	20,200	12,200	4,010	4,010	4,050	4,000	13,300	12,600	12,700	12,600
7	4,000	4,630	20,200	12,100	4,020	3,990	4,060	3,980	14,000	12,700	12,700	12,500
8	4,460	4,630	20,200	12,000	4,010	3,970	4,050	3,990	14,000	12,600	12,800	12,500
9	4,620	4,640	20,200	12,100	4,020	4,000	4,030	4,010	13,900	12,500	12,900	12,500
10	4,690	4,630	20,300	12,100	4,020	4,000	4,040	3,990	13,800	12,400	12,700	12,500
11	4,610	4,630	20,200	12,100	4,020	3,980	4,020	3,990	13,900	12,400	12,700	12,500
12	4,610	4,650	20,200	12,000	4,030	3,970	4,030	3,970	13,900	12,300	11,800	12,500
13	4,600	4,650	20,200	9,040	4,020	3,960	4,000	3,970	14,300	12,300	12,700	13,600
14	4,600	4,640	20,300	7,940	4,010	4,030	4,010	3,990	15,000	12,300	12,700	13,900
15	4,600	4,630	20,000	7,070	4,020	4,020	4,010	4,000	15,000	12,300	12,800	13,800
16	4,590	4,730	15,100	6,160	4,020	4,050	3,990	3,990	14,900	12,500	12,700	11,900
17	4,650	8,240	15,000	5,030	4,030	4,010	4,000	3,980	15,000	12,500	12,600	11,700
18	4,670	14,900	12,800	3,940	4,030	4,050	3,990	3,990	14,900	12,500	12,400	9,460
19	4,660	20,300	10,800	3,940	4,030	3,990	3,960	3,990	14,900	12,400	12,600	9,490
20	4,680	20,300	10,000	4,010	4,020	4,020	3,960	3,960	15,200	12,400	12,600	9,470
21	4,590	20,300	10,000	4,020	4,010	4,020	3,990	4,010	16,000	12,400	12,600	9,480
22	4,660	20,400	10,000	4,020	4,020	4,020	4,040	4,020	15,600	12,600	12,900	9,550
23	4,640	20,400	10,000	4,020	4,020	4,050	4,030	4,020	16,000	12,600	12,900	9,640
24	4,640	15,200	10,100	4,020	4,010	3,990	4,010	4,030	15,900	12,600	12,900	9,610
25	4,570	12,900	10,100	4,010	4,020	3,980	4,010	3,980	15,900	12,700	12,700	9,560
26	4,250	11,300	10,100	4,050	4,090	3,980	4,010	4,000	16,000	12,700	12,500	9,610
27	3,970	9,040	10,000	4,030	4,060	3,980	4,040	4,010	15,400	12,700	12,500	9,710
28	4,000	8,050	10,000	4,030	4,050	4,020	4,040	4,020	13,300	12,700	12,500	9,670
29	4,020	7,090	10,000	4,030	4,020	4,000	4,020	5,410	12,500	12,700	12,500	9,690
30	4,460	9,110	10,100	4,050	---	3,980	4,010	10,300	12,400	12,700	12,400	9,750
31	4,660	---	10,100	4,050	---	3,990	---	13,000	---	12,700	12,300	---
TOTAL	139,870	271,880	474,400	227,860	116,720	124,010	120,360	140,670	430,700	387,900	391,600	336,190
MEAN	4,512	9,063	15,300	7,350	4,025	4,000	4,012	4,538	14,360	12,510	12,630	11,210
MAX	5,020	20,400	20,300	12,200	4,090	4,050	4,060	13,000	16,000	12,700	12,900	13,900
MIN	3,970	4,630	10,000	3,940	4,010	3,960	3,940	3,960	12,400	12,300	11,800	9,460
AC-FT	277,400	539,300	941,000	452,000	231,500	246,000	238,700	279,000	854,300	769,400	776,700	666,800
CFSM	0.50	1.01	1.70	0.82	0.45	0.45	0.45	0.51	1.60	1.39	1.41	1.25
IN.	0.58	1.13	1.96	0.94	0.48	0.51	0.50	0.58	1.78	1.61	1.62	1.39

ADJUSTED FOR CHANGE IN CONTENTS OF LAKE KOOCANUSA

MEAN	6,365	4,526	3,269	2,635	2,495	3,301	10,580	17,910	24,890	14,680	9,688	12,580
CFSM	.71	.50	.36	.29	.28	.37	1.18	1.99	2.77	1.63	1.08	1.40
IN	.82	.56	.42	.34	.30	.42	1.31	2.30	3.09	1.88	1.24	1.56
AC-FT	391,400	269,300	201,000	162,000	143,500	203,000	629,700	1,101,000	1,481,300	902,400	595,700	748,800

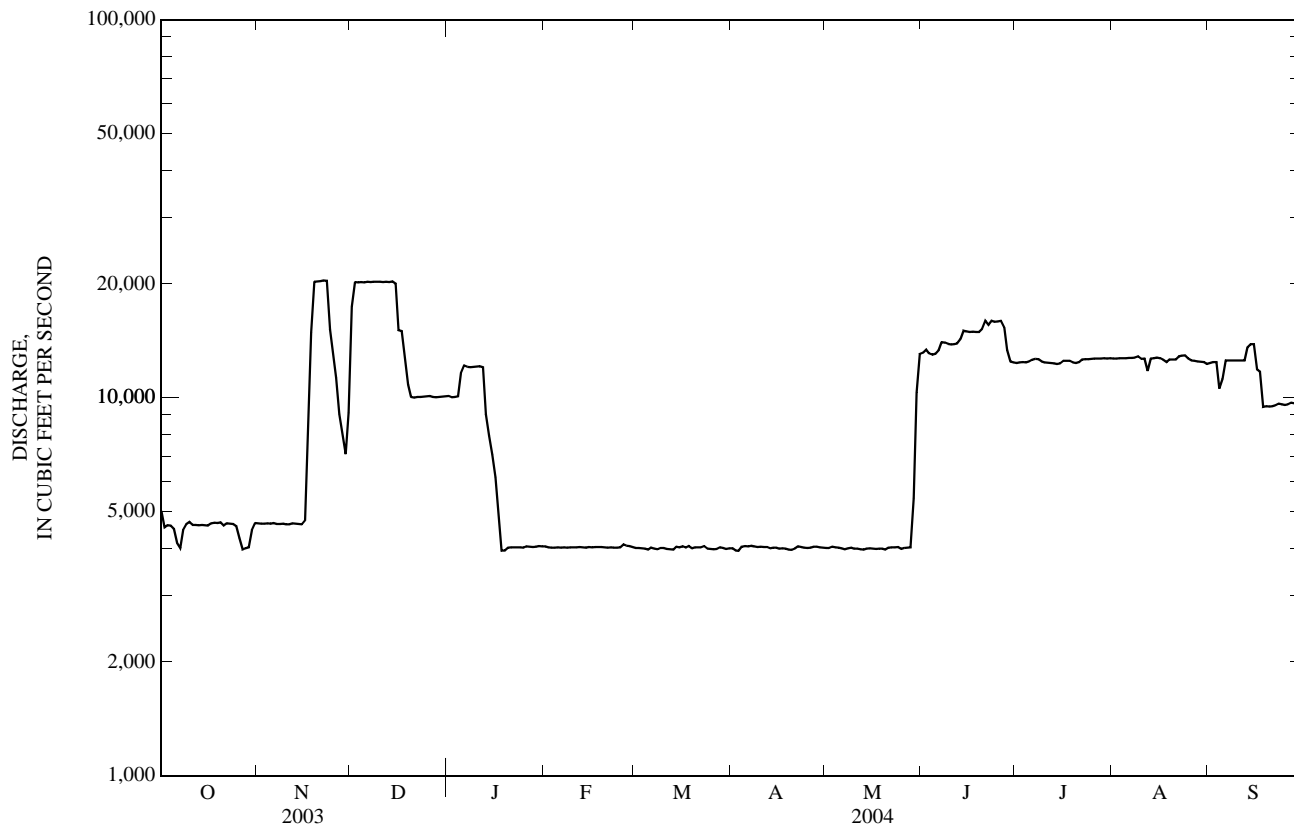
OBSERVED

CALENDAR YEAR 2003	TOTAL	3,353,750	MEAN	9,188	MAX	25,000	MIN	3,960	AC-FT	6,652,000
WATER YEAR 2004	TOTAL	3,162,160	MEAN	8,640	MAX	20,400	MIN	3,940	AC-FT	6,272,000

ADJUSTED

CALENDAR YEAR 2003	TOTAL	3,349,786	MEAN	9,177	CFSM	1.02	IN	13.86	AC-FT	6,644,000
WATER YEAR 2004	TOTAL	3,442,954	MEAN	9,407	CFSM	1.05	IN	14.25	AC-FT	6,829,000

12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT—Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to September 2004 (discontinued). Prior to March 25, 1974, at site 3.2 mi downstream.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to September 1969.

WATER TEMPERATURE: October 1967 to September 1977; seasonal records, April 2001 to September 2003.

SUSPENDED SEDIMENT DISCHARGE: October 1967 to January 1976.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 525 microsiemens per centimeter ( $\mu\text{S}/\text{cm}$ ) at 25.0°C, Dec. 24, 1967; minimum daily, 174  $\mu\text{S}/\text{cm}$  at 25.0°C, May 26, 1969.

WATER TEMPERATURE: Maximum, 21.5°C, Aug. 6, 1970; minimum 0.0°C on many days during winter periods most years prior to Libby Dam.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,200 mg/L, June 5, 1968; minimum daily mean, 1 mg/L on many days in 1968, 1969, 1972-75.

SEDIMENT LOAD: Maximum daily, 200,000 tons, June 5, 1968; minimum daily, 5.4 tons, Jan. 28, 1972.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, water, unfltrd $\mu\text{S}/\text{cm}$ 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Silica, water, fltrd, mg/L (00955)
OCT										
16...	1430	4,580	700	9.0	91	8.3	230	10.0	12.0	3.3
DEC										
17...	1145	15,100	710	9.8	85	7.8	236	1.0	6.0	3.8
FEB										
20...	1130	4,020	705	11.4	93	7.3	246	1.5	3.5	3.9
APR										
16...	1100	3,990	699	12.2	102	7.8	249	--	4.0	4.3
MAY										
18...	1400	3,990	696	10.7	100	7.0	274	26.0	8.5	4.2
JUN										
16...	0830	15,000	711	11.3	106	7.8	254	8.0	9.5	4.4
JUL										
14...	1330	12,200	695	10.0	107	7.4	236	28.5	14.0	4.1
AUG										
27...	1500	12,500	706	9.6	97	7.7	230	22.0	12.5	4.1
SEP										
23...	1345	9,430	705	8.3	84	8.3	224	28.0	12.5	4.2

## 12301933 KOOTENAI RIVER BELOW LIBBY DAM, NEAR LIBBY, MT—Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004--CONTINUED

Date	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Ortho-phosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Suspended sediment, percent <.063mm (70331)	Suspended sediment concentration mg/L (80154)	Suspended sediment discharge, tons/d (80155)
OCT 16...	E.08	<.010	.057	<.006	.005	93	1	12
DEC 17...	E.08	<.010	.127	<.006	E.003	--	--	--
FEB 20...	E.07	<.010	.114	<.006	.006	--	--	--
APR 16...	E.07	<.010	.113	<.006	E.003	--	--	--
MAY 18...	E.08	E.005	.088	<.006	E.003	87	1	11
JUN 16...	E.05	.013	.096	<.006	<.004	92	1	40
JUL 14...	E.07	E.005	.079	<.006	E.003	89	1	33
AUG 27...	E.06	E.005	.100	<.006	<.004	73	1	34
SEP 23...	.11	E.005	.117	<.006	E.003	89	1	25

Date	Time	Hardness, water, mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium adsorption ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, water fltrd end lab, mg/L as CaCO3 (29801)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Sulfate water, fltrd, mg/L (00945)
MAY 18...	1400	130	37.0	9.45	.51	.1	3.57	111	3.33	<.2	23.1
JUL 14...	1330	120	33.3	8.63	.56	.1	3.67	102	2.98	<.2	23.1

Date	Residue water, fltrd, sum of constituents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Aluminum, water, fltrd, ug/L (01106)	Arsenic water, fltrd, ug/L (01000)	Cadmium water, fltrd, ug/L (01025)	Chromium, water, fltrd, ug/L (01030)	Copper, water, fltrd, ug/L (01040)	Lead, water, fltrd, ug/L (01049)	Mercury water, fltrd, ug/L (71890)	Nickel, water, fltrd, ug/L (01065)	Zinc, water, fltrd, ug/L (01090)
MAY 18...	148	.20	1,590	2	.6	E.03	<.8	.7	E.07	<.02	.92	.9
JUL 14...	138	.19	4,550	E2	.3	E.03	<.8	1.7	.30	<.02	1.05	1.9

E--Estimated.

## 12302055 FISHER RIVER NEAR LIBBY, MT

LOCATION.--Lat 48°21'20", long 115°18'50" (NAD 27), in NW<sup>1</sup>/<sub>4</sub> NE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec.21, T.30 N., R.29 W., Lincoln County, Hydrologic Unit 17010102, on left bank 0.8 mi upstream from mouth and 11.4 mi east of Libby.

DRAINAGE AREA.--838 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,134.10 ft (NGVD 29) (U.S. Army Corps of Engineers bench mark).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions of about 700 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about May 22, 1948, reached a discharge of 6,560 ft<sup>3</sup>/s, by slope-area measurement at site 0.5 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	e90	157	e90	205	163	716	744	873	315	106	129
2	68	e95	145	e85	192	165	697	776	804	314	103	122
3	68	103	141	e80	174	160	661	902	750	283	103	118
4	70	99	150	e75	173	160	659	1,000	732	270	110	115
5	70	93	145	e70	166	162	755	973	758	268	105	112
6	70	103	153	e65	154	165	874	852	779	249	104	107
7	70	119	181	e60	157	158	991	764	793	247	118	104
8	70	124	174	e70	151	165	1,070	764	687	262	123	101
9	72	118	159	e80	142	210	1,150	783	613	236	110	98
10	73	104	152	e90	143	271	1,100	717	570	220	105	96
11	73	111	150	e95	140	322	996	704	570	215	101	96
12	75	118	163	e100	127	341	953	666	570	205	96	104
13	78	104	150	e105	118	366	992	597	531	194	93	103
14	86	98	160	e103	121	373	1,200	546	553	187	90	104
15	85	95	150	e100	147	374	1,340	508	510	179	88	122
16	86	94	138	e100	137	379	1,160	488	467	171	87	145
17	93	97	134	e100	130	394	1,000	505	442	164	86	187
18	94	111	139	e102	138	457	890	525	428	160	93	190
19	89	193	115	e103	154	577	799	552	414	160	109	228
20	86	230	105	e105	156	589	730	618	396	170	113	197
21	93	188	139	e106	151	557	678	620	377	158	105	174
22	102	156	130	108	146	534	622	722	375	148	97	159
23	101	151	119	108	146	546	589	867	378	140	101	148
24	99	143	118	109	152	617	597	811	370	134	106	139
25	96	139	118	110	151	688	600	723	355	129	144	132
26	93	131	116	107	156	701	593	719	350	125	265	126
27	91	124	113	106	161	683	653	884	352	127	243	121
28	91	140	112	108	163	642	925	944	326	126	203	117
29	127	139	100	116	163	596	896	920	312	120	176	115
30	144	167	89	165	---	579	793	864	303	115	152	112
31	e100	---	e85	237	---	636	---	917	---	110	137	---
TOTAL	2,681	3,777	4,200	3,158	4,414	12,730	25,679	22,975	15,738	5,901	3,772	3,921
MEAN	86.5	126	135	102	152	411	856	741	525	190	122	131
MAX	144	230	181	237	205	701	1,340	1,000	873	315	265	228
MIN	68	90	85	60	118	158	589	488	303	110	86	96
AC-FT	5,320	7,490	8,330	6,260	8,760	25,250	50,930	45,570	31,220	11,700	7,480	7,780
CFSM	0.10	0.15	0.16	0.12	0.18	0.49	1.02	0.88	0.63	0.23	0.15	0.16
IN.	0.12	0.17	0.19	0.14	0.20	0.57	1.14	1.02	0.70	0.26	0.17	0.17

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2004, BY WATER YEAR (WY)

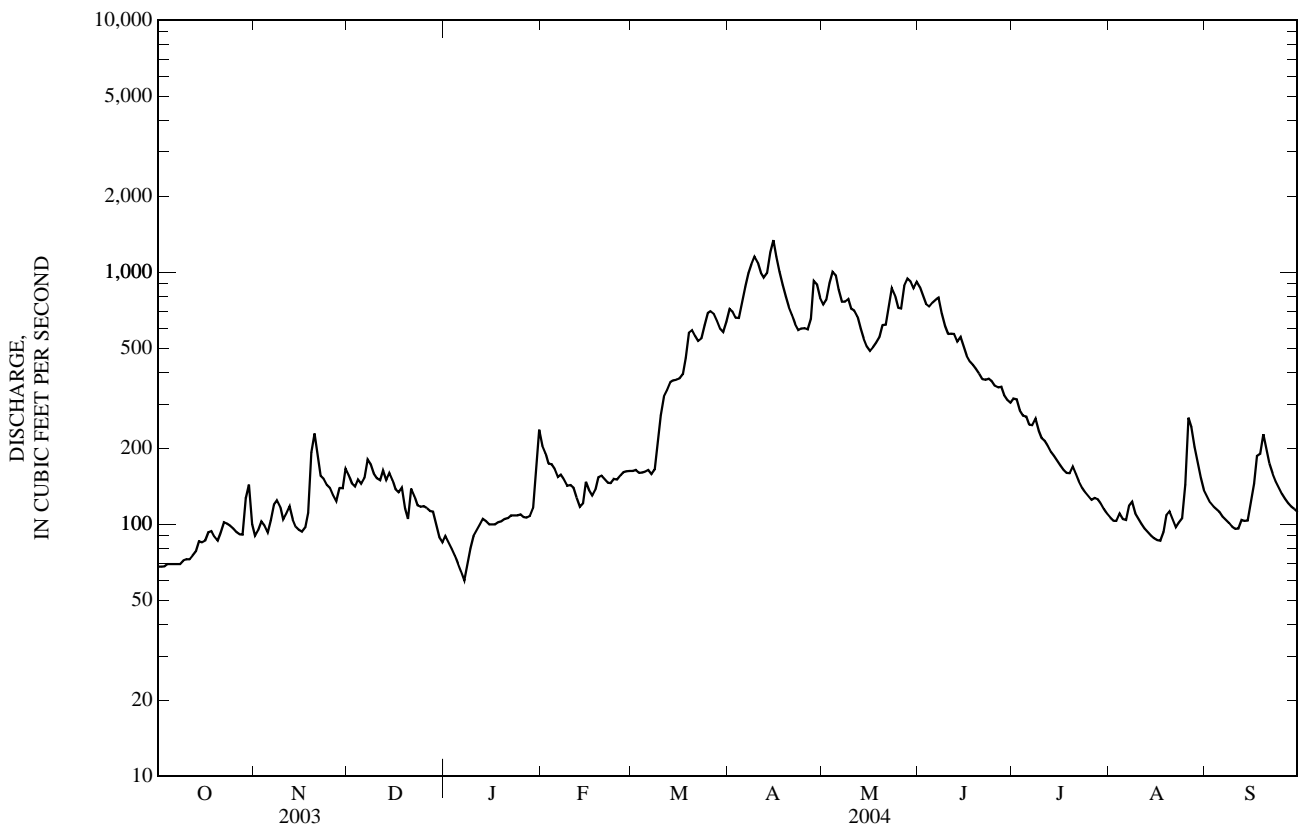
MEAN	133	225	238	251	346	585	1,210	1,380	815	289	138	119
MAX	305	819	1,174	1,272	1,965	2,401	2,752	3,300	1,796	532	244	204
(WY)	(1986)	(1996)	(1996)	(1974)	(1996)	(1972)	(1997)	(1997)	(1974)	(1971)	(1997)	(1968)
MIN	76.4	87.0	90.4	77.9	95.0	134	318	482	221	92.7	56.0	54.6
(WY)	(2002)	(1980)	(1993)	(1979)	(1993)	(2001)	(2001)	(1977)	(1977)	(1977)	(1994)	(2001)

KOOTENAI RIVER BASIN

12302055 FISHER RIVER NEAR LIBBY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1968 - 2004	
ANNUAL TOTAL	108,419		108,946			
ANNUAL MEAN	297		298		477	
HIGHEST ANNUAL MEAN					938	
LOWEST ANNUAL MEAN					169	
HIGHEST DAILY MEAN	1,300	Apr 2	1,340	Apr 15	7,790	Feb 9, 1996
LOWEST DAILY MEAN	61	Sep 6	60	Jan 7	35	Jan 2, 1977
ANNUAL SEVEN-DAY MINIMUM	62	Sep 1	69	Oct 1	50	Aug 18, 1994
MAXIMUM PEAK FLOW			1,360	Apr 15	a12,000	Feb 9, 1996
MAXIMUM PEAK STAGE			5.39	Apr 15	10.35	Feb 9, 1996
INSTANTANEOUS LOW FLOW					29	Jan 2, 1977
ANNUAL RUNOFF (AC-FT)	215,000		216,100		345,700	
ANNUAL RUNOFF (CFSM)	0.354		0.355		0.569	
ANNUAL RUNOFF (INCHES)	4.81		4.84		7.74	
10 PERCENT EXCEEDS	788		760		1,250	
50 PERCENT EXCEEDS	147		152		207	
90 PERCENT EXCEEDS	72		91		97	

a--From indirect measurement.  
e--Estimated.



12304500 YAAK RIVER NEAR TROY, MT

LOCATION.--Lat 48°33'43", long 115°58'09" (NAD 27), in NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec.5, T.32 N., R.34 W., Lincoln County, Hydrologic Unit 17010103, Kootenai National Forest, on right bank 500 ft upstream from bridge on U.S. Highway 2, 0.3 mi upstream from mouth, and 7.7 mi northwest of Troy.

DRAINAGE AREA.--766 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1910 to September 1916 (fragmentary record), March 1956 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,839.2 ft (NGVD 29). Oct. 15, 1910, to Sept. 30, 1916, nonrecording gage at several sites within 11 mi of present site at various elevations.

REMARKS.--Records good. Minor diversions for irrigation upstream from station. U.S. Army Corps of Engineers satellite telemeter at station. Several observations of water temperature and specific conductance were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May to June 1948 reached a stage of 11.0 ft, from floodmarks; discharge, 12,500 ft<sup>3</sup>/s. Flood in May 1954 reached a stage of 11.4 ft, from floodmarks; discharge, 13,400 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	106	144	e85	236	156	1,370	1,830	1,270	471	143	141
2	65	89	e143	e83	183	155	1,190	2,120	1,200	490	137	133
3	65	90	e140	e80	180	150	1,120	2,500	1,110	482	141	130
4	65	e88	e135	e78	193	150	1,190	2,580	1,130	453	178	129
5	64	e85	e130	e75	159	150	1,440	2,510	1,200	449	160	132
6	64	e95	e140	e70	146	150	1,620	2,120	1,550	416	150	128
7	64	e105	e140	e65	143	145	1,760	1,920	1,560	412	158	123
8	64	e110	135	e80	135	150	2,230	1,940	1,280	464	157	122
9	64	e115	127	e95	123	196	2,830	1,870	1,100	433	150	120
10	64	e130	e120	e105	130	254	2,320	1,690	999	383	141	119
11	64	e125	e110	e110	116	280	2,040	1,560	994	350	132	130
12	77	e120	e115	e105	112	298	2,040	1,390	971	328	126	164
13	81	e115	e120	e100	137	323	2,250	1,240	901	310	119	151
14	80	e110	e125	e100	189	337	2,740	1,140	898	292	115	162
15	76	e110	e120	e100	192	336	2,770	1,100	877	274	111	212
16	82	e112	e115	e100	134	336	2,320	1,130	796	259	107	242
17	118	e118	e110	e100	121	365	2,000	1,230	742	245	104	265
18	123	122	e100	e100	126	488	1,760	1,260	701	234	103	338
19	107	309	e95	e100	131	710	1,620	1,340	656	226	104	335
20	109	357	e90	e102	127	662	1,510	1,370	615	229	116	286
21	e125	248	e110	e103	124	587	1,410	1,480	582	218	125	243
22	e130	172	e110	e105	121	578	1,300	1,880	558	211	130	214
23	e130	129	e105	e110	123	706	1,280	1,790	559	206	164	196
24	134	137	e100	e115	128	901	1,350	1,460	522	194	174	184
25	115	143	e105	e112	131	1,030	1,320	1,270	516	185	252	176
26	106	145	e105	e100	138	1,020	1,330	1,350	482	177	251	168
27	99	137	e102	e100	148	976	1,610	1,450	469	170	220	160
28	103	182	e100	e112	154	898	2,110	1,650	463	165	206	155
29	129	218	e90	114	156	857	1,980	1,620	435	159	180	150
30	135	172	e85	178	---	929	1,810	1,440	486	153	166	145
31	133	---	e90	315	---	1,280	---	1,390	---	149	152	---
TOTAL	2,900	4,294	3,556	3,297	4,236	15,553	53,620	50,620	25,622	9,187	4,672	5,353
MEAN	93.5	143	115	106	146	502	1,787	1,633	854	296	151	178
MAX	135	357	144	315	236	1,280	2,830	2,580	1,560	490	252	338
MIN	64	85	85	65	112	145	1,120	1,100	435	149	103	119
MED	82	121	110	100	135	337	1,690	1,480	836	259	143	158
AC-FT	5,750	8,520	7,050	6,540	8,400	30,850	106,400	100,400	50,820	18,220	9,270	10,620
CFSM	0.12	0.19	0.15	0.14	0.19	0.65	2.33	2.13	1.11	0.39	0.20	0.23
IN.	0.14	0.21	0.17	0.16	0.21	0.76	2.60	2.46	1.24	0.45	0.23	0.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2004, BY WATER YEAR (WY)

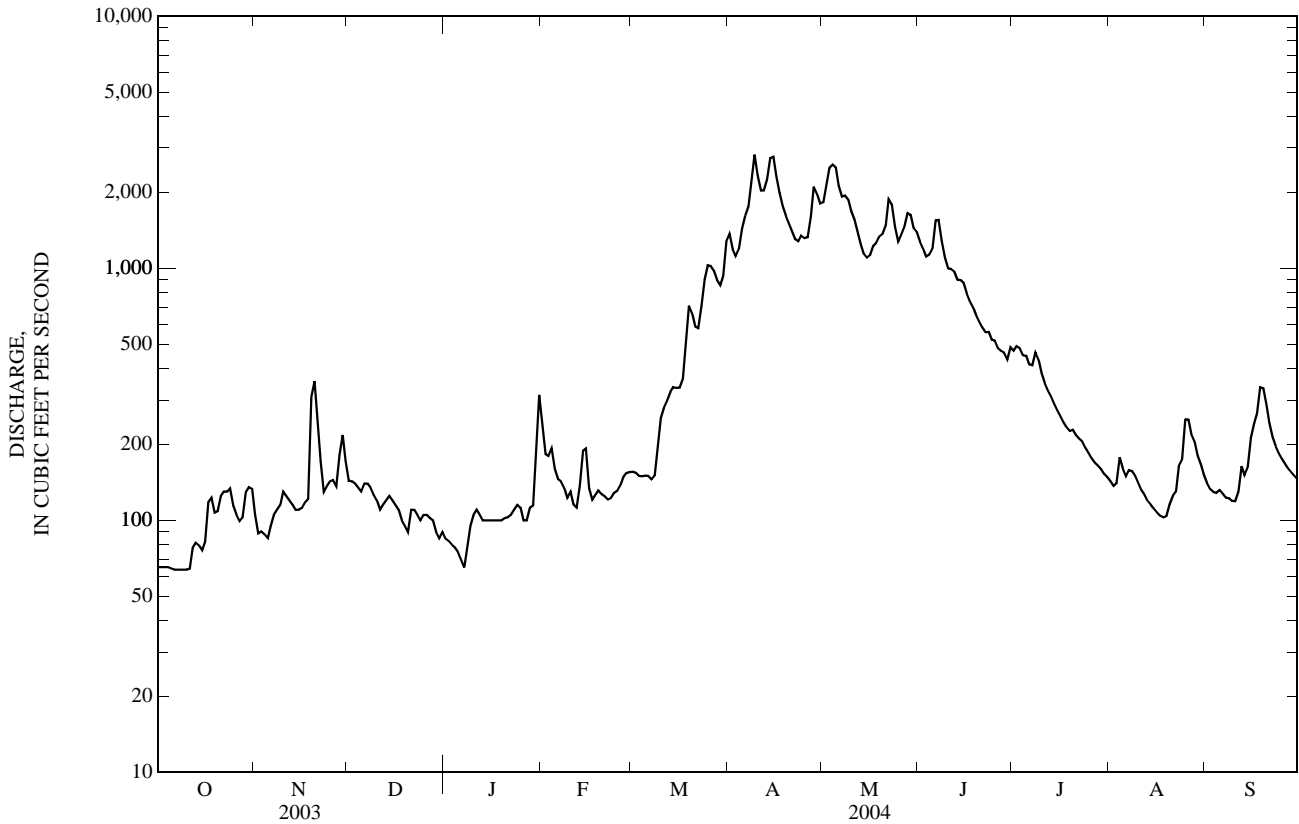
MEAN	196	315	315	289	350	596	1,922	3,456	1,903	490	194	162
MAX	833	1,192	1,630	1,552	1,626	1,872	3,754	6,463	4,992	970	373	506
(WY)	(1960)	(1996)	(1996)	(1974)	(1996)	(1972)	(1969)	(1997)	(1974)	(1969)	(1993)	(1959)
MIN	84.0	93.2	94.0	94.6	83.0	134	421	1,026	377	151	80.9	53.2
(WY)	(1988)	(1980)	(2003)	(1988)	(2001)	(2001)	(2001)	(1977)	(1992)	(1977)	(2001)	(2001)

KOOTENAI RIVER BASIN

12304500 YAAK RIVER NEAR TROY, MT—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1957 - 2004	
ANNUAL TOTAL	182,049		182,910			
ANNUAL MEAN	499		500		850	
HIGHEST ANNUAL MEAN					1,562	1974
LOWEST ANNUAL MEAN					278	1977
HIGHEST DAILY MEAN	3,200	May 26	2,830	Apr 9	11,600	May 16, 1997
LOWEST DAILY MEAN	60	Sep 6	a64	Oct 5	49	Sep 19, 2001
ANNUAL SEVEN-DAY MINIMUM	62	Sep 2	64	Oct 5	49	Sep 19, 2001
MAXIMUM PEAK FLOW			2,990	Apr 9	c12,600	May 17, 1997
MAXIMUM PEAK STAGE			6.39	Apr 9	d9.70	May 21, 1956
INSTANTANEOUS LOW FLOW			b64	Oct 5	47	Sep 22, 2001
ANNUAL RUNOFF (AC-FT)	361,100		362,800		616,000	
ANNUAL RUNOFF (CFSM)	0.651		0.652		1.11	
ANNUAL RUNOFF (INCHES)	8.84		8.88		15.08	
10 PERCENT EXCEEDS	1,580		1,490		2,540	
50 PERCENT EXCEEDS	138		159		283	
90 PERCENT EXCEEDS	75		100		119	

a--Also occurred Oct. 6-11.  
 b--Gage height, 2.74 ft.  
 c--Gage height, 9.58 ft.  
 d--Gage height in well, 10.8 ft, from outside gage.  
 e--Estimated.





12305000 KOOTENAI RIVER AT LEONIA, ID

LOCATION.--Lat 48°37'04", long 116°02'47", in NW¼NW¼NW¼ sec.20, T.33 N., R.34 W., principal Meridian, Lincoln County, Montana, Leonia quad., Hydrologic Unit 17010104, on right bank at Leonia, 450 ft east of Montana-Idaho State line, 0.5 mi upstream from Boulder Creek, and at mile 171.6.

DRAINAGE AREA.--11,740 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--March 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,790.25 ft above NGVD of 1929. Prior to Oct. 1, 1970, at datum 90 ft lower. Prior to Nov. 13, 1928, nonrecording gage on bridge 250 ft upstream at datum 90.41 ft lower.

REMARKS.--No estimated daily discharges. Records good. Station equipment includes satellite telemetry. Diversions above station for irrigation of about 14,600 acres. Flow regulated by Libby Dam and power plant since Mar. 21, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (1929-71), 123,000 ft<sup>3</sup>/s May 28, 1948, gage height, 33.40 ft; minimum, 996 ft<sup>3</sup>/s Dec. 9, 1936, minimum gage height, 7.56 ft, Dec. 10, 1929. Maximum discharge since regulation began in 1972, 62,000 ft<sup>3</sup>/s Jan. 16, 1974, gage height, 24.15 ft; maximum gage height, 25.06 ft, Feb. 9, 1996; minimum daily, 2,270 ft<sup>3</sup>/s Dec. 9, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1894 and 1916 reached stages of 34.6 and 31.6 ft, respectively, present datum, from information by Great Northern Railway.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 21,600 ft<sup>3</sup>/s Nov. 20; minimum daily, 4,270 ft<sup>3</sup>/s Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5,560	5,280	14,200	10,500	5,320	4,960	8,560	9,890	18,000	14,200	13,000	12,900
2	5,130	5,270	20,800	10,500	5,150	4,940	8,240	10,700	17,800	14,100	13,000	13,000
3	4,900	5,250	20,800	10,500	4,990	4,930	8,050	12,100	17,500	14,000	13,000	13,000
4	4,900	5,190	20,800	10,500	4,990	4,940	8,160	12,700	17,400	14,000	13,100	12,900
5	4,850	5,110	20,800	11,000	4,950	4,950	8,790	12,400	17,800	13,900	13,100	10,000
6	4,720	5,090	20,900	12,000	4,880	4,940	9,360	11,100	18,600	13,800	13,100	12,900
7	4,270	5,070	21,000	12,300	4,870	4,920	9,900	10,400	19,200	14,000	13,200	12,900
8	4,380	5,120	20,900	12,300	4,840	4,930	11,000	10,500	18,400	14,000	13,200	12,900
9	4,910	5,160	20,900	12,300	4,780	5,200	12,000	10,500	17,700	13,800	13,200	12,900
10	4,950	5,200	20,900	12,300	4,780	5,640	11,100	9,950	17,200	13,500	13,000	12,900
11	5,000	5,270	20,800	12,400	4,750	5,870	10,500	9,540	17,300	13,400	13,000	13,000
12	5,000	5,260	20,800	12,400	4,700	5,930	10,500	9,160	17,300	13,400	12,200	13,000
13	5,010	5,220	20,800	10,800	4,650	6,010	11,000	8,660	17,100	13,300	12,900	13,500
14	5,010	5,190	20,800	9,170	4,670	6,050	12,400	8,330	18,300	13,200	12,900	14,300
15	5,000	5,180	20,800	8,320	4,760	6,040	12,700	8,160	18,200	13,100	12,900	14,700
16	5,060	5,210	17,200	7,450	4,780	6,050	11,400	8,180	17,800	13,300	13,000	14,500
17	5,150	6,360	15,500	6,380	4,760	6,160	10,400	8,480	17,600	13,300	12,800	12,300
18	5,240	11,500	14,000	5,210	4,830	6,630	9,730	8,700	17,500	13,300	12,700	12,000
19	5,220	21,300	12,000	4,510	4,840	7,400	9,310	9,010	17,300	13,200	12,900	11,300
20	5,260	21,600	10,900	4,520	4,830	7,350	8,970	9,370	17,200	13,200	12,900	11,000
21	5,740	21,200	10,600	4,530	4,820	7,040	8,670	9,850	18,100	13,100	12,900	10,700
22	5,620	21,000	10,700	4,520	4,790	6,910	8,400	10,700	17,900	13,200	13,000	10,700
23	5,460	21,000	10,600	4,520	4,790	7,110	8,300	10,600	18,200	13,200	13,200	10,600
24	5,340	17,400	10,600	4,570	4,820	7,640	8,490	9,720	18,200	13,200	13,300	10,600
25	5,260	14,200	10,600	4,540	4,850	8,030	8,440	9,070	18,100	13,200	14,300	10,500
26	5,080	12,600	10,600	4,510	4,910	8,070	8,520	9,210	18,000	13,100	14,400	10,500
27	4,530	10,500	10,600	4,570	5,000	7,930	9,220	9,890	18,000	13,100	14,100	10,500
28	4,470	9,370	10,500	4,600	4,990	7,710	11,000	10,600	15,800	13,100	13,700	10,400
29	4,910	8,690	10,500	4,650	4,990	7,500	10,700	10,400	14,500	13,100	13,400	10,400
30	5,010	8,850	10,500	5,130	---	7,510	9,960	13,500	14,300	13,100	13,200	10,400
31	5,360	---	10,500	5,510	---	8,200	---	18,000	---	13,100	13,100	---
TOTAL	156,300	288,640	491,900	247,010	141,080	197,490	293,770	319,370	526,300	416,500	407,700	361,200
MEAN	5,042	9,621	15,870	7,968	4,865	6,371	9,792	10,300	17,540	13,440	13,150	12,040
MAX	5,740	21,600	21,000	12,400	5,320	8,200	12,700	18,000	19,200	14,200	14,400	14,700
MIN	4,270	5,070	10,500	4,510	4,650	4,920	8,050	8,160	14,300	13,100	12,200	10,000
AC-FT	310,000	572,500	975,700	489,900	279,800	391,700	582,700	633,500	1,044,000	826,100	808,700	716,400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929-71, BY WATER YEAR (WY) - UNREGULATED

MEAN	6,528	5,705	4,768	4,049	4,364	4,898	14,540	38,860	45,570	23,050	10,010	7,045
MAX	15,5540	11,280	13,700	13,330	10,630	10,390	39,940	61,770	74,280	47,510	16,910	16,560
(WY)	(1948)	(1934)	(1934)	(1934)	(1951)	(1934)	(1934)	(1956)	(1967)	(1954)	(1954)	(1959)
MIN	3,532	2,748	2,477	1,922	1,994	2,693	4,334	18,630	26,630	9,819	6,142	4,744
(WY)	(1937)	(1937)	(1945)	(1937)	(1936)	(1944)	(1945)	(1944)	(1941)	(1944)	(1941)	(1936)

## 12305000 KOOTENAI RIVER AT LEONIA, ID—Continued

## SUMMARY STATISTICS

## WATER YEARS 1929-71

ANNUAL MEAN	14,150	
HIGHEST ANNUAL MEAN	19,240	1956
LOWEST ANNUAL MEAN	7,416	1944
HIGHEST DAILY MEAN	122,000	May 28, 1948
LOWEST DAILY MEAN	1,070	Dec 8, 1936
ANNUAL SEVEN-DAY MINIMUM	1,310	Jan 2, 1937
ANNUAL RUNOFF (AC-FT)	10,250,000	
10 PERCENT EXCEEDS	37,800	
50 PERCENT EXCEEDS	6,750	
90 PERCENT EXCEEDS	3,240	

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2004, BY WATER YEAR (WY) - REGULATED- UNADJUSTED

MEAN	14,140	16,110	16,210	15,050	12,530	8,801	11,010	15,220	17,400	13,100	11,590	11,120
MAX	31,980	26,400	28,140	28,610	24,790	15,160	25,570	31,670	39,200	29,740	20,310	20,960
(WY)	(1973)	(1992)	(1991)	(1976)	(1990)	(1990)	(1996)	(1997)	(1972)	(2002)	(1976)	(1972)
MIN	5,042	5,004	3,423	3,109	3,724	4,350	5,588	8,352	5,374	4,139	3,956	5,539
(WY)	(2004)	(1972)	(1972)	(1972)	(1973)	(1973)	(2001)	(1977)	(1977)	(1988)	(1975)	(1994)

## SUMMARY STATISTICS

## FOR 2003 CALENDAR YEAR

## FOR 2004 WATER YEAR

## WATER YEARS 1972 - 2004

ANNUAL TOTAL	4,064,730		3,847,260		
ANNUAL MEAN	11,140		10,510		13,530
HIGHEST ANNUAL MEAN					20,400
LOWEST ANNUAL MEAN					7,466
HIGHEST DAILY MEAN	30,700	Jun 7	21,600	Nov 20	56,200
LOWEST DAILY MEAN	4,270	Oct 7	4,270	Oct 7	2,270
ANNUAL SEVEN-DAY MINIMUM	4,490	Jan 18	4,530	Jan 19	2,420
ANNUAL RUNOFF (AC-FT)	8,062,000		7,631,000		9,800,000
10 PERCENT EXCEEDS	20,800		17,700		24,200
50 PERCENT EXCEEDS	9,080		10,500		11,800
90 PERCENT EXCEEDS	4,910		4,880		5,010