



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Water Resources Division
2617 E. Lincolnway, Suite B
Cheyenne, Wyoming 82001-5662

RECEIVED

FEB 23 1999

FISH, WILDLIFE, & PARKS
DIRECTOR'S OFFICE

February 23, 1999

File

Mr. Christian Smith
Chief of Staff
Montana Fish, Wildlife, and Parks
P.O. Box 200701
Helena, Montana 59620

Dear Mr. Smith:

Fish community data from 1998 obtained under collecting permit numbers SCP-14-98 and SCP-14-98 (amended) are enclosed. By copy of this letter, we also are sending the respective data to your Livingston, Billings, and Miles City area offices. Some of the data were provided to your fisheries biologists at the time of sampling. Data from the fish-tissue analyses will be sent at a later date because the analyses are not completed at this time. We are also working directly with Janet Decker Hess to get the fish data entered into the Montana Rivers Information System (MRIS).

Our request for a scientific collecting permit for 1999 also is enclosed. At this time, we anticipate sampling the fish community at one site, and the algal and invertebrate communities at six sites in Montana. Our current plans for 1999 do not include fish-tissue sampling, but we are requesting permission to do so in the event that the analysis of the forthcoming laboratory data indicate resampling is appropriate.

Thank you for your cooperation and assistance. If you need additional information, please feel free to contact Dave Peterson at 778-2931, extension 2711, or davep@usgs.gov.

Best regards,

Thomas Quinn
Chief, Yellowstone River Basin
National Water Quality Assessment Program

Enclosures

Copy To: Montana Fish, Wildlife, and Parks

Livingston: Joel Tohtz
Billings: Mike Vaughn
Miles City: Vic Riggs
Helena: Dan Skaar w/o

Fish Sampling Equipment

1. Study Unit YELL 2. Date 08-27-98 Page of
 Month Day Year

3. Station Name Yellowstone Corwin Spgs 4. Station Identification Number 06191500

5. Investigators Peterson, Tohtz, Gary?

6. Reach Conditions

7. Reference Location
 Latitude deg min sec Longitude deg min sec

8. Reach Length 9. Water Quality: Conductivity
 Temperature Dissolved oxygen

10. Sampling gear:

ELECTROFISHING (CODE)

<u> </u> BACKPACK-First Pass (11A)	Model <u> </u> Output voltage <u> </u> Seconds <u> </u> Beginning Time <u> </u> Ending Time <u> </u>
<u> </u> BACKPACK-Second Pass (11B)	Model <u> </u> Output voltage <u> </u> Seconds <u> </u> Beginning Time <u> </u> Ending Time <u> </u>
<u> </u> TOWED-First Pass (12A)	Model <u> </u> Output voltage <u> </u> Seconds <u> </u> Beginning Time <u> </u> Ending Time <u> </u>
<u> </u> TOWED-Second Pass (12B)	Model <u> </u> Output voltage <u> </u> Seconds <u> </u> Beginning Time <u> </u> Ending Time <u> </u>
<u> ✓ </u> BOAT-First Pass (13A)	Model <u> </u> Output voltage <u>600V</u> Seconds <u>E 1000</u> Beginning Time <u> </u> Ending Time <u> </u>
<u> </u> BOAT-Second Pass (13B)	Model <u> </u> Output voltage <u> </u> Seconds <u> </u> Beginning Time <u> </u> Ending Time <u> </u>

SEINING (CODE)

<u> </u> HAUL (21A)	Number of <u> </u> Beginning Time <u> </u> Ending Time <u> </u>
<u> </u> KICK (22A)	Number of <u> </u> Beginning Time <u> </u> Ending Time <u> </u>
<u> </u> BEACH (23A)	Number of <u> </u> Beginning Time <u> </u> Ending Time <u> </u>

GILL NETTING (CODE)

 EXPERIMENTAL (31A) Number of Beginning Time Ending Time

HOOP NETTING (CODE)

 (41A) Number of Beginning Time Ending Time

ADDITIONAL METHODS (CODE)

 (method 1) (51A) Number of Beginning Time Ending Time

COMMENTS: Straight DC 2.0-2.5A

Pass 1

Fish Species

1. Study Unit YELL2. Date 08-27-98
Month Day Year

Page ____ of ____

3. Station Name Yellowstone Corvus Sprgs4. Station Identification Number 06191500

5. Investigators _____

6. Taxonomic Specialist _____

7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
Cttt trt	224	193	111	AA	
Rainbow	196	172	86	AA	
Mt wht	297	263	226	AA	
"	193	164	63.0	AA	
"	214	187	77.9	AA	
"	318	280	259	AA	
"	311	284	271	AA	
"	213	186	85.0	AA	
"	320	285	274	"	
"	199	177	73.8	"	
"	314	284	245	"	
"	194	173	65.2	"	
"	190	171	64.0	"	
Rainbow	147	128	34.3	"	
Mt wht fsh	336	303	-	"	
"	305	276	240	"	
"	318	283	266	"	
"	201	179	80.0	"	
"	325	293	260	"	
"	193	172	64.7	"	
"	305	276	223	"	
"	197	174	72.5	"	
"	322	292	318	"	
"	309	281	252	"	
"	295	264	232	"	
"	191	167	72.4	"	
* Brown	236	210	139	"	0900 1200
Cttt	166	147	49.5	"	
Cttt	355	317	443	"	
Cttt	147	129	38.5	"	
Cttt	139	123	33.1	"	

Pass 1

Fish Species

1. Study Unit _____

2. Date 08-27-98
Month Day Year

Page ____ of ____

3. Station Name Yelp @ CW4. Station Identification Number 06191500

5. Investigators _____

6. Taxonomic Specialist _____

7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
Mt wht	210	183	90.0	AA	
"	344	311	344	"	
"	312	285	240	"	
"	310	270	288	"	
"	196	168	100	"	
"	310	269	313	"	
"	319	275	320	"	
"	335	297	378	"	
"	305	269	360	"	
"	189	166	64.4	"	
"	202	177	84.4	"	
"	194	170	79.8	"	
"	196	173	87.0	"	
"	183	162	70.7	"	
"	202	177	88.3	"	
"	329	287	292	"	
"	305	264	262	"	
"	210	184	114	"	
"	254	220	180	"	
"	314	275	237	"	
Mt wht	327	283	277	"	
* Brown	396	360	721	"	1230
* Brown	378	340	708	"	1230
* Brown	364	325	600	"	1230
CH	320	282	397	LE	
Mt wht	187	165	159	"	

PASS 2

Fish Species

1. Study Unit _____

2. Date 08-27-98
Month Day Year

Page ____ of ____

3. Station Name Yella CW4. Station Identification Number 06191500

5. Investigators _____

6. Taxonomic Specialist _____

7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
Mt Whitefish	342	310	330	AA	
"	318	283	275	"	
"	316	274	214	Bacterial inf on caudal open lesion on dorsal fin	
"	374	330	471	AA	
"	310	268	240	AA	
"	317	273	294	"	
"	290	256	195	"	
"	197	172	82.6	"	
"	320	282	242	"	
"	312	276	265	lesion on operculum	
"	341	297	393	AA	
"	313	276	233	"	
"	311	272	253	"	
"	342	296	347	"	
"	329	286	316	"	
"	312	273	251	"	
"	290	256	225	"	
"	192	167	74.3	"	
"	313	277	273	"	
Mt White	306	268	249	"	
Mt White	192	174	74.7	"	
Rainbow	442	387	960	"	
Rainbow	323	285	402	"	
Mt whitefs	204	180	72.0	"	
Rainbow	331	292	453	"	
Rainbow hybr	151	132	79.7	pass hyd w/ cutt	
Cutt	194	166	118	AA	
Cutt	285	250	264	AA	
Cutt	152	135	72.5	hook scar	
Cutt	150	133	72.6	AA	

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Pass 2

Fish Species

1. Study Unit _____

2. Date 08-27-98
Month Day Year

Page ____ of ____

3. Station Name Yell @ CW4. Station Identification Number 06191500

5. Investigators _____

6. Taxonomic Specialist _____

7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
Cutt	132	117	65.0	AA	
Cutt	148	126	68.5	AA	
* Cutt	265	233	210		1330
* Brown	409	377	626	opaque eyes	1230
* Brown	224	196	170	AA	0900 1200
mt Whitefish	328	286	349		
	322	280	349		
	310	269	260		
	344	303	322		
	304	267	214		
	302	264	232		
	207	180	80.7		
	354	309	384		
	310	268	246		
	190	171	71.6		
	337	292	319		
	293	254	219		
	307	269	247		
	318	303	322		
	302	264	224		
mt Whitefish				mt mt mt mt	
Rainbow	402	353	518	hook scar, blind eye, ER	
Rainbow	133	117	32.8		
Cutt	157	139	43.4		
* Cutt	269	235	190		1330
* Cutt	301	268	271		1330
	330	290	390		X Rain
Cutt	240	211	153		
	132	115	35.7		
	152	135	46.9		
	170	150	60.8		

Pass 2

Yed @ CW

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06191500

Aug 27, 1998

Cutt	121	106	28.4	AA
"	227	198	134	hook scar,
				damag 0perc

Rain	118	103	36.0	AA
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Cutt	135	117	39.0	"
------	-----	-----	------	---

Cutt	139	122	40.5	"
------	-----	-----	------	---

* Brown	212	187	107.8	"	1210 0900
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Brown	135	118	42.5	"
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* Brown	412	370	628	opaque eyes
---------	-----	-----	-----	-------------

Rain	235	211	137	"
------	-----	-----	-----	---

Cutt	151	144	49.8	"
------	-----	-----	------	---

* Cutt	265	233	187	"
--------	-----	-----	-----	---

* Cutt	(247)	127	38.6	"
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Brown	175	152	53.3	"	0900
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130CT98

Fish Sampling Equipment

1. Study Unit YELL

2. Date 08-26-98
Month Day Year

Page ____ of ____

3. Station Name Clarks Fork Edgar

4. Station Identification Number 06208500

5. Investigators

Dave Peterson

6. Reach Conditions

7. Reference Location

Latitude ____ deg ____ min ____ sec Longitude ____ deg ____ min ____ sec

8. Reach Length

9. Water Quality: Conductivity

Temperature Dissolved oxygen

10. Sampling gear:

ELECTROFISHING (CODE)

____ BACKPACK-First Pass (11A) Model ____ Output voltage ____ Seconds ____

Beginning Time ____ Ending Time ____

____ BACKPACK-Second Pass (11B) Model ____ Output voltage ____ Seconds ____

Beginning Time ____ Ending Time ____

____ TOWED-First Pass (12A) Model ____ Output voltage ____ Seconds ____

Beginning Time ____ Ending Time ____

____ TOWED-Second Pass (12B) Model ____ Output voltage ____ Seconds ____

Beginning Time ____ Ending Time ____

☒ BOAT-First Pass (13A) Reach 1 Coffelt Model VVP-15 Output voltage 5-7 A Seconds 1900 est

Beginning Time ____ Ending Time ____

☒ BOAT-Second Pass (13B) Reach 2 Model ____ Output voltage 200 V Seconds 2010 est

Beginning Time ____ Ending Time ____

SEINING (CODE)

____ HAUL (21A) Number of ____ Beginning Time ____ Ending Time ____

____ KICK (22A) Number of ____ Beginning Time ____ Ending Time ____

____ BEACH (23A) Number of ____ Beginning Time ____ Ending Time ____

GILL NETTING (CODE)

____ EXPERIMENTAL (31A) Number of ____ Beginning Time ____ Ending Time ____

HOOP NETTING (CODE)

____ (41A) Number of ____ Beginning Time ____ Ending Time ____

ADDITIONAL METHODS (CODE)

____ (method 1) (51A) Number of ____ Beginning Time ____ Ending Time ____

COMMENTS:

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Reech 1

Fish Species

1. Study Unit YELL2. Date 08-26-98
Month Day YearPage 1 of 33. Station Name Clarks Fl Edgar4. Station Identification Number 062085005. Investigators Dan Peterson

6. Taxonomic Specialist _____

7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT ^g	ANOMALIES	NUMBER
MT whitefish	290	244	164 ^g	AA	
MT whitefish	381	325	542	AA	
MT whitefish	324	274	295	AA	
MT whitefish	286	240	206	AA	
Carp	530	430	1850	AA	
LNSU	500	421	1300	AA	
SHRH	412	340	824	AA	
LNSU	286	240	219	ER	
WSU	339	286	379	LE	
WSU	335	279	415	ER, ANCHOR WORMS	
WSU	275	229	211	AA	
WSU	406	345	715	AA	
MT Whitefish	275	232	164	AA	
MT Whitefish	289	244	212	AA	
MT Whitefish					
Hybom	79	63	6.3	AA	
Hybom	85	68	6.2	AA	
Hybom	78	62	4.7	AA	
EH Chub	86	66	5.3	AA	
EH Chub	149	119	28.4	LE	
MT SU	70	57	3.8	AA	
MT SU	82	67	6.2	AA	
MT SU	75	61	4.9	AA	
MT SU	132	110	25.2	AA	
MT SU	86	71	7.7	AA	
MT SU	133	112	23.7	AA	
WSU	223	185	104	LE	
LNSU	191	159	63.6	AA	
LNSU	120	99	17.3	AA	
LNSU	179	148	56.4	AA	
LNSU	287	246	219	AA	
GE	330	273	282	AA	

Reach 1

Fish Species

1. Study Unit YELL

2. Date 08-26-98
Month Day Year

Page 2 of 3

3. Station Name Claves Fr. Edgar

4. Station Identification Number 06208500

5. Investigators Dave Petersen

6. Taxonomic Specialist _____

7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
EMShiner	75	60	3.8	AA	
WSU	223	184	110	AA	
Lake chub	75	61	4.6	AA	
LN Dace	87	73	5.8	AA	
Stone catfish	134	110	23.1	AA	
MT Whitefish	200	168	66.4	AA	
MT Whitefish	121	100	15.2	AA	
MT SU	132	109	24.5	AA	
MT SU	117	98	18.4	AA	
MT SU	120	100	19.0	AA	
MT SU	144	121	36.3	AA	
MT SU	145	122	31.8	AA	
MT SU	139	119	33.4	AA	
MT SU	152	125	38.3	AA	
MT SU	147	123	35.7	AA	
MT SU	89	75	7.7	AA	
LNSU	155	128	36.0	AA	
LNSU	173	144	47.5	AA	
WSU	212	178	91.5	Anchor Worm	
WSU	219	182	104	AA	
LNSU	212	176	95.5	AA	
LNSU	190	159	64.7	AA	
MTSU	148	125	35.3	AA	
FH Chub	127	100	16.5	Dolphin nose	
MT SU	139	115	27.2	AA	
MT SU	78	64	5.0	AA	
LN Dace	46	37	1.0	AA	
FH Chub	117	91	14.2	ER	
FH Chub	114	93	12.0	AA	
FH Chub	140	113	23.5	AA	
LN Dace	69	55	3.3	AA	
FH Chub	96	77	8.4	AA	

Reach 1

1. Study Unit Y E L L

2. Date 08-26-98
Month Day Year

Page 3 of 3

3. Station Name Charks Fork Edgar

4. Station Identification Number 06208500_____

5. Investigators

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
LN Dace	101	82	9.2	AA	
MT SU	70	56	4.1	AA	
Hyhog	64	50	2.6	AA	
LN dace	63	50	2.2	AA	
Hyhog	60	51	2.6	AA	
LN dace	57	46	2.0	AA	
LN dace	77	62	3.8	AA	
mt su	79	65	5.6	AA	
Stonecat	125	101	19.5	AA	
mt su	72	61	4.4	AA	
Hyhog	81	65	5.5	AA	
Hyhog	70	56	3.6	ER	

Reach 2

Fish Species

1. Study Unit YELL

2. Date 08-26-98
Month Day Year

Page 1 of 2

3. Station Name Clark's Fork, Edgar

4. Station Identification Number 06208520

5. Investigators _____

6. Taxonomic Specialist _____

7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
MT ^{ES} whitefish	340	291	348	AA	
MT whitefish	292	250	218	AA	
MT whitefish	283	242	193	AA	
MT whitefish	206	171	71.1	AA	
MT whitefish	351	302	448	AA	
MT whitefish	320	276	299	AA	
GE	337	281	323	AA	
SHRH	450	361	775	ER	
Carp	514	416	2000	AA	
MT whitefish	105	86	10.5	AA	
MT whitefish	204	172	71.1	AA	
Hybr	106	86	12.3	AA	
Hybr	99	80	9.9	AA	
EH Chub	134	105	20.2	AA	
EH Chub	130	104	18.7	Anchor worm	
EH Chub	135	107	20.5	AA	
EH Chub	146	117	26.7	AA	
EH Chub	140	112	22.3	AA	
EH Chub	162	130	40.3	AA	
EH Chub	130	102	18.6	AA	
EH Chub	155	126	37.1	LE	
Hybr	79	63	4.8	AA	
SHRH	230	185	125	AA	
MT SU	123	104	20.3	AA	
MT SU	148	126	37.1	AA	
MT SU	120	103	20.7	AA	
MT SU	121	103	18.2	AA	
MT SU	77	64	5.4	AA	
MT SU	154	129	39.9	AA	
MT SU	153	129	43.1	AA	
MT SU	158	133	44.3	AA	
MT SU	120	103	19.9	AA	

Reach 2

1. Study Unit YELL

2. Date 08-26-98
Month Day Year

Page 2 of 2

3. Station Name Clark's Fork, Edgar

4. Station Identification Number 06208500 _ _ _

5. Investigators

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
Hyboc	73	58	4.1	AA	
MT SU	142	119	29.9	AA	
LNSU	192	161	69.0	AA	
LNSU	190	159	65.9	AA	
LNSU	206	174	83.9	AA	
LNSU	345	294	389	AA	
FH Chub	127	101	16.8	AA	
LNSU	326	272	326	AA	
LNSU	324	278	336	AA	
LING	710	670	2100	AA	
MT SU	141	123	29.8	AA	
LNSU	192	159	68.1	AA	
LNSU	242	206	139	AA	
LNSU	276	231	202	AA	
LNSU	231	196	119	ER	
SHRH	249	198	172	LE	
MT SU	165	139	48.5	AA	
MT SU	176	152	63.3	AA	
MT SU	169	149	61.7	AA	
MT SU	122	104	19.7	AA	
MT SU	78	63	5.0	AA	

Reach 2

Fish Species

Pass 1

1. Study Unit YELL

2. Date 08-25-98
Month Day Year

Page 1 of 3

3. Station Name Yellowstone River at Billings 4. Station Identification Number 0214500

5. Investigators

David Peterson,

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
SHRS	320	255	358.8	AA	1
	455	361	862	Scar	1
	434	355	807	AA	1
	417	340	691	AA	1
	401	325	656	AA	1
	420	341	750	lesion ^{expand} scar	1
	402	320	686	AA	1
	436	361	895	ER	1
	413	335	694	AA	1
	393	318	657	AA	1
	450	365	922	ER	1
	380	310	533	AA	1
	422	340	762	AA	1
	471	380	1200	AA	1
	405	322	682	AA	1
	420	331	818	AA	1
	445	360	814	AA	1
	360	283	497	AA	1
	371	300	574	AA	1
	388	322	648	AA	1
	373	301	602	AA	1
	375	300	539	AA	1
	471	325	904	ER	1
	430	350	771	ER ^{sanitized} Tail Fin	1
	376	302	577	AA	1
	430	342	755	AA	1
GE	304	246	235	AA	1
	320	265	271	AA	1
	347	290	347	AA	1
	385	320	676	AA	1
	351	292	410	AA	1
	330	265	317	AA	1

Reach 1

PASS 4

Fish Species

1. Study Unit YELL2. Date 08-25-98
Month Day YearPage 2 of 33. Station Name Yellowstone River at Billings4. Station Identification Number 06214500

5. Investigators

Dave Peterson

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
GE	286	235	203	AA	1
	364	305	502	AA	1
	320	269	307	AA	1
	369	310	409	AA	1
	359	304	417	AA	1
	340	275	349	AA	1
	322	266	320	AA	1
	285	240	208	AA	1
	336	276	326	AA	1
	334	276	321	AA	1
	325	265	338	AA	1
	327	270	321	AA	1
	283	232	240	AA	1
	315	261	302	AA	1
	306	250	252	AA	1
MNTWF	326	316	506	AA	1
	362	310	516	Fungus	1
	319	270	336	AA	1
	312	263	310	AA	1
	340	332	551	AA	1
	446	385	1150	AA	1
WSU	273	225	220	lesion	1
	364	306	475	AA	1
	369	307	516	lesion	1
	216	178	102	anchor worm parasite	1
	288	242	259	fin fin/ER	1
	267	224	205	ER	1
	225	186	114	anchor worm ER	1
LNSU	386	325	564	AA	1
	397	339	612	ER/scour	1
HYB26	89	72	7.7	AA	1
	124	102	18.2	AA	1

Reach 3

Page 1

Fish Species

1. Study Unit Y E L L2. Date 08-25-98
Month Day YearPage 3 of 33. Station Name Yellowstone River at Billings4. Station Identification Number 06214500

5. Investigators

Edna Peterson

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
H4BDG	103	84	11.4	AA	1
	110	90	15.0	ER	1
	110	88	14.2	AA	1
	111	89	13.9	AA	1
	104	84	12.8	AA	1
	108	86	12.7	AA	1
	103	83	11.5	parasite	1
MTSU	134	114	28.9	AA	1
	176	149	71.3	AA	1
	141	123	38.6	AA	1
	142	123	33.5	AA	1
	145	144	49.5	AA	1
	97	82	9.7	AA	1
	150	127	42.5	AA	1
	150	128	41.4	AA	1
	87	72	8.0	AA	1
	111	93	15.6	AA	1
WBU	178	147	54.5	lesions	1
	99	81	11.2	AA	1
LNSU	237	204	130	AA	1
LN Dace	84	71	5.4	AA	1
MNTWF	112	93	13.10	AA	1
	115	96	16.0	AA	1
H4BDG	123	99	18.8	AA	1
	117	96	18.3	AA	1
	123	101	19.1	AA	1
MTSU	148	128	37.6	AA	1
	155	129	37.2	AA	1
	131	113	27.2	AA	1
LN Dace	82	68	5.4	AA	1
Emshine/	78	63	4.4	AA	1

Reach 1

Fish Species

Pass 2

1. Study Unit YELL2. Date 08-25-98
Month Day YearPage 1 of 43. Station Name Yellowstone River at Billings 4. Station Identification Number 062145005. Investigators Dawn Petersen

6. Taxonomic Specialist _____ 7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
GE	332	274	334	AA	1
	332	276	303	ER	1
	349	293	344	AA	1
	320	270	253	AA	1
	344	283	348	AA	1
	311	259	252	AA	1
	385	272	291	AA lesions	1
	332	280	335	AA	1
	353	292	413	lesion	1
	318	262	299	AA	1
	318	264	274	AA	1
	335	276	317	lesion	1
	342	281	352	AA	1
	316	258	255	AA	1
	344	286	237.2	AA	1
SHRS	375	306	541	AA	1
	395	317	638	AA	1
	462	376	1050	lesion	1
	395	318	634	AA	1
	449	368	1025	AA	1
	382	310	598	AA	1
MNTWOF	423	365	727	AA	1
WSH	327	278	368	gouty	1
	356	300	488	ER	1
	343	289	429	lesion	1
	330	277	380	lesion	1
	236	196	140	AA	1
	263	219	181	AA	1
LNSH	394	342	536	ER	1
HYB06	84	66	5.1	AA	1
	102	83	11.3	AA	1
	85	70	6.4	AA	1

Reach 1

Fish Species

Pass 2

1. Study Unit YELL2. Date 08-25-98
Month Day YearPage 2 of 43. Station Name Yellowstone River at Billings 4. Station Identification Number 06214500

5. Investigators

Dave Peterson

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
MTSH	148	127	32.5	AA	1
	154	133	45.7	AA	1
	161	138	52.3	AA	1
	132	113	27.6	AA	1
	115	98	19.3	AA	1
FHCHUB	166	134	44.6	AA	1
	143	115	30.1	AA	1
	134	109	22.4	AA	1
	91	73	8.1	AA	1
	125	101	19.0	injured specimen AA	1
	149	119	31.0	AA	1
	145	118	31.4	AA	1
	100	80	9.8	AA	1
HYBON	75	59	5.2	AA	1
	135	109	23.4	AA	1
	82	66	6.4	AA	1
	106	87	12.2	AA	1
	99	81	10.1	AA	1
	87	71	6.7	AA	1
	83	66	5.7	AA	1
FHCHUB	65	52	2.9	AA	1
	99	78	10.6	AA	1
	132	108	24.2	AA	1
	157	129	34.8	AA	1
	122	98	19.7	AA	1
	132	107	23.1	AA	1
	126	99	19.8	AA	1
	120	96	15.5	AA	1
	136	109	26.3	AA	1
SHRS					12
HYBON	97	79	9.3	AA	
	83	65	5.7	AA	

Reach 1

Fish Species

Pass 2

1. Study Unit YELU2. Date 08-25-98
Month Day YearPage 3 of 43. Station Name Yellowstone River at Billings 4. Station Identification Number 06214520

5. Investigators

Dave Petersen

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
<u>HYBDS</u>	100	82	10.7	AA	1
	87	70	6.3	AA	
	80	62	5.0	AA	
	85	69	6.4	AA	
	85	66	6.1	AA	
	100	82	10.0	AA	
<u>HYBDS</u>					<u>THH THH THH</u>
<u>FHCHUB</u>	113	91	14.2	AA	
	100	82	9.3	AA (VOUCHER)	
	140	115	27.8	AA (VOUCHER)	
	92	75	7.3	AA	
	114	95	15.2	AA (VOUCHER)	
	133	109	28.2	AA	
	117	94	17.2	AA	
	130	105	24.1	AA	
	141	114	26.1	AA	
	142	116	30.5	AA	
	126	104	19.7	ER	
<u>MTSH</u>	134	119	30.2	AA	
	135	114	28.1	AA	
	184	160	68.8	AA	
	142	124	34.1	AA	
	152	134	42.5	AA	
<u>GE</u>					1
<u>FHCHUB</u>	100	82	9.7	AA	
	110	89	11.8	AA	
<u>FHCHUB</u>					<u>THH THH THH II</u>
<u>RNBTRT</u>	150	130	36.8	AA	
<u>MTSH</u>	132	112	24.5	AA	
	137	117	27.6	AA	
	150	129	41.7	AA	
	161	151	2.2	AA	

R9ACH 1

Fish Species

Pass 2

1. Study Unit YELL

2. Date 08-25-98
Month Day Year

Page 4 of 4

3. Station Name Yellowstone River at Billings 4. Station Identification Number 06214500

5. Investigators

Dave Peterson

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
MTSU	169	150	52.6	AA	
	130	114	22.3	AA	
	191	166	86.5	AA	
MTSU					11

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REACH 2
Pass 1

Fish Species

page 1 of 2

1. Study Unit YELL2. Date 08-25-98
Month Day YearPage 1 of 23. Station Name Yellowstone River at Billings 4. Station Identification Number 06214500----

5. Investigators

Dave Peterson

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
WSU	303	257	286	LE	1
WSU	275	228	207	LE	1
WSU	232	193	126	AA	1
WSU	224	189	117	AA	1
GE	347	292	356	AA	1
GE	378	313	508	LE	1
GE	379	309	544	LE	1
GE	340	273	352	AA	1
GE	345	287	345	ER	1
GE	336	279	331	fin lesion	1
GE	393	331	696	AA	1
GE	347	292	378	healed wound	1
LNSU	324	271	307	heron bite	1
SHRH	393	326	642	AA	1
SHRH	427	341	799	old wound	1
SHRH	378	304	546	AA	1
MTSU	198	170	85.5	AA	1
MTSU	174	152	61.6	AA	1
MTSU	153	133	37.7	AA	1
MTSU	190	164	75.6	AA	1
MTSU	171	149	59.1	LE	1
MTSU	167	146	58.8	ER	1
MTSU	172	147	58.6	AA	1
MTSU	171	149	57.6	AA	1
MTSU	152	129	45.0	ER	1
MTSU	126	108	23.8	AA	1
MTSU	143	122	33.7	ER	1
MTSU	163	138	48.9	AA	1
MTSU	145	125	35.1	AA	1
MTSU	121	103	20.3	AA	1

REXH2
Pass 1

Fish Species

Page 2 of 2

1. Study Unit 4 ELL

2. Date 08-25-98
Month Day Year

Page 2 of 2

3. Station Name Yellowstone River at Billings 4. Station Identification Number 06214500

5. Investigators Dave Peterson

6. Taxonomic Specialist _____ 7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
LNSU	249	213	154	AA	1
MT WF	106	89	11.8	AA	1
EM Shiner	66	54	2.6	AA	1
MTSU	109	93	15.6	AA	1
MTSU	100	84	12.1	AA	1
MTSU	79	64	4.3	AA	1
MTSU	94	77	9.7	AA	1
MTSU	137	116	30.2	Shattered Operculum	1
Hybog	85	70	7.0	AA	1
Hybog	127	104	19.0	AA	1
Hybog	102	85	10.2	AA	1
Hybog	112	94	15.2	LE	1
Hybog	99	82	9.4	AA	1
Hybog	108	89	13.1	AA	1
Hybog	120	98	16.8	AA	1
Hybog	116	96	16.0	AA	1
Hybog	95	78	9.4	AA	1
Hybog	103	84	9.6	AA	1
Hybog	106	85	12.8	AA	1
Hybog	120	98	15.5	AA	1
EH Chub	85	68	6.2	AA	1
EH Chub	135	109	22.8	AA	1

Reach 2
Pass 2

Fish Species

Page 1 of 2

1. Study Unit YELL2. Date 08-25-98
Month Day YearPage 1 of 23. Station Name Yellowstone River at Billings 4. Station Identification Number 062145005. Investigators Dave Peterson

6. Taxonomic Specialist _____ 7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
WSU	391	332	574	LE	1
WSU	345	290	445	LE	1
GE	308	256	246	AA	1
GE	327	274	281	AA	1
GE	310	251	242	AA	1
GE	325	269	297	AA	1
GE	351	287	387	AA	1
GE	346	287	323	AA	1
MTWF	362	311	464	AA	1
BROWN TRAC	393	337	826	AA	1
Carp	328	258	457	AA	1
SHRH	397	328	716	AA	1
LNSU	482	418	1200	AA-fish/ke	1
WSU	95	74	9.1	AA	1
Hybag	101	82	10.0	LE	1
Hybag	120	97	15.8	ER	1
Hybag	103	86	12.4	AA	1
Hybag	127	101	19.3	AA	1
Hybag	107	87	13.2	AA	1
Hybag	102	84	11.7	AA	1
Hybag	96	79	10.4	AA	1
Hybag	80	67	5.8	AA	1
Hybag	101	82	10.7	AA	1
FH Chub	102	83	10.8	AA	1
FH Chub	143	125	33.5	ER	1
FH Chub	82	66	5.0	AA	1
MT Su	96	82	10.6	AA	1
MT Su	177	154	68.2	AA	1
Hybag	100	83	11.9	AA	1
Hybag	99	81	11.0	LE	1
Hybag	98	78	9.9	AA	1

Reach 2
Pass 2

Fish Species

Page 2 of 2

1. Study Unit Y E L L

2. Date 08-25-98
Month Day Year

Page 2 of 2

3. Station Name Yellowstone River at Billings 4. Station Identification Number 06214500

5. Investigators Dave Peterson

6. Taxonomic Specialist _____ 7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
Hsbog	98	81	10.1	AA	1
Hsbog	103	84	11.8	AA	1
Hsbog	101	83	11.0	AA	1
FH Chub	69	55	3.5	AA	1
FH Chub	83	66	5.8	AA	1
FH Chub	105	84	11.4	AA	1
FH Chub	79	64	4.3	AA	1
FH Chub	130	106	23.5	AA	1
FH Chub	62	50	2.5	AA	1
MT SU	97	81	10.7	AA	1
MT SU	144	123	33.7	AA	1
MT SU	165	141	50.2	AA	1

Fish Sampling Equipment

1. Study Unit YELL 2. Date 07-29-98 Page 1 of 1
Month Day Year

3. Station Name Powder Locote 4. Station Identification Number _____

5. Investigators Peterson, Baylton, Seweese, Wright, Miller

6. Reach Conditions _____

7. Reference Location _____
Latitude ____ deg ____ min ____ sec Longitude ____ deg ____ min ____ sec

8. Reach Length _____ 9. Water Quality: Conductivity _____
Temperature _____ Dissolved oxygen _____

10. Sampling gear: _____

ELECTROFISHING (CODE)

____ BACKPACK-First Pass (11A)	Model _____	Output voltage _____	Seconds _____
	Beginning Time _____	Ending Time _____	
____ BACKPACK-Second Pass (11B)	Model _____	Output voltage _____	Seconds _____
	Beginning Time _____	Ending Time _____	
____ TOWED-First Pass (12A)	Model _____	Output voltage _____	Seconds _____
	Beginning Time _____	Ending Time _____	
____ TOWED-Second Pass (12B)	Model _____	Output voltage _____	Seconds _____
	Beginning Time _____	Ending Time _____	
____ BOAT-First Pass (13A)	Model _____	Output voltage _____	Seconds _____
	Beginning Time _____	Ending Time _____	
____ BOAT-Second Pass (13B)	Model _____	Output voltage _____	Seconds _____
	Beginning Time _____	Ending Time _____	

SEINING (CODE)

____ HAUL (21A)	Number of _____	Beginning Time _____	Ending Time _____
____ KICK (22A)	Number of _____	Beginning Time _____	Ending Time _____
<u>X</u> BEACH (23A)	Number of <u>4</u>	Beginning Time <u>10:30</u>	Ending Time <u>11:30</u>

GILL NETTING (CODE)

____ EXPERIMENTAL (31A) Number of _____ Beginning Time _____ Ending Time _____

HOOP NETTING (CODE)

____ (41A) Number of _____ Beginning Time _____ Ending Time _____

ADDITIONAL METHODS (CODE)

____ (method 1) (51A) Number of _____ Beginning Time _____ Ending Time _____

COMMENTS: _____

Fish Species

1. Study Unit YELL

2. Date 07-29-98
Month Day Year

Page 1 of 1

3. Station Name Ponder Locote

4. Station Identification Number

5. Investigators

Peterson, Raughter, Seweese, Wright, Miller, Quinn

6. Taxonomic Specialist

Seweese

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
plain minnow					
flathead chub					
flathead chub	134	109	20.9	AA	
"	90	71	8.5	"	
"	123	97	23.5	"	
poias minnow	135	109	18.1	"	
flathead chub	70	54	5.2	"	
"	79	62	4.9	"	
sturgeon chub	80	65	4.4	"	
flathead chub	119	94	16.7	"	
"	84	66	6.3	"	
"	76	60	5.2	"	
"	94	75	15.8	"	
"	99	77	9.5	"	
"	95	74	8.9	"	
"	103	77	9.9	"	
"	96	76	10.3	"	
"	83	66	5.3	"	
"	63	49	2.8	"	
"	84	66	7.2	"	
"	71	58	3.7	"	
"	40	32	0.9	"	
"	77	60	4.9	"	
"	46	36	0.1	"	
"	98	78	9.9	"	
"	61	49	2.5	"	
"	79	62	5.3	"	
"	126	99	18.3	"	
"	54	42	1.9	"	
"	49	38	1.3	"	
"	49	38	1.4	"	
"	56	44	2.1	"	
"	73	56	4.2	"	

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Page ____ of ____

4. Station Identification Number

57. Sampling gear code

9

Fish Species

1. Study Unit YELL2. Date 07-29-98
Month Day Year3. Station Name Powder Locate4. Station Identification Number 063

5. Investigators

Peterson, Baughton, DeWeese, Wright, Site Back

6. Taxonomic Specialist

DeWeese, Parkus

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES
<u>plains minnow</u>	<u>109</u>	<u>87</u>	<u>10.2</u>	<u>AA</u>
" "	<u>131</u>	<u>95</u>	<u>17.3</u>	"
" "	<u>100</u>	<u>80</u>	<u>7.1</u>	"
" "	<u>110</u>	<u>89</u>	<u>9.0</u>	"
" "	<u>78</u>	<u>64</u>	<u>4.3</u>	"
" "	<u>89</u>	<u>71</u>	<u>6.0</u>	"
" "	<u>104</u>	<u>95</u>	<u>9.2</u>	"
" "	<u>123</u>	<u>99</u>	<u>8.7</u>	"
" "	<u>79</u>	<u>63</u>	<u>4.6</u>	"
" "	<u>72</u>	<u>58</u>	<u>3.3</u>	"
" "	<u>86</u>	<u>70</u>	<u>5.7</u>	"
" "	<u>66</u>	<u>53</u>	<u>2.7</u>	"
" "	<u>102</u>	<u>84</u>	<u>7.2</u>	"
" "	<u>106</u>	<u>89</u>	<u>10.0</u>	"
" "	<u>95</u>	<u>78</u>	<u>6.1</u>	<u>AA</u>
" "	<u>76</u>	<u>63</u>	<u>4.2</u>	<u>AA</u>
" "	<u>93</u>	<u>74</u>	<u>6.2</u>	<u>AA</u>
" "	<u>81</u>	<u>66</u>	<u>5.3</u>	"
" "	<u>125</u>	<u>100</u>	<u>11.2</u>	"
" "	<u>115</u>	<u>93</u>	<u>11.2</u>	"
" "	<u>76</u>	<u>62</u>	<u>4.4</u>	"
" "	<u>73</u>	<u>58</u>	<u>4.0</u>	"
<u>longnose dace</u>	<u>60</u>	<u>48</u>	<u>3.0</u>	"
" "	<u>60</u>	<u>50</u>	<u>3.2</u>	"
<u>sand shiner</u>	<u>34</u>	<u>26</u>	<u>0.4</u>	"
" "	<u>43</u>	<u>34</u>	<u>0.6</u>	"
" "	<u>38</u>	<u>30</u>	<u>0.6</u>	"
" "	<u>36</u>	<u>28</u>	<u>0.5</u>	"
" "	<u>46</u>	<u>36</u>	<u>1.2</u>	"
" "	<u>50</u>	<u>40</u>	<u>1.5</u>	"
<u>juvenile goldeye</u>	<u>29</u>	<u>32</u>	<u>0.6</u>	"
<u>unknown</u>				" <u>rocker</u>

NATIONAL WATER-QUALITY ASSESSMENT (NAWQA) PROGRAM

FIELD DATA SHEET FOR CONTAMINANTS IN FISH

16-digit NAWQA Sample ID Number: YELLO798TFI0101ASample source:
(stream name
and location) Yellowstone ForeynUSGS downstream-order
station number: 06295000

Latitude: _____

NAWQA study unit name: YELL

Longitude: _____

Date of collection: 07/27/98
mo/day/yrTime of collection: 1200 ¹²⁰²
(24-hr clock)

Data on individuals in composite sample:

Species: _____

Organism number	Standard length (in mm)	Total length (in mm)	Weight (in g)	Gender (m or f)	External anomalies (use code)	Age (in yrs)	Comments
1	505	410	1750	f	AA		
2	524	426	2050	f	AA		
3	534	392	1900	m	AA		
4	540	445	2100	m	ER		
5	475	392	1600	m	AA		
6	504	403	1950	m	ER		
7	483	391	1700	m	AA		
8	429	350	1300	m	AA		
9							
10							

Composite weight
Average weight

Total wt. (g)

Tare wt. (g)

Sample wt. (g) 7230

Note: All individuals in composite must be same taxon.

Common CarpField crew: Peterson, Newberry, Rigger

Tissues collected (circle one):

Whole organism

Liver

Fillet

Other _____

Analyses requested (circle one):

Organic compounds (Lab code 2100)

Trace elements (Lab code 2200)

Other _____

Scale sample collected? yes _____ no ✓Spine sample collected? yes _____ no ✓

NATIONAL WATER-QUALITY ASSESSMENT (NAWQA) PROGRAM

FIELD DATA SHEET FOR CONTAMINANTS IN FISH

16-digit NAWQA Sample ID Number: YELLO798TF00100A

Sample source: Yellowstone-Forsyth
(stream name and location)

USGS downstream-order station number: 06295000

Latitude: _____

NAWQA study unit name: YELL

Longitude: _____

Date of collection: 07/28/98
month/day/yr 07/27/98

Time of collection: 1445 12:01
(24-hr clock)

Data on individuals in composite sample:

Species: _____

Organism number	Standard length (in mm)	Total length (in mm)	Weight (in g)	Gender (m or f)	External anomalies (use code)	Age (in yrs)	Comments
1	420	515	2200	f	AA		
2	421	370	1300	f	AA		
3	542	428	2100	m	AA		
4	451	347	1150	m	AA		
5	528	420	2100	m	AA		
6	554	455	2250-2450	f	AA		
7	443	361	1600	f	AA		
8	566	450	2450	m	AA		
9							
10							

Composite weight
Average weight

Total wt. (g)
Tare wt. (g)
Sample wt. (g)

Note: All individuals in composite must be same taxon.

Common carp

Field crew: Peterson, Devereaux, Riger

Tissues collected (circle one):

Whole organism

Liver

Fillet

Other _____

Analyses requested (circle one):

Organic compounds (Lab code 2100)

Trace elements (Lab code 2200)

Other _____

Scale sample collected? yes _____

no X

Spine sample collected? yes _____

no X

PASS 2

Fish Species

1. Study Unit YELL

2. Date 07-27-98
Month Day Year

Page 1 of 3

3. Station Name Yellowstone Forsyth

4. Station Identification Number 06295000

5. Investigators

Peterson, DeWiese, Riggs

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
1. Chan cat	482	391	1210	9	AA
Chan cat	404	325	650	AA	1
Goldeye	323	260	260	AA	1
	324	263	290	ER	1
5.	335	265	300	Lesions	1
	327	365	260	AA	
	236	188	110	AA	
	318	257	260	AA	
	343	277	365	AA	
10.	309	252	215	AA	
	347	280	360	AA	
	294	243	210	AA	
	306	251	210	AA	
	292	238	245	AA	
15	336	274	270	AA	
	307	250	225	AA	
Goldeye	315	253	275	ER	
Shorthead redhorse	374	294		AA	
Goldeye	310	242	250	lesion on operc	
20 Goldeye	337	271	245	ER	
Goldeye	309	263	245	ER	
Goldeye	357	285	360	AA	
	313	249	220	AA	
	321	260	265	AA	
25	317	256	255	AA	
Goldeye	335	275	275	ER, lesions	
Shorthead redhorse	305	242	315	ER	
	305	243	320	ER	
	285	227	265	ER	
30	212	246	246	AA	
	395	315	590	ER	

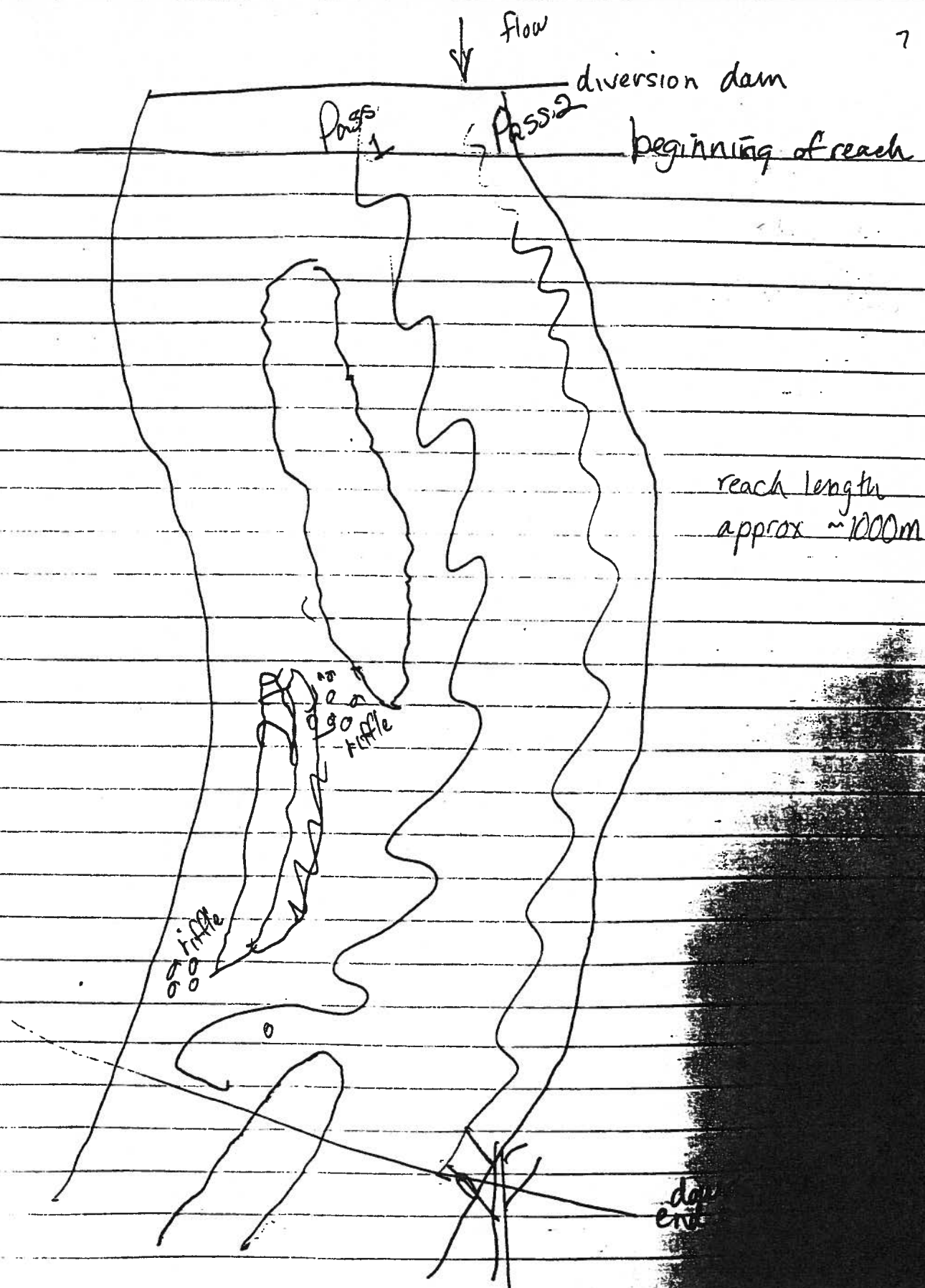
PASS 2 - cont.

Fish Species

1. Study Unit VELL2. Date 07-27-98
Month Day YearPage 2 of 33. Station Name Yellowstone R.C. Forgy 4. Station Identification Number 062950005. Investigators Peterson, Neweese, Pigg

6. Taxonomic Specialist _____ 7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
shorthead redh	436	350	735	ER, lesions	1
"	344	273	445	ER, lesions	
"	454	363	965	AA	
"	310	245	335	ER	
"	362	282	505	lesions, ER	
"	303	238	320	ER	
shorthead md	275	219	220	ER	
longnose sucker	365	308	550	lesions	
river carp	388	305	670	eroded fins ER	
"	405	315	810	AA	
"	379	289	580	AA	
"	417	328	1060	AA	
"	409	315	690	ER	
Brimh buff	605	498	3735	ER	
Goldeye	250	203	135	AA	
goldeye	334	277	290	AA	
Brimh buff	675	560	4950	AA	
Goldeye	316	255	228	AA	
"	287	233	179	AA	
Unknown minnow Lengths = 65, 52, 76, 61, 67, 56, 65, 54, 65, 70, 59, 71, 56, 74, 57, 74, 60, 77, 62, 53, 76, 62, 67, 56, 69, 56, 75, 62, 77, 63					
Total count = 28				3.17 g total weight	
Vouchered - all half				Unknown A	
Common carp	579	476	2200	AA	
"	530	441	2050	AA	
"	563	461	2500	AA	
"	515	425	2400	ER	
"	632	530	3500	FU	
"	519	418	1750	AA	



reach length
approx ~1000m

PASS 1

Fish Species

1. Study Unit YELL2. Date 07-27-98Page 1 of 2

Month Day Year

3. Station Name Yellowstone - Forsyth4. Station Identification Number 06295000

5. Investigators

Peterson, DeWeese, Riggs

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
shorthead redhorse	406	332	730	AA	1
shorthead "	342	276	448	AA	
" "	322	262	344	AA	
" "	285	228	210	AAAE	
" "	421	360	909	AA	
" "	380	310	656	AA	
" "	284	229	276	AA	
" "	315	259	367	AA	
" "	379	274	452	AA	
river carp sucker	373	292	677	AA	
" " "	401	325	831	AA	
" " "	400	315	793	AA	
" " "	371	302	719	AA	
" " "	444	360	1100	AA	
" " "	353	280	567	AA	
sauger	331	280	302	AA	
shorthead redhorse	306	250	329	AA	
bigmouth buffalo	330	525	3350	AA	
goldeye	350	292	322	FU	
" "	323	267	236	AA	
" "	324	271	309	AA	
" "	334	276	267	AA	
" "	295	246	220	AA	
" "	302	254	207	AA	
" "	330	275	288	ER	
" "	310	261	237	AA	
" "	345	290	315	AA	
" "	316	265	238	AA	
" "	311	266	218	AA	
" "	313	256	233	AA	
" "	319	263	240	AA	

PASS 1

Fish Species

1. Study Unit YELL

2. Date 07-27-98
Month Day Year

Page 2 of 2

3. Station Name Yellowstone-Forsyth 4. Station Identification Number 06295000

5. Investigators Peterson, DeWeese, Pigg

6. Taxonomic Specialist _____ 7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
goldeye	315	258	256	AA	1
"	305	259	252	AA	
"	285	240	223	AA	
"	320	265	267	AA	
shorthead redhorse	225	226	242	PA	
"	337	279	431	AA	
longnose sucker	347	296	494	ER	
"	365	309	591	AA	
"	390	331	685	AA	
"	380	327	548	AA	
"	390	329	677	PA	
"	365	309	584	PA, LE	
white sucker	351	297	494	AA	
"	335	286	435	AA	
"	287	239	264	PA	
common carp	455	365	1300	AA	
"	540	440	2050	AA	
"	590	485	2200	AA	
"	630	503	3000	AA	
"	490	411	1750	AA	
"	555	458	2075	PA	

Unknown minnow @ A. size length range ok

PASS 2.

Total count = 17

total weight = 95

couched none

longnose sucker	177	145	56	AA
unknown chub	155	130	35	AA
shorthead redhorse	155	124	45	AA
longnose sucker	90	72	9	AA
white sucker	149	124	33	PA, LE

PASS 2

Fish Species

1. Study Unit YELL2. Date 07-27-97
Month Day YearPage 3 of 33. Station Name Yellowstone-Forsyth 4. Station Identification Number 06295000

5. Investigators

B. Peterson, DeWeese, Pigg

6. Taxonomic Specialist

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
<u>Carassius auratus</u>	<u>603</u>	<u>496</u>	<u>2600</u>	<u>FU</u>	
" "	<u>413</u>	<u>340</u>	<u>1100</u>	<u>AA</u>	
" "	<u>645</u>	<u>528</u>	<u>3750</u>	<u>FU</u>	
" "	<u>395</u>	<u>321</u>	<u>1050</u>	<u>AA</u>	
" "	<u>480</u>	<u>384</u>	<u>1500</u>	<u>AA</u>	
" "	<u>489</u>	<u>401</u>	<u>1200</u>	<u>AA</u>	
" "	<u>695</u>	<u>561</u>	<u>4800</u>	<u>AA</u>	
" "	<u>310</u>	<u>251</u>	<u>600</u>	<u>AA</u>	
" "	<u>541</u>	<u>442</u>	<u>2250</u>	<u>AA</u>	
" "	<u>518</u>	<u>420</u>	<u>1950</u>	<u>AA</u>	
" "	<u>368</u>	<u>292</u>	<u>800</u>	<u>AA</u>	
" "	<u>446</u>	<u>370</u>	<u>1300</u>	<u>AA</u>	
" "	<u>435</u>	<u>359</u>	<u>1300</u>	<u>AA</u>	

Pass 1 - Saw but could not catch ^{possible} shovelnose
sturgeon about 2 ft long

PASS 1

Fish Sampling Equipment

Page 1 of 1

1. Study Unit YELL

2. Date 02-28-98
Month Day Year

3. Station Name Yellowstone Sidney

4. Station Identification Number 04229500

5. Investigators

Jewese, Boughton, Peterson, Riggs

6. Reach Conditions

7. Reference Location

Latitude ___ deg ___ min ___ sec Longitude ___ deg ___ min ___ sec

8. Reach Length

9. Water Quality: Conductivity

Temperature ___ Dissolved oxygen ___

10. Sampling gear:

ELECTROFISHING (CODE)

___ BACKPACK-First Pass (11A)

Model ___ Output voltage ___ Seconds ___
Beginning Time ___ Ending Time ___

___ BACKPACK-Second Pass (11B)

Model ___ Output voltage ___ Seconds ___
Beginning Time ___ Ending Time ___

___ TOWED-First Pass (12A)

Model ___ Output voltage ___ Seconds ___
Beginning Time ___ Ending Time ___

___ TOWED-Second Pass (12B)

Model ___ Output voltage ___ Seconds ___
Beginning Time ___ Ending Time ___

☒ BOAT-First Pass (13A)

Model Coffey WP-15 Output voltage 300 Seconds ___
Beginning Time 13:30 Ending Time 13:55

___ BOAT-Second Pass (13B)

Model ___ Output voltage ___ Seconds ___
Beginning Time ___ Ending Time ___

SEINING (CODE)

___ HAUL (21A)

Number of ___ Beginning Time ___ Ending Time ___

☒ KICK (22A)

Number of ___ Beginning Time ___ Ending Time ___

☒ BEACH (23A)

Number of 2 Beginning Time ___ Ending Time ___
10 min each

GILL NETTING (CODE)

___ EXPERIMENTAL (31A)

Number of ___ Beginning Time ___ Ending Time ___

HOOP NETTING (CODE)

___ (41A)

Number of ___ Beginning Time ___ Ending Time ___

ADDITIONAL METHODS (CODE)

___ (method 1) (51A)

Number of ___ Beginning Time ___ Ending Time ___

COMMENTS:

PASS 1

Fish Species

1. Study Unit YELL2. Date 07-28-98
Month Day YearPage 11 of 13. Station Name Yellowstone Sidney4. Station Identification Number 06522500

5. Investigators

Schwaese, Boughton, Riggs

6. Taxonomic Specialist

Schwaese

7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
Gurbot	4504	340	298	AA	
goldeye	316	265	267	AA	
"	330	220	276	AA	
"	345	281	314	AA	
"	266	220	189	AA	
"	322	260	300	AA	
"	281	227	205	AA	
"	285	228	192	AA	
"	258	212	154	AA	
shorthead redhorse	300	235	224	AA	
"	228	180	133	FR	
river carp sucker	288	228	360	AA	
"	271	290	683	AA	
flathead chub	160	125	35	AA	
"	177	141	54	AA	
"	112	86	12	AA	
"	144	116	22	AA	
"	115	90	14	AA	
"	110	85	12	AA	
"	183	148	59	AA	
"	134	102	23	AA	
"	113	87	14	AA	
"	121	92	17	AA	
flathead chub		92			
largest	95	75		Vouchered	5-6
smallest	65	51		"Voucher A"	
common carp	444	344	1250	AA	
"	531	420	2000	AA	
"	444	351	1400	AA	
"	531	425	2000	AA	
"	397	314	1000	AA	

PA552

Fish Species

1. Study Unit YELL2. Date 07-28-98
Month Day YearPage 1 of 73. Station Name Yellowstone Sidney 4. Station Identification Number 053295005. Investigators Deweese, Peterson, Quinn, Riggs6. Taxonomic Specialist Deweese 7. Sampling gear code _____

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
goldeye	317	256	262	AA	1
"	258	208	155	AA	
river carp sucker	213	168	106	ER	
6/line sucker	525	413	1200	AA	
river carp sucker	413	323	898	AA	
channel catfish	355	287	387	AA	
flothead chub	138	109	25	AA	
"	136	105	23	AA	

Seine haul catch

freshwater drum	218	162	115	PA	
flothead chub	123	95	18	AA	
cutthroat minnow	88	69	6	AA	"voucher B"
flothead chub	85	67	6	AA	"
"	72	60	4	AA	"
"	68	54	3	AA	"
"	75	58	4	AA	"
"	76	59	4	AA	"
"	69	55	3	AA	"
"	76	58	3	AA	"
goldeye	71	57	3	AA	"
"	55	46	1	AA	"
"	46	37	1	AA	"
"	46	37	1	AA	"
"	45	37	1	AA	"
white sucker	50	42	1	AA	"
river carp sucker	35	27	1	AA	"
channel catfish	27	22	1 total	AA	" 5
juvenile carp	32	24	1	AA	"
channel catfish	29	23	1		
flothead chub	73	57	3		1

PASS 2

Fish Species

1. Study Unit YELL2. Date 02-28-98
Month Day YearPage 2 of 23. Station Name Yellowstone Sidley 4. Station Identification Number 063295005. Investigators Riggs, Deweese, Peterson, Brighton, Quinn6. Taxonomic Specialist Deweese 7. Sampling gear code

SPECIES	TOTAL LENGTH	STANDARD LENGTH	WEIGHT	ANOMALIES	NUMBER
Flathead chub			176	AA	36
Unknown minnow	22	22	41	AA	1
goldeye	54	48	3	AA	
sauger *	312	256	198	AA	
" *	277	231	152	AA	
Common carp	508	396	1600	AA	
" "	512	401	1900	AA	
" "	427	336	1100	AA	
	479	373	1500	AA	
	521	411	1900	AA	

* collected for WI district mercury study