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Bureau of Land Management



Data collected throughout the 1981 season on
streams between Delta Junction and the Canada
border not suggested for study by the Biological
Working Group

BLM - ALASKA RESOURCES LIBRARY
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Data collected throughout the 1981 season



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IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1011 E. TUDOR RD.
ANCHORAGE, ALASKA 99503
(907) 276-3800



TN
880.5
E553
1981

January 12, 1982

Lewis Pamplin
Federal Inspector's Office
Pouch 6619
Anchorage, Alaska 99502

Dear Lew:

Enclosed is the data collected throughout the 1981 season on streams between Delta Junction and the Canada border not suggested for study by the Biological Working Group. This will be referred to as Appendix IV in the final report.

Methods are those used for the spring, summer and fall stream surveys and are described in my correspondence of 20 October 1981 that accompanied the fall surveys.

Sincerely,

George V. Elliott
Fisheries Biologist

~~CONFIDENTIAL~~
~~Office of the Federal Inspector~~
~~1000 North Street~~
~~Room 300 Anchorage, Alaska 99501~~

ARLIS
Alaska Resources Library & Information Services
Library Building, Suite 111
3211 Providence Drive
Anchorage, AK 99508-4614

By _____ Waterbody Granite Creek
Date 1981 EMG-RX # 099-1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks See previous spring surveys.
17 July - No flow at AK. hwy. photos taken
of several "channels" in area - Elliott
13 August - No flow at AK hwy. - Kay & Johnson
28 August - No flow at AK. hwy. - Kay & Johnson
8 September - No flow at AK. hwy. - Bach & McDonnell
22 September - No flow at AK. hwy. - Bach & Johnson
15 October - No flow at AK. hwy. - Elliott & Breyman



7/17/81 - Granite Creek? (RX 099-1) looking upstream from Haines pipeline right-of-way. "Channel" is cleared by a bulldozer. Box culvert at AHMP 1409.4.



7/17/81 - Granite Creek? (RX 099-1) looking downstream from Haines pipeline right-of-way. Bulldozer clearing continued.



7/17/81 - Granite Creek? (RX 099-1) looking upstream from Haines pipeline right-of-way. "Channel" is cleared by a bulldozer. CMP at AHMP 1409.2.



7/17/81 - Granite Creek? (RX 099-1) looking downstream from Haines pipeline right-of-way. No apparent channel.

By _____ Waterbody Rhoads Creek
Date 1981 EMG-RX # 100-1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks See previous spring surveys
17 July - No flow at AK. hwy - photos
taken of several "channels" in area - Elliott
13 August - No flow at AK. hwy - King & Johnson
28 August - No flow at AK. hwy - King & Johnson
8 September - No flow at AK. hwy - Bach & McDowell
22 September - No flow at AK hwy - Bach & Johnson
15 October - No flow at AK. hwy - Elliott & Bryman



7/17/81 - Rhoads Creek? (RX 100-1) looking upstream from Haines pipeline right-of-way. CMP at AHMP 1408.0 just northeast of side road.



7/17/81 - Rhoads Creek? (RX 100-1) looking downstream from Haines pipeline right-of-way.



7/17/81 - Rhoads Creek? (RX 100-1) looking upstream from Haines pipeline right-of-way toward Alaska highway. "Channel" is cleared by a bulldozer. CMP 420 ft northwest of CMP at AHMP 1407.6.



7/17/81 - Rhoads Creek? (RX 100-1) looking downstream from Haines pipeline right-of-way. No apparent channel.



7/17/81 - Rhoads Creek? (RX 100-1) looking upstream from Haines pipeline right-of-way toward Alaska highway. "Channel" is a bulldozer track. CMP at AHMP 1407.6



7/17/81 - Rhoads Creek? (RX 100-1) looking downstream from Haines pipeline right-of-way. No apparent channel.



5/7/81 - Sawmill Creek (RX 100-2) looking upstream about 5 mi above Alaska highway.

By _____ Waterbody Sawmill Creek
Date 1981 EMG-RX # 100-2
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks See previous spring surveys

17 July - No flow at AK. hwy. - Elliott
13 August - No flow at AK. hwy. - Kay & Johnson
28 August - No flow at AK. hwy. - Kay & Johnson
8 September - No flow at AK. hwy. - Bach & McDonnell
22 September - No flow at AK. hwy. - Bach & Johnson
15 October - No flow at AK. hwy. - Elliott & Brayman

By Elliott Bach & McDonnell Waterbody Geostle River

Waterbody Gerstle River

Date: 11 September 1981

EMG-RX # 102-1

Section Surveyed From AK Hwy. upstream for about 1000ft.

Fish present/Use None seen or captured

Gear/Effort Electroshocker / 1000 ft

[illegible]

By Bach & JohnsonWaterbody Geestle RiverDate 22 September 1981EMG-RX # 102-1Transect Location 750 ft. upstream from Ak. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 5	0	0				
6	.4	1.3	.65	.2	1	.13
9	.75	2.1	1.7	.575	3	2.93
12	.9	2.7	2.4	.825	3	5.94
15	1.0	2.7	2.7	.95	3	7.70
18	1.0	4.2	3.45	1.0	3	10.35
21	1.3	4.8	4.5	1.15	3	15.53
24	1.3	4.5	4.65	1.3	3	18.14
27	1.2	4.5	4.5	1.25	3	16.88
30	1.2	3.6	4.05	1.2	3	14.58
33	1.1	3.7	3.65	1.15	3	12.59
36	1.1	3.0	3.35	1.1	3	11.06
39	1.0	3.9	3.45	1.05	3	10.87
42	.8	2.45	3.175	.9	3	8.57
45	.7	2.3	2.375	.75	3	5.34
48	.6	1.95	2.125	.65	3	4.14
RBWE 51	.3	.85	1.4	.45	3	1.89

Calculations checked by GEDischarge 146.6 cfsDischarge _____ m³/s

Tw = 3°C

By Bach & Johnson

Waterbody Geostle River

Date 22 September-1981

EMG-RX # 102-1

Section Surveyed About 300ft of side channels above hwy.

Fish present/Use None captured or seen

Gear/Effort Electroshocker / 300 ft.

[illegible]

By JohnsonWaterbody Little Gerstle RiverDate 16 July 1981EMG-RX # 103-2Transect Location 300ft. downstream from AK hwy

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 5	0	0				
			.65	.25	2	.33
7	.5	1.3				
			1.55	.875	2	2.71
9	1.25	1.8				
			2.45	1.4	2	6.86
11	1.55	3.1				
			3.2	1.575	2	10.08
13	1.6	3.3				
			3.85	1.625	2	12.51
15	1.65	4.4				
			3.8	1.7	2	12.92
17	1.75	3.2				
			3.7	1.625	2	12.03
19	1.5	4.2				
			3.7	1.425	2	10.55
21	1.35	3.2				
			2.4	1.425	2	6.84
23	1.5	1.6				
			2.05	1.3	2	5.33
25	1.1	2.5				
			2.25	1.05	2	4.73
27	1.0	2.0				
			1.8	.9	2	3.24
29	.8	1.6				
			1.6	.75	2	2.40
31	.7	1.6				
			1.275	.55	2	1.40
33	.4	.95				
			.65	.45	2	.59
35	.5	.35				
			.175	.25	2.6	.11
RBWE 37.6	0	0				

Calculations checked by GE Discharge 92.6 cfsDischarge _____ m³/s

By Elliott & KayWaterbody Little Geistle RiverDate: 16 July 1981EMG-RX # 103-2Section Surveyed mouth of Tanana River to AK HwyFish present/Use GR, CN, BB, RW, LS, LC / rearingGear/Effort Electroshocker / about 1 mi.

Tw = 13°C

Species	Length	Remarks
GR	71 mm	
"	63	
"	53	
"	56	
"	59	
"	65	
"	58	
"	57	
"	68	
"	46	
"	57	
"	58	
CN	53	
"	61	
"	53	
"	41	
"	72	
"	61	
BB	200 mm	
"	190	

By Elliot & KayWaterbody Little Geistle RiverDate 16 July 1981EMG-RX # 103-2Section Surveyed continued - 2 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
BB	407 mm	
"	304	
"	210	
"	203	
"	278	
"	430	
RW	43 mm	
"	44	
"	47	
"	48	
"	48	
"	41	
"	50	
"	85	
"	67	
"	50	
LS	132 mm	
"	167	
"	67	
"	362	

By Elliott & Kay

Waterbody Little Gensle River

Date: 16 July 1981

EMG-RX # 103-2

Section Surveyed continued 3 of 3

Fish present/Use _____

Gear/Effort

[illegible]

By Kay & JohnsonWaterbody Little Gentle RiverDate 17 July 1981EMG-RX # 103-2Section Surveyed AK. hwy upstream about 1/2 mi.Fish present/Use GR, CN, BB, RW, LS, LC / rearingGear/Effort Electroshocker / about 1/2 mi.

Tw = 12.5°C

Species	Length	Remarks
GR	24 mm	-sampled for identification
GR	98 mm	-verified as GR fry 8/18/81
	103	GE
	303	
	66	
	54	
	69	
	63	
	55	
	56	
	71	
	55	
	84	
	63	
	58	
	60	
	74	
	59	
	56	
	64	

By Kay & JohnsonWaterbody Little Gentle RiverDate 17 July 1981EMG-RX # 103-2Section Surveyed Continued - 2 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	55mm	
"	61	
"	55	
"	67	
"	58	
"	63	
CN	54mm	- many CN seen but not captured.
"	57	
BB	353mm	
RW	86mm	
"	101	
"	120	
"	57	
"	51	
"	55	
LS	140mm	
"	96	
"	346	
"	104	
"	67	

By Kay E. Johnson

Waterbody Little Giessele River

Date 17 July 1981

EMG-RX # 103-2

Section Surveyed Continued - 3 of 3

Fish present/Use _____

Gear/Effort

[illegible]

By Kay & JohnsonWaterbody Little Gerstle RiverDate 30 July 1981EMG-RX # 103-2Transect Location 150ft. downstream from A.K. Hwy

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 15	0	0				
			1.3	.45	2	1.17
17	.9	2.6	2.55	1.15	2	5.87
19	1.4	2.5	3.3	1.45	3	14.36
22	1.5	4.1	4.05	1.6	3	19.44
25	1.7	4.0	4.15	1.75	3	21.79
28	1.8	4.3	4.55	1.75	3	23.89
31	1.7	4.8	5.0	1.65	3	24.75
34	1.6	5.2	4.35	1.55	3	20.23
37	1.5	3.5	3.4	1.5	3	15.30
40	1.5	3.3	2.85	1.4	3	11.97
43	1.3	2.4	2.35	1.15	3	8.11
46	1.0	2.3	2.55	.85	3	6.50
49	.7	2.8	2.25	.65	3	4.39
52	.6	1.7	1.6	.45	3	2.16
55	.3	1.5	.75	.15	5	.56
RBWE 60	0	0				

Calculations checked by GEDischarge 180.5 cfsDischarge _____ m³/s

By Kay E. Johnson

Waterbody Little Gentle River

Date 30 July 1981

EMG-RX # 103-2

Section Surveyed mouth at Tamana River to 500ft above Ak. hwy.

Fish present/Use GR, CN, BB, RW, LS, HW / rearing, migration

Gear/Effort Electroshocker / about 1 mi.

Species	Length	Remarks
GR	73 mm	
"	110	
"	58	
"	115	
"	96	
"	81	
"	97	
"	95	
"	90	
"	87	
"	60	
"	58	
"	81	
"	61	
"	78	
"	87	
"	77	
"	71	
"	63	
"	111	

By Kay E. JohnsonWaterbody Little Gestle RiverDate 30 July 1981EMG-RX # 103-2Section Surveyed Continued - 2 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	42 mm	
"	44	
"	45	
"	72	
"	58	
"	52	
"	55	
"	52	
"	65	
BB	185 mm	
RW	57 mm	
"	60	
"	58	
LS	122 mm	
"	114	
"	328	
"	305	
"	253	
"	210	
"	288	

By Kay & Johnson

Waterbody Little Gestle River

Date 30 July 1981

EMG-RX # 103-2

Section Surveyed continued - 3 of 3

Fish present/Use _____

Gear/Effort

[illegible]

By Kay & JohnsonWaterbody Little Gerstle RiverDate 12 August 1981EMG-RX # 103-2Transect Location NWA alignment

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 5.5	0	0				
			.1	.45	2.5	.11
8	.9	.2	1.2	.95	3	3.42
11	1.0	2.2	2.45	1.15	3	8.45
14	1.3	2.7	2.85	1.3	3	11.12
17	1.3	3.0	3.15	1.3	3	12.29
20	1.3	3.3	3.35	1.25	3	12.56
23	1.2	3.4	3.1	1.2	3	11.16
26	1.2	2.8	2.6	1.15	3	8.97
29	1.1	2.4	2.1	1.0	3	6.30
32	.9	1.8	1.5	.75	3	3.38
35	.6	1.2	1.25	.5	3	1.88
38	.4	1.3	.65	.2	5	.65
RBWE 43	0	0				

Calculations checked by GEDischarge 80.3 cfs $T_w = 10^\circ\text{C}$ Discharge _____ m^3/s

By Elliot Johnson & KayWaterbody Little Gestle RiverDate 12 August 1981EMG-RX # 103-2Section Surveyed from 3/4 mi below to 1/2 mi above AK. hwy.Fish present/Use GR, CN, BB, RW, LS, LC, HW / feeding, migration?Gear/Effort Electroshocker / 1 1/4 mi

Species	Length	Remarks
GR	50mm	- all from below AK. hwy.
"	48	
"	60	
"	69	
"	71	
"	51	
"	100	
"	51	
"	59	
"	51	
"	80	
"	63	
"	65	
"	58	
"	64	
"	58	
"	81	
"	63	
"	59	
"	53	

By Elliott Johnson & KayWaterbody Little Gault RiverDate 12 August 1981EMG-RX # 108-2Section Surveyed continued - 2 of 7

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	40mm	- all from below AK Hwy.
"	72	
"	58	
"	50	
"	49	
"	107	
"	73	
"	67	
CN	68mm	
"	48	
"	47	
"	59	
"	76	
"	65	
"	47	
"	49	
"	44	
"	54	
"	62	
"	53	

By Elliott Johnson & KayWaterbody Little Gastle RiverDate 12 August 1981EMG-RX # 103-2Section Surveyed continued - 3 of 7

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	56mm	- all from below Ak. hwy.
"	59	
"	67	
"	52	
"	54	
"	66	
"	59	
"	69	
"	61	
"	92	
"	60	
"	61	
"	53	
BB	405mm	
"	204	
"	364	
"	582	
"	300	
RW	65mm	
"	51	

By Elliot Johnson & KayWaterbody Little Gentle RiverDate 12 August 1981EMG-RX # 103-2Section Surveyed continued - 4 of 7

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
RW	73mm	- all from below AK. hwy.
"	57	
"	132	
"	128	
"	71	
"	65	
"	127	
"	61	
"	130	
"	109	
"	69	
"	63	
"	65	
"	115	
LS	102mm	
"	72	
"	73	
"	70	
"	121	
"	335	

By Elliott Johnson & KayWaterbody Little Genesee RiverDate 12 August 1981EMG-RX # 103-2

Section Surveyed

continued - 5 of 7

Fish present/Use

Gear/Effort

Species	Length	Remarks
LS	309 mm	
"	80	
"	78	
"	78	
"	97	
"	93	
"	121	
"	130	
"	295	
LC	65 mm	
"	87	
"	52	
"	50	
"	60	
"	54	
"	82	
"	102	- from below AK Hwy
GR	114 mm	- from above AK Hwy
"	57	

By Elliott Johnson & KayWaterbody Little Gestle RiverDate 12 August 1981EMG-RX # 103-2Section Surveyed continued - 6 of 7

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	91 mm	- all from above AK Hwy.
"	121	
"	77	
"	96	
"	84	
"	63	
"	69	
"	92	
"	79	
"	83	
"	89	
"	109	- one adult-sized GR seen but
CN	80 mm	not captured ~ 1/2 mi above
"	55	AK Hwy.
"	57	
"	58	
"	78	
"	61	
"	58	
BB	275 mm	

By Elliott Johnson & KayWaterbody Little Gestle RiverDate 12 August 1981EMG-RX # 103-2Section Surveyed continued - 7 of 7

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
RW	114mm	- all from above Ak. Hwy.
"	92	
"	89	
LS	147mm	
"	79	
"	66	
"	86	
"	270	
"	157	
"	116	
"	95	
"	136	
"	106	
"	157	
HW	372mm	

By Kay & JohnsonWaterbody Little Gerstle RiverDate 27 August 1981EMG-RX # 103-2Transect Location 200 ft downstream from Ak. Hwy.

(LB/RB orientation facing upstream)

 $T_w = 13^\circ\text{C}$

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 6	0	0				
			.5	.575	3	.86
9	1.15	1.0	1.45	1.275	2	3.70
11	1.4	1.9	2.35	1.4	2	6.58
13	1.4	2.8	3.05	1.45	2	8.85
15	1.5	3.3	3.5	1.4	2	9.80
17	1.3	3.7	3.6	1.3	2	9.36
19	1.3	3.5	3.6	1.35	2	9.72
21	1.4	3.7	3.55	1.3	2	9.23
23	1.2	3.4	2.85	1.15	2	6.56
25	1.1	2.3	2.2	1.1	2	4.84
27	1.1	2.1	1.8	.975	3	5.27
30	.85	1.5	1.4	.725	3	3.05
33	.6	1.3	1.1	.55	3	1.82
36	.5	.9	.45	.25	4	.45
RBWE 40	0	0				

Calculations checked by GE Discharge 80.1 cfsDischarge _____ m^3/s

By Kay & Johnson

Waterbody Little Gestle River

Date 27 August 1981

EMG-RX # 103-2

Section Surveyed From mouth to about 1/2 mi above Ak. hwy.

Fish present/Use RW, GB, CN, LS, LC, BB, NP / Rearing

Gear/Effort Electroshocker / about 1 1/2 mi

Species	Length	Remarks
RW	82mm	-All from below hwy.
"	111	
"	240	
"	67	
"	70	
"	73	
"	133	
"	192	
"	133	
"	78	
"	67	
"	90	
"	52	
"	83	
"	62	
"	154	
"	245	
"	253	
"	56	
"	80	

By Kay & JohnsonWaterbody Little Gerstle RiverDate 27 August 1981EMG-RX # 103-2Section Surveyed Continued - 2 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
RW	67 mm	- All from below hwy.
"	250	
"	61	
"	64	
"	145	
"	174	
"	54	
"	90	
GR	52 mm	
"	66	
"	131	
"	51	
"	59	
"	62	
"	54	
"	55	
"	118	
"	110	
"	79	
"	48	

By Kay E. Johnson

Waterbody Little Geesle River

Date 27 August 1981

EMG-RX # 103-2

Section Surveyed Continued - 3 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	116mm	- All from below buoy.
"	58	
"	61	
"	80	
"	78	
"	105	
"	83	
"	61	
"	89	
"	53	
"	81	
"	75	
"	79	
"	48	
"	78	
"	102	
"	244	
"	55	
"	107	
"	109	

By Kay & Johnson

Waterbody Little Geestle River

Date 27 August 1981

EMG-RX # 103-2

Section Surveyed Continued - 4 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	113 mm	- All from below hwy.
"	56	
CN	51 mm	
"	91	
"	100	
"	65	
LS	115 mm	
"	83	
"	86	
"	141	
"	81	
"	113	
"	161	
"	130	
"	121	
"	81	
"	159	
"	95	
"	113	
"	267	

By Kay Johnson

Waterbody Little Geestle River

Date 27 August 1981

EMG-RX # 103-2

Section Surveyed Continued - 5 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
LS	122 mm	- All from below hwy.
"	362	
"	83	
"	366	
"	85	
"	74	
"	180	
"	166	
"	118	
"	355	
LC	72 mm	
"	63	
"	87	
"	64	
"	82	
"	64	
"	67	
"	56	
"	72	
"	63	

By Kay E. JohnsonWaterbody Little Gerstle RiverDate 27 August 1981EMG-RX # 103-2Section Surveyed Continued - 6 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
LC	59 mm	
"	64	
"	66	
"	51	
"	62	
"	63	
"	57	
"	49	
"	52	
"	44	
"	50	
BB	205 mm	
"	186	
"	118	- From below AK hwy
GR	77 mm	- From above AK hwy
"	65	
"	390	
"	83	
"	75	

By Kay E. Johnson

Waterbody Little Gerstle River

Date 27 August 1981

EMG-RX # 103-2

Section Surveyed

Continued - 7 of 8

Fish present/Use

Gear/Effort

Species	Length	Remarks
GR	70 mm	- All from above hwy.
"	69	
"	63	
"	64	
"	72	
"	118	
"	53	
"	92	
"	97	
"	61	
"	48	
"	76	
"	52	
"	104	
"	161	
"	116	
"	81	
LS	106 mm	
"	69	
"	102	

By Kay & Johnson

Waterbody Little Geasle River

Date: 27 August 1981

EMG-RX # 103-2

Section Surveyed

Continued - 8 of 8

Fish present/Use

Gear/Effort

[illegible]

By Bach & McDonnellWaterbody Little Gerstle RiverDate 9 September 1981EMG-RX # 103-2Transect Location 225 ft. downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 4.2	0	0				
7	.45	.8	.4	.225	2.8	.25
10	.6	1.4	1.1	.525	3	1.73
13	.9	2.1	1.75	.75	3	3.94
16	.65	2.15	2.125	.775	3	4.94
19	.65	2.1	2.125	.65	3	4.14
22	.65	2.05	2.075	.65	3	4.05
25	.6	2.05	2.05	.625	3	3.84
28	.5	1.7	1.875	.55	3	3.09
31	.5	1.2	1.45	.5	3	2.18
34	.45	1.35	1.275	.475	3	1.82
37	.5	1.35	1.35	.475	3	1.92
40	.6	1.65	1.5	.55	3	2.48
43	.6	1.65	1.65	.6	3	2.97
46	.3	.75	1.2	.45	3	1.62
48	.1	.3	.525	.2	2	.21
RBWE 50.9	0	0	.15	.05	2.9	.02

Calculations checked by GE Discharge 39.2 cfsDischarge _____ m³/s

Tw = 6°C

Cond = 200 μ mhos

pH = 7.8

DO = 10 ppm

color = slightly glacial

By McDonnell & Bach

Waterbody Little Gerstle River

Date 9 September 1981

EMG-RX # 103-2

Section Surveyed Mouth at Tanana R. to NWA alignment

Fish present/Use GR, RW, CN /rearing

Gear/Effort Electroshocker / about 1 mi.

Species	Length	Remarks
GR	132 mm	
"	110	
"	234	
"	109	
"	119	
"	293	
"	238	
"	90	
"	180	
"	255	
"	191	
"	233	
"	348	
"	200	
"	329	
"	225	
"	235	
"	260	
"	250	
"	199	

By McDonnell & Bach

Waterbody Little Gestle River

Date: 9 September 1981

EMG-RX # 103-2

Section Surveyed

continued- 2 of 2

Fish present/Use

Gear/Effort

[illegible]

By Elliott, McDonnell & Bach

Waterbody Little Gerstle River

Date 10 September 1981

EMG-RX # 103-2

Section Surveyed From Akhwy. to about 1/2 mi. upstream

Fish present/Use GR, RW, BB, LS, CN /tearing

Gear/Effort Electroshocker / 1/2 mi.

Species	Length	Remarks
GR	284 mm	
"	250	
"	249	
"	245	
"	231	
"	218	
"	86	
"	73	
"	69	
"	58	
"	58	
"	55	
RW	247 mm	
BB	205 mm	
LS	112 mm	
CN	54 mm	

By Bark & JohnsonWaterbody Little Gerstle RiverDate 22 September 1981EMG-RX # 103-2Transect Location 250 ft. downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.5	0	0				
4	.4	.65	.325	.2	2.5	.16
7	.6	1.25	.95	.5	3	1.43
10	.8	1.75	1.5	.7	3	3.15
13	.7	2.1	1.925	.75	3	4.33
16	.7	2.2	2.15	.7	3	4.52
19	.7	1.75	1.975	.7	3	4.15
22	.55	1.5	1.625	.625	3	3.05
25	.5	1.5	1.5	.525	3	2.36
28	.45	1.25	1.375	.475	3	1.96
31	.4	.95	1.1	.425	3	1.40
34	.45	1.2	1.075	.425	3	1.37
37	.6	1.55	1.375	.525	3	2.17
40	.5	1.4	1.475	.55	3	2.43
43	.3	.6	1.0	.4	3	1.20
46	0	0	.3	.15	3	.14
RBWE						

Calculations checked by GE Discharge 33.8 cfsDischarge m³/s

Tw = 3.5°C, water clear

By Bach & JohnsonWaterbody Little Gerstle RiverDate 22 September 1981EMG-RX # 103-2Section Surveyed mouth at Tanana River to AK. hwy.Fish present/Use LS, BB, RW, GR, CN / rearingGear/Effort Electroshocker / about 1 mi.

Species	Length	Remarks
LS	139mm	
"	81	
"	159	
"	64	
BB	228	
"	237	
"	333	
"	327	
"	235	
"	230	
"	222	
"	328	
RW	80mm	
"	87	
"	79	
"	133	
"	89	
"	128	
"	127	
"	129	

By Bach & JohnsonWaterbody Little Gestle RiverDate 22 September 1981EMG-RX # 103-2Section Surveyed continued - 2 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
RW	130 mm	
"	140	
CN	93 mm	
GR	105 mm	
"	63	
"	119	
"	231	
"	110	
"	115	
"	120	
"	109	
"	125	
"	112	
"	142	
"	190	
"	64	
"	70	
"	65	
"	103	
"	252	

By Bach & Johnson

Waterbody Little Gerstle River

Date 22 September 1981

EMG-RX # 103-2

Section Surveyed

continued - 3 of 5

Fish present/Use

Gear/Effort

Species	Length	Remarks
GR	223mm	
"	235	
"	115	
"	123	
"	82	
"	125	
"	108	
"	102	
"	105	
"	118	
"	77	
"	105	
"	127	
"	110	
"	104	
"	63	
"	97	
"	112	
"	102	
"	95	

By Bach & Johnson

Waterbody Little Gerstle River

Date 22 September 1981

EMG-RX # 103-2

Section Surveyed continued - 4 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	110 mm	
"	99	
"	110	
"	86	
"	104	
"	110	
"	105	
"	104	
"	102	
"	103	
"	102	
"	119	
"	120	
"	129	
"	110	
"	124	
"	255	
"	118	
"	100	
"	251	

By Bach & Johnson

Waterbody Little Gerstle River

Date 22 September 1981

EMG-RX # 103-2

Section Surveyed continued - 5 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	96mm	
"	102	
"	100	
"	110	
"	255	
"	137	
"	289	
"	103	
"	77	
"	319	
"	254	
"	106	
"	106	
"	250	
"	107	
"	125	
"	75	
"	99	
"	110	
"	108	
"	103	
"	94	

By Bach & JohnsonWaterbody Little Gerstle RiverDate 23 September 1981EMG-RX # 103-2Section Surveyed From AK hwy to about 1/2 mi. upstreamFish present/Use GR, RW, BB, CN / FearingGear/Effort Electroshocker /

Tw = 1°C

Species	Length	Remarks
GR	176mm	
"	254	
"	234	
"	232	
"	226	
"	228	
"	306	
"	188	
"	265	
"	231	
"	249	
"	240	
"	280	
"	294	
"	251	
"	249	
"	113	
"	238	
"	104	
"	102	

By Bach & Johnson

Waterbody Little Gestle River

Date 23 September 1981

EMG-RX # 103-2

Section Surveyed continued - 2 of 9

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	109mm	
"	110	
"	84	
"	106	
"	82	
"	86	
"	105	
"	95	
"	116	
"	88	
"	114	
"	115	
"	106	
"	112	
"	106	
"	102	
"	109	
"	110	
"	81	
"	110	

By Bach & Johnson

Waterbody Little Gestle River

Date 23 September 1981

EMG-RX # 103-2

Section Surveyed Continued - 3 of 9

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	108mm	
"	121	
"	115	
"	116	
"	99	
"	114	
"	112	
"	115	
"	121	
"	104	
"	109	
"	115	
"	118	
"	81	
"	99	
"	87	
"	238	
"	126	
"	100	
"	109	

By Bach & Johnson

Waterbody Little Gestle River

Date 23 September 1981

EMG-RX # 103-2

Section Surveyed continued - 4 of 9

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	120 mm	
"	116	
"	108	
"	122	
"	110	
"	104	
"	110	
"	106	
"	118	
"	104	
"	73	
"	104	
"	110	
"	80	
"	115	
"	129	
"	101	
"	112	
"	110	
"	125	

By Bach & Johnson

Waterbody Little Geostle River

Date 23 September 1981

EMG-RX # 103-2

Section Surveyed

continued - 5 of 9

Fish present/Use

Gear/Effort

Species	Length	Remarks
GR	119 mm	
"	105	
"	120	
"	100	
"	214	
"	61	
"	121	
"	122	
"	111	
"	69	
"	120	
"	128	
"	99	
"	105	
"	66	
"	64	
"	72	
"	114	
"	115	
"	109	

By Bach & Johnson

Waterbody Little Gerstle River

Date 23 September 1981

EMG-RX # 103-2

Section Surveyed

continued - 6 of 9

Fish present/Use

Gear/Effort

Species	Length	Remarks
GR	79 mm	
"	66	
"	110	
"	108	
"	100	
"	82	
"	72	
"	101	
"	100	
"	74	
"	115	
"	100	
"	112	
"	104	
"	80	
"	115	
"	110	
"	111	
"	115	
"	211	

By Bach & Johnson

Waterbody Little Geesle River

Date 23 September 1981

EMG-RX # 103-2

Section Surveyed continued - 7 of 9

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	112 mm	
"	110	
"	109	
"	122	
"	104	
"	105	
"	106	
"	95	
"	114	
"	103	
"	72	
"	76	
"	101	
"	86	
"	62	
"	82	
"	98	
"	76	
"	105	
"	106	

By Bach & Johnson

Waterbody Little Gestle River

Date 23 September 1981

EMG-RX # 103-2

Section Surveyed

continued - 8 of 9

Fish present/Use

Gear/Effort

Species	Length	Remarks
GR	81mm	
"	61	
"	65	
"	80	
"	70	
"	82	
"	65	
"	63	
"	75	
"	74	
"	104	
"	71	
"	70	
"	69	
"	81	
"	71	
"	65	
"	76	
"	63	
"	63	

By Bach & Johnson

Waterbody Little Gerstle River

Date 23 September 1981

EMG-RX # 103-2

Section Surveyed continued - 9 of 9

Fish present/Use

Gear/Effort

[illegible]

By Elliott & Breyman

Waterbody Little Gerstle River

Date 15 October 1981

EMG-RX # 103-2

Section Surveyed From AK. hwy. to 1/2 mi. upstream

Fish present/Use None seen or captured

Gear/Effort Electroshocker

[illegible]



4/24/81 - Johnson River (RX 104-1) looking upstream above NWA alignment.



4/24/81 - Johnson River (RX 104-1) looking upstream about 3000 ft above Alaska highway (left-center in above photo).



4/24/81 - Johnson River (RX 104-1) looking downstream from Alaska highway.



7/17/81 - Johnson River (RX 104-1) looking upstream from Alaska highway bridge.

By Elliott, Bach & McDonnell Waterbody Johnson River

Waterbody Johnson River

Date: 11 September 1981

EMG-RX # 104-1

Section Surveyed From AK hwy upstream for about 1000ft.

Fish present/Use LC / Feeding

Gear/Effort Electro shocker/ 2000 ft (2 channels)

[illegible]

By Elliott & Breyman

Waterbody Johnson River

Date 15 October 1981

EMG-RX # 104-1

Section Surveyed From 200ft. below hwy. to NWA alignment

Fish present/Use GR, LC, CN / Rearing

Gear/Effort Electroshockers / about 1200 ft.

$$T_w = 3.5^\circ\text{C}$$
[illegible]

By Elliott & BreymanWaterbody Johnson RiverDate 17 October 1981EMG-RX # 104-1Transect Location 200 ft. upstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 8	0	0				
	18	.75	.45	.375	10	1.7
	24	1.4	1.3	1.075	6	8.4
	27	1.8	2.0	1.6	3	9.6
	30	2.0	2.65	1.9	3	15.1
	34	1.5	3.1	1.75	4	21.7
	40	.9	3.45	1.2	6	24.8
	46	1.0	3.6	.95	6	20.5
	52	1.3	3.65	1.15	6	25.2
	58	1.3	3.9	1.3	6	30.4
	64	1.3	3.9	1.3	6	30.4
	70	1.4	3.8	1.35	6	30.8
	75	1.6	3.75	1.5	5	28.1
	80	1.2	3.35	1.4	5	23.5
			1.5	.6	6	5.4
RBWE 86	0	0				

Calculations checked by GE Discharge 275.6 cfsDischarge _____ m³/s

By G. Elliott

Waterbody Dry Creek

Date 29 April 1981

EMG-RX # 105-1

Site Access Alaska highway

Color/Turbidity	Temperature
-----------------	-------------

D.O.

pH

Conductivity

Bottom Type

Wetted width	Depth	Gradient
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Banks/Soils

Aquatic Vegetation	Cover
1. <i>Hydrilla</i>	100
2. <i>Elodea</i>	100
3. <i>Chara</i>	100
4. <i>Utricularia</i>	100
5. <i>Sparganium</i>	100
6. <i>Najas</i>	100
7. <i>Cladophora</i>	100
8. <i>Valoniopsis</i>	100
9. <i>Salvinia</i>	100
10. <i>Wolffia</i>	100
11. <i>Scenedesmus</i>	100
12. <i>Chlorella</i>	100
13. <i>Microcystis</i>	100
14. <i>Cylindrocapsa</i>	100
15. <i>Microcystis</i>	100
16. <i>Microcystis</i>	100
17. <i>Microcystis</i>	100
18. <i>Microcystis</i>	100
19. <i>Microcystis</i>	100
20. <i>Microcystis</i>	100
21. <i>Microcystis</i>	100
22. <i>Microcystis</i>	100
23. <i>Microcystis</i>	100
24. <i>Microcystis</i>	100
25. <i>Microcystis</i>	100
26. <i>Microcystis</i>	100
27. <i>Microcystis</i>	100
28. <i>Microcystis</i>	100
29. <i>Microcystis</i>	100
30. <i>Microcystis</i>	100
31. <i>Microcystis</i>	100
32. <i>Microcystis</i>	100
33. <i>Microcystis</i>	100
34. <i>Microcystis</i>	100
35. <i>Microcystis</i>	100
36. <i>Microcystis</i>	100
37. <i>Microcystis</i>	100
38. <i>Microcystis</i>	100
39. <i>Microcystis</i>	100
40. <i>Microcystis</i>	100
41. <i>Microcystis</i>	100
42. <i>Microcystis</i>	100
43. <i>Microcystis</i>	100
44. <i>Microcystis</i>	100
45. <i>Microcystis</i>	100
46. <i>Microcystis</i>	100
47. <i>Microcystis</i>	100
48. <i>Microcystis</i>	100
49. <i>Microcystis</i>	100
50. <i>Microcystis</i>	100
51. <i>Microcystis</i>	100
52. <i>Microcystis</i>	100
53. <i>Microcystis</i>	100
54. <i>Microcystis</i>	100
55. <i>Microcystis</i>	100
56. <i>Microcystis</i>	100
57. <i>Microcystis</i>	100
58. <i>Microcystis</i>	100
59. <i>Microcystis</i>	100
60. <i>Microcystis</i>	100
61. <i>Microcystis</i>	100
62. <i>Microcystis</i>	100
63. <i>Microcystis</i>	100
64. <i>Microcystis</i>	100
65. <i>Microcystis</i>	100
66. <i>Microcystis</i>	100
67. <i>Microcystis</i>	100
68. <i>Microcystis</i>	100
69. <i>Microcystis</i>	100
70. <i>Microcystis</i>	100
71. <i>Microcystis</i>	100
72. <i>Microcystis</i>	100
73. <i>Microcystis</i>	100
74. <i>Microcystis</i>	100
75. <i>Microcystis</i>	100
76. <i>Microcystis</i>	100
77. <i>Microcystis</i>	100
78. <i>Microcystis</i>	100
79. <i>Microcystis</i>	100
80. <i>Microcystis</i>	100
81. <i>Microcystis</i>	100
82. <i>Microcystis</i>	100
83. <i>Microcystis</i>	100
84. <i>Microcystis</i>	100
85. <i>Microcystis</i>	100
86. <i>Microcystis</i>	100
87. <i>Microcystis</i>	100
88. <i>Microcystis</i>	100
89. <i>Microcystis</i>	100
90. <i>Microcystis</i>	100
91. <i>Microcystis</i>	100
92. <i>Microcystis</i>	100
93. <i>Microcystis</i>	100
94. <i>Microcystis</i>	100
95. <i>Microcystis</i>	100
96. <i>Microcystis</i>	100
97. <i>Microcystis</i>	100
98. <i>Microcystis</i>	100
99. <i>Microcystis</i>	100
100. <i>Microcystis</i>	100

Riparian Vegetation

Barriers

Drainage Structures/Conditions

Ice Conditions

Weather

Photographs

Remarks No flow at Alaska highway

By G. Elliott, P. Bach, J. McDonell Waterbody Dry Creek

Date 5/10/81 EMG-RX # 105-1

Site Access _____

Color/Turbidity brown/moderate Temperature 3°C

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks Visually estimated ca 200 cfs flow at
hwy. bridge

Mark placed on bottom of concrete
abutment beam, SW corner of bridge for
water stage measurements

stage = 4.0 ft below mark

By Elliott, McDonnell, Bach

Waterbody Dry Creek

Date 5/11/81

EMG-RX # 105-1

Site Access _____

Color/Turbidity light brown/clear

Temperature 1.5°C

D.O. _____

pH _____

Conductivity 15 μ mhos

Bottom Type _____

Wetted width _____

Depth _____

Gradient _____

Banks/Soils _____

Aquatic Vegetation _____

Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs 3-4 & 3-6 $\rightarrow$ us from hwy bridge / 3-7 $\rightarrow$ ds from bridge (3-5 blank)

Remarks 0930 - stage = 4.5 ft below mark

1320 stage = 4.4 ft below mark



5/11/81 - Dry Creek (RX 105-1) looking downstream from Alaska highway bridge.



5/11/81 - Dry Creek (RX 105-1) looking upstream from Alaska highway bridge.

By Elliott, McDonnell, Bach

Waterbody Dry Creek

Date 5/13/81 - 1145

EMG-RX # 105-1

Site Access _____

Color/Turbidity light brown / clear Temperature 4°C

D.O. _____ pH _____ Conductivity 21 μ mhos

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

0845 - stage = 5.9 ft below mark $T_{wi} = 2^{\circ}C$
1145 - stage = 6.15 ft below mark - discharge

EMG-RX # 105-1

Transect Location 50 ft upstream from Alaska hwy bridge

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE Discharge 11.8 cfs

Discharge m^3/s

By McDonnell, Bach, Nolke Waterbody Dry Creek

Date 14 May 1981 EMG-RX # 105-1

Transect Location 60 ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.0	0	0				
	6.0	.7	.15	.35	4.0	.21
	7.5	.8	.325	.75	1.5	.37
	9.0	1.2	.325	1.0	1.5	.49
	10.5	1.45	.375	1.325	1.5	.75
	12.0	1.7	.475	1.58	1.5	1.13
	13.5	1.8	.525	1.75	1.5	1.38
	15.0	1.8	.6	1.8	1.5	1.62
	16.0	1.8	.65	1.8	1.0	1.17
	17.0	1.7	.65	1.75	1.0	1.14
	18.0	1.6	.625	1.65	1.0	1.03
	19.0	1.3	.475	1.45	1.0	.69
	20.0	1.2	.275	1.25	1.0	.34
	21.0	.9	.15	1.05	1.0	.16
			.05	.45	1.5	.03
RBWE 22.5	0	0				

Calculations checked by J Ma Discharge 10.5 cfs

Discharge m³/s

Tw = 4.5°C

Stage = 6.1 ft below mark on bridge abutment

6'1"?

By McDonnell & BachWaterbody Dry CreekDate 15 May 1981EMG-RX # 105-1Transect Location 60 ft upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.7	0	0				
			.025	.175	2.3	.01
4.0	.35	.05	.075	1.125	2	.17
6.0	1.9	.1	.125	1.5	1.5	.28
7.5	1.1	.15	.25	1.2	1.5	.45
9.0	1.3	.35	.4	1.35	1.5	.81
10.5	1.4	.45	.5	1.45	1	.73
11.5	1.5	.55	.6	1.5	1	.90
12.5	1.5	.65	.675	1.5	1	1.01
13.5	1.5	.7	.675	1.425	1	.96
14.5	1.35	.65	.5	1.275	1	.64
15.5	1.2	.35	.275	1.05	1	.29
16.5	.9	.2	.125	.9	1	.11
17.5	.9	.05	.025	.45	1.9	.02
RBWE 19.4	0	0				

Calculations checked by GE Discharge 6.4 cfsDischarge _____ m³/s

Tw = 7°C

Conductivity = 21 μ mhos

Stage = 6.5 ft below mark on bridge abutment

No fish observed

By Bach & McDonnellWaterbody Dry CreekDate 19 May 1981EMG-RX # 105-1Transect Location 60 ft upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.5	0	0	0	.25	3.0	0
4.5	.5	0	.005	.575	1.0	.003
5.5	.65	.01	.03	.725	1.5	.03
7.0	.8	.05	.075	.825	1.0	.06
8.0	.85	.1	.15	.85	1.0	.13
9.0	.85	.2	.25	.825	1.0	.21
10.0	.8	.3	.25	.8	.5	.10
10.5	.8	.2	.2	.775	.5	.08
11.0	.75	.2	.125	.725	1.0	.09
12.0	.7	.05	.025	.35	3.2	.03
RBWE 15.2	0	0				

Calculations checked by J Mc Discharge 0.7 cfsDischarge _____ m³/s

Tw = 6°C

Conductivity = 25 μ mhos

Stage = 10.35 ft. below mark on bridge span (= 3.41 ft above mark on abutment - surveyed 7/16/81)

By Bach & McDonellWaterbody Dry CreekDate 28 May 1981EMG-RX # 105-1Transect Location 60 ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1	0	0				
4	1.7	.15	.075	.85	3	.19
7	1.7	.45	.3	1.7	3	1.53
12	1.6	.8	.625	1.65	5	5.16
17	1.9	1.1	.95	1.75	5	8.31
20	2.2	1.4	1.25	2.05	3	7.69
23	2.6	1.5	1.45	2.4	3	10.44
26	3.0	1.7	1.6	2.8	3	13.44
29	3.4	1.6	1.65	3.2	3	15.84
32	3.6	1.8	1.7	3.5	3	17.85
35	3.6	1.2	1.5	3.6	3	16.20
38	3.4	.8	1.0	3.5	3	10.50
			.4	1.7	6	4.08
RBWE 44	0	0				

Calculations checked by JK Discharge 111.2 cfsDischarge m³/s

Tw = 6°C

Conductivity = 20 μ mhos

1907 Stage = 4.24 ft. below mark on abutment (discharge)

1209 Stage = 4.32 ft.

- light steady rain all day 5/25

heavier rain evening 5/27 continued lighter all night

By Bach & McDonnellWaterbody Dry CreekDate 29 May 1981EMG-RX # 105-1Transect Location 250 ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0.6	0	0				
			.1	.85	.9	.08
1.5	1.7	.2	.4	2.9	.5	.58
2.0	4.1	.6	.8	4.0	1.5	4.80
3.5	3.9	1.0	.95	3.75	1.0	3.56
4.5	3.6	.9	.975	3.5	1.5	5.12
6.0	3.4	1.05	1.025	3.3	2.0	6.77
8.0	3.2	1.0	.975	3.05	2.0	5.95
10.0	2.9	.95	.975	2.7	2.0	5.27
12.0	2.5	1.0	1.025	2.35	2.0	4.82
14.0	2.2	1.05	.975	2.05	2.0	4.00
16.0	1.9	.9	.9	1.8	2.0	3.24
18.0	1.7	.9	.9	1.6	2.0	2.88
20.0	1.5	.9	.8	1.35	2.0	2.16
22.0	1.2	.7	.575	1.15	3.0	1.98
25.0	1.1	.45	.35	.8	2.0	.56
27.0	.5	.25	.125	.25	3.0	.09
RBWE 30.0	0	0				

Calculations checked by GE Discharge 51.9 cfsDischarge m³/s

Tw = 10°C

Conductivity = 20 μ mhos

Stage = 4.2 ft. below abutment mark (1630)

(5.2 ft?)



6/22/81 - Dry Creek (RX 105-1) looking upstream from Alaska highway bridge.



6/22/81 - Dry Creek (RX 105-1) looking downstream from Alaska highway bridge.

By McDonnell & Barch

Waterbody Sears Creek

Date 19 May 1980

EMG-RX # 106-1

Site Access On foot from Alaska highway

Color/Turbidity slightly tannic/very slight Temperature 0°C

D.O. 12 ppm pH — Conductivity 41 μ mhos

Bottom Type 90% sand

Wetted width — Depth — Gradient low-moderate

Banks/Soils steep 3-6 ft. /sandy

Aquatic Vegetation None Cover 50%

Riparian Vegetation Alder, spruce

Barriers Major beaver dam 45 ft below hwy possible barrier

Drainage Structures/Conditions bridge at hwy /good

Ice Conditions Some bank & bottom ice in bridge area. Also see reman

Weather Partly cloudy, mild

Photographs 3-14 $\rightarrow$ ds across Napline / 3-15 $\rightarrow$ u.s. across Napline /
3-16 beaver dam below hwy.

Remarks Much beaver activity in area. Ca. 1.5 acre pond above major beaver dam extends above bridge to Napline. Above Napline, boulders form small falls, no barrier. About 300 ft above Napline channel is ice blocked causing water to flow out of channel. Two more beaver dams ca. 60 & 90 ft below major dam.

No fish observed from 1200 ft. above to 3/4 mi below Alaska hwy. Creek contains bottom ice & much bank ice in section ca. 1/4 to 1/2 mi below hwy. At ca. 1/2 mi. below hwy, creek joins a turbid tributary with 10°C water, no bank ice from this point to Johnson Slough. From tributary confluence to Johnson Slough, creek bottom is silty-sand with very little cover.

By McDonnell & BachWaterbody Sears CreekDate 19 May 1981EMG-RX # 106-1Transect Location 50 ft above Napline

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.5	.8	.5				
			.65	.8	1.0	.52
2.5	.8	.8				
			.725	.85	.5	.31
3.0	.9	.65				
			.775	1.0	.5	.39
3.5	1.1	.9				
			1.05	1.2	.5	.63
4.0	1.3	1.2				
			1.35	1.15	.5	.78
4.5	1.0	1.5				
			1.45	.95	.5	.69
5.0	.9	1.4				
			1.3	.825	.5	.54
5.5	.75	1.2				
			1.225	.825	.5	.51
6.0	.9	1.25				
			1.125	1.0	.5	.56
6.5	1.1	1.0				
			.95	1.05	.5	.50
7.0	1.0	.9				
			.825	1.0	1.0	.83
8.0	1.0	.75				
			.6	.95	1.0	.57
RBWE 9.0	.9	.45				

Calculations checked by GE Discharge 6.8 cfsDischarge _____ m³/s



5/19/81 - Sears Creek (RX 106-1) looking upstream across NWA alignment.



5/19/81 - Sears Creek (RX 106-1) looking downstream across NWA alignment.



5/9/81 - Sears Creek (RX 106-1) - beaver dam
just below Alaska highway.

Waterbody Sears Creek

Date: 3 June 1981

EMG-RX # 106-1

Section surveyed ca 1/2 mi below Alaska hwy. (confl. w. sm. slough) upstream for 1500 ft.

Fish present/Use X juv / rearing

Gear/Effort Electroshocker / 1500 ft

[illegible]

By McDonnell & Bach

Waterbody Sears Creek

Date 12 June 1981

EMG-RX # 106-1

Site Access On foot from Alaska highway

Color/Turbidity light brown/slight turbidity Temperature _____

D.O. 13 ppm

pH _____

Conductivity 46 μ mhos

Bottom Type *

Wetted width 8 ft. Depth ca. 1 ft. Gradient *

Banks/Soils *

Aquatic Vegetation * Cover *

Riparian Vegetation *

Barriers *

Drainage Structures/Conditions *

Ice Conditions None - Napline to below hwy

Weather Partly cloudy, warm

Photographs -

Remarks * See previous survey on 19 May 1981

Waterbody Sears Creek

EMG-RX # 106-1

Transect Location Napline

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by PB Discharge 3.9 cfs

Discharge m^3/s

By Elliott Waterbody Seams Creek
 Date 15 July 1981 EMG-RX # 106-1
 Transect Location ca. 600 ft. below AK. Hwy
 (LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0.8	0	0				
2	.7	.5	.25	.35	1.2	.11
3	.7	.8	.65	.7	1	.46
4	.7	.8	.8	.7	1	.56
5	.6	.6	.7	.65	1	.46
6	.6	.8	.7	.6	1	.42
7	.6	.85	.825	.6	1	.50
8	.8	.7	.775	.7	1	.54
9	.8	.6	.65	.8	1	.52
RBWE 10	0	0	.3	.4	1	.12

Calculations checked by GE Discharge 3.7 cfs
 Discharge _____ m³/s

By Karl E. Johnson

Waterbody Seave Creek

Date: 15 July 1981

EMG-RX # 106-1

Section Surveyed from 1000ft below Ak. hwy. to beaver dam 50ft
below hwy.

Fish present/Use GR, DV/Rearing

Gear/Effort Electroshocker / 950 ft.

$$T_w = 4^\circ\text{C}$$
[illegible]

By Kay & JohnsonWaterbody Sears CreekDate 29 July 1981EMG-RX # 106-1Transect Location 200ft. upstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.6	.7	0				
			.25	.8	.4	.08
2.0	.9	.5				
			.5	.95	.5	.24
2.5	1.0	.5				
			.6	1.0	.5	.30
3.0	1.0	.7				
			.775	.95	.5	.37
3.5	.9	.85				
			.8	.85	.5	.34
4.0	.8	.75				
			.85	.775	.5	.33
4.5	.75	.95				
			.95	.725	.5	.34
5.0	.7	.95				
			.95	.75	.5	.36
5.5	.8	.95				
			.875	.8	.5	.35
6.0	.8	.8				
			.8	.75	.5	.30
6.5	.7	.8				
			.8	.7	.5	.28
7.0	.7	.8				
			.7	.65	.5	.23
7.5	.6	.6				
			.3	.55	.5	.08
RBWE 8.0	.5	0				

Calculations checked by JK Discharge 3.6 cfsDischarge _____ m³/s

Tw = 6°C

By Kear & Johnson

Waterbody Sears Creek

Date 29 Jul 1981

EMG-RX # 1-06-1

Section Surveyed from 1000ft below to 500 ft above A.K. Hwy.

Fish present/Use GR, DV / Feeding

Gear/Effort Electroshocker / 1500 ft.

$$T_w = 6^\circ\text{C}$$
[illegible]

By Kay JohnsonWaterbody Sears CreekDate 12 August 1981EMG-RX # 106-1Transect Location about 300 ft. upstream from AK hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0.7	.6	0				
			.125	.7	.3	.03
1.0	.8	.25	.375	.85	.6	.19
1.6	.9	.5	.575	.9	.6	.31
2.2	.9	.65	.675	.85	.6	.34
2.8	.8	.7	.775	.8	.6	.37
3.4	.8	.85	.825	.775	.6	.38
4.0	.75	.8	.8	.725	.6	.35
4.6	.7	.8	.775	.625	.6	.29
5.2	.55	.75	.75	.525	.6	.24
5.8	.5	.75	.7	.475	.6	.20
6.4	.45	.65	.5	.425	.8	.17
RBWE 7.2	.4	.35				

Calculations checked by GE Discharge 2.9 cfsDischarge _____ m³/s

Tw = 4°C

By Johnson & Kay

Waterbody Sears Creek

Date 12 August 1981

-EMG-RX # 106-1

Section Surveyed from 1000ft below to 500ft. above A.K. buoy.

Fish present/Use GR, DV / Rearing

Gear/Effort Electroshocker / 1500 ft.

[illegible]

By Johnson & KayWaterbody Sears CreekDate 26 August 1981EMG-RX # 106-1Transect Location 250 ft. above A.K. Hwy.

(LB/RB orientation facing upstream)

 $T_w = 4^\circ\text{C}$

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 7.0	1.2	0				
			.1	1.2	1.0	.12
8.0	1.2	.2				
			.325	1.125	1.0	.37
9.0	1.05	.45				
			.375	1.025	.5	.19
9.5	1.0	.3				
			.4	.95	.5	.19
10.0	.9	.5				
			.5	.9	.5	.23
10.5	.9	.5				
			.5	.9	.5	.23
11.0	.9	.5				
			.525	.9	.5	.24
11.5	.9	.55				
			.6	.9	.5	.27
12.0	.9	.65				
			.525	.85	.5	.22
12.5	.8	.4				
			.275	.775	.5	.11
13.0	.75	.15				
			.075	.625	1.0	.05
14.0	.5	0				

Calculations checked by G2 Discharge 2.2 cfsDischarge _____ m^3/s

By Kay E. Johnson

Waterbody Sears Creek

Date. 26 August 1981

EMG-RX # 106-1

Section Surveyed 1000 ft. below to Ak. hwy

Fish present/Use GR, DV / rearing

Gear/Effort Electroshocker / 1000 ft

[illegible]

By McDonnell & BachWaterbody Sears CreekDate 10 September 1981EMG-RX # 106-1Transect Location 50 ft. above NWA alignment

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.9	.7	0	0	.7	.3	0
2.2	.7	0	.1	.85	.3	.03
2.5	1.0	.2	.35	.95	.8	.27
3.3	.9	.5	.55	.9	.7	.35
4.0	.9	.6	.6	.85	.7	.36
4.7	.8	.6	.675	.775	.8	.42
5.5	.75	.75	.675	.675	.7	.32
6.2	.6	.6	.625	.6	.5	.19
6.7	.6	.65	.65	.55	.6	.21
7.3	.5	.65	.575	.475	.7	.19
8.0	.45	.5	.425	.475	.6	.12
8.6	.5	.35	.275	.525	.2	.03
RBWE 8.8	.55	.2				

Calculations checked by GZ Discharge 2.5 cfsDischarge _____ m³/s

Tw = 3°C

Cond. = 65 μ mhos

DO = 12 ppm

water clear

By Bach & McDonell

Waterbody Sears Creek

Date: 10 September 1981

EMG-RX # 106-1

Section Surveyed 1000ft above NWA to 1000ft below AK hwy.

Fish present/Use None seen or captured

Gear/Effort Electroshocker / about 2500 A.

[illegible]

By Bach & JohnsonWaterbody Sears CreekDate 23 September 1981EMG-RX # 106-1Transect Location 450 ft. upstream from A.K. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 9.2	.5	.1				
			.275	.75	1.2	.25
8.0	1.0	.45	.625	.8	1.0	.50
7.0	.6	.8	.875	.55	.5	.24
6.5	.5	.95	1.0	.45	.5	.23
6.0	.4	1.05	1.025	.45	.5	.23
5.5	.5	1.0	.9	.65	.5	.29
5.0	.8	.8	.7	.825	1.0	.58
4.0	.85	.6	.35	.825	1.3	.38
RBWE 2.7	.8	.1				

Calculations checked by GE Discharge 2.7 cfsDischarge _____ m³/s

Tw = 2°C

By Johnson & Bach

Waterbody Sears Creek

Date 23 September 1981

EMG-RX # 106-1

Section Surveyed From A.K. hwy. downstream for about 500 ft.

Fish present/Use None captured or seen

Gear/Effort Electroshocker / 500 ft.

[illegible]

By McDonnell, Bach & Nolke

Waterbody Berry Creek

Date 14 May 1981

EMG-RX # 106-2

Site Access On foot from Alaska highway

Color/Turbidity light brown / ~~clear~~ slightly turbid Temperature 2°C

D.O. 11.5 ppm

pH -

Conductivity 33 μ mhos

Bottom Type Sand, gravel, cobble

Wetted width 30-45 ft. Depth 0.7-1.0 ft Gradient moderate

Banks/Soils Fairly steep

Aquatic Vegetation None

Cover -

Riparian Vegetation Aspen, birch, spruce, willow

Barriers None

Drainage Structures/Conditions bridge at hwy / good

Ice Conditions Overhanging shelf ice along banks.

Weather Cloudy, rain, mild

Photographs 3-12 $\rightarrow$ ds across Napline / 3-13 $\rightarrow$ us across Napline

Remarks Stream cut through bottom ice on 12 May.
Gauging (?) station 60 ft upstream from bridge
No fish observed.

By McDonnell, Bach & NolkeWaterbody Berry CreekDate 14 May 1981EMG-RX # 106-2Transect Location 90ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0	0	0	.68	.35	5	1.19
5.0	.7	1.35	1.83	.8	4	5.86
9.0	.9	2.3	2.5	.9	4	9.00
13.0	.9	2.7	2.65	.95	4	10.07
17.0	1.0	2.6	2.4	1.0	6	14.40
23.0	1.0	2.2	2.15	.95	4	8.17
27.0	.9	2.1	1.75	.75	5	6.56
32.0	.6	1.4	1.38	.55	5	3.80
37.0	.5	1.35	.78	.7	4.5	2.46
41.5	.9	.2	.1	1.1	4.5	.50
RBWE 46.0	1.3	0				

Calculations checked by GEDischarge 62.0 cfsDischarge _____ m³/s



5/14/81 - Berry Creek (RX 106-2) looking upstream across NWA alignment.



5/14/81 - Berry Creek (RX 106-2) looking downstream across NWA alignment.

By McDonnell & Bach

Waterbody Barry Creek

Date 21 May 1981

EMG-RX # 106-2

Site Access

On foot from Alaska highway

Color/Turbidity

light brown / slightly turbid

Temperature 9°C

D.O.

9 ppm

pH

-

Conductivity

45 μ mhos

Bottom Type *

Wetted width

20-35 ft.

Depth

0.5-1.5 ft.

Gradient *

Banks/Soils *

Aquatic Vegetation

Cover *

Riparian Vegetation *

Barriers *

Drainage Structures/Conditions *

Ice Conditions

Overhanging shelf ice along most of banks

Weather

Clear, warm

Photographs

Remarks

* See previous survey on 14 May 1981.

Observed ca. 15 GR (8-14 in) from hwy - downstream for a distance of ca. 1/2 mi.

Smaller fish (ca. 2 in) were observed but not captured, probably CN.

By McDonnell & BachWaterbody Berry CreekDate 21 May 1981EMG-RX # 106-2Transect Location 75ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3	0	0				
6	.7	.65	.325	.35	3	.34
8	1.1	1.05	.85	.9	2	1.53
10	1.25	1.6	1.325	1.175	2	3.11
12	1.5	1.8	1.7	1.375	2	4.68
13	1.7	1.9	1.85	1.6	1	2.96
14	1.7	2.0	1.95	1.7	1	3.32
15	1.7	2.2	2.1	1.7	1	3.57
16	1.7	1.95	2.075	1.7	1	3.53
17	1.6	1.9	1.925	1.65	1	3.18
18	1.3	1.8	1.85	1.45	1	2.68
19	1.25	2.1	1.95	1.275	1	2.49
21	1.0	2.65	2.375	1.125	2	5.34
23	.9	2.3	2.475	.95	2	4.70
25	.7	1.3	1.8	.8	2	2.88
27	.6	.35	.825	.65	2	1.07
RBWE 28.7	1.5	.3	.325	1.05	1.7	.58

Calculations checked by J MaDischarge 46.0 cfsDischarge _____ m³/s

Waterbody Berry Creek

Date: 3 June 1981

EMG-RX # 106-2

Section Surveyed ca. 1/3 mi. downstream from AK. hwy. to hwy.

Fish present/Use GR, RW juv / Feeding

Gear/Effort Electroshocker to seine / most pools, 1/3 mi.

[illegible]

By McDonnell & Bach

Waterbody Berry Creek

Date 11 June 1981

EMG-RX # 106-2

Site Access On foot from Alaska highway

Color/Turbidity light brown/slight Temperature 8°C

D.O. 11 ppm pH - Conductivity 34 μ mhos

Bottom Type *

Wetted width - Depth - Gradient *

Banks/Soils *

Aquatic Vegetation * Cover *

Riparian Vegetation *

Barriers *

Drainage Structures/Conditions *

Ice Conditions Scattered ice along banks

Weather Partly cloudy, warm

Photographs -

Remarks * See previous survey on 14 May 1981

Flow down from high & turbid on 8 June
after rains every day for previous week.

By McDonnell & BachWaterbody Berry CreekDate 11 June 1981EMG-RX # 106-2Transect Location 60 ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0.6	0	0				
4	.3	.95	.475	.15	3.4	.24
8	.5	.55	.75	.4	4	1.20
12	.6	1.45	1.0	.55	4	2.20
15	.9	2.4	1.925	.75	3	4.33
18	1.2	2.7	2.55	1.05	3	8.03
21	1.4	3.2	2.95	1.3	3	11.51
24	1.1	3.95	3.575	1.25	3	13.41
27	1.9	4.1	4.025	1.5	3	18.11
30	1.9	4.4	4.25	1.9	3	24.23
33	1.5	3.6	4.0	1.7	3	20.40
36	.9	2.8	3.2	1.2	3	11.52
38	.8	1.55	2.175	.85	2	3.70
RBWE 40	0	0	.775	.4	2	.62

Calculations checked by PB Discharge 119.5 cfsDischarge _____ m³/s

By Bach & McDonnell

Waterbody Berry Creek

Date 11 June 1981

EMG-RX # 106-2

Section Surveyed from AK hwy. to ca 1/2 mi. downstream

Fish present/Use RW, GR, CN / Rearing

Gear/Effort Electroshocked / 1/2 mi

[illegible]

By Bach & McDonellWaterbody Barry CreekDate 15 June 1981EMG-RX # 106-2Section Surveyed ca. 2 mi above Ak hwy to 1/2 mi below hwy.Fish present/Use RW, GR, CN, LS, Rearing, SpawningGear/Effort Electroshocker / ca. 2 1/2 mi

Species	Length	Remarks
RW	517 mm	Tw - ranged from 5.5°C at
"	504	0930 to 9°C at 1430
"	501	
"	484	Stream flow from hwy downstream
"	481	for 1/2 mi is more laminar than
"	481	upstream reach.
"	476	Stream bottom from hwy to
"	472	2 mi upstream is cobble &
"	463	boulder with little sand &
"	459	gravel as compared to below
"	456	hwy. There are better
"	456	developed pools above the
"	451	hwy.
"	443	Most of the fish were captured
"	431	in pools & riffles upstream of
"	427	the hwy. Only 4 fish (3 RW &
"	411	1 GR) were captured from the hwy
"	406	for 1/2 mi downstream. The four
"	394	fish were 463, 456, 184 and 304 mm
"	390	FL respectively.

By McDonnell & BachWaterbody Berry CreekDate 15 June 1981EMG-RX # 106-1Section Surveyed continued

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
RW	381 mm	There was a definite decrease in numbers of fish captured or observed (turned but not captured) as we shooed from the 2 mi. point downstream to the hwy.
"	365	
"	356	
"	349	
"	336	
"	332	
"	320	From the 2 mi starting point to 1 mi above the hwy, fish were abundant in all pools and riffles. Decline of fish numbers was very noticeable between 1 & 1/2 mi. above the hwy. Fish in this reach were found only in pools. No fish were captured or observed between the hwy & 1/2 mi upstream.
"	316	
"	295	
"	275	
"	234	
"	218	
"	205	
"	202	
"	193	
"	184	
GR	463 mm	
"	459	
"	418	

By Bach & McDonellWaterbody Berry CreekDate 15 June 1981EMG-RX # 106-2Section Surveyed continued

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	397 _{mm}	
"	394	
"	380	
"	386	
"	381	
"	377	
"	374	
"	370	
"	370	
"	304	
"	279	
"	123	
CN	123 _{mm}	Hundreds of CN were observed
"	115	upstream. Their numbers also
"	102	decreased proportionately with
"	98	the RW & GR as we shocked
"	98	downstream from the 2 mi
"	98	starting point.
"	95	

By Bach & McDonnellWaterbody Berry CreekDate 15 June 1981EMG-RX # 106-2Section Surveyed continued

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	95 mm	
"	91	
"	91	
"	91	
"	82	
"	82	
"	77	
"	77	
"	75	
"	70	
"	66	
LS	522 mm	♂, very faint spawning colors, no milt
LS	492 mm	Ripe ♂, light spawning colors, little milt present
LS	459	♀?, no spawning colors, no milt or roe
LS	438	Ripe ♂, very faint spawning colors, little milt present
LS	431	Ripe ♂, no spawning colors, little milt present

By Elliott Bach & McDonellWaterbody Berry CreekDate: 6/20/81EMG-RX # 106-2Section Surveyed various pools between 1.5 to 2.5 miles above hwy.Fish present/Use GR / rearingGear/Effort Angling / 3 man-hours

Species	Length	Remarks
GR	232 mm	
"	421	
"	290	
"	305	
"	238	
"	299	
"	262	
"	377	
"	174	
"	268	
"	262	
"	229	
"	232	
"	320	
"	229	

By Kay E. Johnson

Waterbody Berry Creek

Date 1⁰ July 1981

EMG-RX # 106-2

Section Surveyed Alaska highway downstream about 1 mi.

Fish present/Use GR / Feeding

Gear/Effort Angling / 1.5 man-hrs

[illegible]

By Elliott Waterbody Berry Creek

Date 15 July 1981 EMG-RX # 106-2

Transect Location 50 ft upstream from Ak. Hwy

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 11	0	0				
			.6	.3	9	1.62
20	.6	1.2	1.45	.7	5	5.08
25	.8	1.7	1.9	1.0	4	7.60
29	1.2	2.1	2.7	1.15	4	12.42
33	1.1	3.3	3.4	1.25	2	8.50
35	1.4	3.5	3.65	1.5	2	10.95
37	1.6	3.8	3.8	1.65	2	12.54
39	1.7	3.8	3.5	1.65	2	11.55
41	1.6	3.2	3.3	1.4	2	9.24
43	1.2	3.4	3.25	.95	2	6.18
45	.7	3.1	1.55	.35	4	2.17
RBWE 49	0	0				

Calculations checked by GE Discharge 87.9 cfs

Discharge m³/s

By Kay & JohnsonWaterbody Berry CreekDate 15 July 1981EMG-RX # 106-2Section Surveyed from AK. hwy. upstream for about 1000 ft.Fish present/Use GR, DV, CN, LS, BB / rearingGear/Effort Electroshocker / 1000 ft. $T_w = 10^{\circ}\text{C}$

Species	Length	Remarks
GR	83 mm	
"	91	
"	88	
"	51	
"	102	
"	98	
"	28	
"	24	
DV	120 mm	
CN	29 mm	
"	25	
"	29	
"	22	
"	40	
"	47	
"	31	
"	48	
"	28	
"	46	
"	32	

By Kay E Johnson

Waterbody Berry Creek

Date: 15 July 1981

EMG-RX # 106-2

Section Surveyed continued - 2 of 2

Fish present/Use _____

Gear/Effort

[illegible]

By Kay E. JohnsonWaterbody Berry CreekDate 17-July 1981EMG-RX # 106-2Section Surveyed AK Hwy downstream about 1000 ft.Fish present/Use GR fry / rearingGear/Effort Dipnet / 1/2 hr.

Tw = 12°C

Species	Length	Remarks
GR	22 mm	
"	25	
"	25	
"	26	
"	24	
"	27	
"	24	
"	25	
"	28	
"	23	
"	26	
"	27	
"	27	
"	27	
"	25	
"	25	
"	26	
"	27	
"	29	

By Kay & JohnsonWaterbody Berry CreekDate 30 July 1981EMG-RX # 106-2Transect Location 100 ft. upstream from Ak. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 10.5	0	0				
			.55	.2	2.5	.3
13	.4	1.1	1.2	.45	3	1.6
16	.5	1.3	1.4	.55	3	2.3
19	.6	1.5	1.5	.7	3	3.2
22	.8	1.5	2.0	.825	3	5.0
25	.85	2.5	2.65	.875	3	7.0
28	.9	2.8	2.75	.95	3	7.8
31	1.0	2.7	3.35	1.15	3	11.6
34	1.3	4.0	3.9	1.4	2	10.9
36	1.5	3.8	4.0	1.55	2	12.4
38	1.6	4.2	3.55	1.6	2	11.4
40	1.6	2.9	3.15	1.35	2	8.5
42	1.1	3.4	2.55	1.05	2	5.4
44	1.0	1.7	1.3	.85	2	2.2
46	.7	.9	.45	.35	1.5	.2
RBWE 47.5	0	0				

Calculations checked by JKDischarge 89.8 cfsDischarge _____ m³/s

By Kay & JohnsonWaterbody Berry CreekDate 29 July 1981EMG-RX # 106-2Section Surveyed 1000ft below to 1000ft above AK hwyFish present/Use GR, CN, RW, LS / rearingGear/Effort Electroshocker / 2000ft

Tw = 11.5°C

Species	Length	Remarks
GR	74 mm	- all from below AK hwy
"	36	
"	79	
"	73	- water was high and
"	40	mucky - near zero visibility
"	215	
"	75	- throughout the stream
"	300	hundreds of CN were
"	54	seen but not captured
CN	91 mm	- in addition many small
"	45	GR &/or RW as well as
"	65	several large fish were
"	67	seen but not captured.
"	35	
"	26	
"	73	
"	33	
"	30	
"	35	
"	47	

By Kay S. JohnsonWaterbody Berry CreekDate 29 July 1981EMG-RX # 106-2Section Surveyed continued 2 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	79 mm	- all from below AK. hwy
"	58	
"	95	
"	53	
"	55	
"	45	
"	50	
"	48	
"	47	
"	82	
"	46	
RW	54 mm	
"	52	
"	109	
"	54	
"	58	
"	52	
"	73	
"	55	
"	59	

By Kay & JohnsonWaterbody Bony CreekDate 29 July 1981EMG-RX # 106-2Section Surveyed continued - 3 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
RW	53 mm	
"	50	
"	55	
"	248	
"	50	
"	71	
"	56	
"	336	
LS	194 mm	
"	187	
"	408	
"	384	from below buoy
GR	131 mm	from above buoy
"	79	
"	113	
"	118	
"	218	
"	345	
"	167	

By Kay E. JohnsonWaterbody Berry CreekDate 29 July 1981EMG-RX # 106-2Section Surveyed continued - 4 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	94 mm	- all from above Ak. Hwy
CN	109 mm	
"	45	
"	41	
"	45	
"	49	
"	24	
"	61	
"	38	
"	34	
"	28	
"	45	
"	40	
"	29	
"	32	
"	33	
"	48	
"	56	
"	47	
"	41	

By Kay & JohnsonWaterbody Berry CreekDate 29 July 1981EMG-RX # 106-2Section Surveyed continued - 5 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	45mm	- all from above AK. Hwy
11	32	
11	44	
21	48	
11	45	
11	46	
11	47	
11	97	
11	64	
11	57	
11	59	
11	56	
11	60	
11	53	
11	47	
11	45	
11	50	
11	52	
11	36	
11	34	

By Kay & JohnsonWaterbody Berry CreekDate 29 July 1981EMG-RX # 106-2Section Surveyed continued - 6 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	40mm	- all from above AK. hwy.
"	31	
"	35	
"	30	
"	52	
"	49	
"	52	
"	81	
"	55	
"	34	
"	86	
"	46	
"	30	
"	32	
"	76	
"	58	
"	28	
"	60	
"	73	
"	55	

By Kay & JohnsonWaterbody Berry CreekDate 29 July 1981EMG-RX # 106-2Section Surveyed continued - 7 of 8

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	80mm	- all from above AK. hwy.
"	64	
"	71	
"	54	
"	58	
"	60	
"	62	
"	65	
"	42	
"	51	
"	45	
RW	54mm	
"	58	
"	105	
"	109	
"	61	
"	57	
"	63	
"	119	
"	55	

By Elliott & KayWaterbody Berry CreekDate 11 August 1981EMG-RX # 106-2Transect Location 20 ft. downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.5	0	0				
			.25	.775	4.5	.87
7	1.55	.5	.75	1.525	4	4.58
11	1.5	1.0	1.1	1.5	4	6.60
15	1.5	1.2	1.45	1.4	4	8.12
19	1.3	1.7	1.7	1.15	4	7.82
23	1.0	1.7	1.6	.95	5	7.60
28	.9	1.5	1.45	.85	5	6.16
33	.8	1.4	1.25	.7	7	6.13
40	.6	1.1	1.0	.6	5	3.00
45	.6	.9	.45	.3	5	.68
RBWE 50	0	0				

Calculations checked by GE Discharge 51.6 cfs $T_w = 11.5^{\circ}\text{C}$ Discharge _____ m^3/s

By Elliott, Johnson & KayWaterbody Berry CreekDate 11 August 1981EMG-RX # 106-2Section Surveyed from 700 ft below to 1000 ft above AK hwyFish present/Use GR, CN, RW, LS, RB / rearingGear/Effort Electroshocker / 1700 ft.

Species	Length	Remarks
GR	75 mm	- all from below AK hwy.
"	54	
"	55	
"	62	
"	133	
"	185	
"	179	
CN	31 mm	
"	42	
"	45	
"	48	
"	69	
"	44	
"	36	
"	51	
"	65	
"	54	
"	55	
"	50	
"	51	

By Elliott Johnson & KayWaterbody Berry CreekDate 11 August 1981EMG-RX # 106-2

Section Surveyed

continued 2 of 5

Fish present/Use

Gear/Effort

Species	Length	Remarks
CN	40 mm	- all from below AK. hwy.
"	52	
"	58	
"	38	
"	83	
"	55	
"	35	
"	48	
"	51	
"	46	
"	102	
"	97	
"	80	
"	92	
"	59	
"	51	
"	49	
"	51	
"	53	
"	58	

By Elliott Johnson & KayWaterbody Berry CreekDate 11 August 1981EMG-RX # 106-2Section Surveyed continued - 3 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	51mm	- all from below AK. hwy
"	40	
"	36	
"	58	
"	71	
"	39	
"	48	
"	56	
"	51	
"	32	
"	78	
"	71	
"	83	
"	81	
"	74	
RW	70mm	
"	59	
"	63	
"	64	
"	109	

By Elliott Johnson & KayWaterbody Berry CreekDate 11 August 1981EMG-RX # 106-2Section Surveyed continued - 4 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
RW	68mm	
"	261	
"	61	
"	59	
"	67	
"	64	
"	60	
"	271	
"	65	
LS	297mm	- from below Ak. hwy.
GR	130mm	- from above Ak hwy.
"	64	
"	310	
"	273	
CN	11mm	+ 65 others (CN) captured and others
"	131	seen but not captured
RW	206mm	
"	69	
"	226	

By Elliott, Johnson & Kay

Waterbody Berry Creek

Date 11 August 1981

EMG-RX # 106-2

Section Surveyed continued - 5 of 5

Fish present/Use _____

Gear/Effort _____

[illegible]

By Kay & JohnsonWaterbody Berry CreekDate 26 August 1981EMG-RX # 106-2Transect Location 50 ft. above Ak. hwy

(LB/RB orientation facing upstream)

 $T_w = 12^\circ\text{C}$

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2	0	0				
8	.55	1.05	.525	.275	6	.87
11	.65	1.3	1.175	.6	3	2.12
14	.7	1.35	1.325	.675	3	2.68
17	.65	1.1	1.225	.675	3	2.48
20	.95	1.65	1.375	.8	3	3.30
22	1.05	2.15	1.9	1.0	2	3.80
24	1.1	2.3	2.225	1.075	2	4.78
26	1.05	3.15	2.725	1.075	2	5.86
28	1.1	3.4	3.275	1.075	2	7.04
30	1.25	2.8	3.1	1.175	2	7.29
33	.9	2.1	2.45	1.075	3	7.90
36	.5	1.1	1.6	.7	3	3.36
			.55	.25	4	.55
RBWE 40	0	0				

Calculations checked by GE Discharge 52.0 cfsDischarge _____ m^3/s

By Kay & JohnsonWaterbody Berry CreekDate 26 August 1981EMG-RX # 106-2Section Surveyed 1500 ft. above and below AK hwy.Fish present/Use CN, RW, DV, GR, BBGear/Effort Electroshocker / 3000 ft.

Species	Length	Remarks
CN	54 mm	- All from above hwy.
"	52	
"	38	
"	50	
"	35	
"	28	
"	39	
"	38	
"	35	
"	77	
"	53	
"	58	
"	43	
"	56	
"	61	
"	53	
"	49	
"	71	
"	54	
"	56	

By Kay & Johnson

Waterbody Berry Creek

Date 26 August 1981

EMG-RX # 106-2

Section Surveyed continued - 2 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	49mm	All from above hwy.
"	50	
"	44	
"	40	
"	59	
"	86	
"	73	
"	85	
"	82	
"	65	
"	67	
"	78	
"	75	
"	85	
"	62	
"	79	
"	70	
"	70	
"	65	
"	53	

By Kay & JohnsonWaterbody Berry CreekDate 26 August 1981EMG-RX # 106-2Section Surveyed Continued - 3 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	54mm	- over 100 other CN seen
"	45	
GR	81mm	
"	50	
"	64	
"	333	
"	206	
"	307	
BB	255mm	
RW	71mm	- from above hwy
GR	245mm	- from below hwy
"	211	
"	263	
"	204	
"	333	
BB	248mm	
"	268	
RW	117mm	
"	134	

By Kay & JohnsonWaterbody Berry CreekDate 26 August 1981EMG-RX # 106-2Section Surveyed Continued - 4 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
DV	116 mm	- All from at below hwy
CN	48 mm	
"	50	
"	36	
"	46	
"	38	
"	49	
"	32	
"	47	
"	29	
"	35	
"	35	
"	87	
"	103	
"	90	
"	66	
"	67	
"	54	
"	41	
"	76	

By Kay & Johnson

Waterbody Berry Creek

Date. 26 August 1981

EMG-RX # 106-2

Section Surveyed Continued = 5 of 5

Fish present/Use _____

Gear/Effort

[illegible]

By McDonnell & BachWaterbody Berry CreekDate 10 September 1981EMG-RX # 106-2Transect Location 20 ft upstream from AK hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.2	0	0				
6	.8	.85	.425	.4	3.8	.65
9	1.1	1.15	1.0	.95	3	2.85
12	.95	1.2	1.175	1.025	3	3.61
15	.9	1.55	1.375	.925	3	3.82
18	.8	1.95	1.75	.85	3	4.46
21	.9	2.2	2.075	.85	3	5.29
24	.9	1.5	1.85	.9	3	5.00
27	.8	1.45	1.475	.85	3	3.76
30	.9	2.05	1.75	.85	3	4.46
33	.85	.95	1.5	.875	3	3.94
36	.6	.45	.7	.725	3	1.52
39	.6	.15	.3	.6	3	.54
RBWE 41	0	0	.075	.3	2	.05

Calculations checked by 62Discharge 40.0 cfs

Tw = 6.5°C

Discharge _____ m³/sCond. = 55 μ mhos

D.O. = 12 ppm

water clear

measurement taken about 1200

By McDonnell & BachWaterbody Berry CreekDate 10 September 1981EMG-RX # 106-2Section Surveyed 1000 ft. above to 1000 ft. below A.K. hwy.Fish present/Use GR, LS, CN / rearingGear/Effort Electroshocker / 2000 ft.

Species	Length	Remarks
CN	88 mm	} From above hwy. Approx 100 more CN seen
"	87	
"	82	
"	59	
"	53	
"	51	
"	51	
"	44	
"	37	
"	37	
"	29	
GR	333 mm	} From below hwy. 2 other GR of same size range seen but not captured. Very few CN seen in this reach.
"	331	
"	315	
LS	357	

By Bach & McDowell

Waterbody Berry Creek

Date 16 September 1981

EMG-RX # 106-2

Section Surveyed From 300 ft. to 1000 ft below A.K. Hwy.

Fish present/Use GR, CN / Tearina

Gear/Effort Electroshocker/1300 ft.

[illegible]

By Bach & JohnsonWaterbody Berry CreekDate 23 September 1981EMG-RX # 106-2Transect Location 50 ft. upstream from A.K. Hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 36	0	0				
			.125	.15	5	.09
31	.3	.25	.275	.35	2	.19
29	.4	.3	.55	.5	2	.55
27	.6	.8	.975	.675	2	1.32
25	.75	1.15	1.25	.725	2	1.81
23	.7	1.35	1.45	.875	2	2.54
21	1.05	1.55	1.8	1.025	2	3.69
19	1.0	2.05	2.25	1.1	2	4.95
17	1.2	2.45	2.075	1.2	2	4.98
15	1.2	1.7	1.775	1.25	2	4.44
13	1.3	1.85	1.775	1.2	2	4.26
11	1.1	1.7	1.325	.9	2	2.39
9	.7	.95	.525	.6	2	.63
7	.5	.1	.05	.25	1.8	.02
RBWE 5.2	0	0				

Calculations checked by GE Discharge 31.9 cfsDischarge _____ m³/s

Tw = 3.5°C

By Bach & JohnsonWaterbody Berry CreekDate 23 September 1981EMG-RX # 106-2Section Surveyed 1000ft above & below AK. hwy.Fish present/Use GR, CN /rearingGear/Effort Electroshocker / 2000ft.

Species	Length	Remarks
GR	61mm	- one large GR seen but not
CN	66mm	captured
"	56	
"	78	
"	90	
"	79	
"	87	
"	65	
"	80	
"	55	
"	84	
"	45	
"	47	
"	43	
"	68	
"	52	
"	34	
"	61	- from above AK. hwy.
GR	358mm	- from below AK. hwy.
"	259	

By Bach & Johnson

Waterbody Berry Creek

Date 23 September 1981

EMG-RX # 106-2

Section Surveyed Continued - 2 of 2

Fish present/Use

Gear/Effort

[illegible]

By Elliott & Breyman

Waterbody Berry Creek

Date 17 October 1981

EMG-RX # 106-7

Section Surveyed From AK hwy upstream about 1000 ft.

Fish present/Use GR, CN / rearing, migration?

Gear/Effort Electroshocker / 1000 ft.

$$T_w = 1.5^\circ\text{C}$$
[illegible]

By Elliott Bach & McDonnell Waterbody Unnamed Creek

Date 1981 EMG-RX # 106-3

Site Access On foot from Alaska highway

Color/Turbidity light brown/clear Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks 29 April - flowing at AK. hwy. - est. 3-5 cfs.

5 May - flowing over bottom ice above hwy.
est. 10-15 cfs. $T_w = 0^\circ\text{C}$ - Hwy culvert

appears to be definite barrier - Scum pool
seined in part - no fish seen or captured.

10 May - flow similar to 5/5, bottom ice eroding.

$T_w = 0.5^\circ\text{C}$ at hwy - 1°C at mouth. Visual
inspection to mouth, no fish seen. Excellent

habitat, no barriers below hwy. Sam Creek
turbid and warmer ($T_w = 7^\circ\text{C}$). Several

unidentified fish broke surface at confluence -
unable to catch.

By G. Elliott & J. McDonellWaterbody Unnamed CreekDate 11 May 1981EMG-RX # 106-3Transect Location 100 ft downstream from Alaska hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 10.6	0	0				
			.55	.35	.6	.12
10.0	.7	1.1	.9	.75	.5	.34
9.5	.8	.7	1.35	.75	1.0	1.01
8.5	.7	2.0	1.8	.85	1.0	1.53
7.5	1.0	1.6	1.65	.8	1.0	1.32
6.5	.6	1.7	1.7	.55	1.0	.94
5.5	.5	1.7	1.6	.55	1.0	.88
4.5	.6	1.5	1.55	.65	1.0	1.01
3.5	.7	1.6	1.55	.7	1.0	1.09
2.5	.7	1.5	.975	.6	1.0	.59
1.5	.5	.45	.225	.45	.4	.04
RBWE 1.9	.4	0				

Calculations checked by GEDischarge 8.9 cfsDischarge _____ m³/s

Tw = 10°C

Conductivity = 32 μ mhosPhoto 3-8 $\rightarrow$ us to hwy culvert



5/11/81 - Unnamed Creek (RX 106-3) looking upstream at Alaska highway culvert outlet.



5/26/81 - Unnamed Creek (RX 106-3) looking upstream at Alaska highway culvert outlet.



5/26/81 - Unnamed Creek (RX 106-3) looking across Alaska highway culvert outlet.

By Bach & McDonnell

Waterbody Unnamed Creek

Date: 12 June 1981

EMG-RX # 106-3

Section Surveyed AK. hwy. downstream for 300ft

Fish present/Use GR / floating

Gear/Effort Electroshocker / 300 ft

[illegible]

Waterbody Unnamed Creek

EMG-RX # 10.6-3

Section Surveyed AK. hwy. culvert scour pool

Fish present/Use GR / Feeding

Gear/Effort Angling / 15 min

[illegible]

By Elliott & Bach

Waterbody Unnamed Creek

Date: 19 June 1981

EMG-RX # 106-3

Section Surveyed AK. hwy to mouth of Sam Creek

Fish present/Use GR / clearing

Gear/Effort. Angling / 2 man-hours

[illegible]

Waterbody Unnamed Creek

EMG-RX # 106-3

Transect Location 60 ft. below Alaska highway

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by PB Discharge 2.2 cfs

Discharge m^3/s

By ElliottWaterbody Unnamed CreekDate 15 July 1981EMG-RX # 106-3Transect Location 50 ft below AK. hwy

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0.6	.4	0				
			.2	.5	0.9	.09
1.5	.6	.4				
			0.9	.5	1.0	.45
2.5	.4	1.4				
			1.45	.5	1.0	.73
3.5	.6	1.5				
			1.3	.45	1.0	.59
4.5	.3	1.1				
			.975	.3	1.0	.29
5.5	.3	.85				
			.875	.35	1.0	.31
6.5	.4	.9				
			1.0	.45	1.0	.45
7.5	.5	1.1				
			.775	.5	1.0	.39
8.5	.5	.45				
			.225	.4	1.5	.14
RBWE 10.0	.3	0				

Calculations checked by GE Discharge 3.4 cfsDischarge _____ m³/s

By Johnson & Kay

Waterbody Unnamed Creek

Date: 15 July 1981

EMG-RX # 106-3

Section Surveyed AK Hwy to 1000ft downstream

Fish present/Use GR CN / Feeding

Gear/Effort Electroshockers / 1000ft.

[illegible]

By Kay & JohnsonWaterbody Unnamed CreekDate 29 July 1981EMG-RX # 106-3Transect Location 50 ft. downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE .3	0	0				
.8	.35	.45	.225	.175	.5	.020
2.3	.5	.6	.525	.425	1.5	.335
2.8	.6	.7	.65	.55	.5	.179
3.3	.6	.8	.75	.6	.5	.225
3.8	.55	1.2	1.0	.575	.5	.288
4.1	.65	1.2	1.2	.6	.3	.216
4.4	.6	1.25	1.225	.625	.3	.230
4.7	.55	1.2	1.225	.575	.3	.211
5.0	.4	1.05	1.125	.475	.3	.160
5.3	.4	1.2	1.125	.4	.3	.135
5.6	.3	1.1	1.15	.35	.3	.121
5.9	.25	1.0	1.05	.275	.3	.087
7.0	.2	.35	.675	.225	1.1	.167
RBWE 8.0	0	0	.175	.1	1.0	.018

Calculations checked by GE Discharge 2.4 cfsDischarge _____ m³/s

By Kay E. Johnson

Waterbody Unnamed Creek

Date 29 July 1981

EMG-RX # -106-3

Section Surveyed from 1000 ft below to 500 ft above AK. hwy

Fish present/Use GR, CA / Feeding

Gear/Effort Electroshocker / 1500ft

[illegible]

By ElliottWaterbody Unnamed CreekDate 11 August 1981EMG-RX # 106-3Transect Location 50 ft. downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.5	0	0				
			.3	.15	.8	.04
2.3	.3	.6	.65	.35	.7	.16
3.0	.4	.7	.675	.45	.5	.15
3.5	.5	.65	.75	.55	.5	.21
4.0	.6	.85	.925	.6	.5	.28
4.5	.6	1.0	1.0	.55	.5	.28
5.0	.5	1.0	.85	.45	.5	.19
5.5	.4	.7	.6	.275	.7	.12
6.2	.15	.5	.25	.075	1.0	.02
RBWE 7.2	0	0				

Calculations checked by GE Discharge 1.5 cfsDischarge m³/s

Tw = 8°C

By Elliott Johnson & KayWaterbody Unnamed CreekDate 11 August 1981EMG-RX # 106-3Section Surveyed from 300 ft. below to 300 ft. above AK hwy.Fish present/Use GR, CN, RWGear/Effort Angling / 30 min & Electroshocker / 600 ft. $T_w = 8^{\circ}\text{C}$

Species	Length	Remarks
GR	123 mm	- all captured by angling from hwy. culvert scum pool
"	148	
"	137	
"	146	
"	180	
"	165	
"	163	
"	171	
"	124	
"	150	
"	257	
"	144	
"	77	
"	140	
"	182	
"	166	
"	81	
"	148	
"	93	
"	235	
"	252	

By Elliott Johnson & KayWaterbody Unnamed CreekDate 11 August 1981EMG-RX # 106-3Section Surveyed continued - 2 of 2

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GB	102 mm	- all captured by electroshocks from below A/C hwy
"	94	
"	89	
"	76	
"	84	
CN	89 mm	- no fish seen or captured above hwy.
"	90	
"	74	
"	68	
"	77	
"	83	
"	88	
"	89	
"	60	
RW	136 mm	

By Kay & JohnsonWaterbody unnamed CreekDate 25 August 1981EMG-RX # 106-3Transect Location 100 ft. upstream from Ak. hwy.

(LB/RB orientation facing upstream)

TW = 5.5°C

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE .5	0	0				
			.075	.325	.5	.01
1.0	.65	.15	.175	.75	.5	.07
1.5	.85	.2	.275	.9	.5	.12
2.0	.95	.35	.4	.925	.5	.19
2.5	.9	.45	.45	.9	.5	.20
3.0	.9	.45	.425	.875	.5	.19
3.5	.85	.4	.35	.85	.5	.15
4.0	.85	.3	.175	.825	.5	.07
4.5	.8	.05	.05	.725	.5	.02
5.0	.65	.05	.025	.325	1.0	.01
RBWE 6.0	0	0				

Calculations checked by 62 Discharge 1.0 cfsDischarge m³/s

By Kay & JohnsonWaterbody Unnamet CreekDate 25 August 1981EMG-RX # 106-3Section Surveyed From 500 ft below to Ak. HwyFish present/Use GR, CN, RW, DV / rearingGear/Effort Angling, Electroshocker / 500 ft.

Species	Length	Remarks
GR	189 mm	} angling from scour pool
"	186	
"	138	
"	130	
"	191	
"	68	- rest shocked below scour pool
"	70	
"	71	
"	66	
"	65	
"	129	
"	80	
"	88	
CN	71 mm	
"	78	
"	73	
"	85	
"	65	
"	61	
"	75	

By Kay E. Johnson

Waterbody Unnamed Creek

Date: 25 August 1981

EMG-RX # 106-3

Section Surveyed continued - 2 of 2

Fish present/Use _____

Gear/Effort

[illegible]

By Bach & McDonnell

Waterbody Unnamed Creek

Date. 4 September 1981

EMG-RX # 106-3

Section Surveyed AK hwy culvert scum pool

Fish present/Use GR / Rearing

Gear/Effort Angling / 1 man-hours

$$T_w = 4.5^\circ\text{C}$$
[illegible]

By McDonnell & BachWaterbody Unnamed CreekDate 8 September 1981EMG-RX # 106-3Transect Location 50 ft. below Ak. hwy.

(LB/RB orientation facing upstream)

Tw = 3°C

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 6.1	.2	0				
			.5	.3	.6	.09
5.5	.4	1.0	.875	.4	.5	.18
5.0	.4	.75	.85	.45	.4	.15
4.6	.5	.95	.65	.45	.6	.18
4.0	.4	.35	.35	.375	.5	.07
3.5	.35	.35	.55	.325	1.0	.18
2.5	.3	.75	.475	.3	.5	.07
2.0	.3	.2	.175	.25	.5	.02
1.5	.2	.15	.075	.1	.7	.01
RBWE .8	0	0				

Calculations checked by GE Discharge 1.0 cfsDischarge m³/s

By Bach & Mc Donnell

Waterbody Unnamed Creek

Date. 8 September 1981

EMG-RX # 106-3

Section Surveyed 300 ft above & below AK hwy.

Fish present/Use GR / Feeding

Gear/Effort Electroshocker / 600ft.

[illegible]

By McDonnell & Bach

Waterbody Unnamed Creek

Date 16 September 1981

EMG-RX # 106-3

Section Surveyed 300ft below up to Alaska highway

Fish present/Use None seen or captured

Gear/Effort Electroshocker / 300 ft.

[illegible]

By Bach & JohnsonWaterbody Unnamed CreekDate 23 September 1981EMG-RX # 106-3Transect Location 90ft. downstream from A.K. Hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.5	.25	1.05				
			1.2	.25	.5	.15
2.0	.25	1.35				
			1.225	.35	.4	.17
2.4	.45	1.1				
			1.05	.475	.4	.20
2.8	.5	1.0				
			2.05	.525	.4	.43
3.2	.55	3.1				
			2.35	.525	.4	.49
3.6	.5	1.6				
			2.225	.5	.4	.45
4.0	.5	2.85				
			2.3	.45	.4	.41
4.4	.4	1.75				
			1.4	.4	.4	.22
4.8	.4	1.05				
			.825	.4	.4	.13
5.2	.4	.6				
			.575	.4	.4	.09
5.6	.4	.55				
			.425	.45	.4	.08
6.0	.5	.3				
			.15	.425	.8	.05
RBWE 6.8	.35	0				

Calculations checked by GE Discharge 2.9 cfsDischarge m³/s

Tw = 1.5°C

By Bach & Johnson

Waterbody Unnamed Creek

Date 23 September 1981

EMG-RX # 106-3

Section Surveyed From A.K. Hwy. downstream for 300 ft.

Fish present/Use GR / rearing

Gear/Effort Electroshocker 1/300 ft.

$$T_w = 1.5^\circ\text{C}$$
[illegible]

By P. Bach & J. McDonell Waterbody Bear CreekDate 12 May 1981 EMG-RX # 109-1Transect Location 150 ft. upstream from Alaska hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 5.0	0	0				
			1.2	.225	5.0	1.35
10.0	.45	2.4				
			1.575	.475	5.0	3.74
15.0	.5	.75				
			1.15	.65	4.0	2.99
19.0	.8	1.55				
			1.875	.8	1.5	2.25
20.5	.8	2.2				
			2.85	.85	1.5	3.63
22.0	.9	3.5				
			3.25	1.05	1.0	3.41
23.0	1.2	3.0				
			3.25	1.25	1.0	4.06
24.0	1.3	3.5				
			3.5	1.35	1.0	4.73
25.0	1.4	3.5				
			3.65	1.45	1.0	5.29
26.0	1.5	3.8				
			3.55	1.35	1.0	4.79
27.0	1.2	3.3				
			3.05	1.2	1.0	3.66
28.0	1.2	2.8				
			2.55	1.1	1.5	4.21
29.5	1.0	2.3				
			1.15	.5	2.0	1.15
RBWE 31.5	0	0				

Calculations checked by GE Discharge 45.3 cfsDischarge _____ m³/s

Tw = 5°C

Conductivity = 35 μ mhos

By McDonnell & BachWaterbody Bear CreekDate 20 May 1981EMG-RX # 109-1Transect Location 150 ft upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0.6	0	0				
	2.0	.2	.35	.1	1.4	.05
	4.0	.55	1.1	.375	2.0	.83
	6.0	.7	1.5	.625	2.0	1.88
	8.0	.7	1.55	.7	2.0	2.17
	9.5	.7	1.55	.7	1.5	1.63
	11.0	.6	2.0	.65	1.5	1.95
	12.5	.7	2.55	.65	1.5	2.49
	14.0	.5	2.4	.6	1.5	2.16
	16.0	.5	2.3	.5	2.0	2.30
	18.0	.5	1.75	.5	2.0	1.75
	20.0	.5	1.45	.5	2.0	1.45
	22.0	.7	1.45	.6	2.0	1.74
	24.0	.5	1.05	.6	2.0	1.26
	26.0	.6	1.1	.55	2.0	1.21
	28.0	.5	1.1	.55	2.0	1.21
RBWE 30.5	0	0	.5	.25	2.5	.31

Calculations checked by JMcDischarge 24.4 cfsDischarge _____ m³/s

Tw = 9°C

Conductivity = 45 μ mhos

No fish observed.

By McDonnell & BachWaterbody Bear CreekDate 15 June 1981EMG-RX # 109-1Transect Location ca 225 ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0	0	0				
			.775	.25	2	.39
2	.5	1.55	1.85	.65	2	2.41
4	.8	2.15	2.275	.8	3	5.46
7	.8	2.4	2.5	.85	3	6.38
10	.9	2.6	2.55	.85	3	6.50
13	.8	2.5	2.425	.85	3	6.18
16	.9	2.35	2.35	1.0	3	7.05
19	1.1	2.35	2.625	1.15	3	9.06
22	1.2	2.9	2.75	1.2	3	9.90
25	1.2	2.6	2.525	1.15	3	8.71
28	1.1	2.45	1.7	.9	2.2	3.37
RBWE 30.2	.7	.95				

Calculations checked by PB Discharge 65.4 cfsDischarge _____ m³/s

Tw = 11°C

Conductivity = 57 μ mhos

Waterbody Bear Creek

EMG-RX # 109-1

Section Surveyed 300ft upstream to 450ft. downstream from A.K. hwy.

Fish present/Use X / rearing

Gear/Effort Electro shocker / 750ft.

[illegible]

By Elliot Waterbody Bear Creek

Date 15 July 1981 EMG-RX # 109-1

Transect Location 50ft. above AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3.5	0	0				
			.95	.2	6.5	1.24
10	.4	1.9				
			1.8	.5	5	4.50
15	.6	1.7				
			2.0	.75	5	7.50
20	.9	2.3				
			2.4	.95	4	9.12
24	1.0	2.5				
			2.65	1.15	2	6.10
26	1.3	2.8				
			2.75	1.55	1.5	6.39
27.5	1.8	2.7				
			2.95	1.85	1.5	8.19
29	1.9	3.2				
			3.55	1.85	1.5	9.85
30.5	1.8	3.9				
			3.5	1.8	1.5	9.45
32	1.8	3.1				
			2.45	1.3	2	6.37
34	.8	1.8				
			.9	.4	4.8	1.73
RBWE 38.8	0	0				

Calculations checked by GE Discharge 70.4 cfs

Discharge m³/s

By Johnson & Kay

Waterbody Bear Creek

Date: 15 July 1981

EMG-RX # 109-1

Section Surveyed 300ft below to 400ft above A.K. line

Fish present/Use GR, CN, LS / Tearing

Gear/Effort Electroshocker / 700 ft.

$$T_w = 11.5^\circ\text{C}$$
[illegible]

By Kay & Johnson Waterbody Bear Creek

Date 28 July 1981 EMG-RX # 109-1

Transect Location 300 ft. upstream from AK. hwy

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 14	0	0				
			1.6	.225	1	.36
15	.45	3.2	3.45	.575	2	3.97
17	.7	3.7	2.625	.8	3	6.30
20	.9	1.55	2.725	.85	3	6.95
23	.8	3.9	3.55	.8	3	8.52
26	.8	3.2	2.7	.8	3	6.48
29	.8	2.2	2.7	.7	3	5.67
32	.6	3.2	2.925	.625	3	5.48
35	.65	2.65	2.425	.7	3	5.09
38	.75	2.2	2.1	.825	3	5.20
41	.9	2.0	4.05	.9	3	10.94
44	.9	6.1	5.6	1.0	2	11.20
46	1.1	5.1	5.15	1.2	2	12.36
48	1.3	5.2	4.55	1.2	2	10.92
50	1.1	3.9	3.0	.9	2	5.40
52	.7	2.1	1.05	.35	1	.37
RBWE 53	0	0				

Calculations checked by GE Discharge 105.2 cfs

Discharge m³/s

By Kay & JohnsonWaterbody Bear CreekDate 28 July 1981EMG-RX # 109-1Section Surveyed from 300 ft below to 300 ft above Ak. Hwy.Fish present/Use GR, CN / rearingGear/Effort Electroshocker / 600 ft.

Species	Length	Remarks
GR	173 mm	- water very turbid
"	145 mm	
"	116	
"	110	
"	41	
"	44	
"	39	
"	46	
CN	69 mm	
"	76	
"	74	
"	74	
"	73	
"	77	
"	72	

By Johnson & KayWaterbody Bear CreekDate 11 August 1981EMG-RX # 109-1Transect Location 100ft. upstream from Ak. Hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 39	0	0				
			.55	.275	5	.76
34	.55	1.1	1.525	.575	3	2.63
31	.6	1.95	1.8	.7	3	3.78
28	.8	1.65	1.775	.775	3	4.13
25	.75	1.9	2.15	.825	3	5.32
22	.9	2.4	2.25	.95	2	4.28
20	1.0	2.1	2.4	1.05	2	5.04
18	1.1	2.7	2.725	1.35	2	7.36
16	1.6	2.75	2.925	1.775	2	10.38
14	1.95	3.1	3.45	1.925	2	13.28
12	1.9	3.8	3.3	1.75	2	11.55
10	1.6	2.8	1.95	1.35	2	5.27
8	1.1	1.1	.725	.9	2	1.31
6	.7	.35	.175	.35	2	.12
RBWE 4	0	0				

Calculations checked by GEDischarge 75.2 cfs $T_w = 9^{\circ}\text{C}$ Discharge _____ m^3/s

By Elliott, Johnson & KayWaterbody Bear CreekDate 11 August 1981EMG-RX # 109-1Section Surveyed 300ft. below to 300ft above AK. hwy.Fish present/Use GR, CN, BB /tearingGear/Effort Electroshocker / 600 ft.

Tw = 9°C

Species	Length	Remarks
GR	63mm	
"	68	
"	56	
"	76	
"	61	
"	63	
"	67	
"	59	
"	59	
"	62	
"	62	
"	63	
"	80	
"	56	
"	71	
"	61	
"	51	
"	66	
"	61	
CN	75mm	

By Elliott, Johnson & Kay

Waterbody Bear Creek

Date 11 August 1981

EMG-RX # 109-1

Section Surveyed Continued - 2 of 2

Fish present/Use

Gear/Effort

[illegible]

By Kay & JohnsonWaterbody Bear CreekDate 25 August 1981EMG-RX # 109-1Transect Location 125 ft upstream from AK hwy.

(LB/RB orientation facing upstream)

Tw = 6.5°C

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3.5	0	0				
	6.0	.4	.475	.2	2.5	.24
	11.0	.4	1.475	.4	5.0	2.95
	16.0	.6	2.075	.5	5.0	5.19
	19.0	.6	2.275	.6	3.0	4.10
	22.0	.8	2.125	.7	3.0	4.46
	25.0	1.3	1.575	1.05	3.0	4.96
	26.5	1.65	1.7	1.475	1.5	3.76
	28.0	1.7	2.45	1.675	1.5	6.16
	29.5	1.8	2.825	1.75	1.5	7.42
	31.0	1.7	2.625	1.75	1.5	6.89
	32.0	1.5	2.3	1.6	1.0	3.68
	34.5	.9	1.45	1.2	2.5	4.35
			.35	.45	3.5	.55
RBWE 38.0	0	0				

Calculations checked by G2 Discharge 54.7 cfsDischarge _____ m³/s

By Kay & JohnsonWaterbody Bear CreekDate 25 August 1981EMG-RX # 109-1Section Surveyed 400 ft. above & below AK. hwy.Fish present/Use GR, CN / tearingGear/Effort Electroshocker / 800 ft.

Tw = 6.5°C

Species	Length	Remarks
GR	67 mm	
"	65	
"	74	
"	71	
"	149	
"	66	
"	70	
"	70	
"	71	
"	62	
"	69	
"	64	
"	59	
"	67	
"	64	
"	76	
"	254	
"	71	
"	62	
"	67	

By Kay E. JohnsonWaterbody Bear CreekDate 25 August 1981EMG-RX # 109-1

Section Surveyed

Continued - 2 of 2

Fish present/Use

Gear/Effort

Species	Length	Remarks
GR	60 mm	
"	66	
"	79	
"	65	
"	70	
"	75	
"	77	
"	88	
"	71	
"	74	
"	67	- 4 other adult sized GR seen but not captured
"	75	
"	72	
"	221	
CN	88 mm	
"	82	

By McDonnell & BachWaterbody Bear CreekDate 4 September 1981EMG-RX # 109-1Transect Location 300 ft upstream from Ak. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 31	0	0				
			.5	.15	1	.08
30	.3	1.0	1.55	.55	3	2.56
27	.8	2.1	2.8	.9	3	7.56
24	1.0	3.5	3.8	1.0	3	11.40
21	1.0	4.1	3.75	.95	2	7.13
19	.9	3.4	2.725	.8	3	6.54
16	.7	2.05	1.675	.65	3	3.27
13	.6	1.3	1.4	.6	3	2.52
10	.6	1.5	1.3	.7	3	2.73
7	.8	1.1	1.1	.7	2	1.54
5	.6	1.1	1.25	.75	2	1.88
3	.9	1.4	.7	.45	3	.95
RBWE 0	0	0				

Calculations checked by GE Discharge 48.2 cfsDischarge _____ m³/s

Tw = 6.5°C

Cond. = 62 µmhos

pH = 7.1

D.O. = 12 ppm

Clear / slight turbidity

By McDonnell & Bach

Waterbody Bear Creek

Date: 4 September 1981

EMG-RX # 109-1

Section Surveyed 300ft above to 1000ft below AK. hwy.

Fish present/Use GR, CN / Clearing

Gear/Effort

[illegible]

By McDonnell & BachWaterbody Bear CreekDate 16 September 1981EMG-RX # 109-1Section Surveyed From 300ft above to 600ft. below AK. hwy.Fish present/Use GR, CN / rearingGear/Effort Electroshocker / 900ft.

Species	Length	Remarks
GR	84mm	Tw = 5°C
"	79	
"	73	
"	73	
"	72	
"	71	
"	69	
"	68	
"	68	
"	67	
"	67	
"	65	
"	65	
"	65	
"	64	
"	64	
"	63	
"	62	
CN	85mm	

By Bach & JohnsonWaterbody Bear CreekDate 21 September 1981EMG-RX # 109-1Transect Location 225 ft upstream from Ak. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 31.5	0	0				
			.4	.175	1	.07
30.5	.35	.8	1.125	.375	1	.42
29.5	.4	1.45	1.45	.55	1.5	1.20
28	.7	1.45	1.4	.75	2	2.10
26	.8	1.35	2.275	.7	2	3.19
24	.6	3.2	2.575	.6	2	3.09
22	.6	1.95	2.5	.7	2	3.50
20	.8	3.05	2.725	.8	2	4.36
18	.8	2.4	1.825	.7	2	2.56
16	.6	1.25	1.675	.55	2	1.84
14	.5	2.1	1.675	.55	2	1.84
12	.6	1.25	1.1	.7	3	2.31
9	.8	.95	.825	.65	3	1.61
6	.5	.7	.8	.55	3	1.32
3	.6	.9	.45	.3	1.5	.20
RBWE 1.5	0	0				

Calculations checked by GE Discharge 29.6 cfsDischarge m³/s

Tw = 4.5°C

By Bach & JohnsonWaterbody Bear CreekDate 21 September 1981EMG-RX # 109-1Section Surveyed 450 ft. above & below Ak. hwy.Fish present/Use GR / searingGear/Effort Electroshocker / 900 ft.

Tw = 4.5°C

Species	Length	Remarks
GR	81 mm	
"	76	
"	68	
"	81	
"	79	
"	64	
"	72	
"	82	
"	70	
"	68	
"	80	
"	82	
"	83	
"	68	
"	72	
"	76	
"	73	
"	65	
"	86	
"	82	
"	70	
"	62	

By _____

Waterbody Unnamed Creek

Date 1981

EMG-RX # 110-3

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks See previous spring surveys

15 July - low flow at NWA alignment - discharge
taken - Elliott

11 August - A stream of straw colored
water trickling from the outlet of
the perched highway culvert - Kay & Johnson

4 September - No flow at AK. hwy. Bach & McDonnell

By Elliott

Waterbody Unnamed Creek

Date 15 July 1981

EMG-RX # 110-3

Transect Location NWA alignment

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE Discharge .008 cfs

Discharge m³/s

By Elliott & Breyman

Waterbody Robertson River

Date 17 October 1981

EMG-RX # 110-4

Section Surveyed From 300 ft below to 300 ft above AK hwy.

Fish present/Use GR, RW, LC / rearing, migration?

Gear/Effort ~~GR, R~~ Electroshocker / 600ft

$$T_w = 2^\circ\text{C}$$
[illegible]

By Bach & McDonell

Waterbody Unnamed Creek

Date 8 May 1981

EMG-RX # 111-6

Site Access On foot from Alaska highway

Color/Turbidity slightly tannic/clear Temperature 3°C

D.O. 13 ppm pH — Conductivity 27 μ mhos

Bottom Type Gravel, cobble

Wetted width 3-4 ft. Depth 0.2-1 ft. Gradient moderate

Banks/Soils shallow / loamy

Aquatic Vegetation Absent Cover 90%

Riparian Vegetation Moss, Labrador tea, spruce

Barriers Napline crossing, low falls

Drainage Structures/Conditions Wooden, ^{circular} culvert / perched 3-4 ft.

Ice Conditions None

Weather Clear, warm, slight breeze

Photographs 2-12 → ds at Napline (channel I) / 2-13 → ds
at Napline (channel II) / 2-14 → ds (natural channel)

Remarks Low falls ca 125 ft upstream from hwy.
with 1-2 ft drop. Stream disturbed by Haines
Row and spread through grass. Two
channels meet to form single channel ca.
300 ft above hwy. Both channels pass
through grassy area above confluence -
probable fish barriers at low flows.
No fish observed

By P. Bach & J. McDonnellWaterbody Unnamed CreekDate 8 May 1981EMG-RX # 111-6Transect Location ca. 180 ft downstream from Alaska hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 4.7	0	0				
			.1	.2	1.0	.02
3.7	.4	.2				
			.2	.4	.2	.02
3.5	.4	.2				
			.3	.4	.3	.04
3.2	.4	.4				
			.8	.45	.2	.07
3.0	.5	1.2				
			1.5	.5	.2	.15
2.8	.5	1.8				
			1.75	.5	.3	.26
2.5	.5	1.7				
			1.65	.45	.2	.15
2.3	.4	1.6				
			1.3	.4	.2	.10
2.1	.4	1.0				
			.5	.2	1.1	.11
RBWE 1.0	0	0				

Calculations checked by 62 Discharge 0.9 cfsDischarge _____ m³/s



5/8/81 - Unnamed Creek
(RX 111-6) looking down-
stream at Napline (channel II).



5/8/81 - Unnamed Creek
(RX 111-6) looking down-
stream at Napline (channel I).



5/8/81 - Unnamed Creek (RX 111-6) looking
downstream 60 ft. below Napline.

By McDonnell & Bach

Waterbody Unnamed slough

Date 8 May 1981

EMG-RX # 112-1 (112-1.6)

Site Access On foot from Alaska highway

Color/Turbidity slightly tannic/clear Temperature 5°C

D.O. 11 ppm pH — Conductivity 21 μ mhos

Bottom Type small gravel

Wetted width 2-4 ft. Depth 0.2-0.7 ft Gradient slight

Banks/Soils low, shallow/sandy

Aquatic Vegetation Absent Cover 15%

Riparian Vegetation Willow, spruce, aspen

Barriers —

Drainage Structures/Conditions wooden box culvert at hwy / 1 ft. falls at inlet

Ice Conditions None

Weather Clear, warm, slight breeze

Photographs 2-15 $\rightarrow$ d.s. ca. 60 ft below Napline / 2-16 $\rightarrow$ ds across Napline.

Remarks Stream follows w. side of hwy. ca. 1/4 mi to reach culvert.

3 ft. pool 10 ft downstream from Haines Row. 2 ft pool at Napline

- 24 in CMP under access road at hwy where flow started to follow hwy

8 May 1981

Unnamed Slough 112-1 (112-1.6)

Tok
↑

AK hwy

Haines Row

Access Rd

24" CMP

box culvert



By J. McDonnell & P. BachWaterbody Unnamed SloughDate 8 May 1981EMG-RX # 112-1 (112-1.6)Transect Location 120 ft. downstream from Napline

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0	0	0				
.7	.1	.1	.05	.05	.7	.002
.9	.15	.2	.15	.13	.2	.004
1.1	.2	.4	.3	.18	.2	.011
1.3	.2	.5	.45	.2	.2	.018
1.5	.2	.4	.45	.2	.2	.018
1.7	.2	.5	.45	.2	.2	.018
1.9	.25	.6	.55	.23	.2	.025
2.1	.25	.5	.55	.25	.2	.028
2.3	.3	.4	.45	.28	.2	.025
2.5	.35	.2	.3	.33	.2	.020
2.8	.3	0	.1	.33	.3	.010
RBWE 4.0	0	0	0	.15	1.2	0

Calculations checked by _____ Discharge 0.18 cfsDischarge _____ m³/s



5/8/81 - Unnamed Creek (RX 112-1.6) looking downstream across Haines pipeline crossing.



5/8/81 - Unnamed Creek (RX 112-1.6) looking downstream 60 ft. below Haines pipeline.

By McDonnell & Bach

Waterbody Unnamed Slough

Date 10 June 1981

EMG-RX # 112-1 (112-1.5)

Site Access On foot from Alaska highway

Color/Turbidity light brown / clear Temperature _____

D.O. 11 ppm pH — Conductivity 16 μ mhos

Bottom Type silt, organic detritus

Wetted width _____ Depth _____ Gradient low

Banks/Soils very slight / sandy loam

Aquatic Vegetation Absent Cover 60%

Riparian Vegetation Willow, aspen, spruce, grasses

Barriers possibly 1.5 ft steep falls at hwy culvert inlet

Drainage Structures/Conditions 6 ft x 6 ft wooden box culvert at hwy

Ice Conditions None

Weather Partly cloudy, mild

Photographs 4-8 $\rightarrow$ east along Napline at western most pond /
4-9 $\rightarrow$ east along Napline at eastern most pond

Remarks This survey describes western most channels
in this drainage. Survey on 8 May describes
eastern channel.

Flow in this drainage high from recent
rains.

Stream ponded at Haines ROW into 3
ponds ranging in size from $\frac{1}{2}$ to 1 acre.
Ephemeroptera naiads abundant in ponds. See
sketch

No fish observed above hwy. WF? fry
collected from channel downstream from
highway.

By McDonnell & BachWaterbody Unnamed SloughDate 10 June 1981EMG-RX # 112-1 (112-1.5)Transect Location 16 ft. downstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 8.3	0	0				
			.05	.125	1.3	.01
7.0	.25	.1				
			.15	.325	1.0	.05
6.0	.4	.2				
			.225	.425	1.0	.10
5.0	.45	.25				
			.35	.375	.5	.07
4.5	.3	.45				
			.475	.375	.5	.09
4.0	.45	.5				
			.575	.425	.5	.12
3.5	.4	.65				
			.6	.425	.5	.13
3.0	.45	.55				
			.3	.45	.5	.07
2.5	.45	.05				
			.025	.225	1.9	.01
RBWE 0.6	0	0				

Calculations checked by JMDischarge 0.65 cfsDischarge _____ m³/s

By Bach & McDowell Waterbody Unnamed Slough

Waterbody Unnamed Slough

Date: 10 June 1981 EMG-RX # 112-1 (112-1.5)

EMG-RX # 112-1 (112-1.5)

Section Surveyed Napline downstream to Tamana River

Fish present/Use WF? fry / rearing

Gear/Effort Seine, visual observation / ca 2000ft.

[illegible]



6/10/81 - Unnamed Slough (RX 112-1) looking east along Haines right-of-way (easternmost pond).



6/10/81 - Unnamed Slough (RX 112-1) looking east along Haines right-of-way (westernmost pond).

By _____ Waterbody Cathedral Creek #1 to #7

Date 1981 EMG-RX # 112-8 to 112-2

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

30 April - #1 flowing over ice - Elliott
9 May - most with surface flow at AK. hwy - Elliott
12 May - #2 & #4 with low flow - discharge
rest with no flow at AK. hwy - Bach & McDonnell
13 May - #4 low flow, rest dry at AK. hwy - Elliott
28 May - all with surface flow at AK. hwy - rain
for past 3 days - Bach & McDonnell
29 May - no flow at AK. hwy - all channels - Bach & McDonnell
9 June - surface flow in all except #6 - rain
for past week - heavy rain 8 June - Bach & McDonnell
17 June - no flow at AK. hwy - all channels - Bach & McDonnell

By J. McDonnell & P. BachWaterbody Cathedral Rapids Creek #2Date 12 May 1981EMG-RX # 112-7Transect Location 30 ft. downstream from Alaska hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.0	0	0				
			.125	.2	1.0	.025
2.0	.4	.25	.125	.45	1.5	.084
3.5	.5	0	0	.5	1.0	0
4.5	.5	0	.225	.6	.5	.068
5.0	.7	.45	.65	.7	.5	.228
5.5	.7	.85	.525	.7	.5	.184
6.0	.7	.2	.4	.6	1.0	.240
7.0	.5	.6	.4	.425	1.0	.170
8.0	.35	.2	.2	.3	1.0	.060
9.0	.25	.2	.1	.125	1.0	.013
RBWE 10.0	0	0				

Calculations checked by 62 Discharge 1.1 cfsDischarge m³/s

Tw = 3°C

Conductivity = 60 μ mhos

Waterbody Cathedral Rapids Creek #4

EMG-RX # 112-5

Transect Location 90 ft. downstream from Alaska hwy

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE Discharge 0.4 cfs

Discharge m^3/s
$$T_w = 4^\circ\text{C}$$

Conductivity = 30 μ mhos

By _____ Waterbody Cathedral Creek #1 to #7

Date 1981 EMG-RX # 112-8 to 112-2

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

15 July - no flow at AK. hwy. - all channels - Elliott

11 August - no flow at AK hwy. - all channels - Elliott

28 August - no flow at AK. hwy. - all channels - Kay & Johnson

4 September - no flow at AK. hwy. - all channels - Bach & McDowell

7 September - no flow at AK hwy. - all channels - about 4 ft's

in upper drainage #2 - flow ends about

1 mi above hwy - McDowell

21 September - no flow at AK. hwy. - all channels - Bach & Johnson

16 October - no flow at AK. hwy. - all channels - Elliott & Breyman

By _____ Waterbody Unnamed Creek
Date 1981 EMG-RX # 112-9
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks * See previous survey on 1 June 1981

15 July - Discharge taken - Elliott

11 August - No flow at AK. hwy - standing
water in scum pool - Elliott

28 August - No flow at AK. hwy - Kay & Johnson

4 September - No flow at AK. hwy - Bach & Mc Donnell

10 September - No flow at AK. hwy - Elliott
photographs - 5-3 → us to hwy culvert /

5-4 → us about 100 ft above hwy

21 September - Tw = 3°C, discharge - Bach & Johnson

By Elliott

Waterbody Unnamed Creek

Date 15 July 1981

EMG-RX # 112-9

Transect Location 30 ft. upstream from A.K. Hwy.

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE Discharge 0.06 cfs

Discharge m^3/s



9/10/81 - Unnamed Creek (RX 112-5
looking upstream to Alaska high-
way culvert.



9/10/81 - Unnamed Creek (RX 112-5
looking upstream 100 ft above
Alaska highway.

Waterbody Unnamed Creek

Date 21 September 1981

EMG-RX # 112-9

Transect Location 15 ft. downstream from A.K. hwy.

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE

Discharge 0.07 cfsDischarge m^3/s
$$T_w = 3^\circ\text{C}$$

By J. Kan

Waterbody Yerrick Creek

Date: 28 August 1981

EMG-RX # 113-1

Section Surveyed 2000 ft. above & below NWA alignment

Fish present/Use GR, DV / clearing

Gear/Effort Angling / 2 hrs.

[illegible]

Waterbody Yerrick Creek

Date: 8 September 1981

EMG-RX # 113-1

Section Surveyed From 1000ft below to 1000ft above NWA alignment

Fish present/Use GR, DV / tearing

Gear/Effort Electroshocker / 2000 ft.

Species	Length	Remarks
GR	240mm	- From below NWA alignment
"	208	
"	235	
"	221	
"	238	
"	142	
"	241	
DV	129mm	
"	68	
DV	145mm	- From above NWA alignment - Two GR plus several unidentified fish seen but not captured.

By McDonnell & BachWaterbody Yerrick CreekDate 11 September 1981EMG-RX # 113-1Section Surveyed For 1500 ft. upstream from AK. HwyFish present/Use GR, DV / rearingGear/Effort Electroshocker / 1500 ft.

Species	Length	Remarks
GR	364mm	
"	318	
"	315	
"	311	
"	304	
"	290	
"	290	
"	245	
"	243	
"	236	
"	234	
"	225	
"	214	
"	195	
"	190	
"	182	
"	172	
"	149	
"	142	
"	133	

Waterbody Yerrick Creek

Date 11 September 1981

EMG-RX # 113-1

Section Surveyed continued - 2 of 2

Fish present/Use _____

Gear/Effort _____

[illegible]

By McDonnell & Bach

Waterbody Yerrick Creek

Date 15 September 1981

EMG-RX # 113-1

Site Access On foot from Alaska highway

Color/Turbidity colorless/clear Temperature 9°C

D.O. 12 ppm pH - Conductivity 110 umhos

Bottom Type *

Wetted width _____ Depth _____ Gradient *

Banks/Soils *

Aquatic Vegetation * Cover *

Riparian Vegetation *

Barriers *

Drainage Structures/Conditions *

Ice Conditions none

Weather -

Photographs -

Remarks * See previous survey on 14 July 1981

Surface flow ends about 4500 ft.
downstream from AK. hwy. as on
14 July and 10 August.

By McDonnell & BachWaterbody Yerrick CreekDate 15 September 1981EMG-RX # 113-1Transect Location 150 ft. downstream from NWA alignment

(LB/RB orientation facing upstream)

Left channel

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1	0	0				
3	.35	.55	.275	.175	2	.10
5	.65	2.1	1.325	.5	2	1.33
6	1.0	2.9	2.5	.825	1	2.06
7	1.5	2.2	2.55	1.25	1	3.19
8	1.5	3.8	3.0	1.5	1	4.50
9	1.1	3.5	3.65	1.3	1	4.75
10	1.3	3.5	3.5	1.2	1	4.20
11	1.0	6.2	4.85	1.15	1	5.58
12	1.0	2.6	4.4	1.0	1	4.40
13	.9	2.5	2.55	.95	1	2.42
14	.7	.6	1.55	.8	1	1.24
16	.5	.85	.725	.6	2	.87
RBWE 20	.2	0	.425	.35	4	.60

Calculations checked by GE Discharge 35.2 cfsDischarge _____ m³/s

By McDonnell & BachWaterbody Yerrick CreekDate 15 September 1981EMG-RX # 113-1Transect Location 100 ft downstream from NWA alignment

(LB/RB orientation facing upstream)

Right channel

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 7.4	.35	0	0	.4	1.4	0
6	.45	0	.55	.475	.5	.13
5.5	.5	1.1	.6	.5	1.0	.30
4.5	.5	.1	.2	.5	.5	.05
4	.5	.3	1.0	.55	.5	.28
3.5	.6	1.7	1.225	.7	.5	.43
3	.8	.75	.9	.75	.5	.34
2.5	.7	1.05	1.15	.75	.5	.43
2	.8	1.25	1.125	.65	.5	.37
1.5	.5	1.0	.75	.4	1.1	.33
RBWE 0.4	.3	.5				

Calculations checked by GE Discharge 2.7 cfsDischarge m³/s

Total discharge at NWA alignment = 37.9 cfs

By McDonnell & BachWaterbody Yerrick CreekDate 15 September 1981EMG-RX # 113-1Transect Location 30 ft downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3.2	0	0				
			.01	.2	1.8	.004
5.0	.4	.02	.21	.475	1.0	.10
6.0	.55	.4	.675	.675	1.0	.46
7.0	.8	.95	.775	.75	1.5	.87
8.5	.7	.6	.55	.85	1.5	.70
10.0	1.0	.5	.275	1.1	1.5	.45
11.5	1.2	.05	.1	1.25	1.5	.19
13.0	1.3	.15	.65	1.35	1.5	1.32
14.5	1.4	1.15	1.375	1.45	1.5	2.99
16.0	1.5	1.6	1.1	1.35	1.5	2.23
17.5	1.2	.6	.55	1.0	1.5	.83
19.0	.8	.5	.45	.85	1.5	.57
20.5	.9	.4	.2	.95	1.5	.29
22.0	1.0	0	0	.75	3.0	0
RBWE 25.0	.5	0				

Calculations checked by GE Discharge 11.0 cfsDischarge _____ m³/s

By McDonnell & BachWaterbody Yerrick CreekDate 15 September 1981EMG-RX # 113-1Section Surveyed From 300ft above NWA alignment to 1/2 mi below AK. hwy.Fish present/Use GR, DV / rearingGear/Effort Electroshocker / about 1 1/2 mi.

Species	Length	Remarks
GR	237mm	- all from above AK hwy.
"	224	
"	224	- larger fish from
"	227	several larger pools below
"	241	NWA alignment
"	143	
"	229	
"	295	
"	132	
"	130	
"	178	
"	318	
"	218	
"	251	
"	259	
"	386	
"	182	
"	305	
"	257	
"	305	

By McDonnell & BachWaterbody Yerrick CreekDate 15 September 1981EMG-RX # 113-1Section Surveyed continued - 2 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	284mm	- from above buoy
"	241	
"	281	
"	200	
"	205	
"	231	
"	188	
"	261	
"	184	
"	208	
"	213	
"	232	
DV	138mm	Red streak on fins
"	147	
"	140	Red streak on fins
"	156	"
"	193	"
"	103	
GR	385mm	- from below buoy
"	326	

By McDonnell & BachWaterbody Yerrick CreekDate 15 September 1981EMG-RX # 113-1Section Surveyed continued - 3 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	325mm	- all from below hwy.
"	302	
"	292	- High concentration of
"	274	grayling found in a 100ft.
"	269	reach immediately
"	266	downstream from hwy
"	251	
"	246	
"	245	
"	242	
"	236	
"	233	
"	232	
"	231	
"	229	
"	223	
"	222	
"	206	
"	141	
"	134	

By Bach & JohnsonWaterbody Yerrick CreekDate 24 September 1981EMG-RX # 113-1Transect Location about 300 ft. downstream from NWA alignment

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 5	0	0				
8	1.05	.05	.025	.525	3	.04
10	1.75	.8	.425	1.4	2	1.19
11	1.5	1.6	1.2	1.625	1	1.95
13	1.95	1.55	1.575	1.725	2	5.43
14	2.0	1.4	1.475	1.975	1	2.91
15	2.05	.75	1.075	2.025	1	2.18
16	2.0	.7	.725	2.025	1	1.47
17	1.7	.55	.625	1.85	1	1.16
18	1.7	.9	.725	1.7	1	1.23
19	1.5	1.2	1.05	1.6	1	1.68
20	1.4	1.15	1.175	1.45	1	1.70
22	1.0	1.2	1.175	1.2	2	2.82
24	.7	1.25	1.225	.85	2	2.08
26	.3	.2	.725	.5	2	.73
RBWE 31	0	0	.1	.15	5	.08

Calculations checked by GEDischarge 26.7 cfs $T_w = 3.5^\circ\text{C}$ Discharge _____ m^3/s

By Johnson & BachWaterbody Yerrick CreekDate 24 September 1981EMG-RX # 113-1Section Surveyed 1000 ft above & below NWA alignment 2 pools
above AK. Hwy. & 100 ft reach below AK. Hwy.Fish present/Use GR, DV / Rearing, Spawning?Gear/Effort Electroshocker / about 2300 ft.

Species	Length	Remarks
GR	162 mm	- all from above NWA alignment
"	135	
"	265	
"	201	
"	174	
"	174	
"	231	
"	222	
"	233	
"	334	
DV	157 mm	- all DV 138 mm & larger
"	138	with red streaks on paired
"	56	fins - spawning colors
"	93	beginning to develop?
"	64	
"	59	
"	54	
"	61	
"	146	
"	51	

By Johnson & BachWaterbody Yerrick CreekDate 24 September 1981EMG-RX # 113-1Section Surveyed continued - 2 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
DV	53 mm	
"	56	
"	149	- from above NWA alignment
GR	165 mm	- from below NWA alignment
"	161	- all but 2 GR in 1000 ft
"	204	reach below NWA alignment
"	217	from 2 pools
"	224	
"	222	
"	200	
"	240	
"	234	
"	203	
"	241	
"	226	
"	195	
"	202	
"	249	
"	210	

By Johnson & BachWaterbody Yerick CreekDate 24 September 1981EMG-RX # 113-1Section Surveyed continued - 3 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	242 mm	
"	243	
"	206	
"	215	
"	210	
"	211	
"	183	
"	227	
"	184	
"	220	
"	140	
"	280	
"	254	
"	122	
DV	159 mm	- from 1000 ft reach below
"	143	NWA alignment
GR	241 mm	- from 2 pools above AK buoy
	298	
	213	

By Johnson & BachWaterbody Yerick CreekDate 24 September 1981EMG-RX # 113-1Section Surveyed continued - 4 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	314mm	
"	241	
"	215	
"	233	
"	245	
"	210	
"	229	
"	215	
"	209	
"	305	
"	226	
"	198	
"	208	
"	188	
"	239	- from 2 pools above AK. hwy
GR	205mm	- from 100 ft reach below AK. hwy
"	185	
"	227	
"	233	

By Johnson & BachWaterbody Yerrick CreekDate 24 September 1981EMG-RX # 113-1Section Surveyed Continued - 5 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	236mm	- all from 100 ft. reach below Ak. hwy.
"	230	
"	253	
"	229	
"	246	
"	210	
"	287	
"	236	
"	208	
"	252	
"	245	
"	257	
"	272	
"	250	
"	226	
"	236	
"	239	
"	233	
"	329	

By Elliott & BreymanWaterbody Yerrick CreekDate 16 October 1981EMG-RX # 113-1Transect Location 200 ft. downstream from NWA alignment

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.4	.5	.8				
	6.0	.25	.525	.65	4.6	1.57
	9.0	.5	.375	1.1	3.0	1.24
	12.0	.2	.35	1.55	3.0	1.63
	14.0	2.3	1.25	1.65	2.0	4.13
	15.5	1.9	2.1	1.7	1.5	5.36
	17.0	1.5	1.7	1.8	1.5	4.59
	19.0	1.9	1.7	1.45	2.0	4.93
	23.0	.8	1.35	.8	4.0	4.32
	28.0	.9	.85	.55	5.0	2.34
	34.5	.3	.6	.4	6.5	1.56
			.15	.1	5.5	.08
RBWE 40.0	0	0				

Calculations checked by GE Discharge 31.8 cfsDischarge _____ m³/s

By Elliott & Breyman

Waterbody Yerrick Creek

Date 16 October 1981

EMG-RX # 113-1

Section Surveyed From 1000 ft. below to NWA alignment

Fish present/Use GR, DV / rearing

Gear/Effort Electroshocker / 1000 ft

$$T_w = 2.5^\circ\text{C}$$
[illegible]

Waterbody Unnamed Creek

Date 12 May 1981

EMG-RX # 113-3

Transect Location 50 ft. downstream from Alaska hwy.

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE

Discharge 0.10 cfsDischarge m^3/s
$$T_w = 30^\circ\text{C}$$

By _____ Waterbody Unnamed Creek
Date 1981 EMG-RX # 113-4
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks

14 July - Discharge taken - Elliott
31 July - $T_w = 10^\circ\text{C}$ - Discharge taken - Kay & Johnson
13 August - $T_w = 9.5^\circ\text{C}$ - Discharge taken - Electroshocked
for 300 ft. downstream from hwy. - no
fish seen or captured - Kay & Johnson
27 August - $T_w = 9.5^\circ\text{C}$ - Flow too low to measure -
Visual observation for 300ft below hwy -
no fish seen - Kay & Johnson

By ElliottWaterbody Unnamed CreekDate 14 July 1981EMG-RX # 113-4Transect Location 30 ft. down stream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.5	0	0				
			.2	.4	2.5	.20
4	.8	.4	.45	.9	2	.81
6	1.0	.5	.45	1.0	1	.45
7	1.0	.4	.6	1.1	1	.66
8	1.2	.8	1.0	1.0	1	1.00
9	.8	1.2	.75	.7	1	.53
10	.6	.3	.35	.45	2	.32
12	.3	.4	.2	.15	3.3	.10
RBWE 15.3	0	0				

Calculations checked by GE Discharge 4.1 cfsDischarge _____ m³/s

By Kay & JohnsonWaterbody Unnamed CreekDate 31 July 1981EMG-RX # 113-4Transect Location 30ft. downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.5	0	0				
			.075	.3	1.0	.023
3.5	.6	.15	.175	.55	.5	.048
4.0	.5	.2	.25	.525	.5	.066
4.5	.55	.3	.35	.55	.5	.096
5.0	.55	.4	.325	.575	.5	.093
5.5	.6	.25	.225	.6	.5	.068
6.0	.6	.2	.125	.65	.5	.041
6.5	.7	.05	.05	.65	.5	.016
7.0	.6	.05	.175	.6	.5	.053
7.5	.6	.3	.35	.625	.5	.109
8.0	.65	.4	.5	.6	.5	.150
8.5	.55	.6	.65	.525	.5	.171
9.0	.5	.7	.575	.5	.5	.144
9.5	.5	.45	.25	.45	.6	.068
RBWE 10.1	.4	.05				

Calculations checked by GE Discharge 1.1 cfsDischarge m³/s

Tw = 10°C

By Kay & JohnsonWaterbody Unnamed CreekDate 13 August 1981EMG-RX # 113-4Transect Location 40 ft. below A.K. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.0	0	0				
			.25	.25	1.0	.06
3.0	.5	.5	.35	.475	.5	.08
3.5	.45	.2	.225	.5	.5	.06
4.0	.55	.25	.225	.575	.5	.06
4.5	.6	.2	.15	.55	.5	.04
5.0	.5	.1	.1	.5	.5	.03
5.5	.5	.1	.15	.55	.5	.04
6.0	.6	.2	.25	.5	.5	.06
6.5	.4	.3	.25	.425	.5	.05
7.0	.45	.2	.1	.475	.5	.02
7.5	.5	0	.125	.45	.5	.03
8.0	.4	.25	.15	.45	.5	.03
8.5	.5	.05	.025	.25	.5	.003
RBWE 9.0	0	0				

Calculations checked by GE Discharge 0.6 cfsDischarge m³/s

By Bach & McDonnell

Waterbody Unnamed Creek

Date 4 September 1981

EMG-RX # 113-4

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature 6°C

D.O. 8 ppm pH 6.1 Conductivity 60 umhos

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks No flow at NWA alignment, very
low flow below AK hwy. (< 0.1 cfs)

21 September - No flow at AK hwy - Johnson & Bach
16 October - Road construction - wood
box culvert being replaced with CMP

By Elliott Johnson & Kay

Waterbody Crystal Slough Creek

Date: 14 July 1981

EMG-RX # 114-1

Section Surveyed from AK. hwy upstream for about 500 ft.

Fish present/Use GR / Rearing

Gear/Effort Electroshocker / 500 ft

$$T_w = 6^\circ\text{C}$$
[illegible]

By Kay & Johnson

Waterbody Crystal Slough Creek

Date: 28 August 1981

EMG-RX # 114-1

Section Surveyed From 100ft below to 150ft above AK. hwy.

Fish present/Use GR, CN / Feeding

Gear/Effort Electroshocker / 250 ft.

$$T_w = 90^\circ\text{C}$$

Species	Length	Remarks
CN	71 mm	{ From below hwy
"	65	
"	81	
GR	157 mm	{ From pond just above hwy. - About 25 other juv. GR seen but unable to capture
"	210	
"	235	
"	206	
"	198	
- No other fish seen in stream above ponded area		

By Bach & McDowell

Waterbody Crystal Slough Springs

Date: 4 September 1981

EMG-RX # 114-1

Section Surveyed From 100ft below to 200ft above Ak. hwy.

Fish present/Use CN, GR / rearing

Gear/Effort Electroshocker / 300ft

[illegible]

By Bach & JohnsonWaterbody Crystal Slough CreekDate 21 September 1981EMG-RX # 114-1Transect Location 15 ft. downstream from A.K. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 4.7	0	0				
			.025	.225	1.3	.01
6.0	.45	.05	.2	.525	.5	.05
6.5	.6	.35	.6	.6	.5	.18
7.0	.6	.85	.825	.6	.5	.25
7.5	.6	.8	.725	.7	.5	.25
8.0	.8	.65	.575	.75	.5	.22
8.5	.7	.5	.375	.625	.5	.12
9.0	.55	.25	.125	.275	1.0	.03
RBWE 10.0	0	0				

Calculations checked by GE Discharge 1.1 cfsDischarge m³/s

Tw = 4°C

By Bach & Johnson

Waterbody Crystal Slough Creek

Date 21 September 1981

EMG-RX # 114-1

Section Surveyed From 600 ft below to 250 ft above AK. hwy.

Fish present/Use GR / Feeding

Gear/Effort Electroshocker / 850 ft.

[illegible]

By Kay & Johnson

Waterbody Unnamed Creek

Date 1981

EMG-RX # 119-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

23 June - Low flow at AK hwy.

25 June - Flow dropped since 6/23

Discharge taken

30 June - Trickle flow at AK hwy.

3 July - Flow back up at AK hwy.

By Kay & Johnson

Waterbody Unnamed Creek

Date 25 June 1981

EMG-RX # 119-1

Transect Location 50 ft. upstream from Ak. hwy.

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE Discharge 0.0006 cfs

Discharge m^3/s

By Kay & Johnson Waterbody Unnamed Creek

Date 9 July 1981 EMG-RX # 119-1

Site Access On foot from Alaska highway

Color/Turbidity light brown/clear Temperature 5°C

D.O. - pH - Conductivity -

Bottom Type Silt & organic debris

Wetted width - Depth - Gradient low

Banks/Soils Gradual / loam & organic mat

Aquatic Vegetation sedge Cover 75%

Riparian Vegetation Willow, spruce

Barriers -

Drainage Structures/Conditions *

Ice Conditions none

Weather Partly cloudy

Photographs 11-13 → u.s. at NWA alignment / 11-14 → across stream at NWA crossing - us. to right / 11-15 → ds 100 ft below NWA alignment / 11-16 → us. 150 ft above NWA alignment.

Remarks * See previous survey on 15 May 1981 and other spring surveys.

Flow up from rain during first week in July - Discharge taken - Data from NWA corridor.

21 July - No flow at AK hwy.

17 August - No flow at AK hwy.

28 August - No flow at AK hwy.

4 September - No flow at AK hwy.

By Kay & JohnsonWaterbody Unnamed CreekDate 9 July 1981EMG-RX # 119-1Transect Location 40 ft downstream from NWA alignment

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.0	.55	.25	.4	.675	.3	.081
1.3	.8	.55	.475	.75	.3	.107
1.6	.7	.4	.3	.6	.3	.054
1.9	.5	.2	.225	.45	.3	.030
2.2	.4	.25	.175	.4	.3	.021
2.5	.4	.1	.1	.4	.3	.012
2.8	.4	.1	.05	.375	.3	.006
RBWE 3.1	.35	0				

Calculations checked by GE Discharge 0.3 cfsDischarge _____ m³/s



7/9/81 - Unnamed Creek (RX 119-1) looking upstream 100 ft above Haines pipeline.



7/9/81 - Unnamed Creek (RX 119-1) looking downstream 100 ft below Haines pipeline.



7/9/81 - Unnamed Creek (RX 119-1)
looking northwest along Haines
pipeline right-of-way at crossing



7/9/81 - Unnamed Creek (RX 119-1)
looking upstream at Haines pipe-
line crossing.

C

By Kay & Johnson Waterbody Unnamed Creek

Date 1981 EMG-RX # 119-2

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

23 June - No flow at Alaska hwy.

25 June - No flow at Alaska hwy.

30 June - No flow at Alaska hwy.

3 July - No flow at Alaska hwy.



6/5/81 - Unnamed Creek (RX 119-2)
looking upstream 100 ft above
Haines pipeline.



6/5/81 - Unnamed Creek (RX 119-2)
looking downstream 100 ft below
Alaska highway.



6/5/81 - Unnamed Creek (RX 119-2)
looking southeast along Haines
pipeline right-of-way at crossing



6/5/81 - Unnamed Creek (RX 119-2)
looking upstream at Alaska high-
way CMP and scour pool.

By Kay & Johnson

Waterbody Unnamed Creek

Date 9 July 1981

EMG-RX # 119-2

Site Access On foot from Alaska highway

Color/Turbidity light brown / clear Temperature 5°C

D.O. — pH — Conductivity —

Bottom Type Silt & organic

Wetted width — Depth — Gradient Low

Banks/Soils Mild / silty loam

Aquatic Vegetation Absent Cover 60%

Riparian Vegetation Willow, spruce, birch, aspen

Barriers intermittent flow

Drainage Structures/Conditions *

Ice Conditions none

Weather Partly cloudy

Photographs 11-17 → ds ~ 250 ft below AK. hwy / 11-18 →
us at NWA alignment / 11-19 → us ~ 350 ft
above NWA alignment.

Remarks * see previous survey on 15 May 1981

- Stream flow in response to rain during
first week of July. Data from NWA
corridor.

21 July - No flow at AK. hwy

17 August - No flow at AK. hwy.

28 August - No flow at AK hwy.

4 September - No flow at AK. hwy

By Kay & JohnsonWaterbody Unnamed CreekDate 9 July 1981EMG-RX # 119-2Transect Location about 100 ft downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.0	0	0				
			.025	.25	.8	.005
1.8	.5	.05	.1	.525	.2	.011
2.0	.55	.15	.175	.575	.2	.020
2.2	.6	.2	.3	.55	.2	.033
2.4	.5	.4	.5	.475	.2	.048
2.6	.45	.6	.55	.425	.2	.047
2.8	.4	.5	.375	.35	.2	.026
3.0	.3	.25	.125	.15	.3	.006
RBWE 3.3	0	0				

Calculations checked by GE Discharge 0.20 cfsDischarge _____ m³/s



7/9/81 - Unnamed Creek (RX 119-2)
looking upstream about 350 ft
above Haines pipeline.



7/9/81 - Unnamed Creek (RX 119-2)
looking downstream about 250 ft
below Haines pipeline.



7/9/81 - Unnamed Creek (RX 119-2) looking upstream at Haines pipeline crossing.

By Elliott & Kay

Waterbody Unnamed Creek

Date 17 June 1981

EMG-RX # 119-3

Site Access On foot from AK hwy.

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions 24in CMP at hwy

Ice Conditions none

Weather _____

Photographs _____

Remarks _____

Trickle flow through CMP
No flow observed at AK hwy the
remainder of the season.

By Bach & JohnsonWaterbody Unnamed CreekDate 29 September 1981EMG-RX # 121-3Transect Location 10 ft. downstream from NWA alignment

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.3	.7	.05				
			.075	.7	.3	.016
1.6	.7	.1	.1	.85	.3	.026
1.9	1.0	.1	.1	1.0	.2	.020
2.1	1.0	.1	.125	.85	.3	.032
2.4	.7	.15	.175	.675	.3	.035
2.7	.65	.2	.15	.675	.3	.030
3.0	.7	.1	.075	.6	.2	.009
RBWE 3.2	.5	.05				

Calculations checked by PB Discharge 0.17 cfsDischarge _____ m³/s

By Elliott, Kay, Johnson

Waterbody Bitters Creek

Date 8 May 1981

EMG-RX # 122-1

Site Access _____

Color/Turbidity light brown/clear Temperature 1°C

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions 150 in X 300 ft multiplate CMP

Ice Conditions _____

Weather _____

Photographs _____

Remarks Culvert surveyed

drop = 26.61 ft / 300 ft = 8.9% slope
perched 0.6 ft

floating chip = 38.0, 38.0, 38.0 sec for 300 ft
average velocity = 7.9 ft/s

discharge taken

By J. Kay & M. JohnsonWaterbody Bitters CreekDate 8 May 1981EMG-RX # 122-1Transect Location ca. 40 ft. upstream from Alaska hwy. CMP

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.4	0	0				
			.1	.3	.6	.02
2.0	.6	.2				
			.6	.725	.6	.26
2.6	.85	1.0				
			1.05	.9	.6	.57
3.2	.95	1.1				
			1.1	.875	.6	.58
3.8	.8	1.1				
			1.2	.8	.6	.58
4.4	.8	1.3				
			1.35	.8	.6	.65
5.0	.8	1.4				
			1.4	.825	.6	.69
5.6	.85	1.4				
			1.25	.825	.6	.62
6.2	.8	1.1				
			1.15	.8	.6	.55
6.8	.8	1.2				
			1.25	.75	.6	.58
7.4	.7	1.3				
			1.3	.625	.6	.49
8.0	.55	1.3				
			1.25	.575	.6	.43
8.6	.6	1.2				
			1.3	.6	.6	.47
9.2	.6	1.4				
			1.3	.6	.8	.62
10.0	.6	1.2				
			1.05	.6	1.0	.63
11.0	.6	.9				
			.45	.3	1.0	.14
RBWE 12.0	0	0				

Calculations checked by GE Discharge 7.9 cfsDischarge m³/s

By Elliott Kay Johnson

Waterbody Bitters Creek

Date 14 May 1981 - AM

EMG-RX # 122-1

Site Access _____

Color/Turbidity _____ Temperature 1.5°C

D.O. 13 ppm pH _____ Conductivity 62 μ mhos

Bottom Type coarse sand, gravel, silt in pools

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

floating chip = 65.0, 64.5, 66.0 sec for 300ft
average velocity = 4.6 ft/s

- discharge taken

Visual survey - AK hwy to mouth - no fish
seen. Stream nearly ice-free

By J. Kay & M. JohnsonWaterbody Bitters CreekDate 14 May 1981EMG-RX # 122-1Transect Location ca. 40ft. upstream from Alaska hwy. CMP

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE	2.0	0				
	2.6	.25	.05	.125	.6	.004
	3.2	.3	.15	.275	.6	.025
	3.8	.3	.4	.3	.6	.072
	4.4	.3	.85	.3	.6	.153
	5.0	.35	.9	.325	.6	.176
	5.6	.4	.6	.375	.6	.135
	6.2	.4	.55	.4	.6	.132
	6.8	.35	.7	.375	.6	.158
	7.4	.3	.8	.325	.6	.156
	8.0	.3	.8	.3	.6	.144
	8.6	.25	.75	.275	.6	.124
	9.2	.2	.6	.225	.6	.081
	9.8	.2	.55	.2	.6	.066
	10.4	.2	.45	.2	.6	.054
			.15	.1	.6	.009
RBWE	11.0	0				

Calculations checked by GEDischarge 1.5 cfsDischarge _____ m³/s

By Kay E. Johnson

Waterbody Bitters Creek

Date 19 May 1981

EMG-RX # 122-1

Site Access On foot from Alaska highway

Color/Turbidity light brown/clear Temperature 5.5°C

D.O. 11 ppm pH - Conductivity 152 u/mhos

Bottom Type

Wetted width

Depth

Gradient

Banks/Soils

Aquatic Vegetation

Cover

Riparian Vegetation

Barriers

Drainage Structures/Conditions

Ice Conditions

Large blocks on shaded banks

Weather

Partly cloudy, calm

Photographs

Remarks

By Kay & JohnsonWaterbody Bitters CreekDate 19 May 1981EMG-RX # 122-1Transect Location 50 ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.7	0	0	.1	.175	.8	.014
2.5	.35	.2	.3	.4	.5	.060
3.0	.45	.4	.55	.5	.5	.138
3.5	.55	.7	.8	.575	.5	.230
4.0	.6	.9	.875	.6	.5	.263
4.5	.6	.85	.8	.6	.5	.240
5.0	.6	.75	.725	.55	.5	.199
5.5	.5	.7	.75	.525	.5	.197
6.0	.55	.8	.8	.525	.5	.210
6.5	.5	.8	.75	.5	.5	.188
7.0	.5	.7	.7	.475	.5	.166
7.5	.45	.7	.65	.45	.5	.146
8.0	.45	.6	.575	.45	.5	.129
8.5	.45	.55	.575	.45	.5	.129
9.0	.45	.6	.6	.425	1.0	.255
10.0	.4	.6	.45	.35	1.0	.158
RBWE 11.0	.3	.3				

Calculations checked by 62 Discharge 2.7 cfsDischarge _____ m³/s

By Kay & Johnson

Waterbody Bitters Creek

Date 27 May 1981

EMG-RX # 122-1

Site Access On foot from Alaska highway

Color/Turbidity dark brown / clear Temperature 4.5°C

D.O. 10 ppm pH — Conductivity 41 μ mhos

Bottom Type —

Wetted width — Depth — Gradient —

Banks/Soils —

Aquatic Vegetation — Cover —

Riparian Vegetation —

Barriers —

Drainage Structures/Conditions —

Ice Conditions None from hwy to mouth / some on bank
upstream from hwy.

Weather Clear, light wind

Photographs —

Remarks Water higher than last survey.

No fish seen from hwy to mouth.

Floating chip = 31.4, 30.5, 31.8 sec for 300ft

average velocity = 9.6 ft/s

By Kay & JohnsonWaterbody Bitters CreekDate 27 May 1981EMG-RX # 122-1Transect Location 50ft upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.3	0	0				
1.7	.6	.1	.05	.3	.4	.006
2.3	.9	.3	.2	.75	.6	.090
3.0	1.1	.8	.55	1.0	.7	.385
3.6	1.15	1.0	.9	1.125	.6	.608
4.2	1.2	1.2	1.1	1.175	.6	.776
4.8	1.2	1.3	1.25	1.2	.6	.900
5.4	1.4	1.0	1.15	1.3	.6	.897
6.0	1.3	1.1	1.05	1.35	.6	.851
6.6	1.3	1.1	1.1	1.3	.6	.858
7.2	1.25	1.1	1.1	1.275	.6	.842
7.8	1.3	.9	1.0	1.275	.6	.765
8.4	1.2	.9	.9	1.25	.6	.675
9.0	1.3	1.0	.95	1.25	.6	.713
10.0	1.2	1.0	1.0	1.25	1.0	1.250
11.0	.9	.9	.95	1.05	1.0	.998
RBWE 12.0	.45	.1	.5	.675	1.0	.338

Calculations checked by JKDischarge 11.0 cfsDischarge _____ m³/s

By Kay & Johnson

Waterbody Bitters Creek

Date 2 June 1981

EMG-RX # 122-1

Site Access On foot from Alaska highway

Color/Turbidity Brown / light turbidity Temperature 4°C

D.O. 11 ppm

pH -

Conductivity 52 μ mhos

Bottom Type

Wetted width

Depth

Gradient

Banks/Soils

Aquatic Vegetation

Cover

Riparian Vegetation

Barriers

Drainage Structures/Conditions

Ice Conditions None

Weather Overcast & raining

Photographs -

Remarks

Floating chip = 24.0, 26.0, 27.0 sec for 300 ft.
average velocity = 11.7 ft/s

4 June Tw = 2.5°C - floating chip = 30.2, 30.6, 31.8 sec
average velocity = 9.7 ft/s

5 June Tw = 3°C - floating chip = 23.1, 23.3, 22.0 sec
average velocity = 13.2 ft/s

10 June Tw = 3°C, pH = 6.4 - flowing high & turbid.

12 June Tw = 4°C - angling in scour pool and
visual observation for 200 ft downstream - No
fish caught or seen - Water clear & lower

By Kay & JohnsonWaterbody Bitters CreekDate 2 June 1981EMG-RX # 122-1Transect Location 40ft upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0.7	0	0				
			.3	.65	1.3	.25
2.0	1.3	.6	1.2	1.4	1	1.68
3.0	1.5	1.8	1.7	1.55	1	2.64
4.0	1.6	1.6	1.55	1.575	1	2.44
5.0	1.55	1.5	1.475	1.525	1	2.25
6.0	1.5	1.45	1.45	1.45	1	2.10
7.0	1.4	1.45	1.5	1.425	1	2.14
8.0	1.45	1.55	1.475	1.425	1	2.10
9.0	1.4	1.4	1.35	1.4	1	1.89
10.0	1.4	1.3	1.325	1.325	1	1.76
11.0	1.25	1.35	.7	.95	1	.67
12.0	.65	.05	.025	.325	0.9	.01
RBWE 12.9	0	0				

Calculations checked by GE Discharge 19.9 cfsDischarge _____ m³/s

By Kay & Johnson Waterbody Bitters Creek
Date 15 June 1981 EMG-RX # 122-1
Site Access On foot from Alaska highway
Color/Turbidity light brown/clear Temperature 5.5°C
D.O. 10 ppm pH 6.71 Conductivity 52 μ mhos
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather Over cast, light rain
Photographs _____

Remarks No fish observed over 100 ft. below CMP.
Floating chip = 37.6, 38.7 & 37.2 sec in 300 ft.
average velocity = 7.9 ft/s
17 June - floating chip = 39.5, 37.9, 35.2 sec
ave. velocity = 8.0 ft/s
CN seen below hwy - see fish data sheet.
19 June - Tw = 7°C - floating chip = 46.6, 47.2, 49.0 sec
ave. velocity = 6.3 ft/s
23 June - Tw = 6.5°C - floating chip = 48.5, 48.6, 49.4 sec.
ave. velocity = 6.1 ft/s
- no fish seen for 100 ft. below scour pool.

By Kay & JohnsonWaterbody Bitters CreekDate 15 June 1981EMG-RX # 122-1Transect Location 50 ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.4	0	0				
	2.0	.65	.05	.325	.6	.01
	3.0	.9	.325	.775	1.0	.25
	4.0	1.1	.7	1.0	1.0	.70
	5.0	1.1	.85	1.1	1.0	.94
	6.0	1.0	.875	1.05	1.0	.92
	7.0	.8	.95	.9	1.0	.86
	8.0	.7	1.075	.75	1.0	.81
	9.0	.6	1.125	.65	1.0	.73
	10.0	.6	1.1	.6	1.0	.66
	11.0	.65	.9	.625	1.0	.56
	12.0	.15	.35	.4	1.0	.14
RBWE						

Calculations checked by GEDischarge 6.6 cfsDischarge _____ m³/s

By M Johnson

Waterbody Bitters Creek

Date 17 June 1981

EMG-RX # 122-

Section Surveyed Alaska highway downstream to Tanana floodplain

Fish present/Use CN

Gear/Effort Visual observation / ca 1 min

[illegible]

By Kay & Johnson

Waterbody Bitters Creek

Date 1981

EMG-RX # 122-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

25 June - floating chip = 58.5, 65.7, 57.4 sec
ave. velocity = 5.0 ft/s

No fish seen for 100ft below scour pool.

Discharge taken.

3 July - Water high, slightly turbid

7 July - floating chip = 25.3, 26.0, 24.8 sec
ave. velocity = 11.8 ft/s

9 July - $T_w = 6^\circ\text{C}$ - Electroshocked above &
below hwy. - see fish data sheet.

21 July - $T_w = 12^\circ\text{C}$ - floating chip = 67.3, 68.4, 67.5 sec.
ave velocity = 4.4 ft/s - Discharge taken

By Kay & JohnsonWaterbody Bitters CreekDate 25 June 1981EMG-RX # 122-1Transect Location about 50 ft. upstream from AK Hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.9	0	0				
			.1	.225	1.1	.025
3.0	.45	.2				
			.3	.475	.6	.086
3.6	.5	.4				
			.55	.525	.6	.173
4.2	.55	.7				
			.65	.575	.6	.224
4.8	.6	.6				
			.6	.55	.6	.198
5.4	.5	.6				
			.65	.475	.6	.185
6.0	.45	.7				
			.8	.4	1.0	.320
7.0	.35	.9				
			.85	.325	1.0	.276
8.0	.3	.8				
			.75	.3	1.0	.225
9.0	.3	.7				
			.75	.25	1.0	.188
10.0	.2	.8				
			.6	.25	1.0	.150
RBWE 11.0	.3	.4				

Calculations checked by GE Discharge 2.1 cfsDischarge m³/s

By Elliott Johnson & Kay

Waterbody Bitters Creek

Date 9 July 1981

EMG-RX # 122-1

Section Surveyed 1500 ft. above & below AK. Hwy

Fish present/Use GR, CN, RW / Rearing

Gear/Effort Electroshocker / 3000 ft

[illegible]

By Kay & JohnsonWaterbody Bitters CreekDate 21 July 1981EMG-RX # 122-1Transect Location about 50ft. upstream from Ak. hwy

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.0	0	0				
			.075	.175	1.0	.013
3.0	.35	.15	.225	.4	.5	.045
3.5	.45	.3	.325	.475	.5	.077
4.0	.5	.35	.425	.5	.5	.106
4.5	.5	.5	.525	.525	.5	.138
5.0	.55	.55	.575	.6	.5	.173
5.5	.65	.6	.55	.625	.5	.172
6.0	.6	.5	.45	.55	.5	.124
6.5	.5	.4	.45	.45	.5	.101
7.0	.4	.5	.4	.35	1.0	.140
8.0	.3	.3	.3	.275	1.0	.083
9.0	.25	.3	.25	.25	1.0	.063
10.0	.25	.2	.1	.125	1.1	.014
RBWE 11.1	0	0				

Calculations checked by GE Discharge 1.2 cfsDischarge _____ m³/s

By Kay & Johnson Waterbody Bitters Creek
Date 1981 EMG-RX # 122.1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks _____
22 July - $T_w = 12^\circ\text{C}$ - Electroshocked below
hwy - see fish data sheets
4 August - $T_w = 7.5^\circ\text{C}$ - Electroshocked below
hwy - see fish data sheet.
6 August - $T_w = 8.5^\circ\text{C}$ - Electroshocked below
hwy - see fish data sheets.
7 August - Discharge taken
19 August - $T_w = 10.5^\circ\text{C}$ - Discharge taken.
Electro shocked above & below hwy. - See
fish data sheets.

By Kay & JohnsonWaterbody Bitters CreekDate 22 July 1981EMG-RX # 122-1Section Surveyed from AK. hwy. downstream for about 1500ft.Fish present/Use GR, CN, RW / rearingGear/Effort Electroshocker / 1500ft.

Species	Length	Remarks
GR	109mm	
"	113	
"	84	
"	127	
"	91	
"	80	
"	113	
"	98	
"	115	
"	123	
"	117	
"	114	
"	134	
"	112	
"	153	
"	80	
"	125	
"	94	
"	121	
"	91	

By Kay & JohnsonWaterbody Bitter CreekDate 22 July 1981EMG-RX # 122-1Section Surveyed Continued - 2 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	113 mm	
"	130	
"	59	
"	91	
CN	73 mm	- many other CN seen
"	70	but not captured.
"	53	
"	80	
"	71	
"	83	
"	66	
"	66	
"	78	
"	87	
"	56	
"	54	
"	93	
"	78	
"	73	
"	82	

By Kay & JohnsonWaterbody Bitters CreekDate 22 July 1981EMG-RX # 122-1Section Surveyed continued - 3 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	64mm	
"	88	
"	75	
"	83	
"	67	
"	65	
"	80	
RW	84mm	
"	85	
"	86	
"	44	- Young of the year RW captured with dipnet, many more seen.
"	46	
"	43	
"	50	
"	54	
"	45	
"	51	
"	45	
"	40	

By Elliott Johnson & Kay

Waterbody Bitters Creek

Date 4 August 1981

EMG-RX # 122-1

Section Surveyed from 1000ft below to AK Hwy

Fish present/Use GR, CN, RW / rearing

Gear/Effort Electroshocker / 1000 ft.

$$T_w = 7.5^\circ\text{C}$$
[illegible]

By Elliott, Johnson & KayWaterbody Bitters CreekDate 6 August 1981EMG-RX # 122-1Section Surveyed from 1000ft below to AK. hwy.Fish present/Use GR, CN, RW, rearingGear/Effort Electroshocker / 1000 ft.

Tw = 8.5°C

Species	Length	Remarks
GR	101mm	
"	108	
"	101	
"	62	
"	102	
"	153	
"	123	
"	106	
"	78	
"	63	
"	218	
"	246	
"	235	} from hwy CMP seom pool
"	209	
"	229	
CN	82mm	
"	66	
"	64	
"	71	
"	70	

By Elliott, Johnson & Kay

Waterbody Bittern Creek

Date 6 August 1981

EMG-RX # 122-1

Section Surveyed continued - 2 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	58mm	
"	69	
"	63	
"	79	
"	65	
"	64	
"	57	
"	65	
"	75	
"	79	
"	87	
"	82	
"	75	
"	88	
"	95	
"	96	
"	88	
"	90	
RW	89mm	
"	97	

By Elliott, Johnson & Kay

Waterbody Bitters Creek

Date 8 August 1981

EMG-RX # 122-1

Section Surveyed continued - 3 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
RW	92 mm	
"	94	
"	58	
"	92	
"	58	
"	70	
"	87	
"	92	
"	99	
"	133	
"	89	
"	147	
"	101	
"	100	
"	101	

By Johnson & ElliottWaterbody Bitters CreekDate 7 August 1981EMG-RX # 122-1Transect Location 30 ft. upstream from Ak. hwy

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 4.0	0	0				
			.35	.2	.5	.035
4.5	.4	.7	.775	.45	.5	.174
5.0	.5	.85	.85	.5	.5	.213
5.5	.5	.85	.8	.525	.5	.210
6.0	.55	.75	.725	.55	.5	.199
6.5	.55	.7	.65	.55	.5	.179
7.0	.55	.6	.55	.55	.5	.151
7.5	.55	.5	.45	.525	.5	.118
8.0	.5	.4	.425	.45	1.0	.191
9.0	.4	.45	.575	.325	1.0	.187
10.0	.25	.7	.525	.25	1.0	.131
11.0	.25	.35	.175	.125	1.0	.022
RBWE 12.0	0	0				

Calculations checked by GEDischarge 1.8 cfsDischarge _____ m³/s

By Kay & JohnsonWaterbody Bitters CreekDate 19 August 1981EMG-RX # 122-1Transect Location 75 ft. upstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.3	0	0				
			.475	.125	1.2	.071
2.5	.25	.95				
			1.075	.275	.2	.059
2.7	.3	1.2				
			1.15	.35	.3	.121
3.0	.4	1.1				
			1.2	.375	.2	.090
3.2	.35	1.3				
			1.3	.35	.3	.137
3.5	.35	1.3				
			1.175	.325	.3	.115
3.8	.3	1.05				
			1.0	.3	.3	.090
4.1	.3	.95				
			.8	.275	.3	.066
4.4	.25	.65				
			.325	.125	.8	.033
RBWE 5.2	0	0				

Calculations checked by M.J. Discharge 0.8 cfsDischarge _____ m³/s

By Kay & JohnsonWaterbody Bitters CreekDate 19 August 1981EMG-RX # 122-1Section Surveyed 500 ft. above & below AK. hwy.Fish present/Use GR, CN, RW / rearingGear/Effort Electroshocker / 1000 ft.

Species	Length	Remarks
GR	63 mm	- all fish from below hwy.
"	59	
"	67	
"	119	
"	202	
"	227	
"	153	
"	288	
"	185	
"	143	
"	94	
"	102	
"	270	
"	115	
"	101	
"	229	
"	110	
"	104	
"	125	
"	118	

By Kay & Johnson

Waterbody Bitters Creek

Date: 19 August 1981

EMG-RX # 122-1

Section Surveyed continued - 2 of 3

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
CN	76 mm	- All fish from below buoy.
"	63	
"	89	
"	86	
"	79	
"	70	
"	68	
"	74	
"	57	
"	75	
"	59	
RW	93 mm	
"	101	
"	92	
"	78	
"	62	
"	88	
"	107	
"	70	
"	88	

By Kay & Johnson Waterbody Bitters Creek

Date: 19 August 1981 EMG-RX # 122-1

Section Surveyed continued - 3 of 3

Fish present/Use _____

Gear/Effort

[illegible]

By Kay & Johnson

Waterbody Bitters Creek

Date 1981

EMG-RX # 122-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

31 August - $T_w = 8^\circ\text{C}$ - Electroshocked below
hwy. - see fish data sheets.

3 September - $T_w = 4.5^\circ\text{C}$, D.O. = 10 ppm, pH = 6.8, Cond = 110 μmhos
Discharge taken

9 September - $T_w = 5^\circ\text{C}$ - Electroshocked below
hwy. - see fish data sheet.

17 September - $T_w = 2^\circ\text{C}$ - floating chip = 55.4, 56.1, 57.2 sec.
ave. velocity = 5.3 ft/s Discharge taken

18 September - $T_w = 3.5^\circ\text{C}$ - Electroshocked above &
below highway. - see fish data sheet.

29 September - $T_w = 0.5^\circ\text{C}$ - Electroshocked below highway.
see fish data sheet. Discharge taken.

16 October. Water up & flowing over ice.

By Johnson & KayWaterbody Bitters CreekDate 31 August 1981EMG-RX # 122-1Section Surveyed From 1000ft. below to AK. hwy.Fish present/Use GR, CN / rearingGear/Effort Electroshocker / 1000 ft.

Species	Length	Remarks
GR	56mm	- water very low $T_w = 8^{\circ}\text{C}$
"	116	
"	175	
"	57	
"	101	
"	62	
"	174	
"	99	
"	59	
"	70	
"	73	
"	68	
"	64	
"	53	
"	107	
"	112	
"	125	
"	116	
"	114	
"	260	} from scour pool
"	209	

Date 31 August 1981

Waterbody Bitters Creek

EMG-RX # 122-1

Section Surveyed Continued - 2 of 2

Fish present/Use _____

Gear/Effort _____

[illegible]

By Kay & Johnson Waterbody Bitters Creek

Date 3 September 1981 EMG-RX # 122-1

Transect Location 60 ft upstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 5.0	0	0				
			.275	.175	.3	.014
5.3	.35	.55	.6	.4	.3	.072
5.6	.45	.65	.875	.475	.3	.125
5.9	.5	1.1	1.3	.5	.3	.195
6.2	.5	1.5	1.525	.475	.3	.217
6.5	.45	1.55	1.35	.4	.3	.162
6.8	.35	1.15	1.05	.35	.3	.110
7.1	.35	.95	.85	.325	.3	.083
7.4	.3	.75	.725	.275	.3	.060
7.7	.25	.7	.35	.125	.6	.026
RBWE 8.3	0	0				

Calculations checked by MJ Discharge 1.1 cfs

Discharge m³/s

By Kear & Johnson

Waterbody Bitters Creek

Date 9 September 1981

EMG-RX # 122-1

Section Surveyed For 100 ft below A.K. Hwy

Fish present/Use GR, CN / Treating

Gear/Effort Electroshocker / 100 ft.

[illegible]

By Bach & Johnson Waterbody Bitters Creek
 Date 17 September 1981 EMG-RX # 122-1
 Transect Location 60ft. upstream from A.K. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.0	0	0				
	3.0	.45	.05	.225	1.0	.01
	3.6	.5	.3	.475	.6	.09
	4.0	.55	.55	.525	.4	.12
	4.6	.5	.65	.525	.6	.20
	5.0	.55	.625	.525	.4	.13
	5.6	.5	.525	.525	.6	.17
	6.0	.45	.525	.475	.4	.10
	7.0	.4	.575	.425	1.0	.24
	8.0	.35	.65	.375	1.0	.24
	9.0	.4	.725	.375	1.0	.27
	10.0	.3	.775	.35	1.0	.27
	11.0	.3	.625	.3	1.0	.19
			.325	.3	.5	.05
RBWE 11.5	.3	.2				

Calculations checked by GE Discharge 2.1 cfs
 Discharge _____ m³/s

By Bach & JohnsonWaterbody Bitters CreekDate 18 September 1981EMG-RX # 122-1Section Surveyed From 750ft. below to 250ft above AK hwy.Fish present/Use GR, CN / rearingGear/Effort Electroshocker 1000 ft. $T_w = 3.5^{\circ}\text{C}$

Species	Length	Remarks
GR	54 mm	- all fish captured below AK.
"	70	hwy culvert. No fish seen
"	53	or captured above culvert.
"	68	
"	62	
"	120	
"	101	
"	74	
"	126	
"	94	
"	149	
CN	68 mm	
"	66	
"	75	
"	53	
"	65	
"	68	

By Bach & JohnsonWaterbody Bitters CreekDate 29 September 1981EMG-RX # 122-1Transect Location 50 ft. downstream from AK. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 7.0	.4	.05				
			.2	.45	1.6	.144
5.4	.5	.35				
			.25	.55	.4	.055
5.0	.6	.15				
			.325	.6	.5	.098
4.5	.6	.5				
			.6	.6	.5	.180
4.0	.6	.7				
			.675	.6	.5	.203
3.5	.6	.65				
			.425	.55	.5	.117
3.0	.5	.2				
			.575	.55	.5	.158
2.5	.6	.95				
			.825	.475	.5	.196
2.0	.35	.7				
			.875	.325	.5	.142
1.5	.3	1.05				
			.575	.3	.9	.155
RBWE 0.6	.3	.1				

Calculations checked by PB Discharge 1.4 cfs $T_w = 0.5^\circ\text{C}$ Discharge m³/s

By Johnson & Bach

Waterbody Bitters Creek

Date 29 September 1981

EMG-RX # 122-1

Section Surveyed From 300 ft. below up to A.K. Hwy.

Fish present/Use CN / Feeding

Gear/Effort Electroshocker / Riffles only

$$T_w = 0.5^\circ\text{C}$$
[illegible]

Day	May		June		July		August	
	Min	Max	Min	Max	Min	Max	Min	Max
1	-	-	4	7	4.5	7	9.5	11.5
2	-	-	2	5	5.5	6.5	9	10.5
3	-	-	1	3	3	5.5	8	9.5
4	-	-	1.5	2	2	4.5	6.5	8
5	-	-	1	4	3.5	4	6	8.5
6	-	-	2.5	4.5	3	3.5	6.5	9
7	-	-	1.5	4	2.5	3.5	6.5	8
8	-	-	1	4	2.5	3.5	7	8
9	-	-	0	2.5	3	6	5.5	8
10	-	-	1	3.5	5	6.5	5	8.5
11	-	-	2	3	6	8	6.5	9
12	-	-	2	5.5	6.5	8	6.5	8.5
13	-	-	3	5.5	5.5	8.5	7.5	7.5
14	-	-	4	6	6	9.5	5	8
15	-	-	3.5	5	7.5	8	5	6
16	0.5	4	2.5	5	7.5	10	5.5	7.5
17	0.5	4	3	6	8	10.5	2.5	5.5
18	0.5	5	3.5	7	7.5	8.5		
19	0	4.5	5.5	8.5	6.5	10		
20	1	3.5	4.5	8.5	7.5	11		
21	1.5	6.5	5.5	7	8.5	13		
22	1	5.5	5.5	7	9	13		
23	0.5	2.5	4.5	9	10	13		
24	0	2.5	4	8	9.5	13.5		
25	1.5	2.5	4.5	9.5	9.5	12.5		
26	1	2.5	6.5	9	8	10		
27	1	5	6	8.5	8	12.5		
28	3	4.5	6	10	8	12.5		
29	1.5	5	6.5	9.5	9.5	13		
30	2.5	7	6	8.5	9	11.5		
31	4.5	7			8.5	12		

Bitters Creek: RX 122-1

Daily minimum-maximum water temperature in °C taken with recording thermograph from the highway culvert scour pool.

By Kory & Johnson

Waterbody Unnamed Creek

Date 1981

EMG-RX # 122-2

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

23 June - no flow at AK. hwy.

30 June - no flow at AK. hwy.

3 July - good flow for this drainage - water
clear.

21 July - no flow at AK. hwy.

17 August - no flow at AK. hwy.

28 August - no flow at AK. hwy.

3 September - no flow at AK. hwy.

Day	May		June		July		August		September	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	-	-	4	5.5	5.5	6.5	9.5	10	5	6
2	-	-	2.5	5	5.5	6	9	9.5	3.5	4.5
3	-	-	1.5	3.5	4	5.5	8	9	4	5
4	-	-	2	2.5	4	5.5	6.5	8	4	5
5	-	-	1.5	4	4.5	5	6	7.5	4.5	5
6	-	-	3	5	4	4.5	6.5	8	4	4.5
7	-	-	3	5	4	5.5	7	7.5	3.5	4
8	-	-	2.5	4.5	4	5	7	7.5	3	4
9	-	-	1	3.5	4.5	6.5	6.5	7.5	3.5	4
10	-	-	2	4.5	5.5	7.5	5.5	7	3.5	4.5
11	-	-	3	4.5	6.5	7.5	6.5	8	4	4.5
12	-	-	3	6	7	7.5	7	7.5	4	4.5
13	-	-	4	6.5	6.5	8	7	7.5	3.5	4
14	-	-	5	6	7.5	8.5	6	7	2.5	3.5
15	-	-	4.5	6	8	8.5	6	6.5	3	3.5
16	-	-	4	7	8	9	6	6.5	2.5	3
17	-	-	4.5	7	8.5	9.5	4.5	5.5	1.5	2.5
18	-	-	5	6.5	8.5	9	5	6	2	2.5
19	-	-	5.5	7	7.5	9	5.5	6.5	2	2.5
20	0.5	1.5	5.5	7	8	9	5.5	6	2	3
21	0.5	3	6	6.5	8.5	10	6	7	1	2
22	1	1.5	5.5	6	9	10.5	6	7	1.5	2
23	0.5	3	4.5	7	9.5	11	5.5	7	1	1.5
24	0.5	3	4.5	6.5	10	11	5	7	1	1.5
25	2	3	5.5	7	10	11	5	7	0.5	1
26	1.5	2.5	6.5	7	9	10	5	7.5	0.5	0.5
27	1.5	5	6.5	7	8.5	10	6	8	0	0.5
28	3	4.5	6	7.5	8.5	10.5	6.5	9	0	0
29	2	5	6.5	7.5	9.5	11	6.5	8	0	0
30	3	6	6.5	7.5	9.5	10	6	6.5	-	-
31	4.5	5.5			9	10.5	6	7	-	-

Bearing Tree Creek: RX 123-1

Daily minimum-maximum water temperature in °C taken with recording thermograph from the highway culvert scour pool.

By Kay & Johnson

Waterbody Beaver Creek

Date 19 May 1981

EMG-RX # 124-1

Site Access On foot from Alaska highway

Color/Turbidity brown/clear Temperature 0°C

D.O. 11 ppm pH - Conductivity 198 μ mhos

Bottom Type Cobble, gravel, sand

Wetted width 15-35 ft. Depth 0.5-3 ft. Gradient Low-mod.

Banks/Soils Gentle / sand, silt

Aquatic Vegetation Absent Cover 10-20%

Riparian Vegetation Grass, willow, alder, birch

Barriers None

Drainage Structures/Conditions bridge at AK. hwy / good

Ice Conditions Bank ice on north side & shaded areas

Weather Partly cloudy, calm

Photographs -

Remarks Access limited to Alaska hwy ROW

By Kay & JohnsonWaterbody Beaver CreekDate 19 May 1981EMG-RX # 124-1Transect Location 15 ft. downstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3	0	0				
			.1	.175	2	.04
5	.35	.2	.2	.55	2	.22
7	.75	.2	.4	.8	2	.64
9	.85	.6	.6	.9	1	.54
10	.95	.6	.675	.9	1	.61
11	.85	.75	.775	.875	1	.68
12	.9	.8	.925	.9	1	.83
13	.9	1.05	1.175	.9	1	1.06
14	.9	1.3	1.2	.95	1	1.14
15	1.0	1.1	1.1	.9	1	.99
16	.8	1.1	1.05	.9	1	.95
17	1.0	1.0	.925	1.025	1	.95
18	1.05	.85	1.025	1.05	1	1.08
19	1.05	1.2	1.025	.925	1	.95
20	.8	.85	.8	.7	2	1.12
22	.6	.75	.375	.3	4.7	.53
RBWE 26.7	0	0				

Calculations checked by GE Discharge 12.3 cfsDischarge _____ m³/s

By Kay & Johnson

Waterbody Beaver Creek

Date 27 May 1981

EMG-RX # 124-1

Site Access On foot from Alaska highway

Color/Turbidity dark brown/clear Temperature 3.5°C

D.O. 11 ppm

pH -

Conductivity 40 μ mhos

Bottom Type *

Wetted width

Depth

Gradient *

Banks/Soils *

Aquatic Vegetation *

Cover *

Riparian Vegetation *

Barriers *

Drainage Structures/Conditions *

Ice Conditions None

Weather Partly cloudy, light wind, TA = 19°C

Photographs -

Remarks * See previous survey on 19 May 1981

No fish seen in vicinity of bridge but
difficult to see into deeper water.

3 June - Tw = 2.5°C - discharge

5 June - Tw = 3°C

9 June - Tw = 5°C - Water high & turbid.

10 June - Tw = 3.5°C, pH = 6.2 - water down some
and clearing - visibility still poor

12 June - 30 min angling - 150 ft above &
below hwy. No fish captured or seen.

14 June - Water low and clear - No fish
seen in vicinity of hwy. bridge

By Kay & JohnsonWaterbody Beaver CreekDate 27 May 1981EMG-RX # 124-1Transect Location 15 ft. downstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3.5	0	0				
6	.55	.3	.15	.275	2.5	.10
7.5	.75	1.3	.8	.65	1.5	.78
9	1.1	1.3	1.3	.925	1.5	1.80
10.5	1.2	1.5	1.4	1.15	1.5	2.42
12	1.2	1.7	1.6	1.2	1.5	2.88
13.5	1.3	1.9	1.8	1.25	1.5	3.38
15	1.2	2.2	2.05	1.25	1.5	3.84
16.5	1.1	2.2	2.2	1.15	1.5	3.80
18	1.1	2.45	2.325	1.1	1.5	3.84
19.5	1.3	2.4	2.425	1.2	1.5	4.37
21	1.1	2.1	2.25	1.2	1.5	4.05
22.5	1.0	1.5	1.8	1.05	1.5	2.84
24	.9	1.2	1.35	.95	1.5	1.92
25.5	.75	1.4	1.3	.825	1.5	1.61
27	.55	.1	.75	.65	1.5	.73
RBWE 29.1	0	0	.05	.275	2.1	.03

Calculations checked by JKDischarge 38.4 cfsDischarge _____ m³/s

By Kay & JohnsonWaterbody Beaver CreekDate 3 June 1981EMG-RX # 124-1

Transect Location _____

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 29	0	0				
			.3	.375	2	.23
27	.75	.6				
			1.2	.725	1	.87
26	.7	1.8				
			2.2	.85	2	3.74
24	1.0	2.6				
			2.2	1.15	2	5.06
22	1.3	1.8				
			1.95	1.45	2	5.66
20	1.6	2.1				
			2.6	1.65	2	8.58
18	1.7	3.1				
			3.45	1.65	2	11.39
16	1.6	3.8				
			3.5	1.6	2	11.20
14	1.6	3.2				
			3.35	1.6	2	10.72
12	1.6	3.5				
			3.3	1.5	2	9.90
10	1.4	3.1				
			3.0	1.25	2	7.50
8	1.1	2.9				
			2.6	.95	2	4.94
6	.8	2.3				
			1.55	.6	2	1.86
4	.4	.8				
			.4	.2	1.8	.14
RBWE 2.2	0	0				

Calculations checked by GE Discharge 81.8 cfsDischarge _____ m³/s

Tw = 2.5°C

Water dark brown / slightly turbid
- heavy rain fall 2 June 1981

By Kay E. Johnson

Waterbody Beaver Creek

Date 16 June 1981

EMG-RX # 124-1

Site Access On foot from Alaska highway

Color/Turbidity brown/slightly turbid Temperature 3.5°C

D.O. - pH 6.41 Conductivity 35 μ mhos

Bottom Type -

Wetted width - Depth - Gradient -

Banks/Soils -

Aquatic Vegetation - Cover -

Riparian Vegetation -

Barriers -

Drainage Structures/Conditions -

Ice Conditions None

Weather Clear, calm

Photographs -

Remarks

Water up from rain on 15 June. No
fish seen, poor visibility.
19 June - Tw = 5.5°C - No fish seen in
vicinity of hwy. bridge
23 June - Water low & clear.
25 June - Tw = 8°C - No fish seen in
vicinity of hwy. bridge - discharge
26 June - Tw = 7°C - Visual observation from
mouth to AK. hwy. - No fish seen. Creek
is slow, meandering slough to within 300ft.
of hwy. - canoe used to that point.

By Kay E. JohnsonWaterbody Beaver CreekDate 16 June 1981EMG-RX # 124-1Transect Location 10 ft. downstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 4.5	0	0				
			.85	.225	1.5	.29
6.0	.45	1.7				
			2.0	.525	1	1.05
7.0	.6	2.3				
			2.75	.625	1	1.72
8.0	.65	3.2				
			3.1	.8	1	2.48
9.0	.95	3.0				
			3.3	.95	1	3.14
10.0	.95	3.6				
			3.55	1.15	2	8.17
12.0	1.35	3.5				
			2.95	1.475	2	8.70
14.0	1.6	2.4				
			3.0	1.725	2	10.35
16.0	1.85	3.6				
			2.5	1.7	2	8.50
18.0	1.55	1.4				
			1.8	1.525	2	5.49
20.0	1.5	2.2				
			2.45	1.225	2	6.00
22.0	.95	2.7				
			2.55	.95	2	4.85
24.0	.95	2.4				
			1.75	.75	2	2.63
26.0	.55	1.1				
			1.0	.425	1	.43
27.0	.3	.9				
			.45	.15	2	.14
RBWE 29.0	0	0				

Calculations checked by GE Discharge 63.9 cfsDischarge _____ m³/s

By Kay & JohnsonWaterbody Beaver CreekDate 25 June 1981EMG-RX # 124-1Transect Location Beneath Ak. hwy. bridge

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 4.9	0	0				
	6.0	.5	.05	.25	1.1	.014
	7.0	.75	.2	.625	1.0	.125
	8.5	1.15	.35	.95	1.5	.499
	9.5	1.3	.375	1.225	1.0	.459
	10.5	1.35	.375	1.325	1.0	.497
	12.0	1.5	.425	1.425	1.5	.908
	13.0	1.5	.45	1.5	1.0	.675
	14.0	1.65	.475	1.575	1.0	.748
	15.0	1.7	.4	1.675	1.0	.670
	16.0	1.6	.3	1.65	1.0	.495
	17.0	1.45	.275	1.525	1.0	.419
	18.0	1.2	.225	1.325	1.0	.298
	20.0	1.2	.15	1.2	2.0	.360
	22.0	.9	.075	1.05	2.0	.158
			.025	.45	2.0	.023
RBWE 24.0	0	0				

Calculations checked by GE Discharge 6.3 cfsDischarge m³/s

By Kay & Johnson

Waterbody Beaver Creek

Date 1981

EMG-RX # 124-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

30 June - very low flow

3 July - very high water & moderate turbidity - one of highest stages observed this year.

4 July - Tw = 5°C - slightly turbid. 10 min angling at hwy - no fish caught.

6 July - 15 min angling for 200 ft. above & below hwy. - no fish caught.

9 July - Electroshocked for 250 ft. above & below hwy. - no fish seen or captured.

By Kay & Johnson

Waterbody Beaver Creek

Date 17 August 1981

EMG-RX # 124-1

Site Access On foot from Alaska highway

Color/Turbidity light brown/clear Temperature 6°C

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather. _____

Photographs _____

Remarks - Low water level again - No longer backed up by high river levels. Fish seen & caught - see fish data sheet.

18 August - Tw = 5°C - Electroshocked above & below buoy - fish captured - see fish data sheet.

21 August - Tw = 11°C - Visual observation from camp at mouth - fish seen & captured - see fish data sheet.

By Kay E. Johnson

Waterbody Beaver Creek

Date 17 August 1981

EMG-RX # 124-1

Section Surveyed 150 ft above & below AK. hwy

Fish present/Use GR, RW / rearing

Gear/Effort Dip net, visual observation / 300ft.

[illegible]

By Kay E Johnson

Waterbody Beaver Creek

Date 18 August 1981

EMG-RX # 124-1

Section Surveyed From 500ft below to 150ft above AK. hwy.

Fish present/Use GR, RW / Rearing

Gear/Effort Electroshocker / 650 ft

[illegible]

By Kay & Johnson

Waterbody Beaver Creek

Date 21 August 1981

EMG-RX # 124-1

Section Surveyed From mouth upstream about 200 ft.

Fish present/Use HW / clearing

Gear/Effort .357 mag. / one shot

[illegible]

By Kay & Johnson

Waterbody Tennile Creek

Date 31 May 1981

EMG-RX # 126-1

Site Access On foot from Alaska highway

Color/Turbidity brown/clear Temperature 10.5°C

D.O. - pH - Conductivity 55 μ mhos

Bottom Type -

Wetted width - Depth - Gradient -

Banks/Soils -

Aquatic Vegetation - Cover -

Riparian Vegetation -

Barriers -

Drainage Structures/Conditions 60" x 93' CMP at hwy. / good

Ice Conditions none

Weather -

Photographs -

Remarks - Discharge taken

1 June - Tw = 12°C - floating chip through
CMP - 26.5, 27.0, 23.5 s ave. vel. = 3.6 ft/s

4 June Tw = 8°C

5 June Tw = 8.5°C

9 June Tw = 10°C - floating chip through
CMP - 24.4, 23.5, 25.1 s ave. vel. = 3.8 ft/s
Visual observation from seow pool upstr.
for 1/4 mi - no fish seen.

10 June - weir trap placed about 300 ft upstr. from hwy.

11 June - no fish in trap.

12 June - Tw = 12°C - no fish in trap

14 June - Tw = 13°C - no fish in trap.

By Kay & ElliottWaterbody Tennile CreekDate 31 May 1981EMG-RX # 126-1Transect Location ca. 150ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.5	.2	0				
			.25	.4	.5	.05
3.0	.6	.5				
			.55	.8	.5	.22
3.5	1.0	.6				
			.575	1.05	1.0	.60
4.5	1.1	.55				
			1.05	1.15	1.0	1.21
5.5	1.2	1.55				
			1.55	1.20	1.0	1.86
6.5	1.2	1.55				
			1.575	1.25	.5	.98
7.0	1.3	1.60				
			1.575	1.3	.5	1.02
7.5	1.3	1.55				
			1.475	1.25	.5	.92
8.0	1.2	1.40				
			1.35	1.20	.5	.81
8.5	1.2	1.30				
			1.15	1.2	.5	.69
9.0	1.2	1.0				
			.85	1.1	.5	.47
RBWE 9.5	1.0	.7				

Calculations checked by 62 Discharge 8.8 cfsDischarge m³/s

Tw = 10.5°C

Conductivity = 55 μ mhos

CMP 60" x 93'

By Kay & Johnson

Waterbody Tenmile Creek

Date 15 June 1981

EMG-RX # 126-1

Site Access On foot from Alaska highway

Color/Turbidity light brown/clear Temperature 13°C

D.O. 9 ppm pH 6.5 Conductivity 58 μ mhos

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions none

Weather _____

Photographs _____

Remarks = discharge taken - no fish in trap

17 June - Tw = 15°C - no fish in trap

18 June - Tw = 14.5°C - no fish in trap

19 June - Tw = 14°C - no fish in trap - water level dropping

22 June - no fish in trap

24 June - Tw = 14°C - no fish in trap

25 June - Tw = 13.5°C - no fish in trap

26 June - Tw = 14.5°C - no fish in trap - discharge

28 June - Tw = 13°C - no fish in trap - flow stable

29 June - Tw = 13°C - no fish in trap - Trap entrance blocked off.

By Kay & JohnsonWaterbody Tennile CreekDate 15 June 1981EMG-RX # 126-1Transect Location 200 ft. upstream from Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3.0	0	0				
4.7	1.1	.2	.1	.55	1.7	.09
5.5	1.2	.5	.35	1.15	.8	.32
6.0	1.3	.6	.55	1.25	.5	.34
6.5	1.3	.5	.55	1.3	.5	.36
7.0	1.25	.6	.55	1.275	.5	.35
7.5	1.25	.5	.55	1.25	.5	.34
8.0	1.2	.5	.5	1.225	.5	.31
8.5	1.25	.4	.45	1.225	.5	.28
9.0	1.1	.5	.45	1.175	.5	.26
9.5	1.1	.4	.45	1.1	.5	.25
10.0	1.1	.5	.45	1.1	.5	.25
10.5	1.1	.6	.55	1.1	.5	.30
RBWR 11.0	1.1	.2	.4	1.1	.5	.22

Calculations checked by GE Discharge 3.7 cfsDischarge m³/s

Tw = 13°C

Conductivity = 58 μ mhos

pH = 6.53

D.O. = 9 ppm

By Kay & JohnsonWaterbody Tennile CreekDate 26 June 1981EMG-RX # 126-1Transect Location about 50 ft. above Alaska highway

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.0	1.1	.2				
			.25	1.1	.4	.11
1.4	1.1	.3				
			.35	1.1	.6	.23
2.0	1.1	.4				
			.375	1.05	.5	.20
2.5	1.0	.35				
			.35	1.0	.5	.18
3.0	1.0	.35				
			.35	1.05	.5	.18
3.5	1.1	.35				
			.375	1.15	.5	.22
4.0	1.2	.4				
			.45	1.15	.5	.26
4.5	1.1	.5				
			.5	1.1	.5	.28
5.0	1.1	.5				
			.475	1.1	.5	.26
5.5	1.1	.45				
			.4	1.075	.5	.22
6.0	1.05	.35				
			.325	1.075	1.0	.35
7.0	1.1	.3				
			.325	1.05	.5	.17
7.5	1.0	.35				
			.25	.95	.5	.12
8.0	.9	.15				
			.075	.45	1.0	.03
RBWE 9.0	0	0				

Calculations checked by GE Discharge 2.8 cfsDischarge m³/s

Tw = 14.5°C

By Kay & Johnson Waterbody Tennile Creek
Date 1981 EMG-RX # 126-1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks

6 July - $T_w = 10^\circ\text{C}$ - Trap opened - water
high & clear.
7 July - $T_w = 11^\circ\text{C}$ - no fish in trap
12 July - 1S in trap - see fish data sheet
13 July - $T_w = 13.5^\circ\text{C}$ - no fish in trap
20 July - $T_w = 17^\circ\text{C}$ - no fish in trap -
electroshocked from seep pool upstr to trap -
no fish captured or seen
21 July - $T_w = 17^\circ\text{C}$ - no fish in trap - discharge
24 July - $T_w = 17^\circ\text{C}$ - no fish in trap
27 July - NP in trap - see fish data sheet

By Elliott

Waterbody Tennile Creek

Date 12 July 1981

EMG-RX # 126-1

Section Surveyed About 300 ft. upstream from Ak. hwy.

Fish present/Use LS / Feeding

Gear/Effort Weir trap / continuous

[illegible]

By Kay & JohnsonWaterbody Tenmile CreekDate 21 July 1981EMG-RX # 126-1Transect Location 10 ft upstream from A.K. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE .6	0	0				
1.2	.45	.1	.05	.225	.6	.007
1.6	.6	.3	.2	.525	.4	.042
2.0	.8	.4	.35	.7	.4	.098
2.4	.9	.75	.575	.85	.4	.196
2.8	.9	.75	.75	.9	.4	.270
3.2	.7	.8	.775	.8	.4	.248
3.6	.6	.2	.5	.65	.4	.130
4.0	.4	.2	.2	.5	.4	.040
RBWE 5.0	0	0	.1	.2	1.0	.020

Calculations checked by GE Discharge 1.1 cfsDischarge m³/s

Tw = 17°C

By Kay E Johnson

Waterbody Tennile Creek

Date 27 July 1981

EMG-RX # 126-1

Section Surveyed About 300 ft upstream from Ak. hwy.

Fish present/Use NP / rearing

Gear/Effort Weir trap / continuous

[illegible]

By Kay & Johnson Waterbody Tennile Creek

Date 1981 EMG-RX # 126-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

7 August - $T_w = 13.5^\circ\text{C}$ - no fish in trap - discharge

9 August - NP in trap - see fish data sheet

14 August - no fish in trap - water level low

17 August - $T_w = 9^\circ\text{C}$ - no fish in trap

18 August - no fish in trap - water level very low

19 August - $T_w = 11.5^\circ\text{C}$ - no fish in trap - discharge

20 August - no fish in trap - electroshocked
from scum pool upstr. to trap - no fish
seen or captured.

29 August - $T_w = 10^\circ\text{C}$ - no fish in trap - very low flow

1 September - no fish in trap - very low flow

By Johnson & ElliottWaterbody Tennile CreekDate 7 August 1981EMG-RX # 126-1Transect Location 10 ft. upstream from A.K. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3.5	0	0				
			.025	.25	.7	.004
4.2	.5	.05	.125	.6	.6	.045
4.8	.7	.2	.2	.75	.3	.045
5.1	.8	.2	.2	.8	.3	.048
5.4	.8	.2	.25	.8	.3	.060
5.7	.8	.3	.3	.725	.3	.065
6.0	.65	.3	.175	.575	.4	.040
6.4	.5	.05	.025	.25	1.0	.006
RBWE 7.4	0	0				

Calculations checked by GE Discharge 0.31 cfs $T_w = 13.5^{\circ}\text{C}$ Discharge _____ m^3/s

By Kay

Waterbody Tennile Creek

Date 9 August 1981

EMG-RX # 126-1

Section Surveyed About 300 ft upstream from AK. hwy.

Fish present/Use NP / Feeding

Gear/Effort Weir trap / continuous

[illegible]

By Kay & Johnson Waterbody Tennile Creek

Waterbody Tennile Creek

Date 19 August 1981

EMG-RX # 126-1

Transect Location 10 ft. upstream from AK. hwy.

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by MJ Discharge 0.11 cfs

Discharge m^3/s

By Kay & Johnson Waterbody Tenmile Creek
Date 1981 EMG-RX # 126-1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks _____

2 September - Tw = 6°C - no fish in trap.
Electroshocked from seep pool up str. to
trap - no fish seen or captured.

4 September - no fish in trap

8 September - Tw = 6°C, D.O. = 9 ppm, pH = 6.6,
Cond = 122 μ mhos - no fish in trap.

9 September - no fish in trap
Trap removed.

10 September - Tw = 6.5°C - discharge taken

By Kay & JohnsonWaterbody Tennile CreekDate 10 September 1981EMG-RX # 126-1Transect Location 6 ft. upstream from A.K. hwy.

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 3.0	0	0				
			.075	.25	.6	.011
3.6	.5	.15				
			.175	.5	.3	.026
3.9	.5	.2				
			.2	.55	.3	.033
4.2	.6	.2				
			.25	.6	.3	.045
4.5	.6	.3				
			.25	.575	.4	.058
4.9	.55	.2				
			.2	.525	.3	.032
5.2	.5	.2				
			.175	.525	.3	.028
5.5	.55	.15				
			.075	.275	.6	.012
RBWE 6.1	0	0				

Calculations checked by GE Discharge 0.25 cfsDischarge m³/s

Tw = 6.5°C

By _____ Waterbody Tennile Creek
Date 1981 EMG-RX # 126-1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks _____

17 September - Tw = 4.5°C - discharge taken
Bach & Johnson.

16 October - Tw = 0°C - stream completely
ice covered except in hwy CMP -
low flow. CMP separated and
collapsing 20 ft downstream from
inlet - Elliott & Breymann.

By Bach & Johnson

Waterbody Tennile Creek

Date 17 September 1981

EMG-RX # 126-1

Transect Location 6 ft. upstream from AK hwy.

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE Discharge 0.23 cfs

Discharge m^3/s

By Kay & Johnson

Waterbody Gardiner Creek

Date 1981

EMG-RX # 127-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

12 May - 30 min angling, visual observation.
No fish caught or seen

13 May - $T_w = 0.5^{\circ}\text{C}$ - No fish seen. About
95% bottom ice coverage in vicinity
of bridge.

18 May - $T_w = 0.5^{\circ}\text{C}$ - 30 min angling - no
fish caught. About 80% bottom ice
coverage in vicinity of bridge. Flow lower.

19 May - Visual observation for $\frac{1}{2}$ mile below
and 1000 ft above hwy. Some surface ice
and lots of bottom ice especially below
hwy. No fish seen.

By Kay & Johnson Waterbody Gardiner Creek
Date 1981 EMG-RX # 127-1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks

26 May - GR caught - see fish data sheet
28 May - Tw = 7°C - 2 hrs angling - no fish caught.
30 May - Tw = 9°C - ripe GR caught - see fish data sheet
1 June - Tw = 10°C - GR caught - see fish data sheet - Many fish observed feeding at surface above hwy.
3 June - Tw = 9°C - GR caught - see fish data sheet
4 June - Tw = 8°C - GR caught - see fish data sheet
5 June - Tw = 7°C - GR caught - see fish data sheet
9 June - Tw = 8.5°C - GR & LS caught - see fish data sheet.

By Kay & Johnson Waterbody Gardiner Creek

Waterbody Gardiner Creek

Date 26 May 1981

EMG-RX # 127-1

Section Surveyed 1/4 mi. above & below A.K. hwy. bridge

Fish present/Use GR adult / spawning run

Gear/Effort Angling / 2 man-hours

[illegible]

By Elliott & Kay

Waterbody Gardiner Creek

Date 30 May 1981

EMG-RX # 127-1

Section Surveyed 200ft below to 1/4 mi above Ak. hwy bridge

Fish present/Use GR adult & juvenile / rearing, spawning

Gear/Effort Angling / 2 man-hours

$$T_w = 9^\circ\text{C} \quad (1530 \text{ hrs})$$
[illegible]

By Kay E. Johnson

Waterbody Gardiner Creek

Date 1 June 1981

EMG-RX # 127-1

Section Surveyed from Alaska highway upstream 1/2 mi

Fish present/Use GR / Spawning run, clearing

Gear/Effort Angling 1.5 man-hrs.

[illegible]

By Karl E. Johnson

Waterbody Gardiner Creek

Date 30 June 1981

EMG-RX # 127-1

Section Surveyed 60 ft. below Alaska highway

Fish present/Use GR

Gear/Effort Angling - 15 min

[illegible]

By Kay E. Johnson

Waterbody Gardiner Creek

Date 4 June 1981

EMG-RX # 127-1

Section Surveyed 60 ft. below Alaska highway

Fish present/Use LR / spawning

Gear/Effort Angling / 1/2 hour-

[illegible]

By Kay E. Johnson

Waterbody Gardiner Creek

Date 5-June 1981

EMG-RX # 127-1

Section Surveyed 60 ft. below Alaska highway
 Fish present / No CR

Fish present/Use GR

Gear/Effort Angling / 5 min

[illegible]

By Kan & Johnson

Waterbody Gardiner Creek

Date 9 June 1981

EMG-RX # 127-1

Section Surveyed 60 ft. below Alaska highway

Fish present/Use GR, LS / Spawning run

Gear/Effort Angling / 4 hrs

[illegible]

By Kay & Johnson

Waterbody Gardiner Creek

Date 1981

EMG-RX # 127-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

11 June - Water high - GR being caught by
fishermen at hwy.

12 June - Tw = 10°C - GR being caught by fishermen

16 June - GR caught - see fish data sheet

18 June - Tw = 11°C - GR caught - see fish data sheet

19 June - GR caught - see fish data sheet

26 June - GR fry caught - see fish data sheet

28 June - Tw = 11.5°C - fry numerous above &
below hwy. bridge.

29 June - Tw = 11°C - GR fry measured - see fish data
sheet

Waterbody Gardiner Creek

EMG-RX # 127-1

Section Surveyed 60 ft. below Alaska highway

Fish present/Use GR, LS / spawning, feeding

Gear/Effort Angling / 10 min

[illegible]

By Kain & Johnson

Waterbody Gardiner Creek

Date 18 June 1981

EMG-RX # 127-1

Section Surveyed at AK. Hwy bridge

Fish present/Use CR / Clearing

Gear/Effort Angling / 5 min.

[illegible]

By Kary E. Johnson

Waterbody Gardiner Creek

Date 19 June 1981

EMG-RX # 127-1

Section Surveyed at AK. hwy bridge

Fish present/Use GR / clearing

Gear/Effort Angling / 10 min

[illegible]

By Kay & Johnson

Waterbody Gardiner Creek

Date 26 June 1981

EMG-RX # 127-

Section Surveyed AK. highway bridge

Fish present/Use GR rearing

Gear/Effort Dip net / 5 min

[illegible]

By Kay & Johnson

Waterbody Gardiner Creek

Date 29 June 1981

EMG-RX # 127-1

Section Surveyed just above & below AK hwy bridge

Fish present/Use GR / rearing

Gear/Effort Dipnet 20 min

Species	Length	Remarks
GR	15 mm	
"	17	
"	16	
"	21	
"	18	
"	21	
"	20	
"	23	
"	19	
"	18	
"	21	
"	19	
"	16	
"	18	
"	15	
"	18	
"	20	
"	17	
"	21	
"	18	

By Kay & Johnson

Waterbody Gardiner Creek

Date 29 June 1981

EMG-RX # 127-1

Section Surveyed continued - 2 of 2

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	18 mm	
"	20	
"	22	
"	19	
"	19	
"	21	
"	21	
"	21	
"	22	
"	22	
"	23	
"	23	
"	20	
"	20	
"	21	
"	22	

By Kay & Johnson

Waterbody Gardiner Creek

Date 1981

EMG-RX # 127-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

7 July - Tw = 8.5°C - GR fry measured, NP caught
by fisherman - see fish data sheet.

12 July - GR caught - see fish data sheet
Many GR fry seen.

20 July - Tw = 15°C - GR fry measured - see fish data sheet

24 July - GR fry measured - see fish data sheet

5 August - GR fry measured - see fish data sheet

7 August - Tw = 12.5°C - GR fry measured - see fish data sheet

9 August - LS fry near mouth - see fish data sheet

20 August - Tw = 10°C - CN, GR, LS electroshocked -
see fish data sheet.

By Kay & JohnsonWaterbody Gardiner CreekDate 7 July 1981EMG-RX # 127-1Section Surveyed at Alaska highway bridgeFish present/Use GR, ND / rearingGear/Effort Dipnet / 15 min.

Species	Length	Remarks
GR	28mm	
"	26	
"	28	
"	27	
"	29	
"	31	
"	29	
"	27	
"	28	
"	32	
"	30	
"	29	
"	25	
"	27	
"	30	
"	28	
"	30	
"	27	
"	29	
"	25	

By Kay & Johnson

Waterbody Gardiner Creek

Date 7th July 1981

EMG-RX # 127-1

Section Surveyed Continued - Lot 2

Fish present/Use _____

Gear/Effort

[illegible]

By G. Ellish

Waterbody Gardiner Creek

Date 12 July 1981

EMG-RX # 127-1

Section Surveyed 100 ft. above & below AK. hwy.

Fish present/Use GR/Leasing

Gear/Effort angling / 10 min, Visual observation

[illegible]

By Kay & Johnson

Waterbody Gardiner Creek

Date 20 July 1981

EMG-RX # 127-1

Section Surveyed from 150ft. below to 100ft. above A.K. Hwy

Fish present/Use GR Log / clearing

Gear/Effort Dip net

$$T_w = 15^\circ\text{C}$$
[illegible]

By Kay & Johnson

Waterbody Gardiner Creek

Date: 24 July 1981

EMG-RX # 127-1

Section Surveyed 100ft above to 100ft below AK. Hwy.

Fish present/Use GR Fry / Rearing

Gear/Effort Dipnet

[illegible]

By Elliott, Johnson & Kay

Waterbody Gardiner Creek

Date 5 August 1981

EMG-RX # 127-1

Section Surveyed AK. hwy downstream for 100 ft.

Fish present/Use GR fry/rearing

Gear/Effort Dip-net

[illegible]

By Elliot H. Johnson & KayWaterbody Gardiner CreekDate 7 August 1981EMG-RX # 127-1Section Surveyed AK, Hwy downstream 100 ft.Fish present/Use GR fry / rearingGear/Effort Hand to seine with dipnet

Tw = 12.5°C

Species	Length	Remarks
GR	62 mm	
"	55	
"	50	
"	51	
"	50	
"	48	
"	60	
"	50	
"	50	
"	46	
"	52	
"	61	
"	49	
"	55	
"	51	
"	56	
"	39	
"	55	
"	46	
"	57	

By Elliott Johnson & Kay

Waterbody Gardiner Creek

Date 7 August 1981

EMG-RX # 127-1

Section Surveyed Continued - 2 of 2

Fish present/Use _____

Gear/Effort

T

[illegible]

By Elliott & JohnsonWaterbody Gardiner CreekDate 9 August 1981EMG-RX # 127-1Section Surveyed from mouth upstream about 1/2 miFish present/Use LS fry / rearingGear/Effort Dipnet

Species	Length	Remarks
LS	22mm	- LS fry abundant throughout
"	25	
"	25	- several large fish seen
"	24	surfacing along shore,
"	21	probably NP, unable to
"	23	capture by angling
"	22	
"	25	
"	23	
"	25	
"	24	
"	23	
"	23	
"	25	
"	25	
"	24	
"	26	
"	24	
"	21	
"	22	

By Elliott & Johnson

Waterbody Gardiner Creek

Date 9 August 1981

EMG-RX # 127-1

Section Surveyed Continued - 2 of 2

Fish present/Use _____

Gear/Effort _____

[illegible]

By Kang & JohnsonWaterbody Gardiner CreekDate 20 August 1981EMG-RX # 127-1Section Surveyed 100 ft above & below Ak hwyFish present/Use CN, LS, GR / rearingGear/Effort Electroshocker / 200 ft

Tw = 10°C

Species	Length	Remarks
CN	30 mm	- Water level lowest seen
"	30	this summer.
"	27	
"	71	
"	32	
"	28	
LS	68 mm	
GR	59 mm	
"	68	
"	48	
"	47	
"	57	
"	44	
"	49	
"	53	
"	55	
"	57	
"	45	
"	64	

By _____ Waterbody Gardiner Creek
Date 1981 EMG-RX # 127-1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks

8 September - $T_w = 7^\circ\text{C}$ - many GR fry seen - Kay & Johnson

18 September - $T_w = 5^\circ\text{C}$ - GR fry measured - see fish data sheet - Bach & Johnson

30 September - $T_w = 1.5^\circ\text{C}$ - GR fry measured - see fish data sheet - Elliott, Bach & Johnson

16 October - $T_w = 1^\circ\text{C}$ - GR fry measured - see fish data sheet - Elliott & Breyman

By Bach & JohnsonWaterbody Gardiner CreekDate 18 September 1981EMG-RX # 127-1Section Surveyed 75 ft. below A.K. Hwy. bridgeFish present/Use GR, CN / rearingGear/Effort Electroshocker / 25 ft. $T_w = 5^{\circ}\text{C}$

Species	Length	Remarks
GR	70 mm	
"	65	
"	52	- one CN seen but not captured.
"	53	
"	59	
"	67	
"	64	
"	53	
"	68	
"	69	
"	52	
"	53	
"	75	
"	47	
"	66	
"	54	
"	61	

By Elliot H. Bach & JohnsonWaterbody Gardiner CreekDate 30 September 1981EMG-RX # 127-1Section Surveyed 100 ft downstream from Ak. hwy.Fish present/Use GR / FeedingGear/Effort Electroshockers / 20 ft.

Tw = 1.5 °C

Species	Length	Remarks
GR	53 mm	- all fish captured from
"	53	one shallow backwater
"	60	- many more turned
"	72	but not netted.
"	68	
"	85	
"	54	
"	63	
"	54	
"	72	
"	71	
"	67	
"	65	
"	54	
"	60	
"	66	
"	52	
"	65	
"	64	
"	57	

By Elliott Bach & Johnson

Waterbody Gardiner Creek

Date 30 September 1981

EMG-RX # 127-1

Section Surveyed continued - 2 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	52 mm	
"	57	
"	55	
"	62	
"	49	
"	54	
"	49	
"	51	
"	68	
"	56	
"	57	
"	59	
"	49	
"	62	
"	58	
"	53	
"	61	
"	55	
"	56	
"	61	

By Elliott, Bach & JohnsonWaterbody Gardiner CreekDate 30 September 1981EMG-RX # 127-1

Section Surveyed

continued - 3 of 5

Fish present/Use

Gear/Effort

Species	Length	Remarks
GR	60mm	
"	58	
"	53	
"	60	
"	53	
"	79	
"	53	
"	52	
"	53	
"	51	
"	52	
"	62	
"	55	
"	52	
"	48	
"	55	
"	67	
"	47	
"	55	
"	60	

By Elliott, Bach & JohnsonWaterbody Gardiner CreekDate 30 September 1981EMG-RX # 127-1Section Surveyed continued - 4 of 5

Fish present/Use _____

Gear/Effort _____

Species	Length	Remarks
GR	58mm	
"	62	
"	55	
"	57	
"	64	
"	57	
"	55	
"	55	
"	58	
"	57	
"	56	
"	48	
"	52	
"	53	
"	51	
"	47	
"	52	
"	53	
"	62	
"	55	

By Elliott Barch & Johnson

Waterbody Gardiner Creek

Date 30 September 1981

EMG-RX # 127-1

Section Surveyed Continued - 5 of 5

Fish present/Use _____

Gear/Effort _____

[illegible]

By Elliott & Brezman

Waterbody Gardiner Creek

Date 16 October 1981

EMG-RX # 127-1

Section Surveyed From 50 ft. to 100ft below Ak. hwy.

Fish present/Use GR / rearing, migration

Gear/Effort Electroshocker / 50 ft.

$$T_w = 1^\circ\text{C}$$
[illegible]

By Kay & Johnson

Waterbody Unnamed Creek

Date 1981

EMG-RX # 129-1

Site Access On foot from Alaska highway

Color/Turbidity light brown/clear Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type * _____

Wetted width * _____ Depth * _____ Gradient * _____

Banks/Soils * _____

Aquatic Vegetation * _____ Cover * _____

Riparian Vegetation * _____

Barriers * _____

Drainage Structures/Conditions * _____

Ice Conditions none

Weather -

Photographs -

Remarks * See previous survey on 11 May 1981 and other spring data.

22 June - Tw = 13°C - No fish in trap

24 June - Tw = 14°C - No fish in trap

25 June - Tw = 13°C - No fish in trap, discharge taken

28 June - Tw = 12°C - No fish in trap, water very high, flowing around trap.

29 June - removed weir at trap

6 July - Tw = 7.5°C - weir replaced - water very high

8 July - Tw = 9.5°C - No fish in trap. Visual observation and angling from confluence with 129.2 downstream for about 2 mi. - No fish seen or caught.

By Kay & JohnsonWaterbody Unnamed CreekDate 25 June 1981EMG-RX # 129-1Transect Location about 200ft upstream from Haines P/L

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.0	.4	.05				
			.05	.45	.5	.011
2.5	.5	.05	.05	.475	.3	.007
2.8	.45	.05	.125	.55	.3	.021
3.1	.65	.2	.275	.675	.3	.056
3.4	.7	.35	.4	.7	.3	.084
3.7	.7	.45	.425	.65	.3	.083
4.0	.6	.4	.35	.575	.3	.060
4.3	.55	.3	.15	.525	.4	.032
4.7	.5	0	0	.35	.4	0
RBWE 5.1	.2	0				

Calculations checked by GE Discharge 0.35 cfsDischarge _____ m³/s

Tw = 13°C

By Kay E. Johnson Waterbody Unnamed Creek
Date 1981 EMG-RX # 129-1
Site Access On foot from Alaska highway
Color/Turbidity light brown/clear Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type * _____
Wetted width _____ Depth _____ Gradient * _____
Banks/Soils * _____
Aquatic Vegetation * _____ Cover * _____
Riparian Vegetation * _____
Barriers * _____
Drainage Structures/Conditions * _____
Ice Conditions none _____
Weather _____
Photographs _____

Remarks * See previous survey on 11 May 1981
10 July - No fish in trap
12 July - No fish in trap
13 July - Tw = 12°C, No fish in trap
21 July - Tw = 17°C, No fish in trap
discharge taken. Electro fish from
300 ft. above NWA alignment downstream
to confluence with 129-2 No fish seen
or captured.
24 July - No fish in trap
7 August - Tw = 12°C - No fish in trap. Discharge
taken

Waterbody Unnamed Creek

EMG-RX # 129-1

Transect Location about 100ft upstream from Haines P/L

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE Discharge 0.6 cfs

Discharge m^3/s
$$T_w = 17^\circ\text{C}$$

By Johnson & Elliott Waterbody Unnamed Creek

Waterbody Unnamed Creek

Date 7 August 1981

EMG-RX # 129-1

Transect Location 150 ft. downstream from AK. Hwy.

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by GE Discharge 1.6 cfs

$$T_w = 12^\circ\text{C}$$
Discharge m^3/s

By Kary & Johnson

Waterbody Unnamed Creek

Date 1981

EMG-RX # 129-1

Site Access On foot from Alaska highway

Color/Turbidity light brown/clear Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type *

Wetted width _____ Depth _____ Gradient *

Banks/Soils *

Aquatic Vegetation * Cover *

Riparian Vegetation *

Barriers *

Drainage Structures/Conditions *

Ice Conditions none

Weather -

Photographs -

Remarks * See previous survey on 11 May 1981.

17 August - Tw = 10°C - No fish in trap.

18 August No fish in trap.

19 August Tw = 10°C - No fish in trap - Discharge taken.

20 August No fish in trap. Visual observation from confluence with 129-2 downstream about 2000 ft - No fish seen.

1 September - No fish in trap - low flow

By Kay & Johnson

Waterbody Unnamed Creek

Date 19 August 1981

EMG-RX # 129-1

Transect Location about 100ft downstream from AK. hwy.

(LB/RB orientation facing upstream)

[illegible]

Calculations checked by MJ

Discharge 0.21 cfs

Discharge m^3/s
$$T_w = 10^\circ\text{C}$$

By Kay Johnson Waterbody Unnamed Creek
Date 3 September 1981 EMG-RX # 129-1
Site Access On foot from Alaska highway
Color/Turbidity light brown/clear Temperature 9.5°C
D.O. 8 ppm pH 6.8 Conductivity 108 μ mhos
Bottom Type *
Wetted width * Depth * Gradient *
Banks/Soils *
Aquatic Vegetation * Cover *
Riparian Vegetation *
Barriers *
Drainage Structures/Conditions *
Ice Conditions none
Weather -
Photographs -

Remarks * See previous survey on 11 May 1981

- No fish in trap. Discharge taken
4 September - No fish in trap
8 September - No fish in trap
16 September - No fish in trap
18 September - $T_w = 5^\circ\text{C}$ - No fish in trap - Trap
removed.

30 September - Thermograph removed.
15 October - $T_w = 0^\circ\text{C}$ - Water flowing
under thin ice. Very few open leads.

By Kay & JohnsonWaterbody Unnamed CreekDate 3 September 1981EMG-RX # 129-1Transect Location 25 ft. upstream from NWA alignment

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 2.1	0	0	.15	.2	.1	.003
2.2	.4	.3	.425	.425	.3	.054
2.5	.45	.55	.475	.45	.2	.043
2.7	.45	.4	.3	.45	.2	.027
2.9	.45	.2	.275	.45	.2	.025
3.1	.45	.35	.375	.45	.2	.034
3.3	.45	.4	.3	.45	.2	.027
3.5	.45	.2	.225	.425	.2	.019
3.7	.4	.25	.175	.4	.2	.014
3.9	.4	.1	.05	.2	.1	.001
RBWE 4.0	0	0				

Calculations checked by MJ Discharge 0.25 cfsDischarge m³/s

Day	May		June		July		August		September	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	-	-	8.5	10.5	6.5	8.5	12.5	14	5.5	8
2	-	-	6	9.5	8	8.5	12	13.5	4.5	7.5
3	-	-	4	6	7	7.5	10.5	12	6.5	8
4	-	-	4	5	6	8.5	9.5	10.5	6.5	8.5
5	-	-	3.5	5.5	6.5	7.5	8.5	12.5	6	8
6	-	-	4.5	8.5	6.5	7.5	9.5	11.5	5.5	7
7	-	-	5	8.5	5.5	9.5	8.5	11.5	4	5.5
8	-	-	4.5	7.5	7	10	10	11	3.5	6.5
9	-	-	3.5	9	7.5	12	8.5	11.5	5	6
10	-	-	5	10	9	12.5	8.5	12.5	4.5	6
11	-	-	6.5	9	10	12.5	10.5	13	5.5	7
12	-	-	5.5	12.5	10	13	10	12	5.5	7.5
13	-	-	8.5	12.5	10	13	10	11.5	5	6
14	-	-	10	12	10.5	14.5	8	10	3	4
15	-	-	9.5	11.5	12	13.5	8.5	9	3.5	5.5
16	3	4	9.5	14	12	13.5	7	9	3	5
17	3	4	10	14	12	14.5	5.5	8	2	4
18	3	6	10	13.5	11.5	13	6.5	9.5	3.5	4
19	4.5	7	10.5	12	11	15	7.5	9.5	3.5	4.5
20	4.5	6	8.5	13.5	12	15	8	9	3.5	5.5
21	5	7.5	9.5	12.5	12.5	15.5	8	10	3	4
22	5	7	9	10.5	12.5	16	9	9.5	2.5	3.5
23	3.5	6.5	8.5	12.5	13.5	15.5	8	10	2	3.5
24	4.5	7	8.5	12	12	15	7	9.5	1.5	2
25	6	9	9.5	10.5	12.5	15	6.5	9	1.5	2
26	5.5	8	9	11.5	12.5	14	7	9.5	1	1.5
27	5	9.5	9	11	12	15.5	8	10.5	0	1
28	7	10.5	8	10.5	13	16	9.5	11	0	0.5
29	6.5	11.5	8	11.5	13.5	15.5	8.5	10	0	0
30	7.5	12	8.5	10	12	13.5	7.5	8.5	0	0
31	9	10.5			11.5	14	7.5	9		

Bohemian Creek: RX 129-1

Daily minimum-maximum water temperature in °C taken with recording thermograph about 100 ft upstream from NWA alignment.

By Kay & Johnson Waterbody Unnamed Creek
Date 1981 EMG-RX # 129-2
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks

25 June - Slight flow at hwy. CMP.
28 June - Water up since 6/25 from rain
6 July - High flow (for this drainage)

By Kay & Johnson Waterbody Unnamed Creek
Date 3 September 1981 EMG-RX # 129-2
Site Access On foot from Alaska highway
Color/Turbidity light brown/clear Temperature 6.5°C
D.O. 8 ppm pH 6.9 Conductivity 190 μ mhos
Bottom Type *
Wetted width * Depth * Gradient *
Banks/Soils *
Aquatic Vegetation * Cover *
Riparian Vegetation *
Barriers *
Drainage Structures/Conditions * See survey - 1 June 1981
Ice Conditions none
Weather -
Photographs -

Remarks * See previous survey on 11 May 1981

8 September - very low flow

Waterbody Unnamed Creek

EMG-RX # 129-2

(LB/RB orientation facing upstream)

Calculations checked by M.J. Discharge 0.02 cfs

Discharge _____ m³/s

By Kay & Johnson Waterbody Desper Creek
Date 1981 EMG-RX # 130-1
Site Access On foot from Alaska highway
Color/Turbidity dark brown/clear Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type * _____
Wetted width _____ Depth _____ Gradient * _____
Banks/Soils * _____
Aquatic Vegetation * _____ Cover * _____
Riparian Vegetation * _____
Barriers * _____
Drainage Structures/Conditions * _____
Ice Conditions none _____
Weather — _____
Photographs — _____

Remarks * See previous survey on 7 May 1981.

25 June - 15 min. angling below hwy - no fish caught
28 June - 15 min angling below hwy - no fish caught.
water very high

29 June - Tw = 13°C - no fish caught by angling.

6 July - Tw = 8°C - 30 min angling above &
below hwy - no fish caught - water high.

8 July - Tw = 11°C - discharge taken.

floating chip - time mean time $\bar{V}$

N CMP 17.1, 19.3, 17.4 s 18.9 s 6.3 ft/s

S CMP 19.5, 17.7, 18.3 s 18.5 s 6.1 ft/s

- both culverts 112 ft. long

By Kay E. JohnsonWaterbody Desper CreekDate 8 July 1981EMG-RX # 130-1Transect Location AK Hwy CMP's - outlets

(LB/RB orientation facing upstream)

	Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
S. CMP	LBWE 0	0	0				
	1.0	1.15	6.1	3.05	.575	1.0	1.75
	1.5	1.3	6.3	6.2	1.225	.5	3.80
	1.9	1.4	6.8	6.55	1.35	.4	3.54
	2.3	1.4	6.9	6.85	1.4	.4	3.84
	2.8	1.3	6.6	6.75	1.35	.5	4.56
				3.3	.65	1.0	2.15
	RBWE 3.8	0	0				19.64
N. CMP	LBWE 0	0	0				
	1.0	1.3	3.2	1.6	.65	1.0	1.04
	1.5	1.7	4.7	3.95	1.5	.5	2.96
	1.9	1.8	5.6	5.15	1.75	.4	3.61
	2.3	1.7	4.2	4.9	1.75	.4	3.43
	2.8	1.5	3.4	3.8	1.6	.5	3.04
				1.7	.75	1.1	1.40
	RBWE 3.9	0	0				15.48

Calculations checked by GE Discharge 35.1 cfsDischarge _____ m³/s

Middle CMP blocked - no flow

Tw = 11°C

By Kay & Johnson

Waterbody Desper Creek

Date 1981

EMG-RX # 130-1

Site Access On foot from Alaska highway

Color/Turbidity dark brown/clear Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type *

Wetted width _____ Depth _____ Gradient *

Banks/Soils *

Aquatic Vegetation * Cover *

Riparian Vegetation *

Barriers *

Drainage Structures/Conditions *

Ice Conditions none

Weather -

Photographs -

Remarks * See previous survey on 7 May 1981.

10 July - Tw = 12.5°C - angling 5 min below
hwy - no fish caught. Visual inspection
around pool below highway - no fish seen

13 July - Tw = 13.5°C - 5 min angling below
hwy - no fish caught.

20 July - Tw = 15.5°C - Electroshock shallows
around pool below highway - no fish seen
or captured.

24 July - Tw = 18°C - 15 min angling below
hwy - no fish caught.

7 August - Tw = 14°C - discharge taken.

By Elliott, Johnson & KayWaterbody Desper CreekDate 7 August 1981EMG-RX # 130-1Transect Location AK. hwy. CMP's - outlets

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 0	0	0				
1.1	1.7	2.3	1.15	.85	1.1	1.08
1.6	1.9	2.9	2.6	1.8	.5	2.34
2.0	2.0	2.7	2.8	1.95	.4	2.18
2.4	2.0	2.6	2.65	2.0	.4	2.12
2.9	1.8	2.4	2.5	1.9	.5	2.38
RBWE 3.9	0	0	1.2	.9	1.0	1.08
						11.18
LBWE 0	0	0				
1.1	2.1	1.4	.7	1.05	1.1	.81
1.6	2.3	1.3	1.35	2.2	.5	1.49
2.0	2.3	1.4	1.35	2.3	.4	1.24
2.4	2.3	1.2	1.3	2.3	.4	1.20
2.9	2.1	1.1	1.15	2.2	.5	1.27
RBWE 3.9	0	0	.55	1.05	1.0	.58
						6.59

Calculations checked by GE Discharge 17.8 cfs

Middle CMP blocked - no flow

Discharge m³/s

Tw = 14°C at 1145

By Kay & Johnson Waterbody Desper Creek
Date 1981 EMG-RX # 130-1
Site Access On foot from Alaska highway, canoe
Color/Turbidity dark brown/clear Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type * _____
Wetted width _____ Depth _____ Gradient * _____
Banks/Soils * _____
Aquatic Vegetation * _____ Cover * _____
Riparian Vegetation * _____
Barriers Beaver dam about 2 mi below hwy.
Drainage Structures/Conditions * _____
Ice Conditions none _____
Weather - _____
Photographs - _____

Remarks * See previous survey on 7 May 1981.
8 August - Stream inspected by canoe from
AK hwy downstream to mouth. Beaver
dam 2 mi below hwy about 5 ft high completely
across stream. NP caught below dam -
see fish data sheet. Beaver dam 3 mi below
hwy, 1 ft. below water surface.
19 August - 15 min angling below hwy - no
fish caught. Visual inspection of shore
line below hwy & slough - no fish seen.
1 September - NP caught at lower beaver dam -
see fish data sheet. Second beaver dam
(3 mi below hwy) now above water surface.

By Elliott & Johnson

Waterbody Desper Creek

Date 8 August 1981

EMG-RX # 130-1

Section Surveyed below beaver dam, about 2 mi below AK. hwy.

Fish present/Use NP / rearing

Gear/Effort Angling / 10 min

[illegible]

By Kay E. Johnson Waterbody Desper Creek

Date: 1 September 1981

EMG-RX # 130-1

Section Surveyed At beaver dams, about 3-4 mi below AK. hwy.

Fish present/Use NP / rearing

Gear/Effort Angling / 1 man-hour

[illegible]

By J. Kay Waterbody Desper Creek
Date 8 September 1981 EMG-RX # 130-1
Site Access On foot from Alaska highway
Color/Turbidity Brown/clear Temperature 8°C
D.O. 5 ppm pH 6.6 Conductivity 117 μ mhos
Bottom Type *
Wetted width _____ Depth _____ Gradient *
Banks/Soils *
Aquatic Vegetation * Cover *
Riparian Vegetation *
Barriers Two beaver dams about 2 & 3 mi below hwy.
Drainage Structures/Conditions *
Ice Conditions none
Weather Partly cloudy
Photographs -

Remarks * See previous survey on 7 May 1981.
10 September - 1 hr angling above & below
beaver dam about 1000 ft upstream
from hwy - no fish caught.
13 September - Canoe from AK hwy to
mouth - HW observed near mouth -
see fish data sheet.
30 September - ~~Thermograph~~ Thermograph removed
16 October - Tw = 0°C - stream ice covered
except for 50 ft below hwy CMP's.
Submerged 24 in CMP at hwy crossing
of slough.

By Elliott & Kay

Waterbody Desper Creek

Date 13 September 1981

EMG-RX # 130-1

Section Surveyed 1 mi. upstream from mouth.

Fish present/Use HW / rearing, spawning?

Gear/Effort Shotgun / one shot

[illegible]

Day	May		June		July		August		September	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1	-	-	12.5	13	11	11.5	15	16.5	9	9.5
2	-	-	11.5	12.5	10.5	11	14.5	16	8	9
3	-	-	10.5	11	10	10.5	13.5	14.5	8.5	9
4	-	-	8.5	10.5	9.5	10	12.5	13.5	8.5	9
5	-	-	7.5	8.5	8.5	9.5	11.5	12.5	8.5	9
6	-	-	7.5	8	8	8.5	12	12.5	8	8.5
7	-	-	7.5	8.5	8	9	11.5	12.5	7	7.5
8	-	-	8.5	9	8.5	10	12	12.5	6.5	7.5
9	-	-	8.5	9.5	9.5	11	12	12.5	7	7.5
10	-	-	8.5	10	11	12	11.5	12.5	6.5	7
11	-	-	9.5	11	11.5	12.5	12	13	6.5	7.5
12	-	-	10.5	12	12	12.5	12	13	6.5	7.5
13	-	-	11	13	12	12.5	12	13	6.5	7
14	-	-	12	13.5	12	13	11	12	5.5	6.5
15	-	-	12.5	13.5	12.5	13.5	11	11.5	5.5	6.5
16	3	5	12.5	14	13	14	10.5	11.5	5	6
17	4	5.5	13	14.5	13.5	14.5	9	10.5	4.5	5.5
18	4.5	6	13	14.5	14	14.5	9.5	10.5	5	5.5
19	4.5	6.5	13.5	14	13.5	14.5	9.5	10.5	5	5.5
20	5	7	12.5	14	13.5	14.5	9.5	10.5	5	5.5
21	7	9	13	14	14	15.5	10	10.5	4.5	5.5
22	8	8.5	13	13.5	14.5	16	10	10.5	4.5	5
23	7.5	9	12.5	14	15	16.5	10	10.5	4	4.5
24	8	8.5	12	14	15	16.5	9.5	10.5	3.5	4
25	8.5	10	12.5	13	15.5	17	9.5	10.5	3.5	3.5
26	9.5	10.5	12	13	15.5	16	9.5	10.5	3	3.5
27	10	11.5	12	12.5	15	17	10	11	2.5	3
28	11	12	12	12.5	15.5	17.5	10.5	11.5	2.5	2.5
29	11.5	12.5	12	13	15.5	16	10.5	11.5	2.5	2.5
30	11.5	13.5	12	12.5	15	16	10	10.5	2.5	2.5
31	12.5	13.5			14.5	15.5	10	10.5		

Desper Creek: RX 130-1

Daily minimum-maximum water temperature in °C taken with recording thermograph on the channel bottom at the Haines pipeline crossing.

By Kay & Johnson Waterbody Scottie Creek
Date 1981 EMG-RX # 131-1
Site Access On foot from Alaska highway
Color/Turbidity brown/clear Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks _____

21 May - Tw = 8°C - 30 min angling - no fish caught.
28 May - Tw = 9°C - NP captured by angling,
see fish data sheet.
30 May - 20 min angling - no fish caught.
1 June - Tw = 12°C
3 June - Tw = 12°C - 20 min angling - no fish caught.
5 June - Tw = 6°C - Water level up about 2 ft
over past few days - highest of this spring.
9 June - Tw = 9.5°C
11 June - Tw = 12°C - 5 min angling - no fish caught.

By Kay & Johnson

Waterbody Scottie Creek

Date 28 May 1981

EMG-RX # 131-1

Section Surveyed About 300ft above & below AK. hwy bridge

Fish present/Use NP adult / R

Gear/Effort Angling / 40 min.

[illegible]

By Kay & Johnson Waterbody Scottie Creek
Date 1981 EMG-RX # 131-1
Site Access On foot from Alaska highway
Color/Turbidity _____ Temperature _____
D.O. _____ pH _____ Conductivity _____
Bottom Type _____
Wetted width _____ Depth _____ Gradient _____
Banks/Soils _____
Aquatic Vegetation _____ Cover _____
Riparian Vegetation _____
Barriers _____
Drainage Structures/Conditions _____
Ice Conditions _____
Weather _____
Photographs _____

Remarks _____

18 June - $T_w = 15^{\circ}\text{C}$ - 30 min angling - no fish caught.
Set line placed under hwy. bridge. Unidentified
fish seen breaking surface.

21 June. 20 min angling - no fish caught.
but one followed line to shore, probably NP.
Set line lost.

22 June. Set line placed near bridge.

23 June - $T_w = 15.5^{\circ}\text{C}$ - 30 min angling - no fish caught.
No fish on set line

24 June - $T_w = 15.5^{\circ}\text{C}$ - 10 min angling - no fish caught.
No fish on set line

By Kan & Johnson

Waterbody Scottie Creek

Date 18 June 1981

EMG-RX # 131-1

Section Surveyed Above & below Ak. Hwy. bridge

Fish present/Use X

Gear/Effort Angling / 30 min - Visual observation

[illegible]

By Kay & Johnson

Waterbody Scottie Creek

Date 1981

EMG-RX # 131-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks

25 June - 15 min angling - no fish caught.
No fish on set line.

28 June - 15 min angling - no fish caught.
No fish on set line.

29 June - Tw = 13.5°C - 10 min angling - no fish caught.
No fish on set line - set line removed.

6 July - Tw = 5.5°C - 15 min angling - no fish caught.
Water level highest of this season.

10 July - 10 min angling - no fish caught.

13 July - Tw = 13.5°C - 5 min angling - no fish caught.

By Kay & Johnson

Waterbody Scottie Creek

Date 1981

EMG-RX # 131-1

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

7 August - $T_w = 14^\circ\text{C}$ - 25 fry captured - see
fish data sheet.

19 August - $T_w = 14^\circ\text{C}$ - 25 fry captured - see
fish data sheet - 15 min angling - no fish caught.

8 September - 30 min angling - no fish caught.
Several fish seen breaking surface.

15 October - Stream ice-covered except
for several small open leads mid-channel
above bridge.

By Elliott & KayWaterbody Scottie CreekDate 7 August 1981EMG-RX # 131-1Section Surveyed 200 ft above AK-hwyFish present/Use LS fry / rearingGear/Effort Dipnet

Tw = 14°C

Species	Length	Remarks
LS	25mm	- five fry preserved for positive id.
"	19	
"	21	
"	25	
"	21	
"	25	
"	20	
"	29	
"	22	
"	23	
"	23	
"	28	
"	32	
"	20	
"	20	
"	23	
"	27	
"	18	
"	22	
"	21	

By Elliott & Kay

Waterbody Scottie Creek

Date 7 August 1981

EMG-RX # 131-1

Section Surveyed Continued - 2 of 2

Fish present/Use _____

Gear/Effort _____

[illegible]

By Kay E. Johnson

Waterbody Scottie Creek

Date 19 August 1981

EMG-RX # 131-1

Section Surveyed about 250 ft above AK. hwy

Fish present/Use LS / rearing

Gear/Effort Dip net / one locality

Tw = 14°C

Species	Length	Remarks
LS	31 mm	
"	32	
"	24	
"	25	
"	24	
"	30	
"	33	
"	23	
"	24	
"	20	
"	31	
"	28	
"	27	
"	26	
"	27	
"	29	
"	25	
"	20	
"	24	
"	27	

By Kay E Johnson

Waterbody Scottie Creek

Date 19 August 1981

EMG-RX # 131-1

Section Surveyed continued - 2 of 2

Fish present/Use _____

Gear/Effort _____

[illegible]

By Kan E Johnson

Waterbody Scottie Creek

Date: 8 September 1981

EMG-RX # 131-1

Section Surveyed Above & below AK hwy. bridge

Fish present/Use ☒

Gear/Effort Angling / 30 min - visual observation

[illegible]

By Kay E Johnson

Waterbody Little Scottie Creek

Date 18 May 1981

EMG-RX #

Section Surveyed Backwater pond (RX 131-2 outlet)

Fish present/Use X

Gear/Effort Visual observations

[illegible]

By Karr & Johnson

Waterbody Little Scottie Creek

Date 9 June 1981

EMG-RX #

Section Surveyed Backwater Pond (RX131-2 outlet)

Fish present/Use LS / tearing

Gear/Effort Visual observation

[illegible]

By Korn and Johnson

Waterbody Little Scottie Creek

Date 18 June 1981

EMG-RX #

Section Surveyed Backwater pond (RX131-2 outlet)

Fish present/Use X

Gear/Effort Visual observation

[illegible]

By Kay & Johnson

Waterbody Little Scottie Creek

Date 8 September 1981

EMG-RX #

Section Surveyed Barkwater pond (RX131-2 outlet)

Fish present/Use HW/rearing

Gear/Effort .357 mag / one shot

[illegible]

By Kay & Johnson

Waterbody Unnamed Creek

Date 11 May 1981

EMG-RX # 131-2

Site Access On foot from Alaska highway

Color/Turbidity brown/clear

Temperature _____

D.O. _____

pH _____

Conductivity _____

Bottom Type organic detritus

Wetted width 1-3 ft

Depth 0.2-0.7 ft

Gradient Low

Banks/Soils low / tundra mat

Aquatic Vegetation Absent

Cover 90%

Riparian Vegetation willow, spruce, grass

Barriers _____

Drainage Structures/Conditions 2 CMP's at hwy - see remarks

Ice Conditions CMP's frozen

Weather Clear

Photographs _____

Remarks CMP 4824 +77 24" x 99' - outlet

end coming apart, no flow to pond

overflow CMP ca. 150 ft north of 4824+77

- Both CMP's frozen & water is ponded

above the highway

18 May - Both CMP's still frozen. Trickle

flow observed at NWA alignment.

Unidentified fish seen in pond below

hwy. - see fish data sheet for Little Scottie

Creek.

By Elliott & Kay

Waterbody Unnamed Creek

Date 31 May 1981

EMG-RX # 131-2

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks CMP's still frozen as on 5/11 &

pond somewhat higher, backing up
to ~~Hapline~~ NWA alignment

- Several fish seen along shore
of the pond below the highway and
in shallows of Little Scottie Creek
Possibly adult sized HW

By Kay & Johnson

Waterbody Unnamed Creek

Date 1981

EMG-RX # 131-2

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

3 June - both CMP's still blocked -
ponding above hwy. expanding.

5 June - $T_w = 6.5^\circ\text{C}$ - S. CMP blocked, N.
CMP open - most of upstream ponding
drained.

9 June - $T_w = 7^\circ\text{C}$ - flow through N. CMP
only. Most of flow parallels hwy. to
S. CMP outlet, then follows channel to
pond. LS seen in pond - see fish
data sheet for Little Scottie Creek.

15 June - $T_w = 7^\circ\text{C}$ - slight flow

By Kay & Johnson

Waterbody Unnamed Creek

Date 1981

EMG-RX # 131-2

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

18 June - $T_w = 14^\circ\text{C}$ - All flow through N. CMP flowing through willows to pond not to the S. CMP channel. Unidentified fish seen in pond - see fish data sheet for Little Scottie Creek.

25 June - $T_w = 11.5^\circ\text{C}$ - low flow, N. CMP only

29 June - low flow, N. CMP only

Fish seen jumping in pond below highway.

6 July - $T_w = 5^\circ\text{C}$ - S. CMP still blocked, all flow to north.

By Kay & Johnson

Waterbody Unnamed Creek

Date 1981

EMG-RX # 131-2

Site Access On foot from Alaska highway

Color/Turbidity _____ Temperature _____

D.O. _____ pH _____ Conductivity _____

Bottom Type _____

Wetted width _____ Depth _____ Gradient _____

Banks/Soils _____

Aquatic Vegetation _____ Cover _____

Riparian Vegetation _____

Barriers _____

Drainage Structures/Conditions _____

Ice Conditions _____

Weather _____

Photographs _____

Remarks _____

20 July - $T_w = 7^{\circ}\text{C}$ - Both CMP's open,
discharge taken in S. channel.

N. "channel" unsuitable for discharge
measurement. Many fish seen
breaking surface of pond below hwy,
10 min angling - no fish caught.

19 August - $T_w = 6^{\circ}\text{C}$ - Several fish seen
surfacing in pond below hwy.

By Kay & JohnsonWaterbody Unnamed CreekDate 20 July 1981EMG-RX # 131-2Transect Location 30 ft. downstream from S. hwy. CMP

(LB/RB orientation facing upstream)

Station	Depth	Velocity	Mean Velocity	Mean Depth	Cell Width	Partial Discharge
LBWE 1.0	0	0				
	1.6	.4	.05	.2	.6	.006
	2.0	.4	.9	.4	.4	.144
	2.4	1.7	1.65	.45	.4	.297
	2.8	.5	2.0	.45	.4	.360
	3.2	.4	2.1	.45	.4	.378
	3.6	.5	1.75	.5	.4	.350
	4.0	1.7	1.6	.45	.4	.288
	4.4	1.5	1.3	.45	.6	.351
	4.6	1.1	1.2	.4	.4	.192
	5.0	1.3	.65	.15	1.0	.098
RBWE 6.0	0	0				

Calculations checked by GE Discharge 2.5 cfsDischarge _____ m³/s

By J. Kay Waterbody Unnamed Creek
Date 8 September 1981 EMG-RX # 131-2
Site Access On foot from Alaska highway
Color/Turbidity Colorless/clear Temperature 5.5°C
D.O. 8 ppm pH 6.7 Conductivity 105 µmhos
Bottom Type *
Wetted width 0.4-3.5 ft Depth 0.2-1.5 ft Gradient *
Banks/Soils *
Aquatic Vegetation * Cover
Riparian Vegetation *
Barriers *
Drainage Structures/Conditions * - see below
Ice Conditions none
Weather Partly cloudy
Photographs -

Remarks * See previous survey on 11 May 1981
- CMP at station 4824+77 split apart and
unraveling at outlet end. Very low flow -
visually estimated < 0.1 cfs.
- Even less flow through CMP to north
- one HW captured in pond near mouth
of stream (395 mm FL) - fish data
sheet for Little Scottie Creek.