

8-17-2004

Ex. 280-US-440

R. Nawa
Oregon Department of Fish and Wildlife

C. Huntington
Oregon Department of Fish and Wildlife

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Stream: Sprague River
Tributary to: Williamson River
Reach: 9B Anderson
Survey Type: ODFW Stream Habitat
Access: Canoe
Start: T36S-R12E-S14NE
Quad: Beatty, Ferguson Mountain
Date Surveyed: 17 August 04
Surveyors: R. Nawa K. Hartzell
Report: R. Nawa, C. Huntington
Distance Surveyed: 3.4 km

Land Use

Light grazing and hay production.

Valley and Stream Channel Geometry

The 0.03 percent gradient river was in a broad valley over 1 km wide. Sinuosity was high (1.7). Low terraces sloped abruptly to constrain narrow floodplains adjacent to the 35 m wide river.

Substrate

The streambed was very fine textured. An estimated 90 percent of the streambed was sand/organics; 10 percent was gravel. Riffles were fine textured gravel (42%) and sand (58%).

Spawning Gravel

About 16 m² of spawning gravel was found at a lateral bar in unit 1 but 90 percent of the gravel was dry (Photo 76). Surveyors recorded an estimated 2 m² of spawning gravel suitable for steelhead at existing low flows (1 m²/km). An additional 14 m² (4 m²/km) would become available at bankful flows. A riffle at unit 10 had 150 m² of marginal spawning gravel (5mm-20mm). A riffle at unit 6 had 200 m² of marginal spawning gravel (Photo 84). A mid-channel bar in unit 12 had 300 m² of marginal spawning gravel (8-25mm). A total of 650 m² of marginal spawning gravel was not judged suitable for salmon and steelhead spawning.

Riparian Vegetation

Sagebrush and grass dominate the riparian zone with occasional patches of willows (Photo 76). A large willow thicket is on the right bank where the railroad crosses the river (unit 14). Existing grass and shrub cover is inadequate to stabilize streambanks. About 30 percent of streambanks were actively eroding. Shade from terraces and willow patches averaged only 5 percent.

Wood

The reach had very low amounts of wood debris (0.1 pieces/100m) because streambanks lack tree cover.

Rearing and Adult holding Habitat

Due to very low stream gradient, the reach consisted of long scour pools and glides (70m-1265 m). Pools were segregated from glides based on maximum pool depths that ranged from (1.0 m- 2.5 m). Residual pool depths averaged 1.0 m. Glides averaged about 0.5 m deep. A 1.6 ha off channel pond at unit 16 (Map) has high potential for rearing juvenile fish. The pond has an outlet to the mainstem Sprague but no apparent inlet.

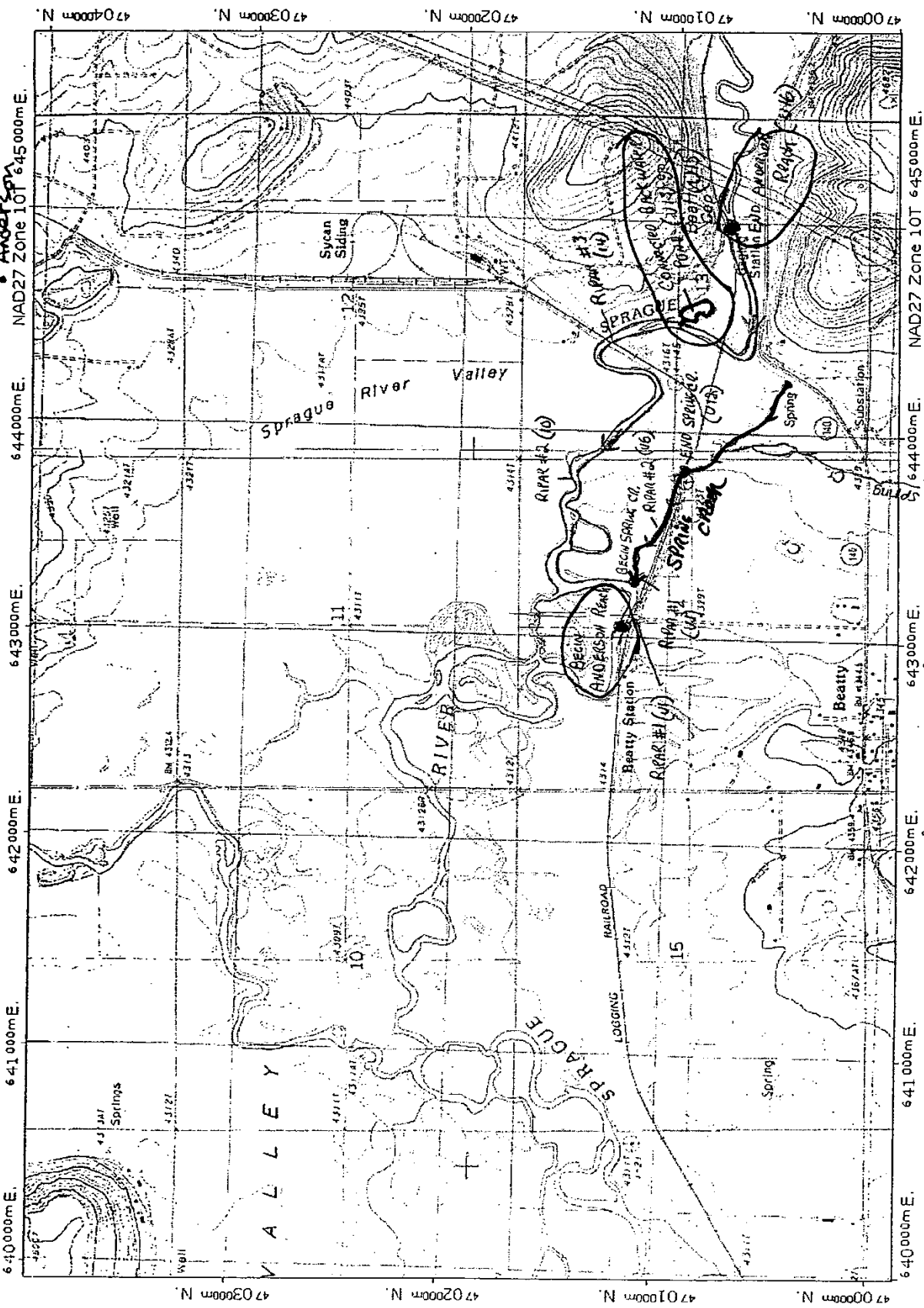
Stream Temperature

Spring Creek (18.9°C) lowered the temperature of the Sprague River from 20.5°C to 20°C for about 100 m 1500 (pdt).

Photo 76 Unit 1
Marginal spawning
gravel was found
at lateral and mid-
channel bars.

Photo 84 Unit 6
Marginal spawning gravel
(5mm-20mm) was not
judged suitable for
spawning steelhead and
salmon. Tape is in inches.

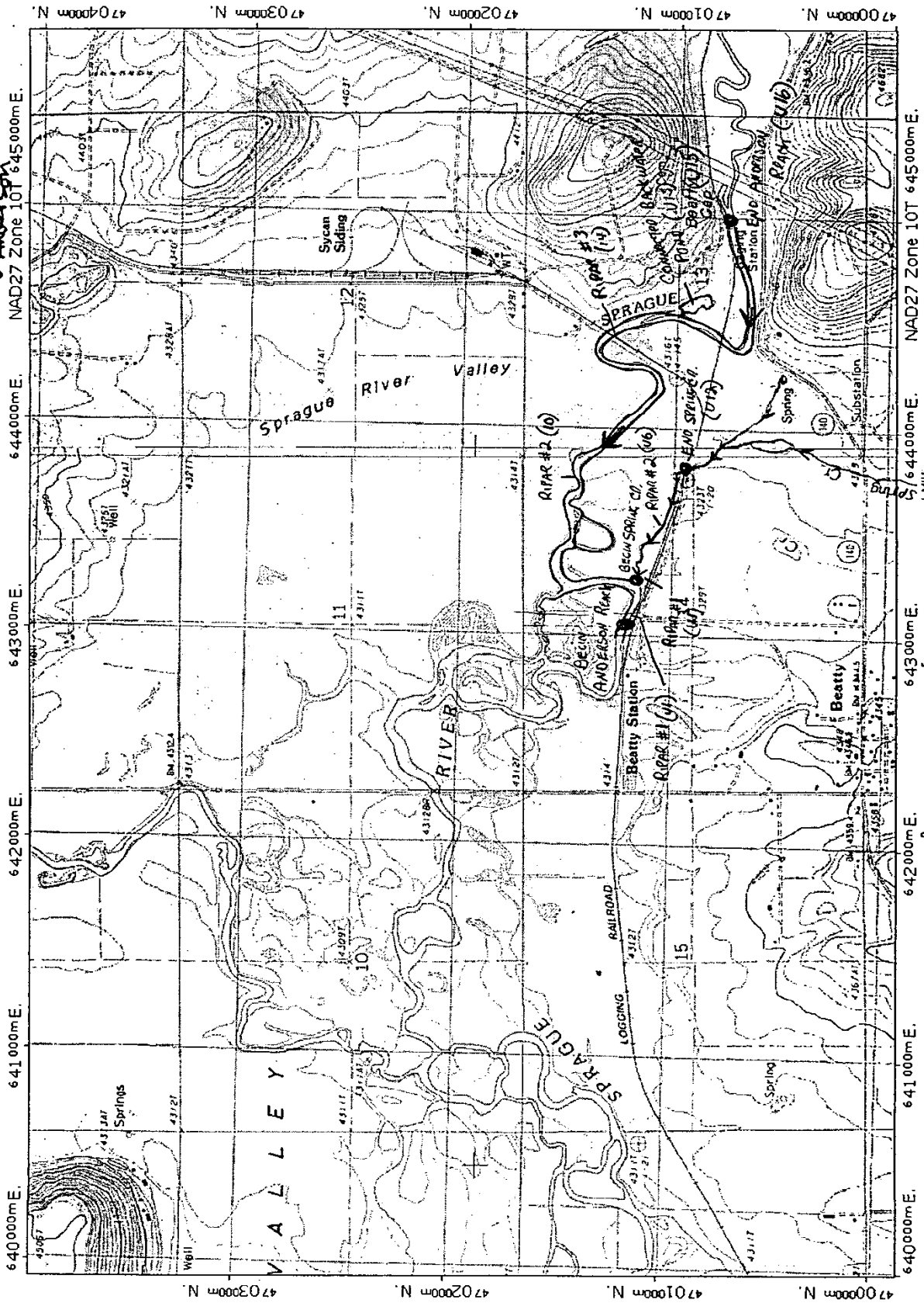
• Anderson
• Anderson



Sprague R.

Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)

• Anderson
• Anderson



Map created with TOPO © 2002 National Geographic (www.nationalgeographic.com/topo)

Sprague R.

REACH: _____

STREAM: Sprague (Anderson Property)

BASIN: Sprague

PAGE: 1 OF: _____

CREW: KH, RN

USGS 7.5' MAP NAMES: _____

DATE	REACH #	UNIT NUMBER	VALLEY FORM		VEG CLASS		LAND USE		WATER TEMP	STRM FLOW	LOCATION TWN-RNG-SEC-1/4	PHOTO #	REACH NOTE
			CHANL FORM	FORM	DOM.	SUB-DOM.	DOM.	SUB-DOM.					
8/17/04	Anderson	1-16	CT	CT	P	S	AG	LG	69°F	LF	36S, 12E, 14 NE 1/4	1430	N-S Feneline
8/17/04		1-2	US	WF	P	S	AG	LG	66°F	LF	36S, 12E, 14 NE 1/4	1505	Conf. w/ Sprague

Anderson
UTM: 0643044
4701226

ACW=46m
ACH=1.3m
FPW=54m
HT

Bar

Sprague
UTM: 0643258
4701190

ACW=26m
ACH=0.7m
FPW=200m
HT

Trail

Sprague
UTM: 0643258
4701190

ACW=26m
ACH=0.7m
FPW=200m
HT

Trail

UTM: _____

UTM: _____

UTM: _____

REACH

PAGE: _____ OF: _____

STREAM: _____ CREW: _____

BASIN: _____ USGS 7.5' MAP NAMES: _____

DATE	REACH #	UNIT NUMBER	CHANL FORM	VALLEY FORM	VWI	VEG CLASS DOM.	SUB-DOM.	LAND USE DOM.	SUB-DOM.	WATER TEMP	STRM FLOW	LOCATION TWP-RNG-SEC-1/4	PHOTO #	REACH NOTE

UTM: _____

UTM: _____

UTM: _____

UTM: _____

UTM: _____

UTM: _____

RIPARIAN

STREAM: Springer Anopson Pond NAME: _____ DATE: _____

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	COUNT (DBH in CENTIMETERS)					RIPARIAN NOTE	
								3-15	15-30	30-50	50-90	90+		
	LEFT	1	FP	10	0	0	80	CONIFER						
		2	LT	0	0	0	70	HARDWOOD						
		3	LT	0	0	0	40	CONIFER						
	RIGHT	1	FP	12	40	40	60	HARDWOOD						
		2	LT	4	20	40	40	CONIFER						
		3	LT	0	40	60	40	HARDWOOD						
	LEFT	1						CONIFER						
		2						HARDWOOD						
		3						CONIFER						
	RIGHT	1						HARDWOOD						
		2						CONIFER						
		3						HARDWOOD						
UNIT # <u>14</u>														

FOR EACH RIPARIAN TRANSECT, DRAW AND LABEL THE SURFACES (HT, LT, FP, HS, ETC) OF A CROSS SECTION IN THE BOX PROVIDED ABOVE. DRAWING AND LABELING VEGETATION IS NOT NECESSARY.

RIPARIAN

PAGE: _____ OF: _____

STREAM: _____ DATE: _____ NAME: _____

UNIT NUMBER	SIDE	ZONE	SURFACE	SLOPE	CANOPY CLOSURE	SHRUB % COVER	GRASS/FORB % COVER	TREE	COUNT (DBH in CENTIMETERS)				RIPARIAN NOTE	
									3-15	15-30	30-50	50-90		90+
	LEFT	1						CONIFER						
		2						HARDWOOD						
		3						CONIFER						
								HARDWOOD						
	RIGHT	1						CONIFER						
		2						HARDWOOD						
		3						CONIFER						
								HARDWOOD						
	LEFT	1						CONIFER						
		2						HARDWOOD						
		3						CONIFER						
								HARDWOOD						
	RIGHT	1						CONIFER						
		2						HARDWOOD						
		3						CONIFER						
								HARDWOOD						
													UNIT # _____	

WOOD

PAGE: 1 OF:

NAME: Martez

DATE: 2/17/04

STREAM: Sprague (Anderson)

UNIT NUMBER	UNIT		DEBRIS		DBH CLASS	RW < 3	6	9	12	15	18	21	24	28	32	36+	WOOD NOTE
	TYPE	LOCAT	TYPE	LOCAT													
13	LP		S	N	15												
14	GP		S	N	15												
15	SP		S	N	30												
15	SP		S	N	15												

WOOD

PAGE: _____ OF: _____

STREAM: _____ DATE: _____ NAME: _____

UNIT NUMBER	UNIT TYPE	CONFIG	DEBRIS TYPE	LOCAT	DBH CLASS	RW<3	LENGTH CLASS (m)							WOOD NOTE						
							3	6	9	12	15	18	21		24	28	32	36+		

UNIT-2: []

PAGE: 1 OF 1

STREAM: SPRING (ANDERSON ROAD) DATE: 17 Aug 04 NUMERATOR: R. NAVY

UNIT #	UNIT TYPE	DEPTH* FTC	DEPTH** FTC	VERIFIED LENGTH	WIDTH	S/O	SND	PERCENT SUBSTRATE			BLDR COUNT	% ACTIVE EROSION	% UNDER CUT	COMMENT CODES	NOTE
								GRVL	CBLE	BLDR	BLDR				
1	GL	.45				100									Small 2" x 2" Boulders
2	RI	.35				80		20							80% < 1"
3	LP	1.0	.21			100									90% < 1" SPRING CR
4	RI	.40				100									1" x 1" 95%
5	GL	.55				80		20							
6	RI	0.30				40		60							
7	GL	.60				90		10							
8	RI	0.30				40		60							6" 75%
9	LP	2.5	.40			100									13-17 inches
10	RI	.20				30		70							
11	LP	.18	.40			100									
12	GL	0.1				30		70							3-12 inch
13	LP	1.2	.45			80		15		5					
14	GL	0.6				100									
15	SP	1.1				100									Boulders 5 inch ~ 4 feet
16	SP	.5				100									
V															

AX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS

** ONLY MEASURED @ POOLS (EXCEPT OFF-CHANNEL POOLS)

UNIT-2

PAGE: 1 OF 1

STREAM: WOOD R. (Kimbark Park) DATE: 9 AUG 04 NUMERATOR: R. NAWA

NOTE: Basic
0583332 - 4732373
Wax FACED LG

UNIT #	UNIT TYPE	DEPTH*	DEPTH**	PTC	VERIFIED LENGTH	WIDTH	PERCENT SUBSTRATE			BLDR BDRCK	BLDR COUNT	% ACTIVE EROSION	% UNDER CUT	UNDER COMMENT CODES	NOTE
							S/O	SND	GRVL						
1	C	16.7			119 + 84 + 86	60	20	40		10	100m	90	MOIST FINE G. 2.1"		
2	RI	10.30			329					44	130m		MOIST FINE GRAVEL < 1" 4.70		
3	LP	3.5		55	282360	50	5	5		30, 12, 18			MOIST SS		
4	G	0.20				50	50	50		27			SS		
														ABOVE T1 = 440	
														WOOD R. 30.18 T1 = 43	
														DELTA T1 = 44	
V															
V															
V															

AX DEPTH POOLS - MODAL DEPTH IN FAST WATER UNITS
 ** ONLY MEASURED @ POOLS (EXCEPT OFF-CHANNEL POOLS)

SICK YOU BLUD ONE DAY MONTH KUFUNIA

PHOTO RECORD

PAGE: 1 OF: 1

STREAM: Sprague R. (Anderson) SURVEY TYPE: OR. PLAN BASIN MIXED
 BASIN OR GCG: Sprague FILM: DIGITAL SLIDE PRINTS
 SURVEY CREW: KH, RN ROLL #: _____ MAILER #: _____

	PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION	
Sprague	1: A 74		9/17/04	1430	Left Bank View @ Beginning of Reach	
	2:	75			Right " " " " " "	
	3:	76			US View @ " " " "	
	4:	77	1		DS View " " " "	
	5:	78	4		DS View of Sprague & Spring Cr Cont.	
	6:	79	4		DS View of Sprague & Spring Cr Cont.	
	7:	80	4		Lt Bank View	
	8:	81	4		Rt Bank View	
	9:	82	105	9/17/04	1605	View of Beaver Dam UTM 643742 4700990 Spring Serv
	10:	83	83	9/17/04	1720	Left to Rt. View of Wolman Count Site
Sprague	11:	84		1800	Bar Gravel	
	12:	85		1835	View of Spawning Gravel on Sprague R. Bar	
	13:	86		1840	US View	
	14:	87			DS View	
	15: A 88	10			Left Bank View	
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PHOTO RECORD

PAGE: _____ OF: _____

STREAM: _____ SURVEY TYPE: OR. PLAN BASIN MIXED

BASIN OR GCG: _____ FILM: DIGITAL SLIDE PRINTS

SURVEY CREW: _____ ROLL #: _____ MAILER #: _____

PHOTO # OR DIGITAL ID	UNIT #	DATE	TIME	STREAM / PHOTO DESCRIPTION
1:				
2:				
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UNIT - 1

PAGE: 1 OF: ESTIMATOR: Hartzel

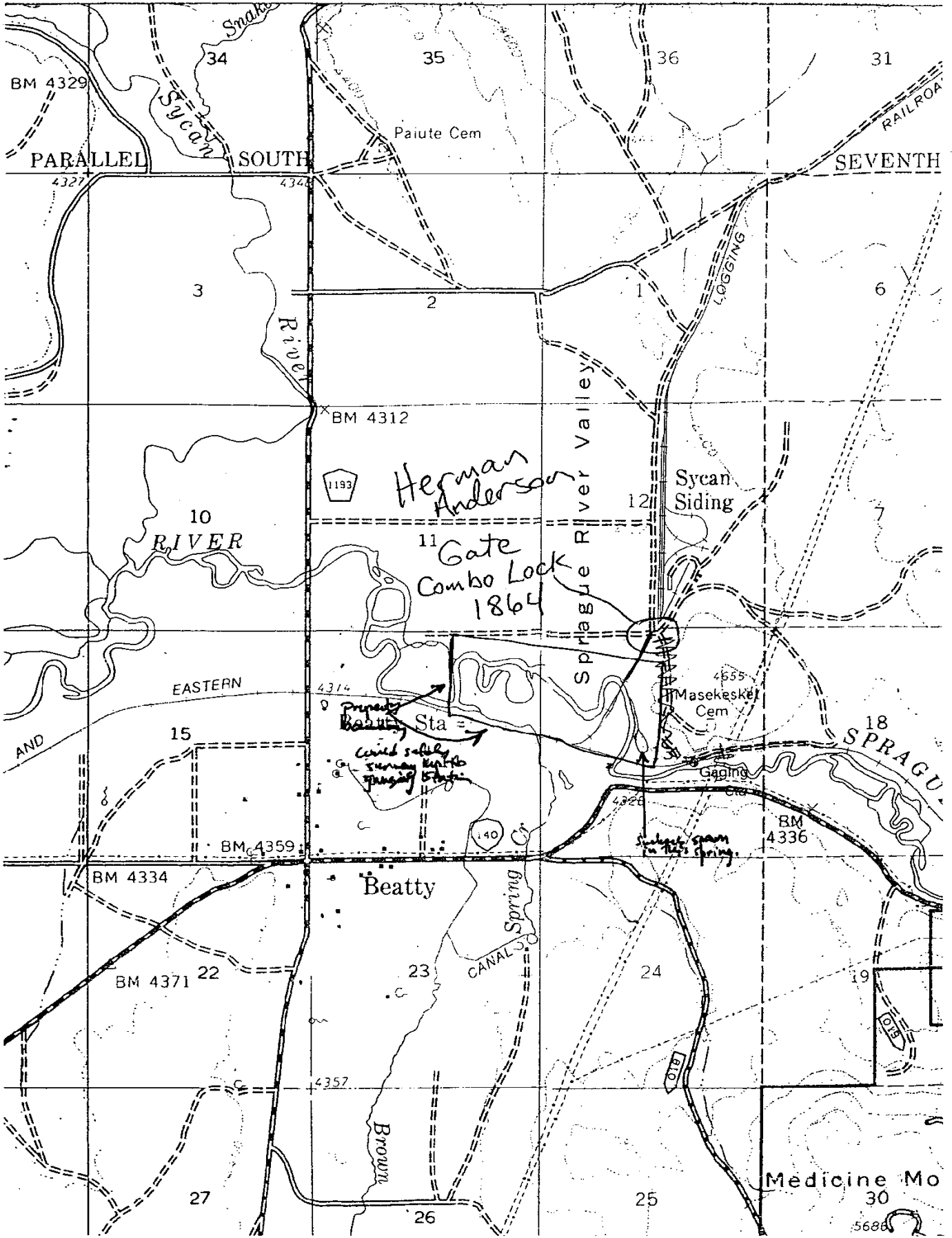
DATE: 8/17/04

STREAM: Sprague (Anderson Property)

REACH #	UNIT #	UNIT TYPE	CHANL TYPE	% FLOW	UNIT LENGTH	UNIT WIDTH	SLOPE %	SHADE (0-90)		ACTIVE CHANNEL		FLOOD PRONE		TERRACE		NOTE
								LEFT	RIGHT	HT.	WIDTH	HT.	WIDTH	HT.	WIDTH	
1	GL	00	100	39	0.5	3	18	1.3	46	2.6	54	2.8	60	22	FC	
2	RT	00	100	35	0.5	2	14									
3	LP	01	80	34	0.5	2	12									
4	R	11	20	41	1.0	2	10	0.7	26	1.4	2200	5.0			33	SPAIN CR
5	GL	00	100	33	0.5	4	20									RT Terrace Only
6	RT	01	70	250	1.0	2	2									Side Channel For Sprague
7	GL	11	30	17	0.5	2	2									
8	RT	00	100	37	1.0	2	2									
9	LP	00	100	155	0.5	2	2									
10	RT	00	100	95	1.0	3	2	0.75	42	1.5	44	2.0	46	19	11	Left Terrace Only
11	LP	00	100	860	0.5	2	2									
12	GL	00	100	130	0.5	2	2									
13	LP	00	100	150	0.5	2	2									
14	GL	01	100	70	0.5	2	2	1.1	36	2.2	53	2.4	56	21	11	Left Terrace Only BC
15	SP	01	90	1265	0.5	3	2									
16	SP	11	70	180	0.5	3	4									

* MEASURE FROM THE STREAMBED TO THE TOP OF THE ACTIVE CHANNEL. TAKE THE MEASUREMENT AT POOL TAIL CREST ON POOL UNITS.

UNIT 15 ENDS @ USGS Gaging Station



SPAWNING HABITAT FORM

Stream SPRAGUE R. Reach ANDERSON Date 17 AUG 04

Surveyor(s): R. NOWA / K. HARZELL

Surface area (m ²)	Class (G, GC, C)	Percent wetted	Percent usable	UNIT	Comments
16	G	10	0	1	EXPOSED Lateral bar > 50% SAND
SPRING CREEK				SPRING CREEK	
3	G	100	100	6	
6	G	100	100	7	< 6"
15	G	100	70	8	Avcl. size < 1"
9	G	100	60	9	< 6"
2	G	100	100	10	

Class: G= gravel; C= small cobble (<150mm [6"])
 Usable habitat is at least 150mm (6") deep and has water velocities between 1 and 4 feet/second.

SPAWNING HABITAT FORM

Stream _____ Reach _____ Date _____

Surveyor(s) _____

Surface area (m ²)	Class (G, GC, C)	Percent wetted	Percent usable	Comments

Class: G= gravel; C= small cobble (≤150mm [6"])
 Usable habitat is at least 150mm (6") deep and has water velocities between 1 and 4 feet/second.