

9-28-2004

## Ex. 280-US-473

R. Nawa  
*Oregon Department of Fish and Wildlife*

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Stream: South Fork Sprague River  
Tributary to: Sprague River>Williamson River  
Survey Type: Spawning Gravel  
Access: Foot  
Reaches: 5,6,8A,8B,  
Start: T36S-R15E-S8SW  
Quad: Campbell Reservoir  
Date Surveyed: 28 September 04  
Surveyors: R. Nawa, K. Hartzell  
Report: R. Nawa, C. Huntington  
Distance Surveyed: 6.3 km

Reach 5 (0.1 km, partial)

An estimated 60 m<sup>2</sup> of gravel was suitable for spawning steelhead at existing low flows (286 m<sup>2</sup>/km). An additional 90 m<sup>2</sup> of gravel would become available at bankfull flows (429 m<sup>2</sup>/km).

Reach 6 (1 km)

This reach is a Forest Service day use area. The active channel was 10 m in the upper portion of the reach. Low stream gradient and high sinuosity resulted in moderate amounts of well sorted spawning gravel. An estimated 688 m<sup>2</sup> of gravel was suitable for spawning steelhead at existing low flows (668 m<sup>2</sup>/km). An additional 369 m<sup>2</sup> of gravel would become available at bankfull flows (358 m<sup>2</sup>/km). The median size of spawning gravel was 32-64 mm indicating suitability for Chinook salmon (D50 from Wolman Pebble Count). Cobble embeddedness ranged from 10-30 percent. Gravel is being eroded out of streambanks on meander bends and deposited in pool tailouts. Severe erosion and channel widening is occurring at lower end of reach. Remnants of a washed out footbridge was found along the stream. A dry secondary channel is at the lower end of the reach.

Photo 460. Relatively coarse textured gravel/cobble would be suitable for spawning Chinook salmon.

Reach 8A (3.1 km)

This reach is in a steep sided canyon on Forest Service lands. An estimated 1359 m<sup>2</sup> of gravel/cobble was suitable for spawning steelhead at existing low flows (433 m<sup>2</sup>/km). An additional 147 m<sup>2</sup> of gravel/cobble would become available at bankfull flows (47 m<sup>2</sup>/km). Coarse textured gravel cobble would also be suitable for spawning Chinook salmon (Photo110). Brownsworth Creek may be the source of gravel in this reach.

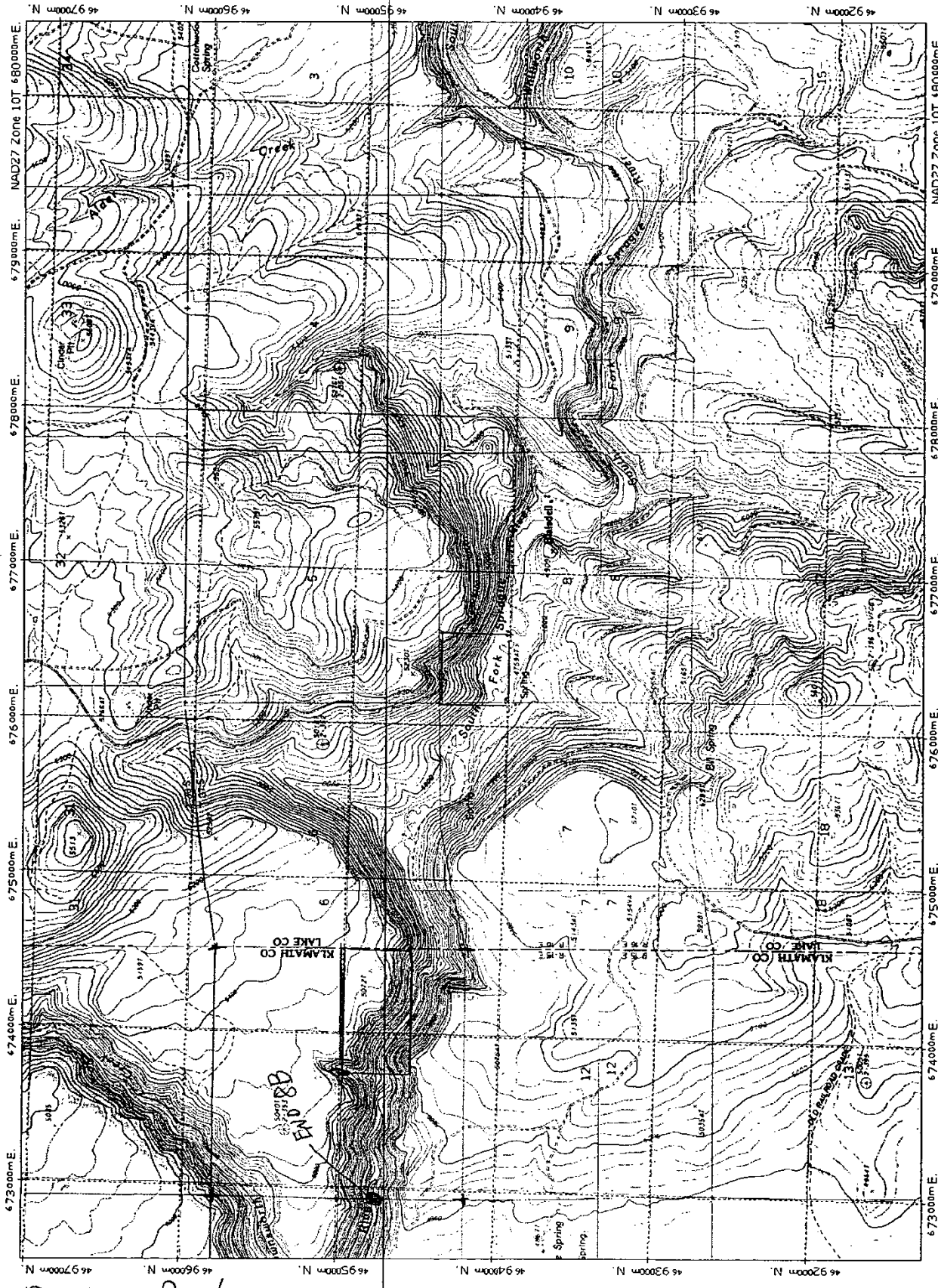
Photo 110. Coarse textured gravel/cobble would be suitable for Chinook salmon spawning.

Reach 8B (1.3 km)

This reach is in a steep sided canyon on Forest Service lands. Cobble/boulder substrate lacked significant amounts of spawning gravel (Photo 117).

Photo 117. Cobble  
boulder substrate was  
unsuitable for spawning.





310K Spring - FDSI

END BB

TIN 1/IN 16"

Stream Name S.F. SPRACUE R. Rosgen Channel Type \_\_\_\_\_  
 Hydrologic Unit \_\_\_\_\_ EPA Reach 6 EPA EXT \_\_\_\_\_  
 Stream Survey Reach PICNIC A Sample # 1 Habitat Unit Type \_\_\_\_\_ Fast/Slow Water \_\_\_\_\_  
 Observers R. NAWA Date 28 SEPT 04  
 Procedure  (Wolman, 1954) \_\_\_\_\_ (Beverger and King, 1995) \_\_\_\_\_ Other \_\_\_\_\_  
 Measurement Device Ruler Gravelometer (FISP US SA-97)

Class Name	Particle Size (mm)	Dot Count	Total #	% Total	Cum. #	Cum %
<del>Small Organic</del>	<del>&lt; 25 mm</del>					
<del>Large Organic</del>	<del>&gt; 25 mm</del>					
<del>Clay</del>	<del>&lt; 0.0039</del>					
<del>Silt</del>	<del>0.0039 - 0.0625</del>					
<del>Fine Sand</del>	<del>0.0625 - 0.25</del>					
<del>Med. Sand</del>	<del>0.25 - 0.5</del>					
<del>Coarse Sand</del>	<del>0.5 - 1.0</del>					
VC Sand	0 - 2		7			
VF Gravel	2 - 4		0			
Fine Gravel	4 - 8		5			
<del>Fine Gravel</del>	<del>6 - 8</del>					
Med. Gravel	8 - 16		72			
Coarse Gravel	16 - 32		25			
VC Gravel	32 - 64		43			
Sm. Cobble	64 - 128		12			
Lg. Cobble	128 - 256					
Sm. Boulder	256 - 512					
Med. Boulder	512 - 1024					
Lg. Boulder	1024 - 2048					
VL Boulder	2048 - 4096					
Bedrock			104			

Total #: \_\_\_\_\_

Calculations: % Fines <2mm \_\_\_\_\_ % Fines <6mm \_\_\_\_\_ D50 \_\_\_\_\_ D84 \_\_\_\_\_

Notes: Active channel = 10.1 m

UTM = 667547 - 4692910

**PHOTO RECORD**

PAGE: 1 OF: 1

STREAM: S. Fork Sprague SURVEY TYPE: OR. PLAN  BASIN  MIXED   
 BASIN OR GCG: Sprague FILM: DIGITAL  SLIDE  PRINTS   
 SURVEY CREW: Hartzell ROLL #: \_\_\_\_\_ MAILER #: \_\_\_\_\_

Reach

PHOTO # OR DIGITAL ID	#	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: <u>109</u>	<u>8A</u>	<u>9/27/04</u>	<u>1557</u>	<u>US View into FS Land</u>
2: <u>109</u>	<u>7</u>		<u>"</u>	<u>US View into Private Land</u>
3: <u>110</u>	<u>8A</u>		<u>1600</u>	<u>Typical Spawning Cobble</u>
4: <u>111</u>			<u>1630</u>	<u>Typical Embedded Cobble Bar</u>
5: <u>112</u>			<u>"</u>	<u>US View</u>
6: <u>113</u>			<u>1645</u>	<u>US View of Change to Boulder Subs. 20670491</u>
7: <u>114</u>			<u>"</u>	<u>US View of Predominant Cobble Subs. S 4695254</u>
8: <u>115</u>			<u>1725</u>	<u>Brownworth Cr. outflow</u>
9: <u>116</u>	<u>↓</u>		<u>"</u>	<u>US View</u>
10: <u>117</u>	<u>8B</u>		<u>1742</u>	<u>US View</u>
11: <u>118</u>	<u>9</u>		<u>1824</u>	<u>US View into Private Land</u>
12: <u>119</u>	<u>8B</u>	<u>↓</u>	<u>"</u>	<u>US View into FS Land</u>
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PHOTO RECORD

PAGE: 1 OF 1

STREAM: S.F. SPRAGUE SURVEY TYPE: OR. PLAN  BASIN  MIXED

BASIN OR GCG: Sprague FILM: DIGITAL  SLIDE  PRINTS

SURVEY CREW: Nawa ROLL #: MAILER #:

PHOTO # OR DIGITAL ID <sup>Reach</sup> DATE TIME STREAM / PHOTO DESCRIPTION <sup>Spatially</sup> (ARRANGED IN UPSTREAM ORDER)

PHOTO # OR DIGITAL ID	DATE	TIME	STREAM / PHOTO DESCRIPTION
1: B 460	5	28 Sept 04	1130 DOWNSTREAM INTO PRIVATE LAND "S.F. SPRAGUE R5"
2: B 467	6		1107 USFS EROSION BANKS, WASHED OUT FOOT BRICKS, COALASH DEPOSITION ON FLOORPLAIN
3: B 469	6		1222 WOLMAN PEBBLE COUNT 667547 - 4692910
4: B 458	6		0908 "S.F. SPRAGUE R6" WOLMAN PEBBLE COUNT
5: B 459	6		0910 "S.F. SPRAGUE R6" SUITABLE GRAVEL AT WOLMAN PEBBLE COUNT
6: B 460	6		0938 Close up of Suitable Spawning Gravel
7: B 461	6		0930 Riffle with Suitable Spawning Gravel
8: B 462	6		0940 GRAVEL ERODED FROM MEANDER BENDS IS DEPOSITED IN TAIL OF POOL
9: B 463	6		0950 Old CEMENTED GRAVELS BEING ERODED SUGGESTS CHANNEL WIDENING
10: B 464	7A		1006 UPSTREAM INTO PRIVATE LAND R7A NOT "R6" AS PICTURED
11: B 465	6		1006 DOWNSTREAM INTO USFS
12: B 466	7A	✓	1010 UPSTREAM INTO PRIVATE LAND R7A NOT "R7" AS SHOWN IN PHOTO
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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
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### SPAWNING HABITAT FORM

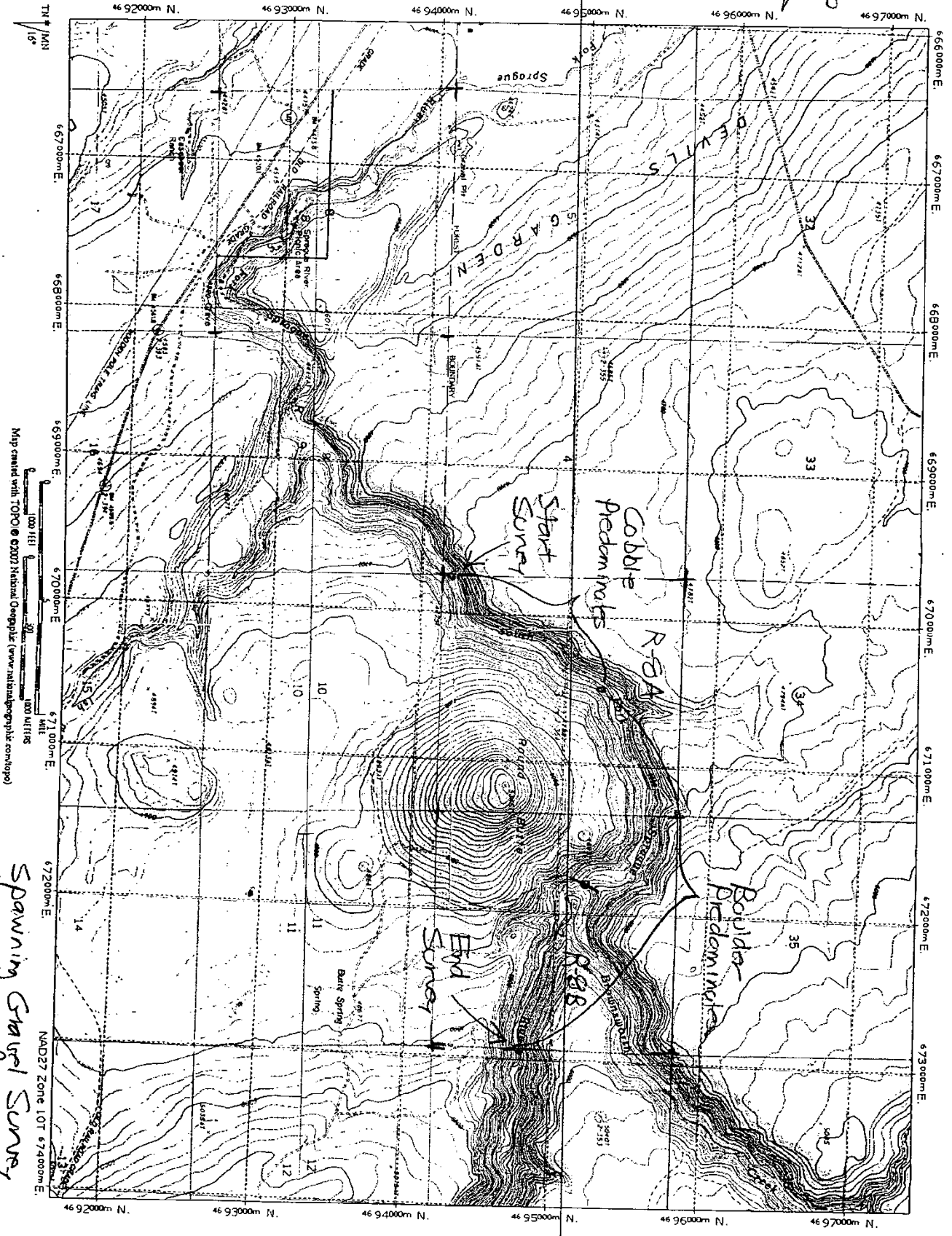
Stream South Fork SPRALUE Reach 5+6 Date 28 SEPT 04  
 Surveyor(s) R. NAWA (USFS PICNIC AREA)

reach	Surface area (m <sup>2</sup> )	Class (G, GC, C)	Percent wetted	Percent usable	cob Emb	70 SAND	Begin
							Comments 667181-4693455
5	70	G	40	20			Begin ~ 100 m below USFS Boundary
5	80	GC	40	30			
6	60	G	60	50			
6	120	G	40	20			EXPOSED POINT BAR
6	45	G	80	60		10	
6	100	G	70	50		20	
6	12	G	100	80			
6	40	G	80	40			
6	60	G	20	10			LATERAL BAR EXPOSED
6	25	G	100	60		30	Mid channel bar
6	60	G	50	30			Mid channel bar below bridge
6	16	G	100	100			
6	25	G	90	70	10-20		WOLMAN COUNT 667547 4692910
6	100	GC	80	60	10		
6	64	GC	70	40	10		
6	60	GC	90	70	10-20		
6	60	GC	60	40	30		
6	80	G	60	40		20	
6	30	GC	60	40	10-20		
6	60	G	60	20		20	Blown out below dam? old
6	40	G	80	60		20	
							END SURVEY AT fence line. USFS/private 0667742-4692648

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.



S. Fork Sprague - West



Spanning Gravel Survey  
S. F. Sprague Reaches BA & BB

SPAWNING HABITAT FORM

Stream S. Fork Sprague Reach 8A Date 9/27/04  
 Surveyor(s) Hartzell

Surface area (m <sup>2</sup> )	Class (G, GC, C)	Percent wetted	Percent usable	% Embed	Comments
8	GC	100	20	35	Start @ USFS Boundary
14			20	35	(N-S Sec. Line) Temp: 60°/1600
24			40	40	0669739, 4694212
40			20	35	
60			20	35	
36		✓	30	35	
30		0	0	30	Lateral Bar
16		100	100	40	
150		90	10	35	
200		90	20	35	
90		80	10	40	
120		90	80	35	
30		0	0	50	Lateral Bar
60		100	60	35	
40		100	20	35	
64		100	20	35	
36		100	20	35	
30		90	20	35	
280		100	30	35	
24	✓	100	30	35	
					Channel Substrate Changes
					From Predom. Cobble to Boulder
2	GC	100	100	35	0670491, 4695254
6		100	100	35	
16		100	100	40	
18			100	30	
4			100	35	
8			100	40	
24			60	35	
60			20	35	
8	✓	✓	100	30	
8	G	50	20		40% Sand
					Brownsworth Cr. - End of Reach 8A

NEARLY all of 25' collected is large cobble (3 to 5") with very little gravel mixed in lying in shallow riffles

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.

