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R. Nawa Oregon Department of Fish and Wildlife

C. Huntington
Oregon Department of Fish and Wildlife

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Tributary to: Sprague River>Williamson River

Survey Type: Spawning Gravel

Access: Foot Reach: 5 (partial)

Start: T36S-R14E-S3NE

Quad: Bly

Date Surveyed: 27 September 04

Surveyor: R. Nawa

Report: R. Nawa, C. Huntington Distance Surveyed: estimated 1.1 km

Only the upper half of the reach was surveyed (Map 1). An estimated 940 m² of gravel were suitable for spawning steelhead at existing low flows (330 m²/km). An additional 320 m² of gravel would become available at bankfull flows (170 m²/km). The relatively coarse gravel/cobble substrate would also be suitable for Chinook salmon (Photo 457). Cobble embeddedness ranged from 30-50 percent. Gravel was concentrated below meander bends where the channel was sinuous.. The unsurveyed lower portion of the reach had a straight channel. No spawning gravel was apparent for at least 100 m in the straight channel below where the survey began. Beaver had dammed one side channel near the Ganong residence.

Photo 457. Coarse gravel/cobble substrate would be suitable for Chinook salmon spawning.

Tributary to: Sprague River>Williamson River

Survey Type: Spawning Gravel

Access: Foot Reach: 6

Start: T35S-R14E-S35NE

Quad: Bly

Date Surveyed: 27 September 04

Surveyor: R. Nawa

Report: R. Nawa, C. Huntington Distance Surveyed: 1.42 km

The upper half of the reach was Forest Service; the lower portion was private (Map 1). Carry and Ralph Ganong provided access to private lands. Cobble and poorly sorted gravel dominated the channel (Photo 454). An estimated 4 m² of gravel were suitable for spawning steelhead at existing low flows (3 m² /km). Lack of suitable spawning gravel may be related to low sinuosity. Wetted width was about 15 m. An unscreened diversion ditch immediately below Forest Road 3411 diverts about 70 percent of the North Fork flow (Map). Greatly reduced flow in the North Fork would make adult salmon migration difficult. Stream temperature at the upper end of reach was 9.4°C at 1400.

Photo 454. Coarse cobble/ boulder substrate is unsuitable for spawning salmon and steelhead.

Tributary to: Sprague River> Williamson River

Survey Type: Spawning Gravel

Access: Foot Reach: 7 (partial)

Start: T35S-R14E-S36NW Quad: Bly,Campbell Reservoir

Date: 27 September 04 Surveyor: R. Nawa

Distance Surveyed: estimated 1.3 km

Only the lower half of the reach was surveyed (Map 1). The stream was in a very steep walled canyon with cobble/boulder substrate (Photo 449). Small patches of gravel were occasionally found behind large boulders. An estimated 16 m² of gravel were suitable for spawning steelhead at existing flows (12 m²/km). This reach has little potential for spawning, but would provide excellent holding water for adults because of high flows, cold water (9.4°C) and inaccessibility. Bankfull flow made wading treacherous.

Photo 449. Coarse cobble/boulder substrate was unsuitable for salmon and steelhead spawning.

Tributary to: Sprague River>Williamson River

Survey Type: Spawning Gravel

Access: Foot Reach: 14

Start: T34S-R16E-S30NW

Quads: Sandhill Crossing, Lee Thomas Crossing

Survey Date: 26 September 04

Surveyor: R. Nawa

Report: R. Nawa, C. Huntington Distance Surveyed: 5.3 km

The entire reach was Freemont National Forest lands (Map 2). Low stream gradient and high sinuosity resulted in large amounts of mostly well sorted spawning gravel. An estimated 3,850 m² of gravel were suitable for steelhead spawning at existing low flows (732 m²/km). An additional 424 m² of gravel would become available at bankfull flows (81 m²/km). The median gravel size (D50) was 16-32 mm (Wolman Pebble Count). Fresh deposition on point bars indicates significant amounts of sediment moving through the system (Photos 442,443). An estimated 10-30 percent of the spawning gravel was sand. At 2 locations boulders were 40-80 percent embedded in fine gravel. Eroding streambanks were heavily grazed in meadow areas resulting in a lack of shade (few willows). The active channel was 4-8 m wide. Stream temperature was 13.3° C at 1630 pdt.

Photo 442. Well sorted spawning gravel deposited at point bars associated with meander bends.

Photo 443. Gravel/cobble suitable for both steelhead and Chinook salmon

Tributary to: Sprague River>Williamson River

Survey Type: Spawning Gravel

Access: Foot Reach: 15

Start: T34S-R16E-S20NW

Quads: Sandhill Crossing, Lee Thomas Crossing

Date Surveyed: 26 September 04 Report: R. Nawa, C. Huntington

Surveyor: R. Nawa

Distance Surveyed: 1.7 km

This reach is a private meadow within the Freemont National Forest (Map 2). Low stream gradient and high sinuosity resulted in large amounts of mostly well sorted spawning gravel in riffles (Photo 432). An estimated 1,154 m^2 of gravel were suitable for steelhead spawning at existing low flows (695 m^2 /km). An additional 352 m^2 of gravel would become available at bankfull flows (212 m^2 /km). The median gravel size (D50) was 16-32 mm (Photo 434; Wolman Pebble Count). Estimated embeddedness was 10-20 percent. In some locations the gravels were heavily cemented or were surficial deposits < 15 cm deep over a claypan. These thin layers of gravel were judged unsuitable. Streambanks were only lightly grazed and seemed to be recovering. The active channel was 8 m. Stream temperature was 6.6° C at 1130.

Photo 432. Large amounts of well sorted gravel were in riffles.

Photo 434. Median gravel size was 16-32 mm.

Tributary to: Sprague River>Williamson River

Survey Type: Spawning Gravel

Access: Foot Reach: 16A

Start: T34S-R16E-S20NE Quad: Lee Thomas Crossing Date: 26 September 04 Surveyor: K. Hartzell

Report: R. Nawa, C.Huntington Distance Surveyed: 0.4 km

This reach is on Freemont National Forest (Map 2). An estimated 382 m² of gravel/cobble was suitable for steelhead spawning at existing low flows (955 m²/km). Estimated sand content in gravel patches was 25 percent.

Photo 90. Meandering low gradient stream had a high density of spawning gravel.

Tributary to: Sprague River>Williamson River

Survey Type: Spawning Gravel

Access: Foot Reach: 16B

Start: T34S-R16E-S20SE Quad: Lee Thomas Crossing Date: 26 September 04

Surveyor: K. Hartzell

Report: R. Nawa, C.Huntington Distance Surveyed: 3.8 km

This reach is on Freemont National Forest land upstream of School Creek (Map 2). An estimated 217 m² of gravel/cobble was suitable for steelhead spawning at existing low flows (57 m²/km). Estimated sand content in gravel patches was 25 percent. Estimated embeddedness was 30 percent.

Photo 93. Source of spawning gravel appears to be from local streambank erosion.

Tributary to: Sprague River>Williamson River

Survey Type: Spawning Gravel

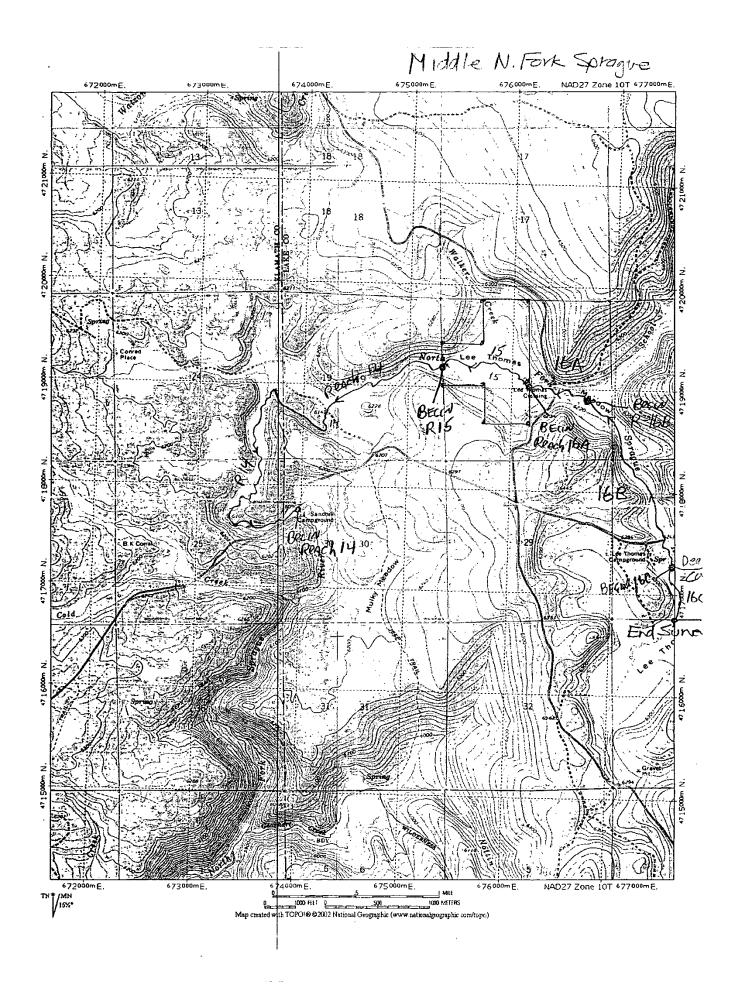
Access: Foot Reach: 16C

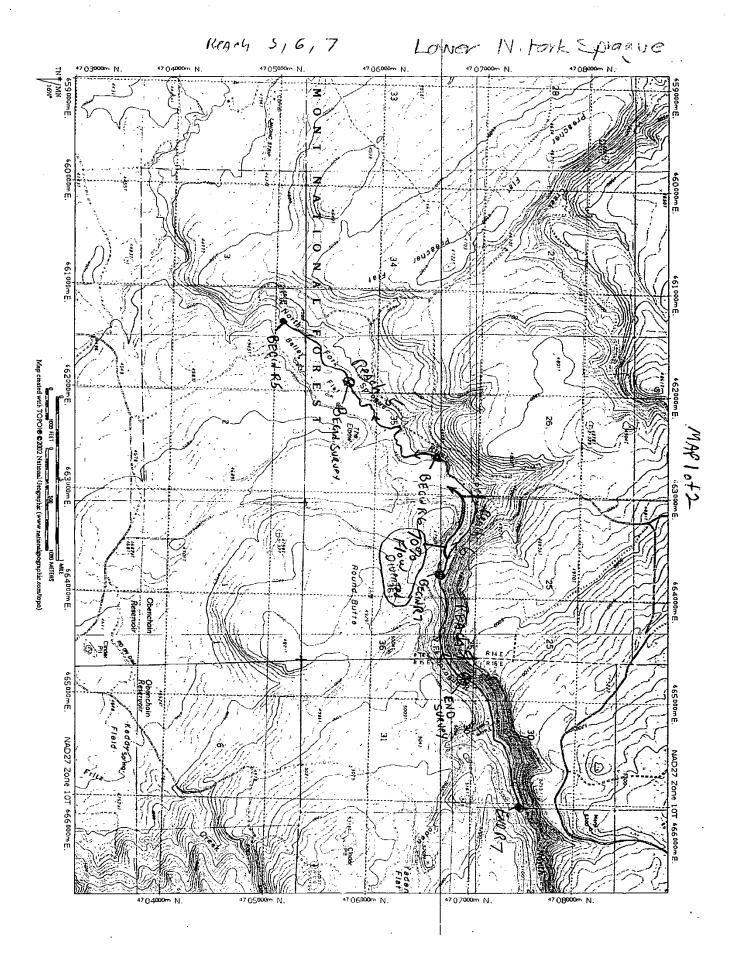
Start: T34S-R16E-S28SW Quad: Lee Thomas Crossing Date: 26 September 04 Surveyor: K. Hartzell

Report: R. Nawa, C.Huntington Distance Surveyed: 3.8 km

This reach is on Freemont National Forest land upstream of Dead Cow Creek (Map 2;Photo 96). An estimated 165 m² of gravel was found suitable for steelhead spawning at existing low flows (57 m²/km). Estimated sand content in gravel patches ranged from 25-40 percent.

Photo 96. Upstream view of Dead Cow Creek and North Fork.





Date_26 SePT 04 Stream North FORK SPRALUE _____Reach__ R. NAWA Surveyor(s)

Surveyor(s)	IC NAWY		<u> </u>			
Surface area (m²)	Class (G, GC, C)	Percent wetted	Percent usable	SAND	EAB	Comments
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60	<u> </u>	100	90	+-	++-	
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30	G	60	40	++-		
200	<u> </u>	100	70	++-		
40	G	90	60	 		
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70	G	60	40	11-		
35	G	80	GO			
80	GC	90	. 60			
35	4	80	60			<u> </u>
88	G	G0	60	11.		
300	G	70	50			
80	GC	90	60			
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_____Reach_

Surveyor(s)	(NAWA			4,66	3 m2/3	·27 miles = (1426 m2/mile)
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16	6	90	40			
<u> 30 </u>	6	80	. 60	20	1	
300	G	95	80	30		Glioe
12	G.	100	80	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		SCATTARY AMONG BOULDES
64	G	ЮО	76	20		
54	G.	160	80	20	11-	Boulon Enaber = 60%
40	G	40	30	10		
150	G	70	50	20		
37	G	80	50	20		
64	GC	100	90	20		
72	G	80	40	20		
100	6	100	40	20		Rogo Choisses Check - NO BAIL
70	GC	90	40	20		
20	GC	100	30	20		·
30 .	G	100	60	20	1	
200		90	70	20		
36	GC	- 80	50	20	1	
45	6	100	40	20	1	
40 -	GC	100	60	20	1	
3o ·	GC.	100	70	20		
40	G	100	. 70	30		
50	GC	90	60	70		
20	G	80	70	20		
50	G	100	60	20		
80	GC	. 100	60	20		
40	6c	100	80	20	11	
20	G	100	100	30	10-20	1
14	G	100	40	30	Ny	
50	G	100	20	30	1	
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16	GC	100	100			<u> </u>
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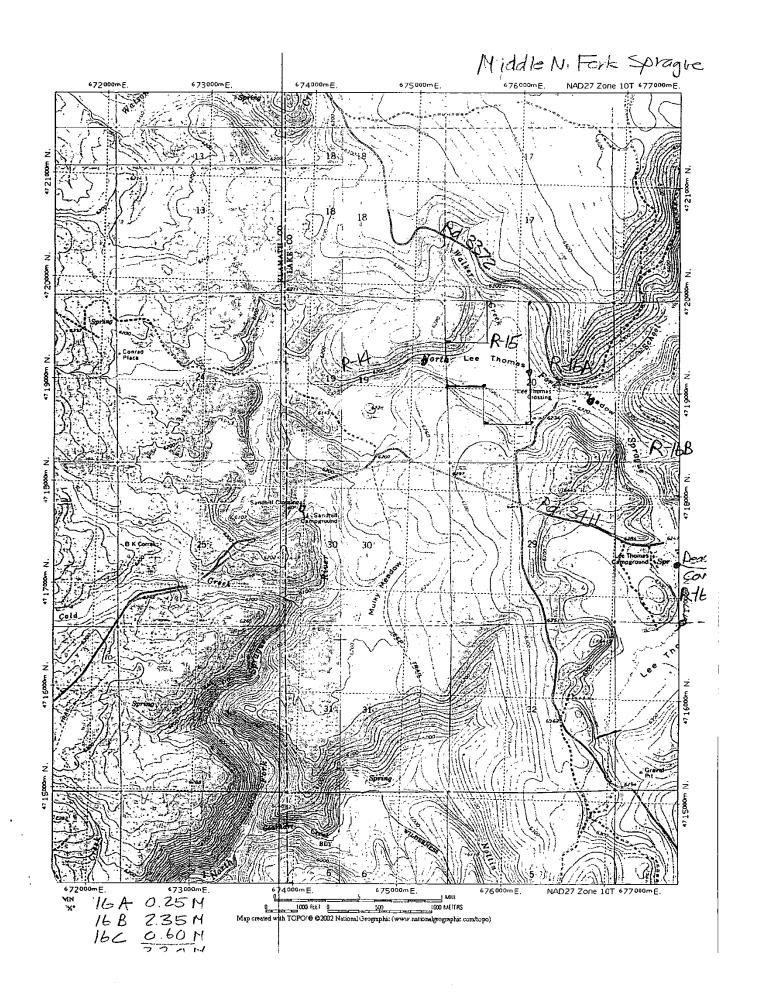
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Large Organic	> 25 mm					
Clay	<0.0039					
Silt	0.0039-0.0625					
Fine Sand	0.0625 0.25					
. Med. Sand	0.25 - 0.5					
Coarse Sand	0.5 - 1.0					
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Fine Gravel	4-48	···	1			
Fine Gravel	6-8	~~~			-	~~
Med. Gravel	8 - 16		7			
Coarse Gravel	16 - 32		37	1		
VC Gravel	32 - 64		45			
Sm. Cobble	64 - 128		5			
Lg. Cobble	128 - 256					
Sm. Boulder	256 - 512		<u> </u>	1		
Med. Boulder	512 - 1024			· -	·	
Lg. Boulder	1024 - 2048	-		 		1
VL Boulder	2048 - 4096	·				1
Bedrock						1
Calculations: Notes:	% Fines <2mm	Total #:	5mm_ >/9083	D50	D8	4 .n=1=.6

Stream Name	NO114	FOIR SPRACU			annel Type _	
Hydrologic Unit .		Reach _	14		EPA EXT_	
Stream Survey F	Reach	Sample #/	Habitat Unit	Туре	_Fast/Slow W	/ater
Observers	R-Ngus		 		SPPT 04	/
		(Bevenger and K		· · · · · · · · · · · · · · · · · · ·	Other	
Measurement D	Particle Size	lerGravelometer (F		<u> </u>		
Class Name	(mm)	Dot Count -	Total #	% Total	Cum. #	Cum %
Small Organic	< 25 mm				<u> </u>	<u> </u>
Large Organic	> 25 mm					
Clay	<0.0039					
Silt	0.0039-0.0625					
Fine Sand	0.0625 - 0.25					
Med. Sand	0.25-0.5					·
Coarse Sand	0.5 - 1.0		1		-	
VC Sand	0 - 2	,	5	5		
VF Gravel	2-4	-	0			
Fine Gravel	4-08		5	5		
Fine Granel	6-8		1		へへ	
Med. Gravel	· 8 - 16		11	11		
Coarse Gravel	16 - 32		36	36		
VC Gravel	32 - 64		39	39	_	
Sm. Cobble	64 - 128		4	4		
Lg. Cobble	128 - 256		-			1
Sm. Boulder	256 - 512					
Med. Boulder	512 - 1024					
Lg. Boulder	1024 - 2048					
VL Boulder	2048 - 4096				-	
Bedrock			****			
		Total #:	10.0			
Calculations:	% Fines <2n	nm % Fines <6	— . Smm	D50	D8	14
Notes:	AC=	8.1m a40	~	UTMY =	675056-	47/ 926
	17000	1. 14				
	Kepe	7 17				

	PHOTO RECO	RD		[PAGE:OF:
	410017	Engle CP	000.00		
	STREAM: NOTE 14	FORK SIA	IL A.R.	, SURVEY:	FILM: DIGITAL SLIDE PRINTS
	BASIN OR GCG:	4 14,13,	″ Sov	save	FILM: DIGITAL SLIDE PRINTS
	araily on dos			0	The point of the p
	SURVEY CREW:	R. Nowa	- K. H	l _i	ROLL #: MAILER #:
7	00,1727 0.1a.11.		7		
ì	PHOTO#	Distr. A	5475	715.45	STREAM / PHOTO DESCRIPTION
:	OR DIGITAL ID	114	DATE Of Control	TIME	CLOSE UP OF FRESHLY DOPOSITIES GRAZEL ON POINT BAR
. /	1:8 444 2:8 443	14	BOSHIOA	1650	Close up of Gravel Top TURE
: [3:6 442	14	 	1550	GROVEL DEPOSITION AT POINT BARK
1	4:9 441	14	 	1510-	STAZOM LACKS Shope IN MERROUS
.	5:8 440	14	 	1500	Excelled GAAVE DEPOSITED ABOVE FAILEN TREE
. \	6.8 429	114	 	1450	POOR SONTING BLON EMBRORINES = 70% - NOT COUNTED
	7 B 430	19		1430	
Į	8:B 437	14 .		1410	DOWNSTREAM INTO USFS -NO WILLOWS SOUME BANK EDONON
1	9: B 436	15	 		UPSTREAM PRIvite - willows Recovering
٠	10: B 435	15	 	1350	
- 1	11 B 434		 	13.10	
-1		15		1310	
-	12:8 433	113-	 		130 m² SPACINIEC GENEL IN LOW GRADIENT Riffle
4	13:B 432	15	 	1250	SPAUNIA GROUP CLOSE UP - LAMPAY REDOS ?
1		15	 	•	
٠/	15:8 430	110		1120	Wolmen Pebble count
i . '	16:8 429	13	 	1105	DOWNSTREAM INTO PRIVATE LAND - LEE Thomas MEADOW
	17:	1/ /		1110	US View of FS Eard W/ Rich
1	18: -90	16A	 	1413	US View of Channel
- \	19: 91	16A	 		DS View of Chann W/ Rich
ı	2	16B	 	1450	US View of Eraded Bank
- 1	74/	16B	 	1450	DS View of Meandas 0677502, 4717713
-⟨		16B	 	1535	NS VI
)	77/	100	 	1035	US View of Dead Cow Cr (Original Channel)
1	7-	160			US View Frem Reach Break
7	112	110	 	1000	Side Channel Riffle & Spanning Gravel
-	1.0	16P	 	1557 1652	US View of Willowless Phyate Lang
1		1-7		1656	USVION OF PHYATE Land of House
1	28: 00	11/	 	-	
		166		1-711-	DS View at Reach Break US View of New Dood Caw Cr. Channel (30mm
į	30: 102	16B		1715	DS Vion of Rd 3411 Bridge of Bridge
J	31: 03	1/28	 	1715	US View of Mcandars FinkLava Outcop
)	32: 104 33: 105	16B	 	1725	US View of Manders " "
- [101	160	 	1775	De Victoria
- (16B 16B 16B	 	1750	
'	35 (07	16P	V	1750	USViou of School Cr. Inflow
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Stream	N.F. SPRACUE	Reach_ 5, 6, 7	Date 27 500004
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Surveyor(s)	R. NAWA	-			
Surface	Class	Percent	Percent	10.	1
area (m²)	(G, GC, C)	wetted	usable	KEACH	Comments
110	GE	70	30_	REACH 5	
40	GC	50	30	5	
40	40	70	20	5	- 1
150	<u>GC</u>	60	30	5	
50	GC	60	20	3	·
80	GC	90	40	5	·
200	GC	60	20	3	cobble Embas = 30-50%
150	GC	50	20	3	
60	GC	100	80	5	
60	G C	60	40	5	
4	6 C	80	0	6	
6	46	20	0	6	70% FLOW DIVERTED OT KOM bolow 3411
-6 -2 2	90	100	100	7	PATCH Above RD 3411
2	GC	100	100	7	Below Boulder
20	G	60	46	7	Below Debris Jam on RB
					·
				Note:	Reach 647 communes by
					Cobble/Boulom Substrate
					Cobble / Boulom Substante UNSUITABLE for SPAWNING
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Stream		· · · · · · · · · · · · · · · · · · ·	Reach	Date
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Surface	Class	Percent	Percent	
area (m²)	(G, GC, C)		usable	Comments
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STREAL	M: Noal4	Fort S	PRACE	ve _	SURVEY	TYPE: OR, PLAN BASIN MIXED
		Beach 5,6	5,7			
BASIN (OR GCG:	Sprage	é_			FILM: DIGITAL SLIDE PRINTS
SI IBAE	Y CREW:	R.	NAU	NA-		ROLL #: MAILER #:
SURVE	11 CREW	Reach		·		NOLL #
	РНОТО#	, 678 1				
	DIGITAL ID	#		ATE	TIME	STREAM/PHOTO DESCRIPTION
	457	5	2/50	PTOY		Suitable GRAVA cobble substructe Found in RS Suitable
2:3	456	6	 -	}	1515	Docums Typony - PAINATE
3: B	455	6	-		1515	upstragm - FOREST SOLUTE
4:B	454	6	-		1458	Cobble Goulan Substante UNSWITAble For SPAUNING
5: ß	455	6	\square		1445	DOWNSTARDAM cobble Boulom Substante
6:8	452	6			1435	Diversion 04 mg with Natural by Pas AT LO
7 : B	45]	<u> </u>			1430	UNSCREENED PLUESSION TOPES 70% Flow
8 : B	450	6_			1400	"Bolin Roach 6" wontrine Down STARDAM
9: <u>B</u>	445	 			1030	Mio channel BAT - cobble Boulan unsuitable for spawning
10 B	446	7			1030	390 GROOINT CUNNT RO 3411 - POSSI ble BARRIM AT HILL SP. FLOW
11.8	447	17			1140	3-470 GRADIANT COSSE Boulan PITTES & CASCADES
12 16	446	17				Colluvial contant DOMINATION BY BULBARS + cobble
13:6	449.		1	'	1145	cobble Boulam substrate unsuitable For Spawning
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