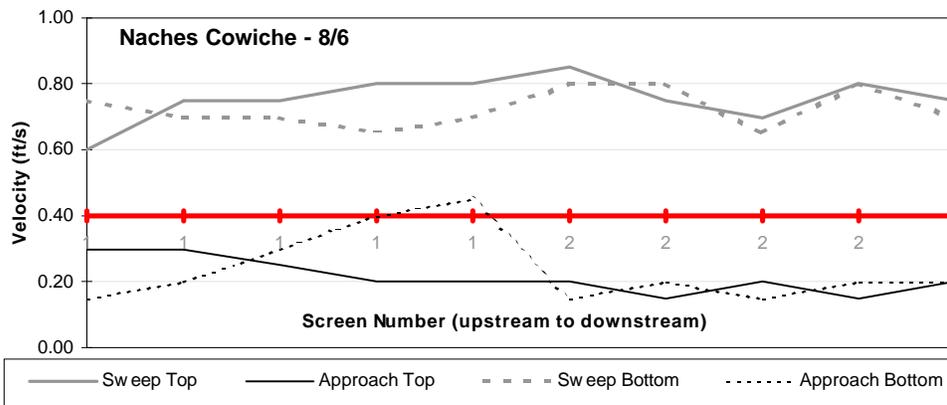
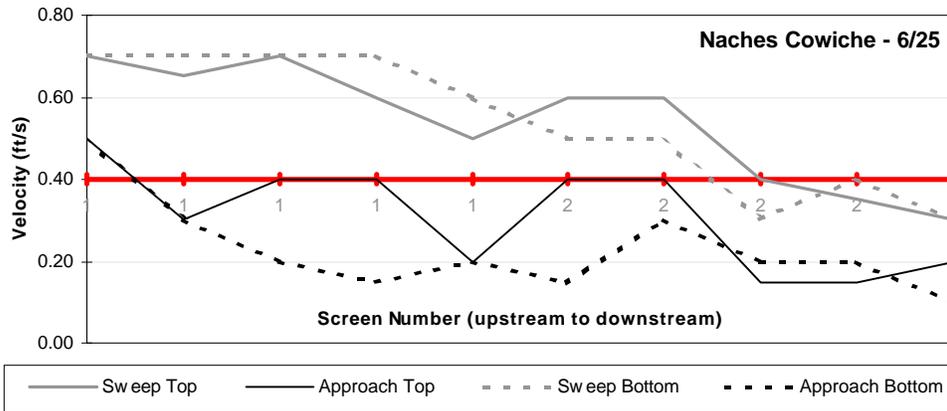
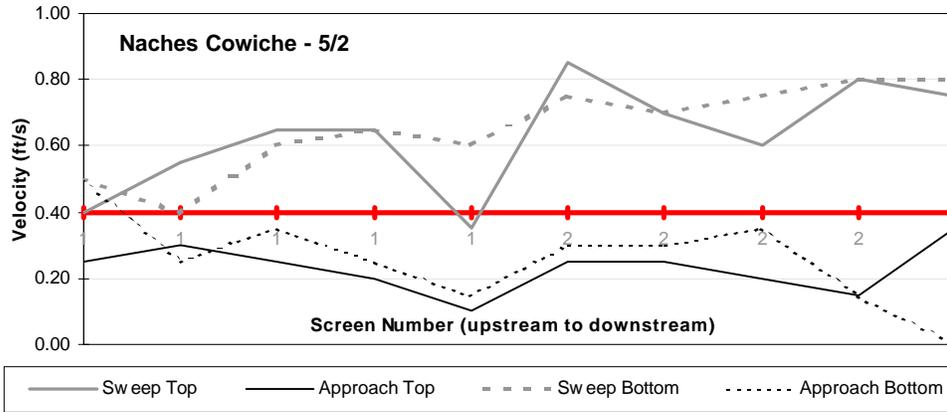
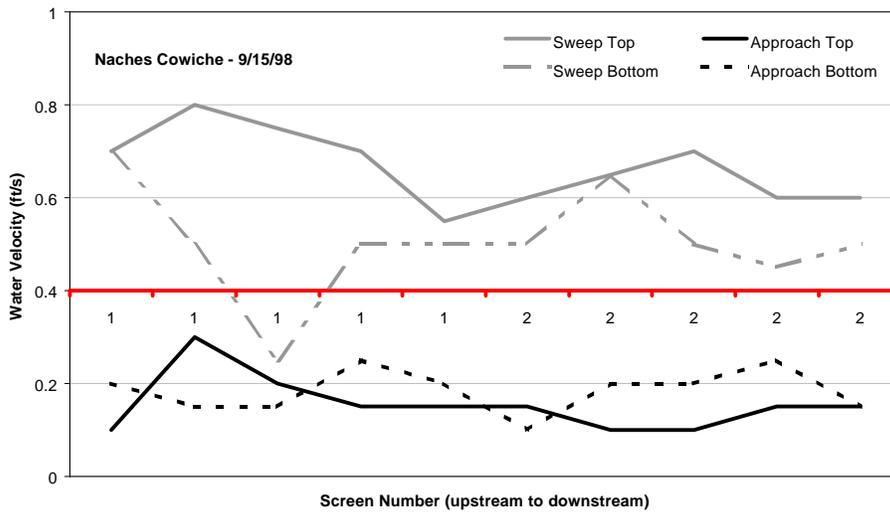
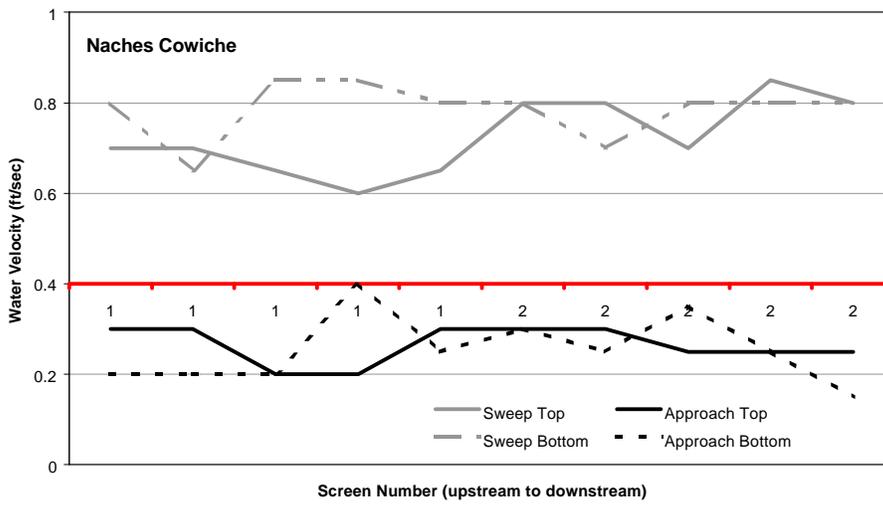
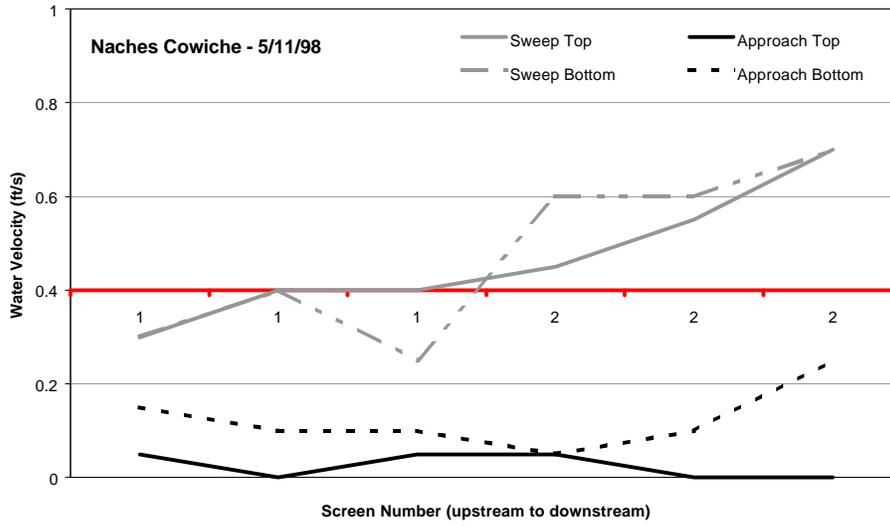


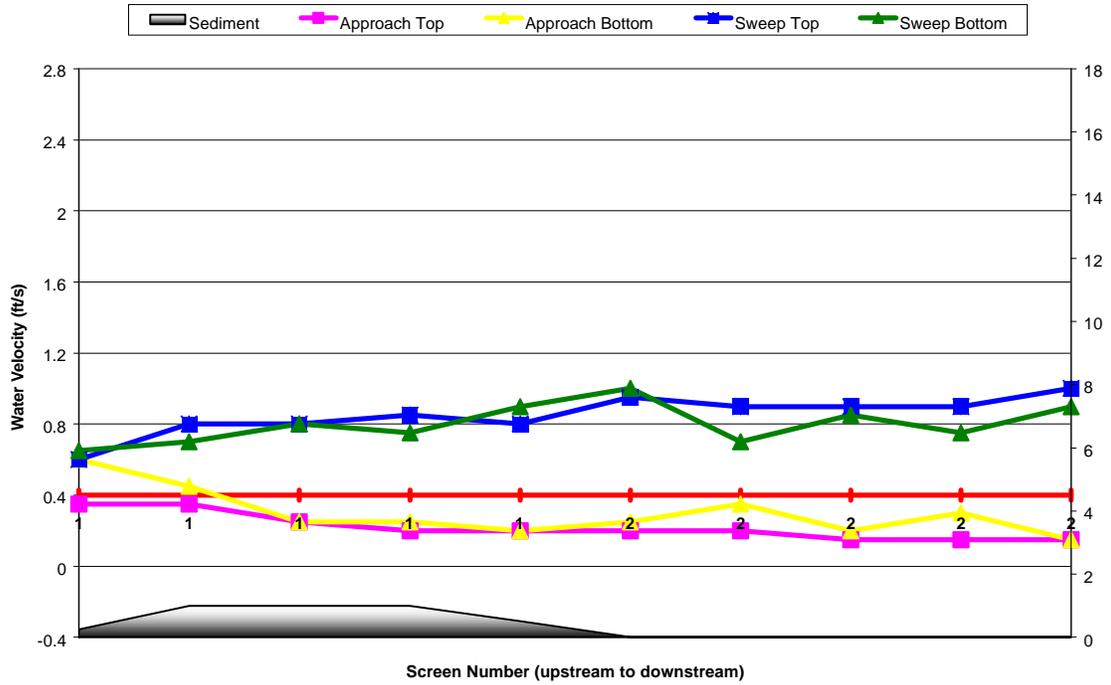
Water Velocities: Naches Cowiche

1997

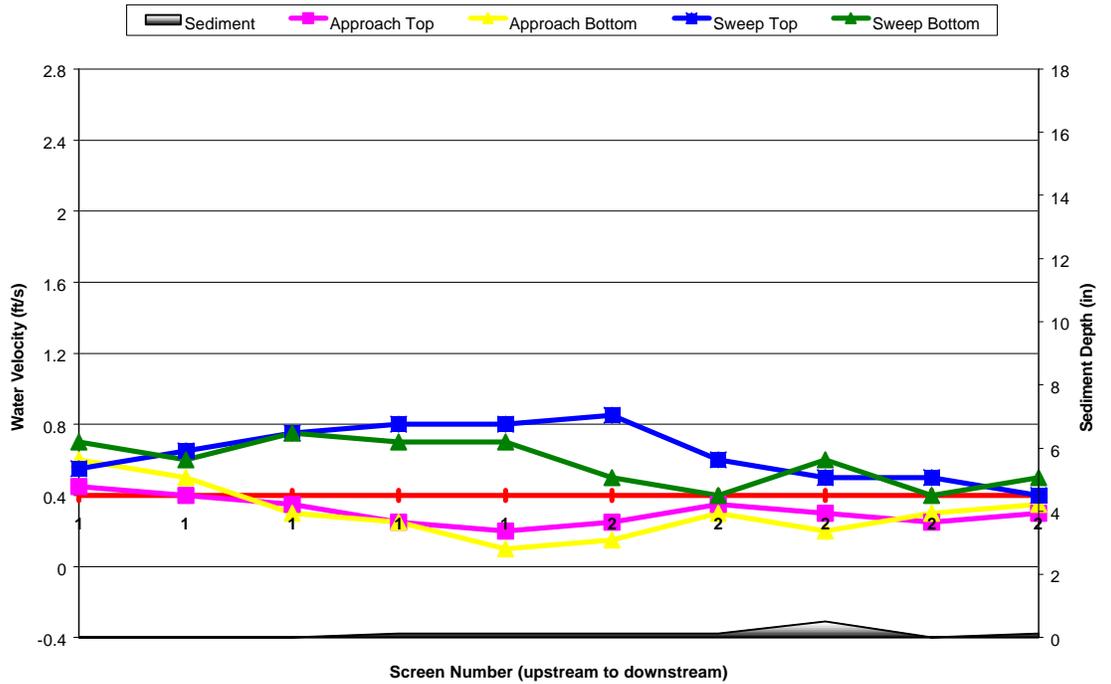




Naches Cowiche - May 13, 1999



Naches-Cowiche - July 14, 1999



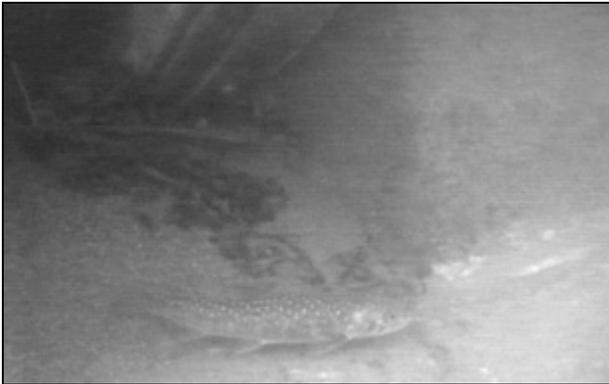
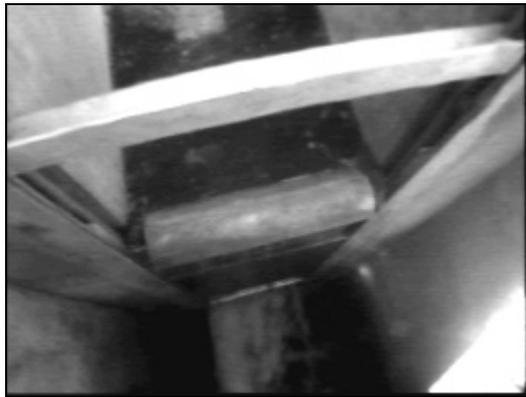
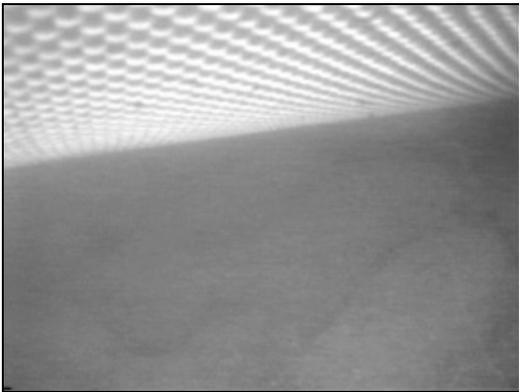
General Observations: Naches Cowiche

Date	Naches Cowiche 5/2/97	Naches Cowiche 6/25/97	Naches Cowiche 8/6/97	Naches Cowiche 5/11/98	Naches Cowiche 7/7/98	Naches Cowiche 9/15/98	Naches Cowiche 5/13/1999	Naches Cowiche 7/14/99
Staff Gages?	no	no	no	forebay=3.05	no	no	none observed	none observed
Submergence Marks?	no	no	no	yes; at every 10%.	yes	yes; at every 10%.	yes; 80 to 100.	yes
Stopplogs?	yes, 3" of water over top	yes, 6" of water over top	yes	yes, behind both screens	yes	yes, 6" of water over top	yes	yes
Louvers?	NA	NA	NA	NA	NA	NA	NA	NA
Head Loss?	no	no	1/4"	no info	0.5"	no data	No. 3/4"	No. 1/4"
Screen Material Condition	pretty shiney woven wire, #1 slight denting near middle seal <1/4" deep and ~1' in diameter.	good	good	no info	good	Look good- mostly covered in brown algae. A few places on #1 may be more worn, but not bad.	Light & dark spots from diatoms scraped off.	Clean and silver except along bands.
Seal Condition	good	good	good	no info	good	good	good	good
Drums Turning Evenly?	yes	yes	yes	yes	yes	yes	yes	yes
Debris Anywhere?	trashrack has a good number of sticks on it	some sand	in bottom, especially woody debris at the downstream corner of Screen #2	A very little bit between screen and porosity boards. One stick wedged in the bypass.	No	Not visible from above. Water is turbid.	No.	Some medium sized sticks at trashrack.
Cleaning System Working?	yes	yes	yes	no data	yes	Yes	Yes.	Yes.
Submergence (% of 48")	80.0	86.7	78.3	~78.3 (a guess using forebay depth)	84	80.8	81%	
Flow over Weir? How much?	yes, 16"	no - it's going under...	yes, 14"	Yes, but only 3"	Yes, 6"	Yes, 10", but Dale came by and opened it up wider to get the silt to move out of the bypass.	Yes. 16.5"	Yes. 9"
Gage to Measure Weir Crest?	no	no	no	no	no	Yes, but faded in the sun.	yes	No. "Closed" line for flush.
Weir Full Open? If not, how many inches to go?	yes	no	no, 3.5" to go	No, 10.25" to go	No, 10" to go	No, but it was fully opened by WDFW staff while we were there.	yes	No. 15"
Water Running Freely behind Weir?	yes	no; it's backed up above, but running freely under the weir	yes	yes	yes	yes	yes	yes
Depth of water in outfall pipe	couldn't find outfall pipe	pipe is submerged	9"/18"	pipe is submerged	pipe is submerged	pipe is submerged	pipe is submerged	pipe is submerged
Outfall Running Smooth?	couldn't find outfall pipe	yes	yes	It's way out in the river, underwater	yes	yes	yes	yes
Debris at End of Pipe?	couldn't find outfall pipe	no	no	no	no	no	no	no
Discharge Area ≈ 1 ft?	couldn't find outfall pipe	yes	yes	yes	yes	Yes, it's in the middle of the river.	yes	yes

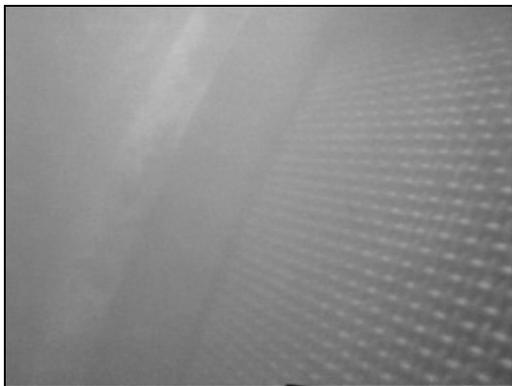
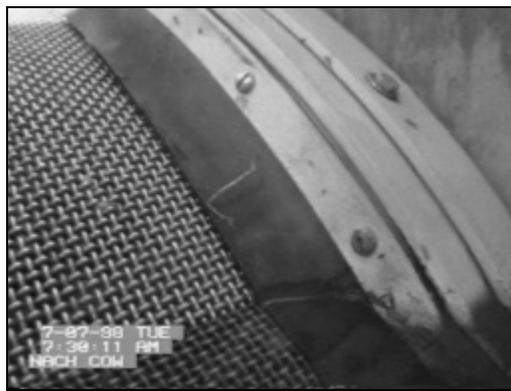
General Observations, continued

Date	Naches Cowiche 5/2/97	Naches Cowiche 6/25/97	Naches Cowiche 8/6/97	Naches Cowiche 5/11/98	Naches Cowiche 7/7/98	Naches Cowiche 9/15/98	Naches Cowiche 5/13/1999	Naches Cowiche 7/14/99
<b>Silt</b>	a little in front of screen 1, less in front of screen 2, and none in the bypass	lots of sand b/t trashrack and forebay, then it clears out before reaching the screen, 3" sediment at Screen #1; no sediment at Screen #2.	1" of silt at Screen #1; 2" of silt at Screen #2. There was more sediment in the aftbay and some built up about 6" deep before the canal gates.	1-2" upstream in the middle of screen 1, 4" in the middle of screen 2, then clean at the downstream end of 2.	6-8" of silt in front of Screen 1, 3-4" of silt in front of Screen 2	First 3 of 5 positions on the upstream screen had silt (2-4"). The rest was clean except for the bypass which was clogged with at least 12" of silt.	Up to 1" in scr.1, none at 2.	Trace amounts at end of screen 1 and at screen 2.
<b>Comments</b>		A WDFW person came along and made changes when we pointed out problems. When we left, there were 16" of water going over the weir.	Set net for fish here. Caught 1 tiny sculpin (2.1cm FL), but saw > 15 fish swimming in the forebay. Many were 6-12" trout, some shiners. Saw at least 1 big char.	Brown water. May be a slightly negative approach at the top of the screen nearest the bypass.	River is high.	Turbid water only allowed us to video tape the side seals.	Fish at scr.1. Bypass has slight opening at bottom 2".	Debris in corners of screen.

1997 Photos: Naches Cowiche



1998 Photos: Naches Cowiche



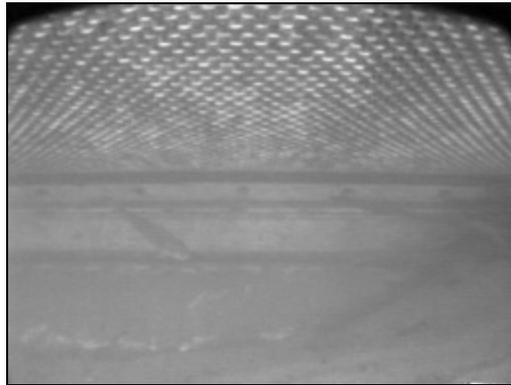
1999 Underwater Video: Naches Cowiche

Screen Site	Date (Tape #)	Location (screen # & VCR counter)	VCR Counter	Notes	Photos	Descriptor	
Naches Cowiche	5/13/99 (1)	1	0:41:39	0:42:07	sand and stick pile in corner fish, 5-6" sticks, sand pile covering seal sediment along bottom opening at bottom of ramp-door open?	0:42:24	D1
				0:42:49		0:43:03	F1
				0:43:42		0:43:51	S1
		2	0:44:37	0:45:22		0:45:46	S2
		Bypass	0:46:17	0:47:28			
Naches Cowiche	7/14/99 (2)	1	0:51:29	0:52:34	sediment and debris in corner can't see bottom seal, sediment/dark debris pile, large sticks, sediment brush pile in corner		
				0:54:11			
				0:54:31			
				0:54:48			
		2	0:55:31	0:56:02		brush pile in corner brush and sediment up over seal and on screen all the way across	
Bypass	0:58:08	0:58:29	sediment on bottom				

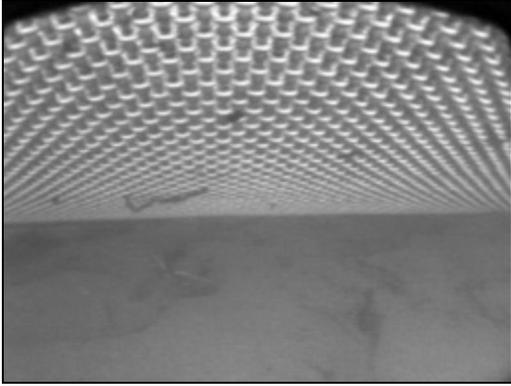
1999 Photos: Naches Cowiche



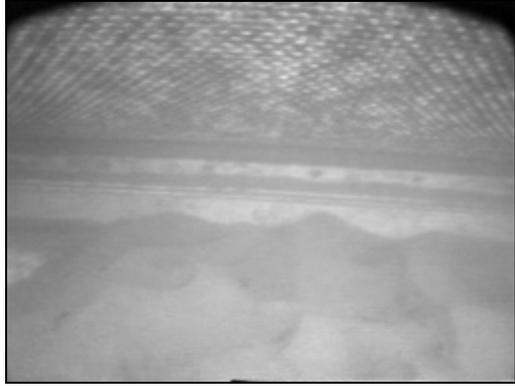
D1



F1



S1



S2