WASHINGTON STATE DEPARTMENT OF ECOLOGY

Discharge Measurement Summary

Date Generated: Tue Apr 6 2010

File Information

File Name	HC1.WAD
Start Date and Time	2010/03/30 08:44:59

Site Details

Site Name	HC1
Operator(s)	MGW

System Information

Sensor Type	FlowTracker
Serial #	P1789
CPU Firmware Version	3.4
Software Ver	2.11

Units (English Units)

Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	1.3%
Velocity	1.1%	6.3%
Width	0.1%	0.1%
Method	1.4%	-
# Stations	2.3%	-
Overall	**3.1%**	**6.5%**

Summary

Averaging Int.	40	# Stations	22
Start Edge	REW	Total Width	13.999
Mean SNR	30.4 dB	Total Area	16.603
Mean Temp	42.90 °F	Mean Depth	1.186
Disch. Equation	Mid-Section	Mean Velocity	0.3141
		Total Discharge	**5.2151**

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:44	5.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	08:44	7.00	0.6	0.750	0.6	0.300	0.0148	1.00	0.0148	1.313	0.0194	0.4
2	08:46	8.50	0.6	1.180	0.6	0.472	0.0164	1.00	0.0164	1.475	0.0242	0.5
3	08:47	9.50	0.6	1.100	0.6	0.440	-0.0207	1.00	-0.0207	1.100	-0.0227	-0.4
4	08:49	10.50	0.6	1.060	0.6	0.424	-0.0531	1.00	-0.0531	0.795	-0.0423	-0.8
5	08:50	11.00	0.6	1.150	0.6	0.460	0.1358	1.00	0.1358	0.575	0.0781	1.5
6	08:51	11.50	0.6	1.300	0.6	0.520	0.3720	1.00	0.3720	0.650	0.2418	4.6
7	08:52	12.00	0.6	1.300	0.6	0.520	0.7352	1.00	0.7352	0.585	0.4300	8.2
8	08:53	12.40	0.6	1.200	0.6	0.480	0.8251	1.00	0.8251	0.480	0.3960	7.6
9	08:54	12.80	0.6	1.400	0.6	0.560	0.8301	1.00	0.8301	0.560	0.4647	8.9
10	08:55	13.20	0.2/0.8	1.530	0.2	1.224	0.9629	1.00	0.9596	0.612	0.5872	11.3
10	08:56	13.20	0.2/0.8	1.530	0.8	0.306	0.9564					
11	08:58	13.60	0.8/0.2	1.650	0.2	1.320	1.0082	1.00	0.9872	0.660	0.6514	12.5
11	08:58	13.60	0.8/0.2	1.650	0.8	0.330	0.9662					
12	09:00	14.00	0.2/0.8	1.800	0.2	1.440	0.8320	1.00	0.8742	0.720	0.6293	12.1
12	09:01	14.00	0.2/0.8	1.800	0.8	0.360	0.9163					
13	09:04	14.40	0.8/0.2	2.030	0.2	1.624	0.5394	1.00	0.4308	0.812	0.3497	6.7
13	09:03	14.40	0.8/0.2	2.030	0.8	0.406	0.3222					
14	09:05	14.80	0.2/0.8	2.000	0.2	1.600	0.5095	1.00	0.5285	0.800	0.4228	8.1
14	09:06	14.80	0.2/0.8	2.000	0.8	0.400	0.5476					
15	09:09	15.20	0.8/0.2	1.920	0.2	1.536	0.2592	1.00	0.3898	0.768	0.2993	5.7
15	09:08	15.20	0.8/0.2	1.920	0.8	0.384	0.5203					
16	09:10	15.60	0.2/0.6/0.8	1.840	0.2	1.472	0.1713	1.00	0.4244	0.736	0.3123	6.0
16	09:12	15.60	0.2/0.6/0.8	1.840	0.6	0.736	0.5784					
16	09:11	15.60	0.2/0.6/0.8	1.840	0.8	0.368	0.3694					
17	09:14	16.00	0.2/0.6/0.8	1.790	0.2	1.432	0.2434	1.00	0.3659	0.806	0.2949	5.7
17	09:16	16.00	0.2/0.6/0.8	1.790	0.6	0.716	0.4423					
17	09:15	16.00	0.2/0.6/0.8	1.790	0.8	0.358	0.3356					
18	09:19	16.50	0.2/0.8	1.550	0.2	1.240	0.1178	1.00	0.1332	0.776	0.1034	2.0
18	09:20	16.50	0.2/0.8	1.550	0.8	0.310	0.1486					
19	09:22	17.00	0.8/0.2	1.510	0.2	1.208	-0.0351	1.00	-0.0218	1.132	-0.0247	-0.5
19	09:21	17.00	0.8/0.2	1.510	0.8	0.302	-0.0085					
20	09:23	18.00	0.6	1.250	0.6	0.500	0.0003	1.00	0.0003	1.249	0.0004	0.0
21	09:23	19.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

WASHINGTON STATE DEPARTMENT OF ECOLOGY

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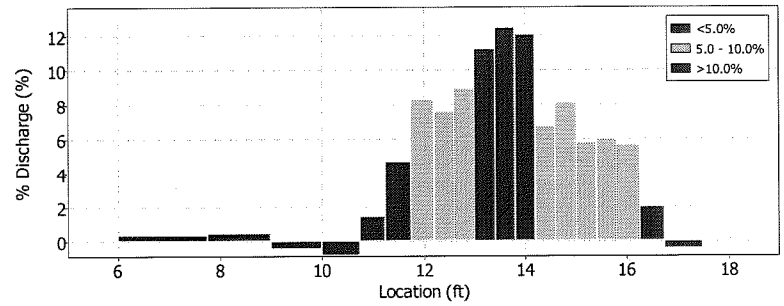
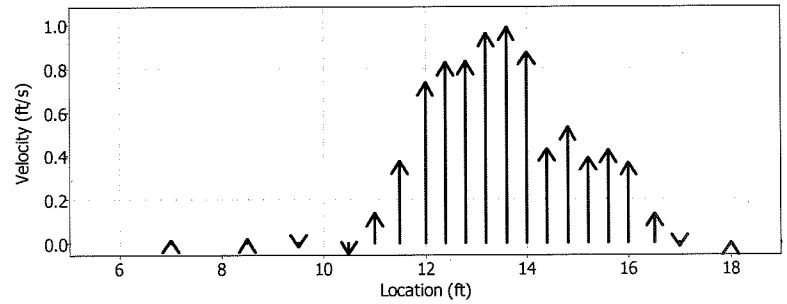
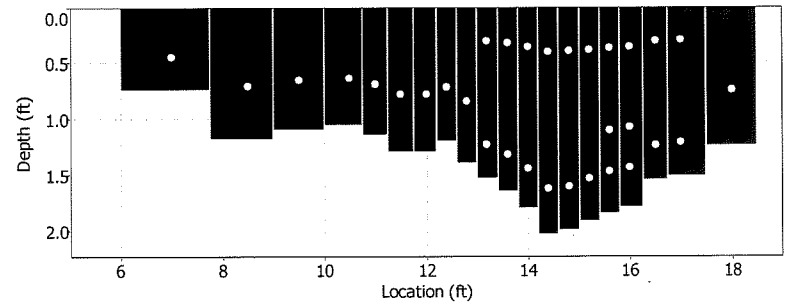
File Information
File Name HC1.WAD
Start Date and Time 2010/03/30 08:44:59

Site Details
Site Name HC1
Operator(s) MGW







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Discharge Measurement Summary

Date Generated: Tue Apr 6 2010

File Information

File Name	HC1.WAD
Start Date and Time	2010/03/30 08:44:59

Site Details

Site Name	HC1
Operator(s)	MGW

Quality Control

St	Loc	%Dep	Message
1	7.00	0.6	SNR (43.4) is different from typical SNR (30.4)
		0.6	High SNR variation during measurement: 8.6,7.7
2	8.50	0.6	High SNR variation during measurement: 6.5,6.9
3	9.50	0.6	High angle: 116
		0.6	SNR (48.6) is different from typical SNR (30.4)
4	10.50	0.6	High angle: 134
		0.6	SNR (46.2) is different from typical SNR (30.4)
5	11.00	0.6	High angle: 25
		0.6	SNR (41.1) is different from typical SNR (30.4)
13	14.40	0.2	High standard error: 0.041
14	14.80	0.8	High standard error: 0.035
15	15.20	0.8	High angle: 22
16	15.60	0.8	High angle: 27
17	16.00	0.8	High angle: 27
		0.8	High standard error: 0.034
18	16.50	0.8	High angle: 28
19	17.00	0.2	High angle: 179
		0.8	High SNR variation during measurement: 9.0,6.9
20	18.00	0.6	SNR (52.2) is different from typical SNR (30.4)
		0.6	High SNR variation during measurement: 7.3,4.7

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Discharge Measurement Summary

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File Name HC1.WAD

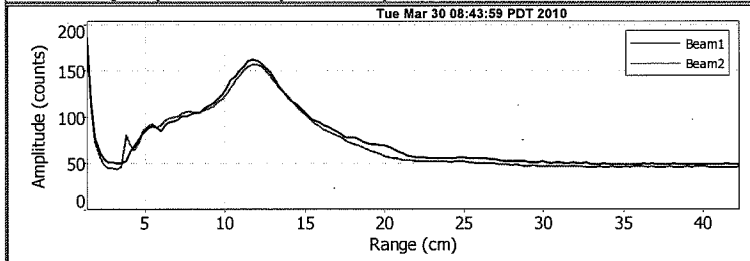
Start Date and Time 2010/03/30 08:44:59

Site Details

Site Name HC1

Operator(s) MGW

Automatic Quality Control Test (BeamCheck)



- Noise level check - Pass
- SNR check - Pass
- Peak location check - Pass
- Peak shape check - Pass

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Discharge Measurement Summary

Date Generated: Tue Apr 6 2010

File Information

File Name	HC3.WAD
Start Date and Time	2010/03/30 09:54:28

Site Details

Site Name	HC3
Operator(s)	MGW

System Information

Sensor Type	FlowTracker
Serial #	P1789
CPU Firmware Version	3.4
Software Ver	2.11

Units (English Units)

Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.2%	0.8%
Velocity	0.7%	2.7%
Width	0.1%	0.1%
Method	1.8%	-
# Stations	2.1%	-
Overall	**3.0%**	**3.0%**

Summary

Averaging Int.	40	# Stations	24
Start Edge	REW	Total Width	24.000
Mean SNR	25.6 dB	Total Area	22.918
Mean Temp	46.25 °F	Mean Depth	0.955
Disch. Equation	Mid-Section	Mean Velocity	0.4590
		Total Discharge	**10.5198**

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:54	5.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	09:54	7.50	0.6	0.200	0.6	0.080	0.1604	1.00	0.1604	0.350	0.0562	0.5
2	09:55	8.50	0.6	0.480	0.6	0.192	0.2995	1.00	0.2995	0.480	0.1438	1.4
3	09:56	9.50	0.6	0.610	0.6	0.244	0.3868	1.00	0.3868	0.610	0.2359	2.2
4	09:57	10.50	0.6	0.740	0.6	0.296	0.4396	1.00	0.4396	0.740	0.3254	3.1
5	09:58	11.50	0.6	0.840	0.6	0.336	0.4984	1.00	0.4984	0.840	0.4186	4.0
6	09:59	12.50	0.6	0.910	0.6	0.364	0.5059	1.00	0.5059	0.910	0.4604	4.4
7	10:00	13.50	0.6	0.980	0.6	0.392	0.4400	1.00	0.4400	0.980	0.4312	4.1
8	10:01	14.50	0.6	1.100	0.6	0.440	0.5591	1.00	0.5591	1.100	0.6150	5.8
9	10:02	15.50	0.6	1.290	0.6	0.516	0.5404	1.00	0.5404	1.290	0.6971	6.6
10	10:04	16.50	0.6	1.230	0.6	0.492	0.4193	1.00	0.4193	1.230	0.5157	4.9
11	10:05	17.50	0.6	1.200	0.6	0.480	0.5745	1.00	0.5745	1.200	0.6894	6.6
12	10:06	18.50	0.6	1.230	0.6	0.492	0.4551	1.00	0.4551	1.230	0.5597	5.3
13	10:07	19.50	0.6	1.120	0.6	0.448	0.3927	1.00	0.3927	1.120	0.4399	4.2
14	10:08	20.50	0.6	1.140	0.6	0.456	0.4275	1.00	0.4275	1.140	0.4874	4.6
15	10:09	21.50	0.6	1.250	0.6	0.500	0.4967	1.00	0.4967	1.250	0.6209	5.9
16	10:10	22.50	0.6	1.300	0.6	0.520	0.5420	1.00	0.5420	1.300	0.7045	6.7
17	10:11	23.50	0.6	1.400	0.6	0.560	0.5797	1.00	0.5797	1.400	0.8116	7.7
18	10:12	24.50	0.6	1.430	0.6	0.572	0.4692	1.00	0.4692	1.430	0.6710	6.4
19	10:14	25.50	0.6	1.400	0.6	0.560	0.5653	1.00	0.5653	1.400	0.7914	7.5
20	10:15	26.50	0.6	1.280	0.6	0.512	0.4767	1.00	0.4767	1.280	0.6101	5.8
21	10:16	27.50	0.6	1.000	0.6	0.400	0.2106	1.00	0.2106	1.000	0.2106	2.0
22	*10:17*	*28.50*	*0.6*	*0.850*	*0.6*	*0.340*	*0.0377*	*1.00*	*0.0377*	*0.638*	*0.0241*	*0.2*
23	10:17	29.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

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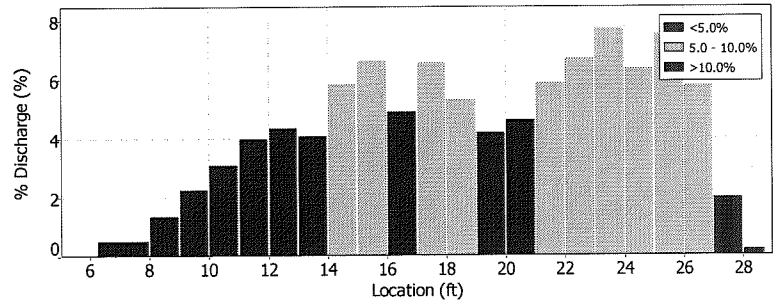
WASHINGTON STATE DEPARTMENT OF ECOLOGY

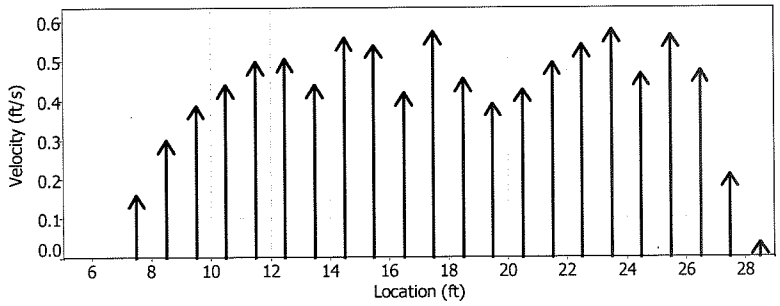
Discharge Measurement Summary

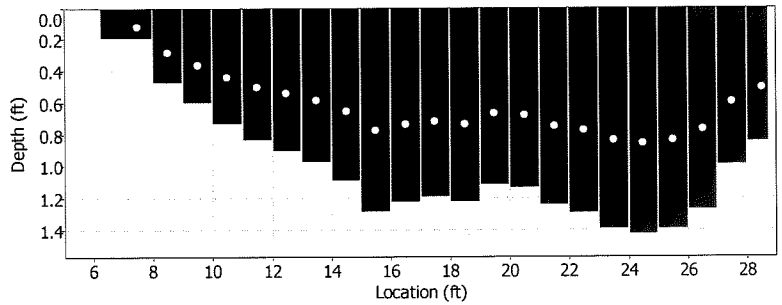
Date Generated: Tue Apr 6 2010

File Information
File Name HC3.WAD
Start Date and Time 2010/03/30 09:54:28

Site Details
Site Name HC3
Operator(s) MGW







WASHINGTON STATE DEPARTMENT OF ECOLOGY

Discharge Measurement Summary

Date Generated: Tue Apr 6 2010

File Information

File Name	HC3.WAD
Start Date and Time	2010/03/30 09:54:28

Site Details

Site Name	HC3
Operator(s)	MGW

Quality Control

St	Loc	%Dep	Message
22	28.50	0.6	High angle: -27
		0.6	High SNR variation during measurement: 9.0,6.0
		0.6	Boundary QC is Fair; possible boundary interference

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Discharge Measurement Summary

Date Generated: Tue Apr 6 2010

File Information

File Name HC3.WAD

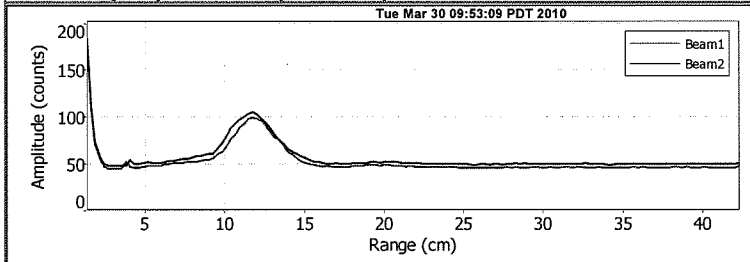
Start Date and Time 2010/03/30 09:54:28

Site Details

Site Name HC3

Operator(s) MGW

Automatic Quality Control Test (BeamCheck)



- Noise level check - Pass
- SNR check - Pass
- Peak location check - Pass
- Peak shape check - Pass

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Discharge Measurement Summary

Date Generated: Tue Apr 6 2010

File Information

File Name	HC5.WAD
Start Date and Time	2010/03/30 10:43:09

Site Details

Site Name	HC5
Operator(s)	MGW

System Information

Sensor Type	FlowTracker
Serial #	P1789
CPU Firmware Version	3.4
Software Ver	2.11

Units (English Units)

Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	1.0%
Velocity	0.7%	4.8%
Width	0.1%	0.1%
Method	1.4%	-
# Stations	2.0%	-
Overall	**2.8%**	**5.0%**

Summary

Averaging Int.	40	# Stations	26
Start Edge	REW	Total Width	14.000
Mean SNR	33.3 dB	Total Area	17.715
Mean Temp	46.09 °F	Mean Depth	1.265
Disch. Equation	Mid-Section	Mean Velocity	1.0731
		Total Discharge	**19.0095**

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:43	5.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	10:43	6.00	0.6	1.420	0.6	0.568	0.0079	1.00	0.0079	1.420	0.0112	0.1
2	*10:44*	*7.00*	*0.2/0.8*	*1.870*	*0.2*	*1.496*	*0.1332*	*1.00*	*0.2021*	*1.403*	*0.2835*	*1.5*
2	*10:45*	*7.00*	*0.2/0.8*	*1.870*	*0.8*	*0.374*	*0.2710*					
3	*10:47*	*7.50*	*0.8/0.2*	*1.900*	*0.2*	*1.520*	*0.1791*	*1.00*	*0.2779*	*0.950*	*0.2640*	*1.4*
3	*10:46*	*7.50*	*0.8/0.2*	*1.900*	*0.8*	*0.380*	*0.3766*					
4	*10:48*	*8.00*	*0.2/0.8*	*1.700*	*0.2*	*1.360*	*0.2290*	*1.00*	*0.3791*	*0.850*	*0.3223*	*1.7*
4	*10:49*	*8.00*	*0.2/0.8*	*1.700*	*0.8*	*0.340*	*0.5292*					
5	*10:52*	*8.50*	*0.8/0.2*	*1.500*	*0.2*	*1.200*	*0.6657*	*1.00*	*0.8273*	*0.750*	*0.6204*	*3.3*
5	*10:51*	*8.50*	*0.8/0.2*	*1.500*	*0.8*	*0.300*	*0.9888*					
6	*10:53*	*9.00*	*0.2/0.8*	*1.710*	*0.2*	*1.368*	*1.4341*	*1.00*	*1.3056*	*0.855*	*1.1163*	*5.9*
6	*10:54*	*9.00*	*0.2/0.8*	*1.710*	*0.8*	*0.342*	*1.1772*					
7	*10:56*	*9.50*	*0.8/0.2*	*1.710*	*0.2*	*1.368*	*1.8822*	*1.00*	*1.5284*	*0.855*	*1.3067*	*6.9*
7	*10:55*	*9.50*	*0.8/0.2*	*1.710*	*0.8*	*0.342*	*1.1745*					
8	*10:57*	*10.00*	*0.2/0.8*	*1.710*	*0.2*	*1.368*	*2.0348*	*1.00*	*1.4432*	*0.855*	*1.2340*	*6.5*
8	*10:58*	*10.00*	*0.2/0.8*	*1.710*	*0.8*	*0.342*	*0.8517*					
9	*11:00*	*10.50*	*0.8/0.2*	*1.620*	*0.2*	*1.296*	*2.0062*	*1.00*	*1.3752*	*0.810*	*1.1139*	*5.9*
9	*10:59*	*10.50*	*0.8/0.2*	*1.620*	*0.8*	*0.324*	*0.7441*					
10	*11:01*	*11.00*	*0.2/0.8*	*1.570*	*0.2*	*1.256*	*2.0515*	*1.00*	*1.5305*	*0.785*	*1.2014*	*6.3*
10	*11:02*	*11.00*	*0.2/0.8*	*1.570*	*0.8*	*0.314*	*1.0095*					
11	11:03	11.50	0.6	1.430	0.6	0.572	1.6302	1.00	1.6302	0.715	1.1657	6.1
12	11:04	12.00	0.6	1.320	0.6	0.528	1.9341	1.00	1.9341	0.660	1.2764	6.7
13	*11:06*	*12.50*	*0.6*	*1.320*	*0.6*	*0.528*	*1.4728*	*1.00*	*1.4728*	*0.660*	*0.9719*	*5.1*
14	11:07	13.00	0.6	1.260	0.6	0.504	1.7244	1.00	1.7244	0.630	1.0862	5.7
15	11:08	13.50	0.6	1.250	0.6	0.500	1.6007	1.00	1.6007	0.625	1.0005	5.3
16	11:09	14.00	0.6	1.200	0.6	0.480	1.3809	1.00	1.3809	0.600	0.8286	4.4
17	11:10	14.50	0.6	1.120	0.6	0.448	1.5837	1.00	1.5837	0.560	0.8869	4.7
18	11:11	15.00	0.6	1.150	0.6	0.460	1.4820	1.00	1.4820	0.575	0.8521	4.5
19	11:12	15.50	0.6	1.100	0.6	0.440	1.4934	1.00	1.4934	0.550	0.8214	4.3
20	11:13	16.00	0.6	1.100	0.6	0.440	1.7231	1.00	1.7231	0.550	0.9478	5.0
21	11:14	16.50	0.6	1.000	0.6	0.400	1.8077	1.00	1.8077	0.500	0.9039	4.8
22	*11:16*	*17.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.6660*	*1.00*	*0.6660*	*0.500*	*0.3330*	*1.8*
23	*11:17*	*17.50*	*0.6*	*0.900*	*0.6*	*0.360*	*-1.0256*	*-1.00*	*1.0256*	*0.450*	*0.4615*	*2.4*
24	*11:19*	*18.00*	*Input V*	*0.810*	*0.0*	*0.000*	*0.0000*	*1.00*	*0.0000*	*0.608*	*0.0000*	*0.0*
25	11:19	19.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

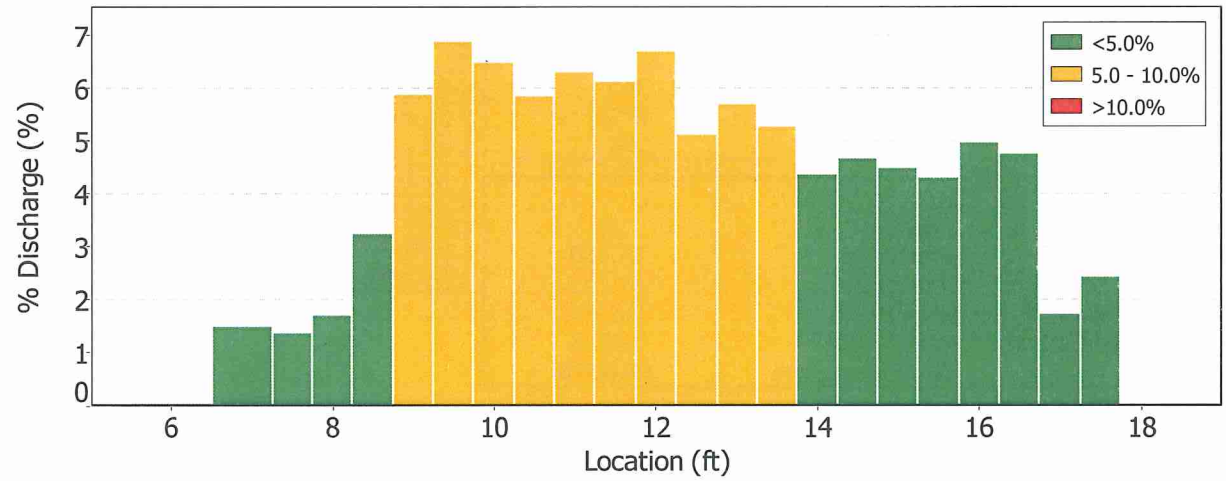
WASHINGTON STATE DEPARTMENT OF ECOLOGY

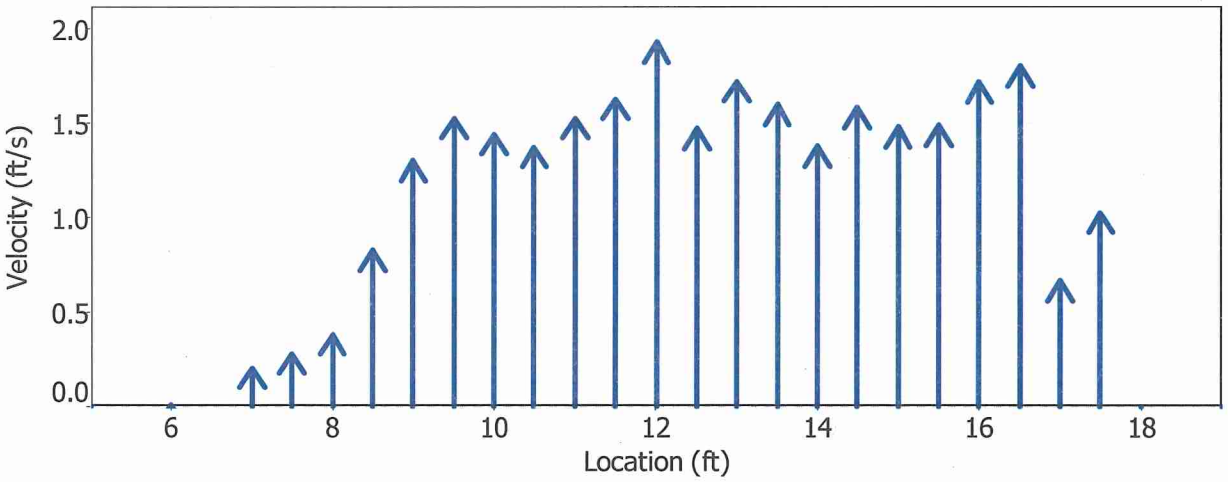
Discharge Measurement Summary

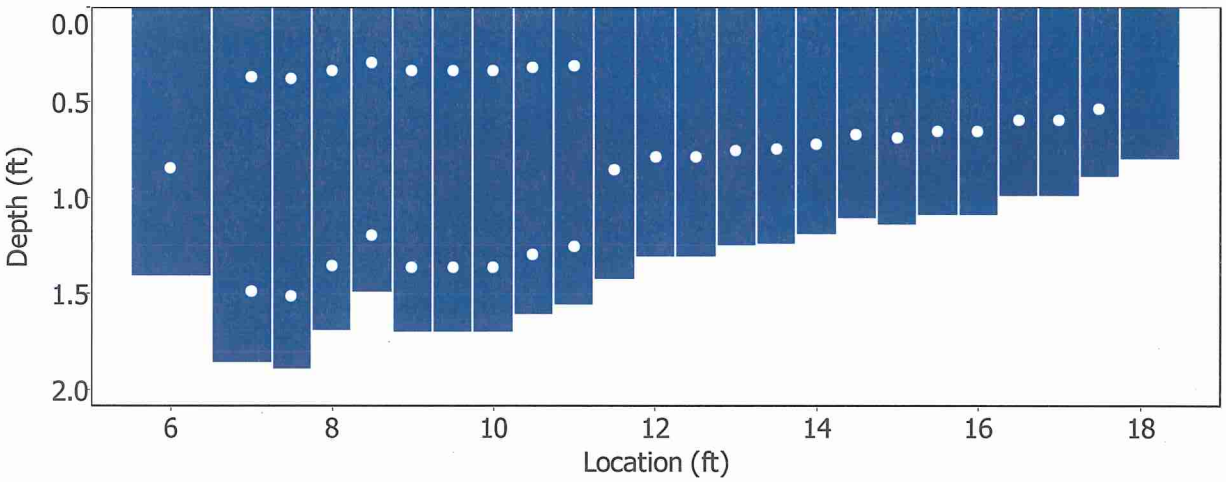
Date Generated: Tue Apr 6 2010

File Information	
File Name	HC5.WAD
Start Date and Time	2010/03/30 10:43:09

Site Details	
Site Name	HC5
Operator(s)	MGW







WASHINGTON STATE DEPARTMENT OF ECOLOGY

Discharge Measurement Summary

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File Information	
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Start Date and Time	2010/03/30 10:43:09

Site Details	
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Quality Control

St	Loc	%Dep	Message
2	7.00	0.8	High angle: -27
3	7.50	0.8	High angle: -47
4	8.00	0.8	High angle: -42
5	8.50	0.8	High angle: -27
6	9.00	0.8	High angle: -27
7	9.50	0.2	High number of spikes: 5
		0.8	High standard error: 0.087
8	10.00	0.8	High standard error: 0.058
9	10.50	0.8	High standard error: 0.094
10	11.00	0.8	High standard error: 0.058
13	12.50	0.6	High standard error: 0.097
22	17.00	0.6	High SNR variation during measurement: 3.4,5.2
		0.6	Boundary QC is Good; possible boundary interference
23	17.50	0.6	High angle: 176
24	18.00	0.0	Low SNR: 0.0,0.0
		0.0	SNR (0.0) is different from typical SNR (34.7)
		0.0	High standard error: 0.000

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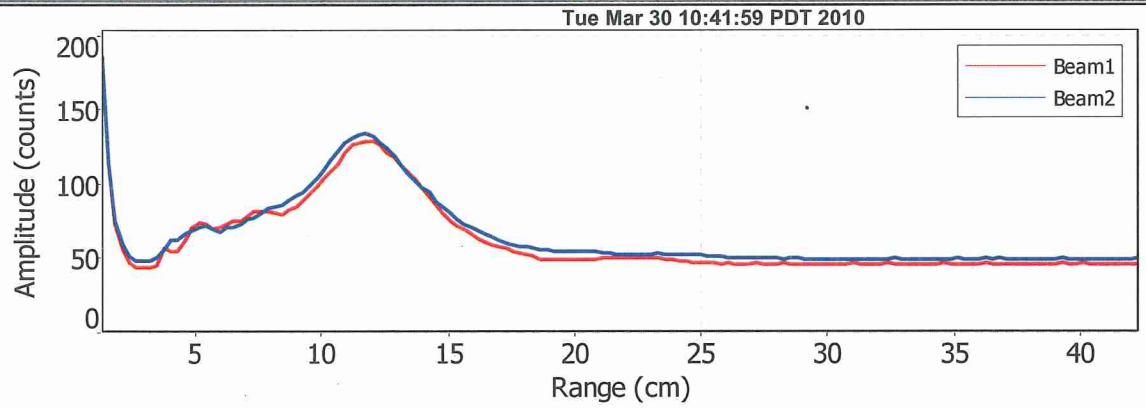
Automatic Quality Control Test (BeamCheck)



- Noise level check - Pass
- SNR check - Pass
- Peak location check - Pass
- Peak shape check - Pass