

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 36-15986
Exam Date: 07/30/2019

1. Current Owner:
DEAN T AND EDEN C DIMOND
1454 STATE HIGHWAY 25
JEROME ID 83338-6714
2. Accompanied by: Dean Diamond, permit holder,
Michelle Richman, Jana Reeder and David Graybill, IDWR staff

3. **SOURCE:**
WASTE WATER

Method of Determination: Visit with Dean Diamond, Aerial photography and ArcMap Imagery

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
36-2460	Ground Water	Irrigation	Decree
36-7614	Ground Water	Irrigation	Decree

Comments: The ground water rights are used when there is insufficient waste water.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
None			

Comments:

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
WASTE WATER NW¼ SE¼, Sec. 32, Twp 08S, Rge 19E, B.M. JEROME County

Method of Determination: Aerial photography, ArcMap and site visit.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
08S	19E	32	35.0	38.0	40.0	40.0	40.0	37.0	19.0	35.0	14.0				6.3	15.0			319.3
08S	19E	33							2.7										2.7

Total Acres: 322.0

Method of Determination: Aerial photography, ArcMap and site visit

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X Indicate weir size/pipe as applicable.X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.X Aerial Photo Attached (required for irrigation of 10+ acres).X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Re-Lift	US Motors	50	R-0238-05-167 R2148082M	Aurora	10.74"
Re-Lift	AC	30	LP 09132	Goulds	6"

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Panametrics Flow Meter	Polysonic	GE	PT878	272522	N/A	April 2019
Acoustic Doppler	Flow Tracker	Son Tex	P156A	P841	N/A	Self-Testing

E. FLOW CALCULATIONSX Additional Computation Sheets Attached

Measured Method:

Panametrics Polysonic Flow Meter: Average total flow from both relift pumps equaled 2025 gpm/448.83 gpm (1 cfs) = 4.51 ~~AF~~ ^{cfs}

Acoustic Doppler Flow Tracker: The total diversion into the pond measured was 5.08 cfs.

Note: Additional Measurement Sheets Attached.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 322 \text{ acres} \times 4 \text{ af} = 1288 \text{ AF}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 4 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 1951.76 \text{ AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = V_{IR} = 1288 \text{ AF}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

Application for Permit 36-15986 was filed on January 17, 2002 by Dean Dimond to appropriate 4 cfs of waste water for irrigation of 322 acres. A Permit to Appropriate Water was issued March 29, 2002. Proof of Beneficial Use was due on or before April 1, 2003. Proof of Beneficial Use was filed on March 17, 2003. I met with Dean Dimond on July 12, 2019 to conduct the field exam. We discussed how the system works and verified the land being irrigated. Waste water is delivered to the property byway of lateral 21 of the canal system. A headgate is in place where waste water is diverted from the lateral into the pond and returns to the lateral by four 12" pvc pipes to maintain the water level in the pond and prevent any over flow of the pond. The waste water is then pumped from the pond via two relift pumps, a 30 hp and a 50 hp pump, to a secondary pond where ground water can be diverted and/or mixed with the waste water, if needed, via three relift pumps at the secondary pond to the place of use. After I returned to the office I discussed how the system operates with Corey Skinner, Regional Manager and it was decided to try and measure the water diverted from the lateral and the two re-lift pumps from the sediment pond. On July 30, 2019 Michelle Richman, Jana Reeder and David Graybill and I returned to Mr. Dimond's property to conduct a measurement of the water being diverted from the lateral and from the pond. The amount of waste water being diverted into the pond from the lateral was measured at 5.08 cfs and the amount of waste water being diverted via the relift pumps to the secondary pond averaged 4.51 cfs. Note that excess overflow water was returning back to the lateral during the exam. Because, both in flow to the pond and outflow to the irrigation system exceeded 4.0 cfs, there is sufficient waste water available to license permit 36-15986 for the permitted amount of 4.0 cfs. See flow calculation and the additional computation sheets attached. The applicant submitted an Application for Amendment for permit 36-15986 to update the place of use, and adding Eden C. Dimond as a current owner of the right. In addition the applicant has submitted a transfer application to update the place of use to current irrigation practices, and to properly describe the legal description of the ground water point of diversion.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/15 to 11/15	4.00 CFS	1288 AF
Totals:		4.00 CFS	1288 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None
☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ None

I. AUTHENTICATION Benny Walker - Senior Water Resource Agent

Field Examiner's Name Benny Walker Date 12/9/2019
 Reviewer [Signature] Date 12/11/2019

Permit 36-15986



Above: Lateral 21 from Canal to Pond

Below: Head gate into Pond





Diversion into Pond



Field Exam 36-15986

Permit 36-15986



Above: Irrigated Land

Below: Diversion to Secondary Pond & re-lift pumps





Measurement of Flow in Lateral



Permit 36-15986



Return Flow from Pond to Lateral

Field Exam 36-15986

Panametrics, Flow Meter PT878 Measurement #1

Date/Time	(+)Total (gal)	Volume (gal/m)	Velocity (ft/s)	Error #
7/30/2019 10:15:04	12315.72249	1228.582197	4.730634781	0
7/30/2019 10:16:04	13533.7988	1232.468312	4.7455982	0
7/30/2019 10:17:04	14756.7678	1231.619069	4.742328206	0
7/30/2019 10:18:05	16030.78909	1231.852356	4.743226474	0
7/30/2019 10:19:05	17252.1622	1228.689394	4.731047541	0
7/30/2019 10:20:04	18475.70359	1229.244831	4.733186242	0
7/30/2019 10:21:04	19692.63716	1226.195275	4.72144398	0
7/30/2019 10:22:05	20963.54509	1233.24095	4.74857323	0
7/30/2019 10:23:05	22188.59868	1227.623362	4.726942804	0
7/30/2019 10:24:04	23405.87166	1227.132559	4.725052976	0
7/30/2019 10:25:04	24625.27631	1230.61805	4.738473799	0
	1230.955382			

50hp Relift pump average flow = 1230.96 gpm/448.83 gpm = (1cfs) = 2.7 cfs

Panametrics, Flow Meter PT878 Measurement #2

Date/Time	(+)Total (gal)	Volume (gal/m)	Velocity (ft/s)	Error #
7/30/2019 10:47:57	48197.70763	1239.057122	4.7709683	0
7/30/2019 10:48:57	49424.99693	1236.533677	4.761251819	0
7/30/2019 10:49:57	50653.48801	1236.013805	4.759250062	0
7/30/2019 10:50:59	51956.99471	1236.205222	4.759987109	0
7/30/2019 10:51:59	53188.29747	1234.614883	4.753863537	0
7/30/2019 10:52:59	54430.64039	1237.531461	4.76509377	0
7/30/2019 10:53:57	55603.70716	1234.016343	4.751558867	0
7/30/2019 10:54:59	56899.64682	1238.249041	4.767856801	0
7/30/2019 10:55:59	58133.42046	1239.897333	4.774203519	0
7/30/2019 10:56:58	59362.06284	1236.014694	4.759253486	0
7/30/2019 10:57:58	60593.29506	1241.110271	4.778873917	0
	1239.558743			

5ohp Relift pump average flow = 1239.56 gpm/448.83 gpm = (1 cfs) = 2.8 cfs

Panametrics, Flow Meter PT878 Measurement #3

Date/Time	Velocity (ft/s)	Volume (gal/m)	(+)Total (gal)	Error #
7/30/2019 11:42:30	9.800582847	790.4712737	77850.10016	0
7/30/2019 11:43:29	9.872345552	796.2593332	78620.69044	0
7/30/2019 11:44:30	9.862714659	795.4825484	79437.07008	0
7/30/2019 11:45:29	9.882669015	797.0919776	80218.88659	0
7/30/2019 11:46:29	9.822722159	792.2569317	81000.05544	0
7/30/2019 11:47:30	9.978116733	804.7903646	81819.33873	0
7/30/2019 11:48:29	9.551452536	770.3775346	82592.27231	0
7/30/2019 11:49:31	9.476231203	764.3105176	83389.6051	0
7/30/2019 11:50:31	9.51309011	767.2833925	84139.14094	0
7/30/2019 11:51:29	9.554750277	770.6435157	84934.98935	0
7/30/2019 11:52:31	9.783093697	789.0606769	85751.43131	0
	790.1331145			

30hp Relift pump average flow = 790.13 gpm/448.83 gpm = (1cfs) = 1.8 cfs



Stage ~~174~~
+ .36' on check

Discharge Measurement Summary

Date Generated: Tue Jul 30 2019

File Information

File Name DL190730.WAD
Start Date and Time 2019/07/30 11:07:26

Site Details

Site Name
Operator(s) BW

System Information

Sensor Type FlowTracker
Serial # P841
CPU Firmware Version 3.9
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.2%	0.5%
Velocity	1.6%	2.6%
Width	0.2%	0.2%
Method	2.6%	-
# Stations	2.8%	-
Overall	4.2%	2.8%

Summary

Averaging Int. 40 # Stations 18
Start Edge REW Total Width 7.200
Mean SNR 49.3 dB Total Area 13.779
Mean Temp 71.22 °F Mean Depth 1.914
Disch. Equation Mid-Section Mean Velocity 0.3239
Total Discharge 4.4629

lower

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:07	1.00	None	1.200	0.0	0.0	0.0000	1.00	0.8848	0.360	0.3186	7.1
1	11:07	1.60	0.6	1.800	0.6	0.720	0.8848	1.00	0.8848	0.900	0.7963	17.8
2	11:08	2.00	0.6	2.000	0.6	0.800	0.7838	1.00	0.7838	0.800	0.6269	14.0
3	11:10	2.40	0.6	2.200	0.6	0.880	0.7421	1.00	0.7421	0.880	0.6530	14.6
4	11:11	2.80	0.6	2.300	0.6	0.920	0.5574	1.00	0.5574	0.920	0.5127	11.5
5	11:12	3.20	0.6	2.400	0.6	0.960	0.5312	1.00	0.5312	0.960	0.5098	11.4
6	11:14	3.60	0.6	2.400	0.6	0.960	0.4144	1.00	0.4144	0.960	0.3977	8.9
7	11:15	4.00	0.6	2.400	0.6	0.960	0.2795	1.00	0.2795	0.960	0.2683	6.0
8	11:16	4.40	0.6	2.300	0.6	0.920	0.2457	1.00	0.2457	0.920	0.2260	5.1
9	11:17	4.80	0.6	2.300	0.6	0.920	0.1867	1.00	0.1867	0.920	0.1717	3.8
10	11:18	5.20	0.6	2.200	0.6	0.880	0.1483	1.00	0.1483	0.880	0.1305	2.9
11	11:19	5.60	0.6	2.100	0.6	0.840	0.0840	1.00	0.0840	0.840	0.0705	1.6
12	11:21	6.00	0.6	2.000	0.6	0.800	-0.0390	1.00	-0.0390	0.800	-0.0312	-0.7
13	11:22	6.40	0.6	1.900	0.6	0.760	-0.0440	1.00	-0.0440	0.760	-0.0334	-0.7
14	11:23	6.80	0.6	1.700	0.6	0.680	-0.0200	1.00	-0.0200	0.680	-0.0136	-0.3
15	11:24	7.20	0.6	1.350	0.6	0.540	-0.0427	1.00	-0.0427	0.540	-0.0230	-0.5
16	11:25	7.60	0.6	1.100	0.6	0.440	-0.1683	1.00	-0.1683	0.551	-0.0927	-2.1
17	11:25	8.20	None	0.500	0.0	0.0	0.0000	1.00	-0.1683	0.150	-0.0253	-0.6

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

Discharge Measurement Summary

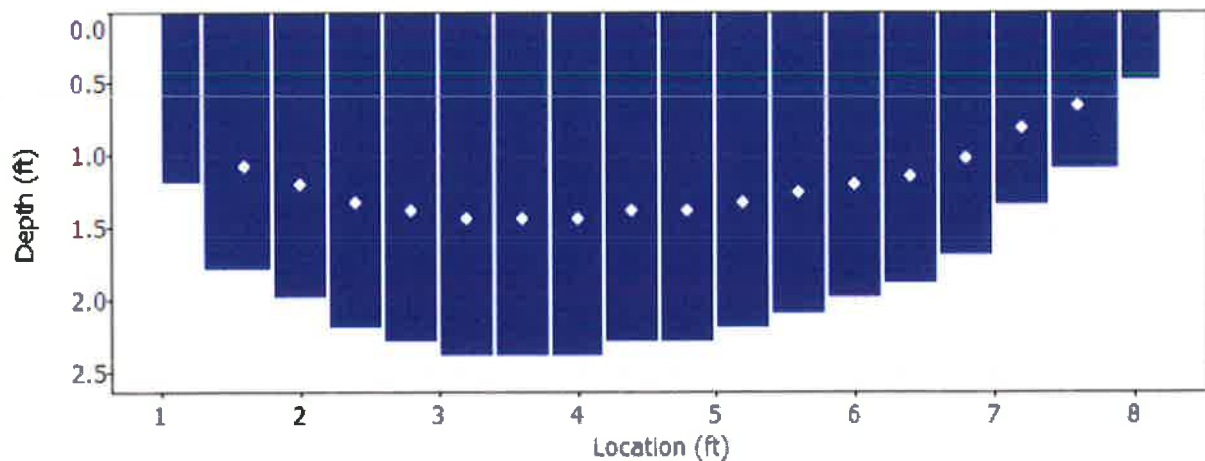
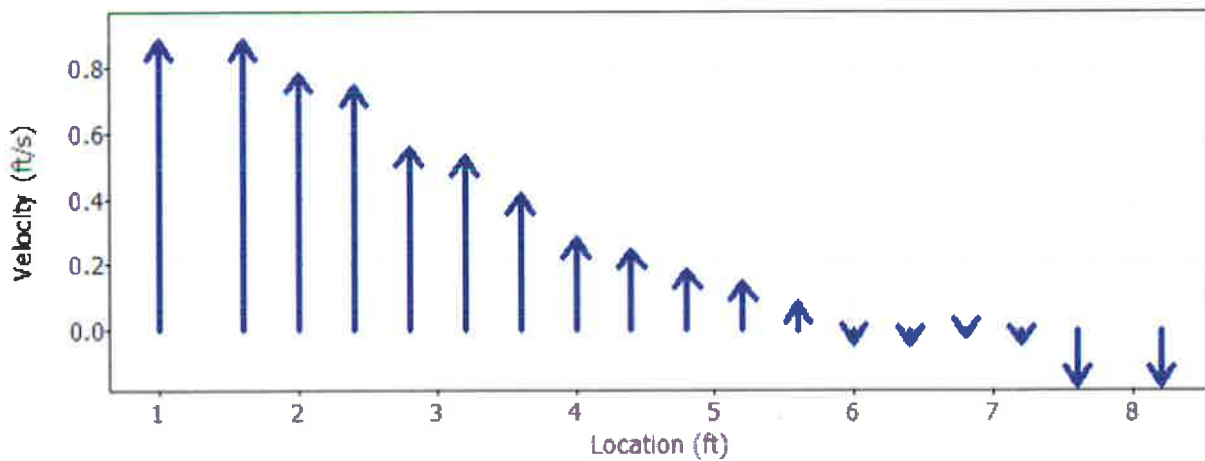
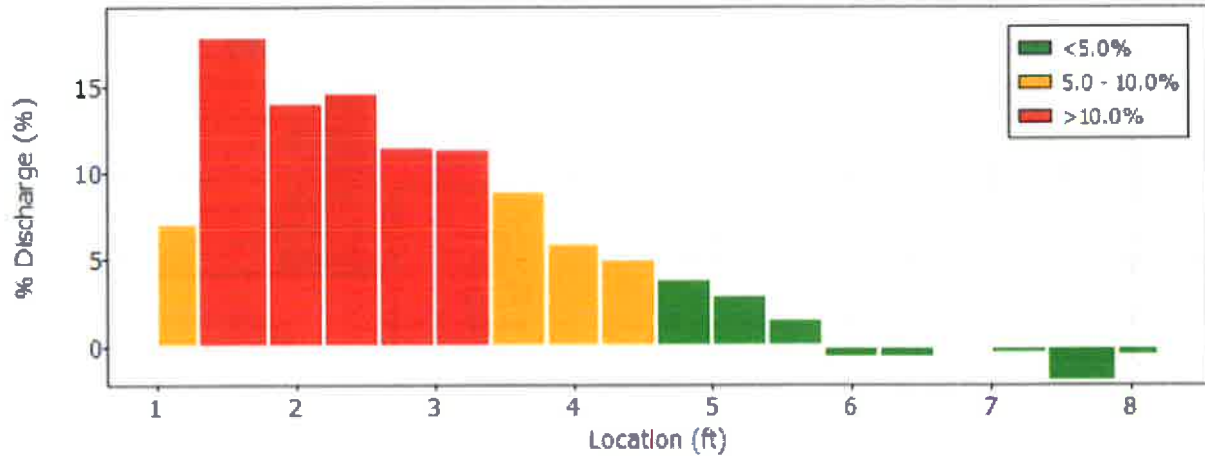
Date Generated: Tue Jul 30 2019

File Information

File Name DL190730.WAD
Start Date and Time 2019/07/30 11:07:26

Site Details

Site Name
Operator(s) BW



Discharge Measurement Summary

Date Generated: Tue Jul 30 2019

File Information

File Name DL190730.WAD
Start Date and Time 2019/07/30 11:07:26

Site Details

Site Name
Operator(s) BW

Quality Control

St	Loc	%Dep	Message
8	4.40	0.6	High angle: 30
9	4.80	0.6	High angle: 32
10	5.20	0.6	High angle: 38
11	5.60	0.6	High angle: 63
12	6.00	0.6	High angle: 108
13	6.40	0.6	High angle: 107
14	6.80	0.6	High number of spikes: 5
		0.6	High angle: 118
		0.6	High SNR variation during measurement: 6.0,4.3
15	7.20	0.6	High angle: 161
16	7.60	0.6	High angle: -173

Discharge Measurement Summary

Date Generated: Tue Jul 30 2019

File Information

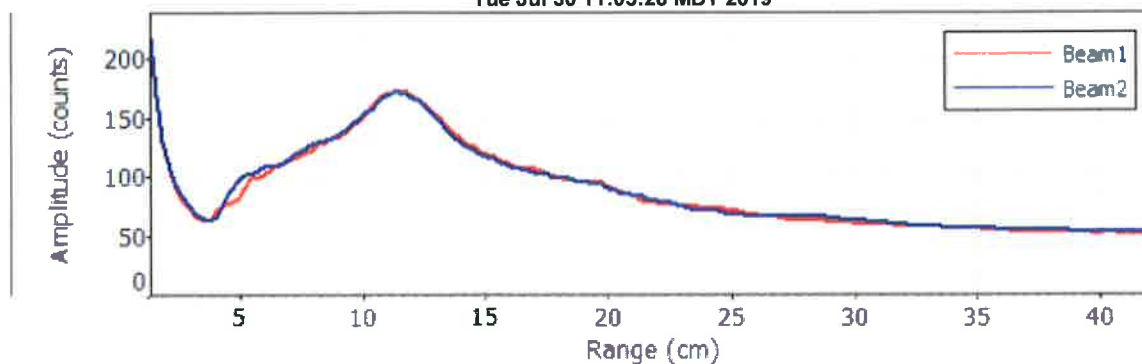
File Name DL190730.WAD
Start Date and Time 2019/07/30 11:07:26

Site Details

Site Name
Operator(s) BW

Automatic Quality Control Test (BeamCheck)

Tue Jul 30 11:05:28 MDT 2019



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

Discharge Measurement Summary

Date Generated: Tue Jul 30 2019

File Information

File Name DU190730.WAD
Start Date and Time 2019/07/30 11:36:06

Site Details

Site Name
Operator(s) BW

Staff = .36 on chk Board

System Information

Sensor Type FlowTracker
Serial # P841
CPU Firmware Version 3.9
Software Ver 2.30
Mounting Correction 0.0%

Units (English Units)

Distance ft
Velocity ft/s
Area ft²
Discharge cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.1%	0.9%
Velocity	0.3%	1.7%
Width	0.1%	0.1%
Method	1.0%	-
# Stations	2.3%	-
Overall	2.7%	2.2%

Summary

Averaging Int. 40 # Stations 22
Start Edge REW Total Width 6.800
Mean SNR 49.5 dB Total Area 10.161
Mean Temp 72.18 °F Mean Depth 1.494
Disch. Equation Mid-Section Mean Velocity 0.9391
Total Discharge 9.5421

Upper

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:36	0.70	None	0.300	0.0	0.0	0.0000	1.00	0.8163	0.090	0.0734	0.8
1	11:36	1.30	0.6	0.850	0.6	0.340	0.8163	1.00	0.8163	0.383	0.3122	3.3
2	11:37	1.60	0.6	0.900	0.6	0.360	0.8691	1.00	0.8691	0.270	0.2348	2.5
3	11:38	1.90	0.6	1.100	0.6	0.440	0.8829	1.00	0.8829	0.330	0.2916	3.1
4	11:39	2.20	0.6	1.250	0.6	0.500	0.9810	1.00	0.9810	0.375	0.3681	3.9
5	11:41	2.50	0.2/0.8	1.600	0.2	1.280	0.9718	1.00	0.9160	0.480	0.4400	4.6
5	11:42	2.50	0.2/0.8	1.600	0.8	0.320	0.8602					
6	11:45	2.80	0.8/0.2	1.800	0.2	1.440	1.0591	1.00	0.9697	0.540	0.5239	5.5
6	11:44	2.80	0.8/0.2	1.800	0.8	0.360	0.8802					
7	11:46	3.10	0.2/0.8	1.800	0.2	1.440	1.0994	1.00	1.0592	0.540	0.5723	6.0
7	11:47	3.10	0.2/0.8	1.800	0.8	0.360	1.0190					
8	11:49	3.40	0.8/0.2	1.800	0.2	1.440	1.1099	1.00	1.0502	0.540	0.5674	5.9
8	11:49	3.40	0.8/0.2	1.800	0.8	0.360	0.9905					
9	11:51	3.70	0.2/0.8	1.900	0.2	1.520	1.1703	1.00	1.1010	0.570	0.6280	6.6
9	11:52	3.70	0.2/0.8	1.900	0.8	0.380	1.0318					
10	11:55	4.00	0.8/0.2	2.100	0.2	1.680	1.2451	1.00	1.1721	0.630	0.7389	7.7
10	11:53	4.00	0.8/0.2	2.100	0.8	0.420	1.0991					
11	11:56	4.30	0.2/0.8	2.100	0.2	1.680	1.2566	1.00	1.1476	0.630	0.7235	7.6
11	11:57	4.30	0.2/0.8	2.100	0.8	0.420	1.0387					
12	12:00	4.60	0.8/0.2	2.100	0.2	1.680	1.3488	1.00	1.2062	0.630	0.7604	8.0
12	11:58	4.60	0.8/0.2	2.100	0.8	0.420	1.0636					
13	12:01	4.90	0.2/0.8	2.200	0.2	1.760	1.2799	1.00	1.0894	0.660	0.7195	7.5
13	12:02	4.90	0.2/0.8	2.200	0.8	0.440	0.8990					
14	12:05	5.20	0.8/0.2	2.100	0.2	1.680	1.2428	1.00	1.1358	0.630	0.7161	7.5
14	12:04	5.20	0.8/0.2	2.100	0.8	0.420	1.0289					
15	12:06	5.50	0.2/0.8	2.100	0.2	1.680	1.1670	1.00	1.0750	0.630	0.6777	7.1
15	12:07	5.50	0.2/0.8	2.100	0.8	0.420	0.9829					
16	12:10	5.80	0.8/0.2	1.800	0.2	1.440	1.1102	1.00	1.0338	0.540	0.5586	5.9
16	12:09	5.80	0.8/0.2	1.800	0.8	0.360	0.9573					
17	12:12	6.10	0.2/0.8	1.500	0.2	1.200	1.0607	1.00	0.9760	0.450	0.4395	4.6
17	12:13	6.10	0.2/0.8	1.500	0.8	0.300	0.8914					
18	12:15	6.40	0.6	1.400	0.6	0.560	0.4678	1.00	0.4678	0.420	0.1966	2.1
19	12:16	6.70	0.6	1.000	0.6	0.400	0.0000	1.00	0.0000	0.300	0.0000	0.0
20	12:17	7.00	0.6	0.800	0.6	0.320	-0.0010	1.00	-0.0010	0.319	-0.0003	0.0
21	12:17	7.50	None	0.800	0.0	0.0	0.0000	1.00	-0.0010	0.199	-0.0002	0.0

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

Discharge Measurement Summary

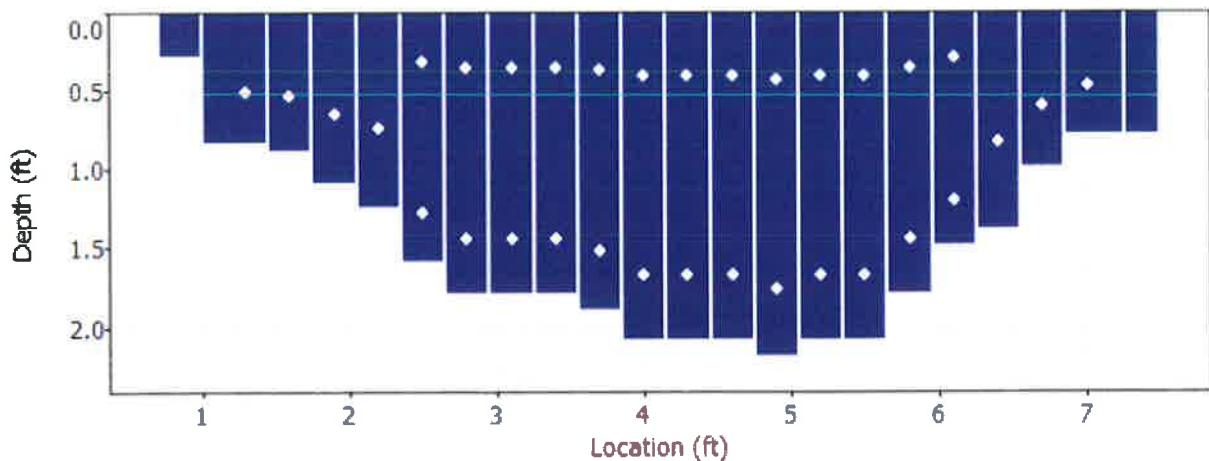
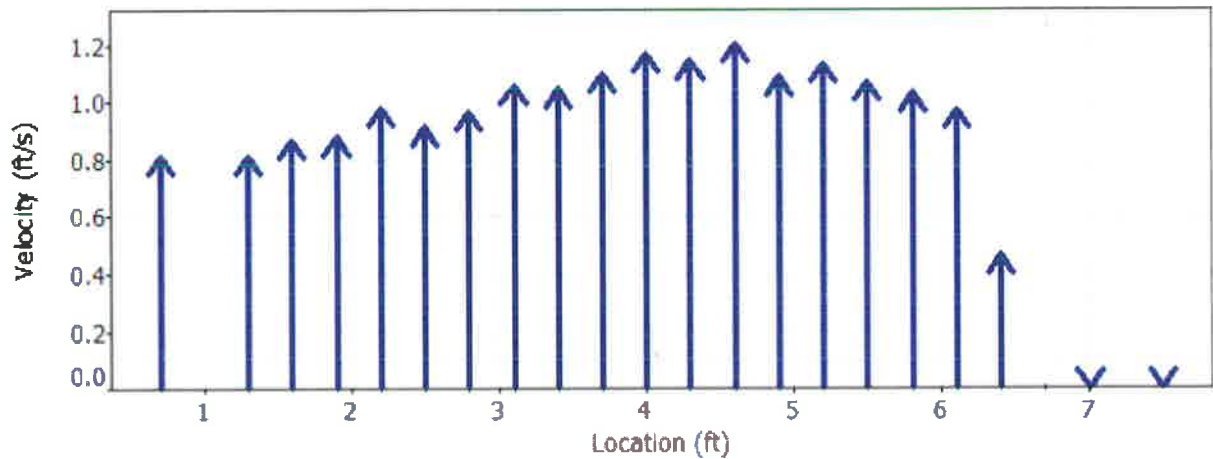
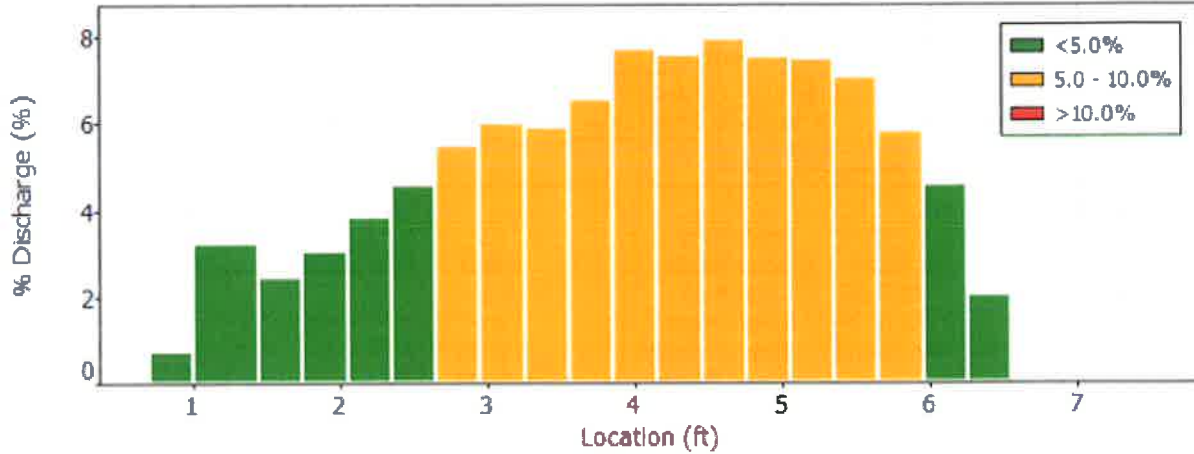
Date Generated: Tue Jul 30 2019

File Information

File Name DU190730.WAD
Start Date and Time 2019/07/30 11:36:06

Site Details

Site Name
Operator(s) BW



Discharge Measurement Summary

Date Generated: Tue Jul 30 2019

File Information

File Name DU190730.WAD
Start Date and Time 2019/07/30 11:36:06

Site Details

Site Name
Operator(s) BW

Quality Control

St	Loc	%Dep	Message
18	6.40	0.6	High standard error: 0.038
19	6.70	0.6	SNR (65.6) is different from typical SNR (49.5)
20	7.00	0.6	High number of spikes: 18
		0.6	High SNR variation during measurement: 4.7,5.2

Discharge Measurement Summary

Date Generated: Tue Jul 30 2019

File Information

File Name DU190730.WAD
Start Date and Time 2019/07/30 11:36:06

Site Details

Site Name
Operator(s) BW

Automatic Quality Control Test (BeamCheck)