

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 78-12520
Exam Date: 08/09/2023

1. Current Owner:
RYAN W ENDICOTT 6916 MAP ROCK RD CALDWELL ID 83607-9797
2. Accompanied by:
Phone No: 208-870-8932
Address: 6916 Map Rock Rd Caldwell ID 83607
Relationship to permit Holder: Same

3. **SOURCE:**
WASTE WATER

Tributary
EAST BRANCH GOOSE CREEK

Method of Determination: Site visit, aerial imagery

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
78-12255	Goose Creek	Irrigation	Decreed
78-12257	Goose Creek	Irrigation	Decreed
78-12259	Goose Creek	Irrigation	Decreed
78-12261	Goose Creek	Irrigation	Decreed
78-12263	Goose Creek	Irrigation	Decreed
78-4068B	Goose Creek	Irrigation	Decreed
78-7263A	Brundage Creek	Irrigation From Storage	Decreed
78-7263C	Brundage Creek	Irrigation From Storage	Decreed
78-2085	Brundage Creek	Irrigation From Storage	Decreed
78-4006A	Goose Creek	Irrigation From Storage	Decreed
78-4006B	Goose Creek	Irrigation From Storage	Decreed
78-10222	Ground Water	Domestic	Decreed

Comments: Overlapping water rights for irrigation from surface water owned by applicant, also within Brundage Water Users Association Inc. and Goose Lake Reservoir Co service areas.

2. Other water rights with the same point-of-diversion: None

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

WASTE WATER L3 (NW¼ SW¼), Sec. 18, Twp 19N, Rge 02E, B.M. ADAMS County
WASTE WATER L4 (SW¼ SW¼), Sec. 18, Twp 19N, Rge 02E, B.M. ADAMS County

Method of Determination: Site visit, aerial imagery

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	
19N	01E	13				32.0													32.0

Total Acres: 32.0

Method of Determination: Site visit, aerial imagery

3.

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

 X Indicate weir size/pipe as applicable.

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 X Aerial Photo Attached (required for irrigation of 10+ acres). X X Photo of Diversion and System Attached X

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
SonTek	Acoustic Doppler Velocimeter	FlowTracker2		FT2H2141019		

2. Measurements: Measurement #1 = 1.77cfs, measurement #2 = 1.34 cfs. Average = 1.56 cfs

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method: Two cross-sectional flow measurements were taken with the Flow Tracker 2 acoustic doppler velocimeter. Measurement one resulted in a flow rate of 1.77 cfs and measurement two totaled 1.34 cfs for an average of 1.56 cfs.

Measured rate = 1.56 cfs

Permitted rate = 0.64 cfs

Standard irrigation rate 0.02 cfs/ac x 32 ac = 0.64 cfs

License Recommendation 0.64 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 32 \text{ acres} \times 3 \text{ AFA} = 96 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.64 \times 213 \times 1.9835 = 270.39$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 96 \text{ AF}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

An initial field exam was conducted on 06/28/22 by Senior Water Right Agent Laura McSherry and was accompanied by Mr. Ryan Endicott. Ryan Endicott is the permit holder. The permit was approved on June 25, 2020, and proof of beneficial use was submitted on June 17, 2021. A follow-up field exam to determine conveyance capacity was conducted on 08/09/2023 by Senior Water Right Agent Aaron Olson and Water Rights Supervisor Scott Storms.

The point of diversion (POD-1) location was confirmed from wastewater runoff in the Govt Lot 3 NWSW QQ and the point of diversion (POD-2) location was confirmed from wastewater runoff in the Govt Lot 4 SWSW QQ. Both are accurately described by the permit. Wastewater runoff from eastern irrigated acres, owned by Timothy Farrell, is captured and conveyed using a gravity flow ditch system to flood irrigate the place of use (POU). Both PODs convey wastewater through culverts under the road, through a ditch flowing north to the POU. Wastewater is conveyed from POD-2 to POD-1.

The permit authorizes 32 acres for irrigation within the NESE QQ of Sec. 18, T19N, R01E, however it was recognized during this review that the application was actually for the NESE of Sec. 13, T19N, R01E. The application was also advertised with the POU in Sec. 13. ArcMap tools and aerial imagery, supported by photos taken during the field exam, were used to verify the area of irrigated lands was developed in accordance with how the permit holder applied for the permit. It appears there was a typo when the permit was issued, and therefore no amendment will be required and the license should be issued in accordance with the original application. Wastewater is conveyed to the POU using a gravity flow ditch system. No weirs and flumes are installed. Ditch capacity was determined by performing two live flow measurements using a SonTek FlowTracker2. With data from the two measurements an average flow of the conveyance ditch at the time was determined to be 1.56 cfs, which is more than the permitted rate of 0.64 cfs. This ditch, however, serves as a lateral for delivering Goose Creek rights owned by the applicant, as well as a lateral for the Goose Lake Reservoir Co. rights. It was undetermined how much of the flow was being delivered through the ditch for these additional rights so the flow exceeding the permitted rate of 0.62 cfs is justified.

Condition 01J was removed with written watermaster permission (see file). Conditions R62, R05, and 176 were carried forward to license.

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	04/01 to 10/31	0.64 CFS	96 AF
<u>Totals:</u>		0.64 CFS	96 AF

2. Recommended Amendments

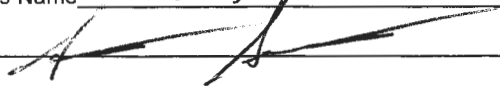
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

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

I. AUTHENTICATION

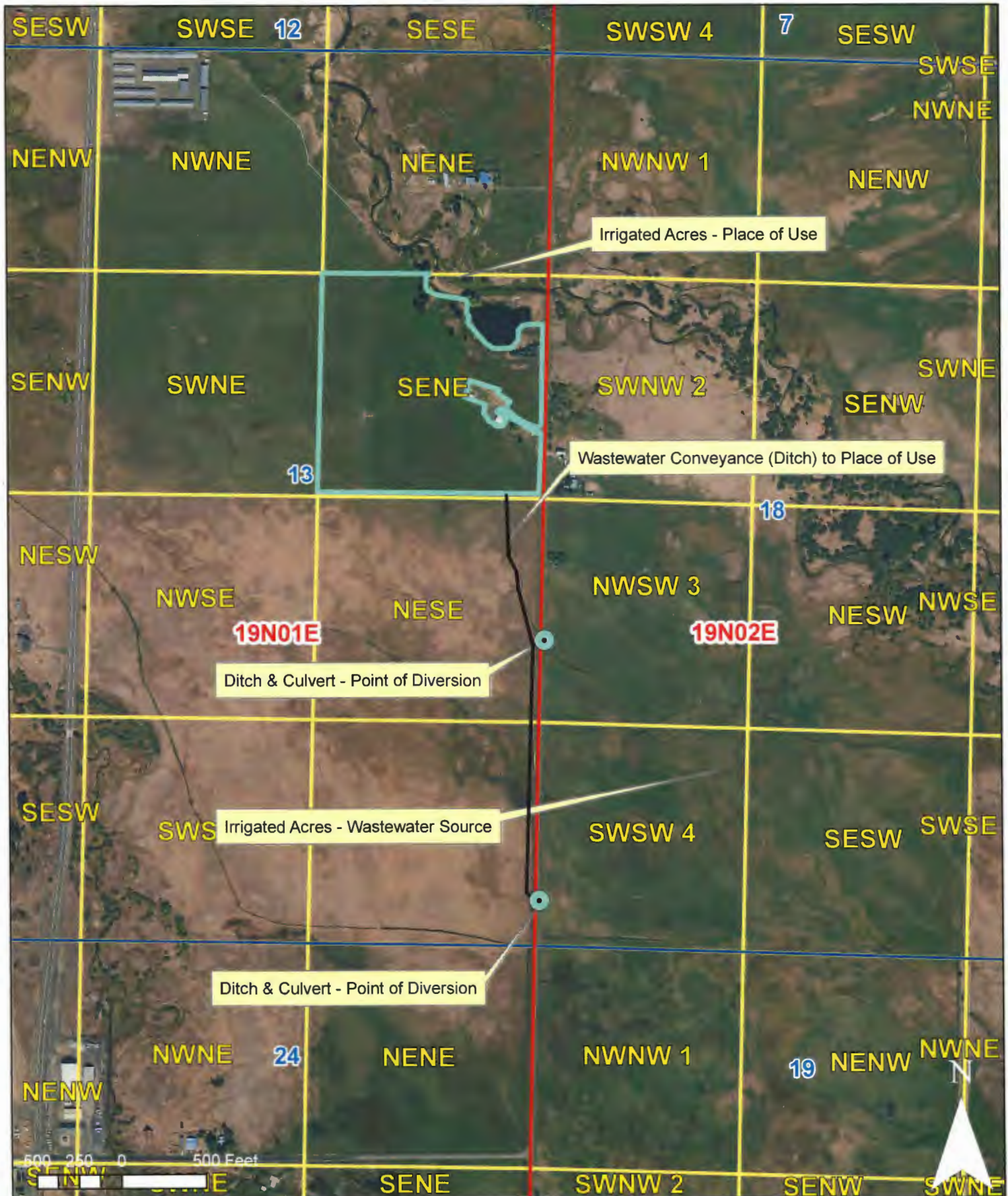
Aaron Olson -

Field Examiner's Name  Date 6/14/2024

Reviewer  Date 8/8/2024

DELIVERY SYSTEM DIAGRAM

Water Right No. 78-12520



IRRIGATED
ACRES
-
PLACE OF USE

SENE

SWNW 2

18

NESE

NWSW 3

13

UNDER
ROAD
CULVERT

POD

19N01E

19N02E

DITCH
CONVEYANCE

SESE

IRRIGATED
ACRES
-
WASTEWATER
SOURCE

SWSW 4

POD

UNDER
ROAD
CULVERT

NENE

NWNW 1

19

NEN

	X-Sec Area (Ft ²)	Mean Vel (ft/s)	Q
1	1.1302095	1.571932465	1.776613
2	1.1194456	1.19422576	1.336871
	Average Q		1.556742

Vel #1 (m/s)	Vel #2 (m/s)
0.335	0.036
0.516	0.211
0.392	0.546
0.667	0.411
0.546	0.675
0.601	0.592
0.407	0.609
0.369	0.425
0.479125	0.364
	0.429888889
1.57193247	1.19422576

X-Sec Area	
#1	#2
0.105	0.104 m ²
1.13021	1.119446 ft ²

Mean Vel (ft/s)



Discharge Measurement Summary

Site name New mead6ws
Site number 1
Operator(s) Ss
File name New mead6ws_20230808-113012.ft
Comment

Start time	8/8/2023 11:01 AM	Sensor type	Top Setting
End time	8/8/2023 11:27 AM	Handheld serial number	FT2H2141019
Start location latitude	44.983	Probe serial number	FT2P2140027
Start location longitude	-116.270	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
11	40	0.000

Total width (ft)	Total area (m²)	Wetted Perimeter (ft)
4.000	0.105	4.087

Mean SNR (dB)	Mean depth (in)	Mean velocity (m/s)
48.372	3.378	0.000

Mean temp (°C)	Max depth (in)	Max velocity (m/s)
15.996	4.200	0.667

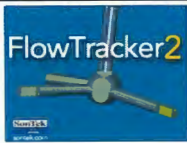
Discharge Uncertainty		
Category	ISO	IVE
Accuracy		
Depth		
Velocity		
Width		
Method		
# Stations		
Overall		

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

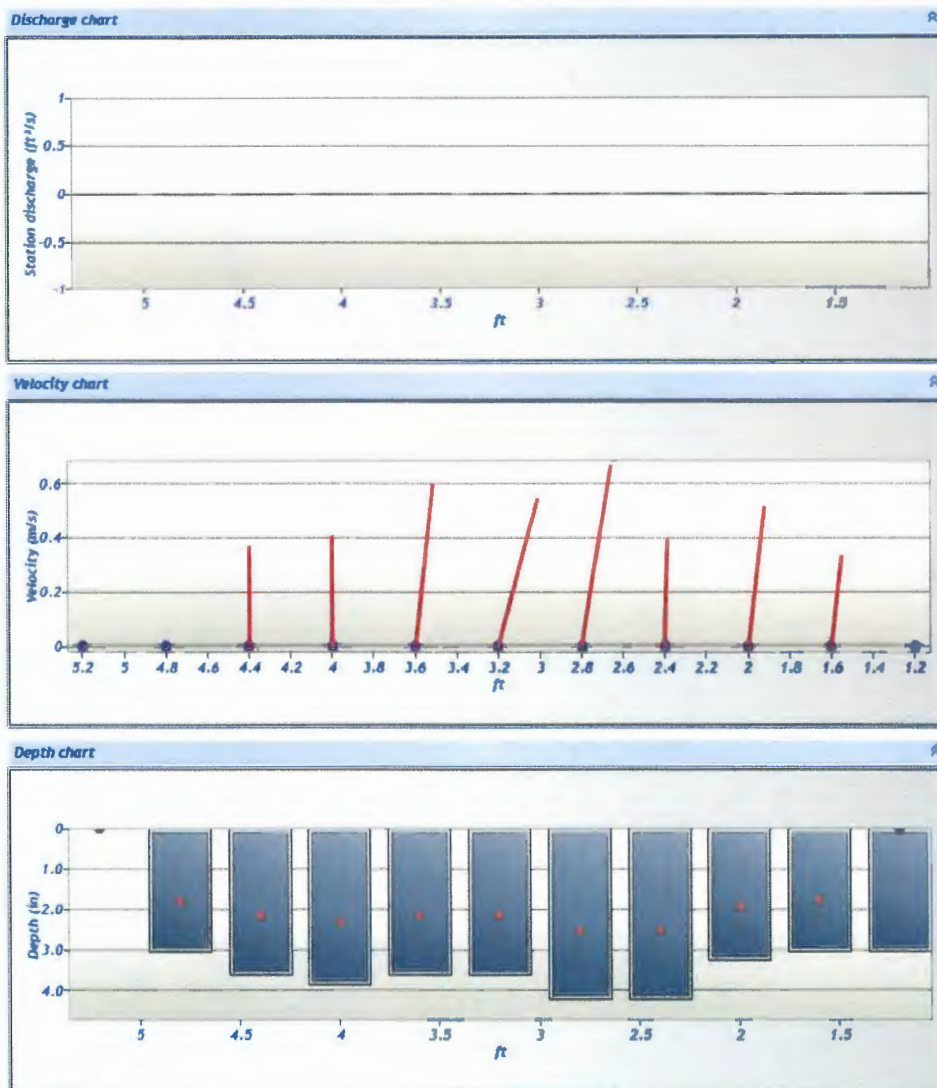
No changes were made to this file
Quality control warnings



Discharge Measurement Summary

Site name New mead6ws
Site number 1
Operator(s) Ss
File name New mead6ws_20230808-113012.ft
Comment

Station Warning Settings	
Station discharge OK	Station discharge < 5.000%
Station discharge caution	5.000% >= Station discharge < 10.000%
Station discharge warning	Station discharge >= 10.000%





Discharge Measurement Summary

Site name New mead6ws
Site number 1
Operator(s) Ss
File name New mead6ws_20230808-113012.ft
Comment

Measurement results

St#	Time	Location (ft)	Method	Depth (in)	%Depth	Measured Depth (in)	Samples	Velocity (m/s)	Correction	Mean Velocity (m/s)	Area (m ²)	Flow (ft ³ /s)	%Q	
0	11:01 AM	1.200	None	3.000	0.000	0.000	0	0.000	0.000	0.000	0.005	0.000		✓
1	11:08 AM	1.600	0.6	3.000	0.600	1.800	80	0.335	0.000	0.000	0.009	0.000		✓
2	11:11 AM	2.000	0.6	3.240	0.600	1.944	80	0.516	0.000	0.000	0.010	0.000		✓
3	11:14 AM	2.400	0.6	4.200	0.600	2.520	80	0.392	0.000	0.000	0.013	0.000		✓
4	11:17 AM	2.800	0.6	4.200	0.600	2.520	80	0.667	0.000	0.000	0.013	0.000		✓
5	11:19 AM	3.200	0.6	3.600	0.600	2.160	80	0.546	0.000	0.000	0.011	0.000		✓
6	11:21 AM	3.600	0.6	3.600	0.600	2.160	80	0.601	0.000	0.000	0.011	0.000		✓
7	11:23 AM	4.000	0.6	3.840	0.600	2.304	80	0.407	0.000	0.000	0.012	0.000		✓
8	11:24 AM	4.400	0.6	3.600	0.600	2.160	80	0.369	0.000	0.000	0.011	0.000		✓
9	11:26 AM	4.800	0.6	3.000	0.600	1.800	80	-0.002	0.000	0.000	0.009	0.000		✓
10	11:27 AM	5.200	None	0.000	0.000	0.000	0	0.000		0.000	0.000	0.000		✓



Discharge Measurement Summary

Site name New mead6ws
Site number 1
Operator(s) Ss
File name New mead6ws_20230808-113012.ft
Comment

Quality Control Settings

Maximum depth change 50.000%
Maximum spacing change 100.000%
SNR threshold 10.000 dB
Standard error threshold 0.010 m/s
Spike threshold 10.000%
Maximum velocity angle 20.000 deg
Maximum tilt angle 5.000 deg

Quality control warnings

St#	Time	Location (ft)	Method	Depth (in)	%Depth	Measured Depth (in)	Warnings
1	11:08 AM	1.600	0.6	3.000	0.600	1.800	Standard Error > QC
7	11:23 AM	4.000	0.6	3.840	0.600	2.304	Standard Error > QC
9	11:26 AM	4.800	0.6	3.000	0.600	1.800	SNR Threshold Variation



Discharge Measurement Summary

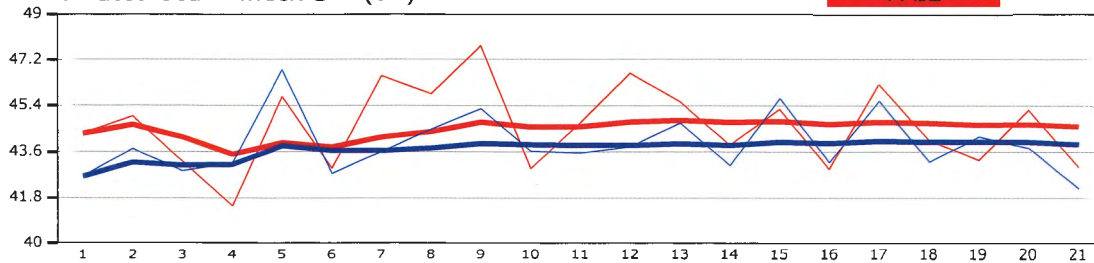
Site name New mead6ws
Site number 1
Operator(s) Ss
File name New mead6ws_20230808-113012.ft
Comment

Beam 1	
Beam 2	

Automated beam check Start time 8/8/2023 11:00:37 AM

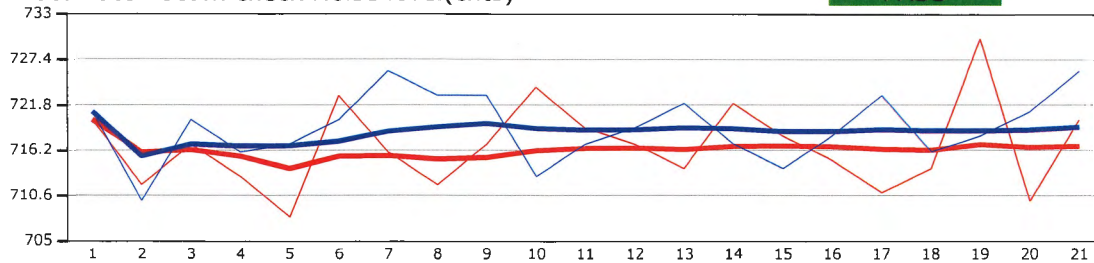
Automated beam check SNR(dB)

FAIL



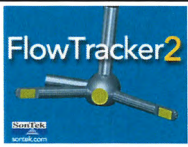
Automated beam check Noise level(cnts)

PASS



Automated beam check Quality control warnings

Beam SNRs Not Similar
Peak Location > QC



Discharge Measurement Summary

Site name New mead6ws
Site number 1
Operator(s) Ss
File name New mead6ws_20230808-113012.ft
Comment

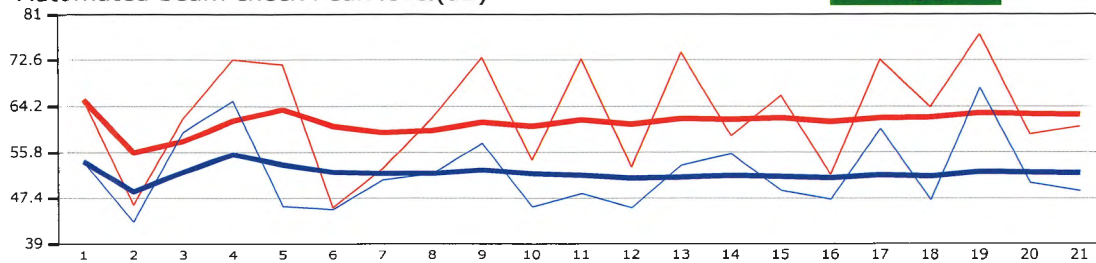
Beam 1

Beam 2

Automated beam check Start time 8/8/2023 11:00:37 AM

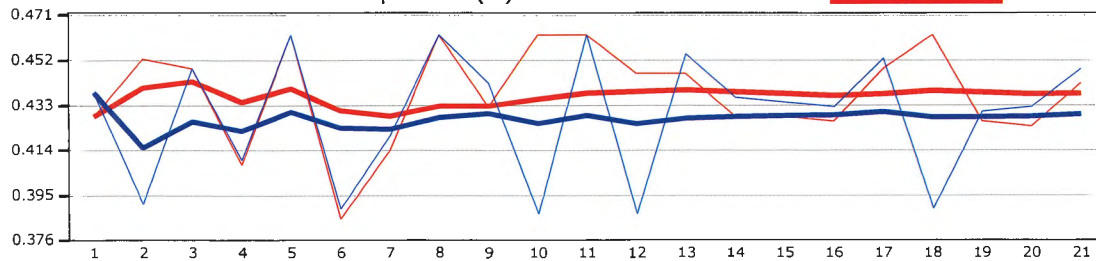
Automated beam check Peak level(dB)

PASS



Automated beam check Peak position(ft)

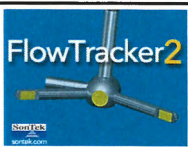
FAIL



Automated beam check Quality control warnings

Beam SNRs Not Similar

Peak Location > QC



Discharge Measurement Summary

Site name Nm a
Site number 1
Operator(s) Ss
File name Nm a_20230808-115210.ft
Comment

Start time	8/8/2023 11:31 AM	Sensor type	Top Setting
End time	8/8/2023 11:49 AM	Handheld serial number	FT2H2141019
Start location latitude	44.983	Probe serial number	FT2P2140027
Start location longitude	-116.270	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
12	40	0.000

Total width (ft)	Total area (m²)	Wetted Perimeter (ft)
4.400	0.104	4.514

Mean SNR (dB)	Mean depth (in)	Mean velocity (m/s)
49.135	3.065	0.000

Mean temp (°C)	Max depth (in)	Max velocity (m/s)
16.491	4.200	0.675

Discharge Uncertainty		
Category	ISO	IVE
Accuracy		
Depth		
Velocity		
Width		
Method		
# Stations		
Overall		

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

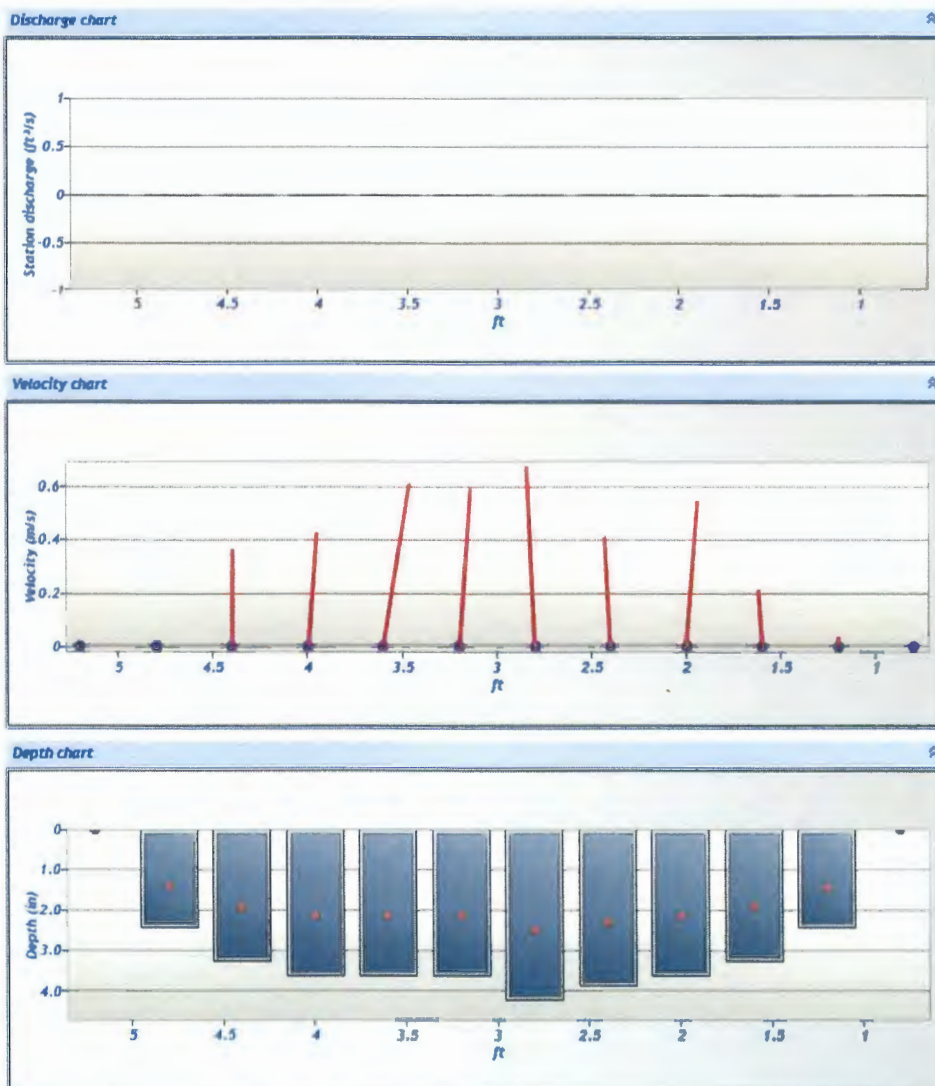
No changes were made to this file
Quality control warnings



Discharge Measurement Summary

Site name Nm a
Site number 1
Operator(s) Ss
File name Nm a_20230808-115210.ft
Comment

Station Warning Settings	
Station discharge OK	Station discharge < 5.000%
Station discharge caution	5.000% >= Station discharge < 10.000%
Station discharge warning	Station discharge >= 10.000%





Discharge Measurement Summary

Site name Nm a
Site number 1
Operator(s) Ss
File name Nm a_20230808-115210.ft
Comment

St#	Time	Location (ft)	Method	Depth (in)	%Depth	Measured Depth (in)	Samples	Velocity (m/s)	Correction	Mean Velocity (m/s)	Area (m ²)	Flow (ft ³ /s)	%Q	
0	11:31 AM	0.800	None	0.000	0.000	0.000	0	0.000	0.000	0.000	0.000	0.000		✓
1	11:32 AM	1.200	0.6	2.400	0.600	1.440	80	0.036	0.000	0.000	0.007	0.000		✓
2	11:35 AM	1.600	0.6	3.240	0.600	1.944	80	0.211	0.000	0.000	0.010	0.000		✓
3	11:37 AM	2.000	0.6	3.600	0.600	2.160	80	0.546	0.000	0.000	0.011	0.000		✓
4	11:38 AM	2.400	0.6	3.840	0.600	2.304	80	0.411	0.000	0.000	0.012	0.000		✓
5	11:40 AM	2.800	0.6	4.200	0.600	2.520	80	0.675	0.000	0.000	0.013	0.000		✓
6	11:42 AM	3.200	0.6	3.600	0.600	2.160	80	0.592	0.000	0.000	0.011	0.000		✓
7	11:43 AM	3.600	0.6	3.600	0.600	2.160	80	0.609	0.000	0.000	0.011	0.000		✓
8	11:44 AM	4.000	0.6	3.600	0.600	2.160	80	0.425	0.000	0.000	0.011	0.000		✓
9	11:46 AM	4.400	0.6	3.240	0.600	1.944	80	0.364	0.000	0.000	0.010	0.000		✓
10	11:47 AM	4.800	0.6	2.400	0.600	1.440	80	-0.002	0.000	0.000	0.007	0.000		✓
11	11:49 AM	5.200	None	0.000	0.000	0.000	0	0.000		0.000	0.000	0.000		✓



Discharge Measurement Summary

Site name Nm a
Site number 1
Operator(s) Ss
File name Nm a_20230808-115210.ft
Comment

Quality Control Settings

Maximum depth change	50.000%
Maximum spacing change	100.000%
SNR threshold	10.000 dB
Standard error threshold	0.010 m/s
Spike threshold	10.000%
Maximum velocity angle	20.000 deg
Maximum tilt angle	5.000 deg

Quality control warnings

St#	Time	Location (ft)	Method	Depth (in)	%Depth	Measured Depth (in)	Warnings
10	11:47 AM	4.800	0.6	2.400	0.600	1.440	Boundary Interference,SNR Threshold Variation



Fig. 1 – Point of diversion (POD - 1) location in the Gvt Lot 3 NWSW QQ. View looking N towards the place of use (POU).

GPS'd at:

44° 58' 57.46" N

116° 16' 12.89" W



Fig. 2 – Wastewater runoff from irrigated acres. Water conveyed under the road through culvert to POD – 1. View looking SE.



Fig. 3 – Ditch conveyance at POD-1 from POD-2, looking upstream. View looking S.

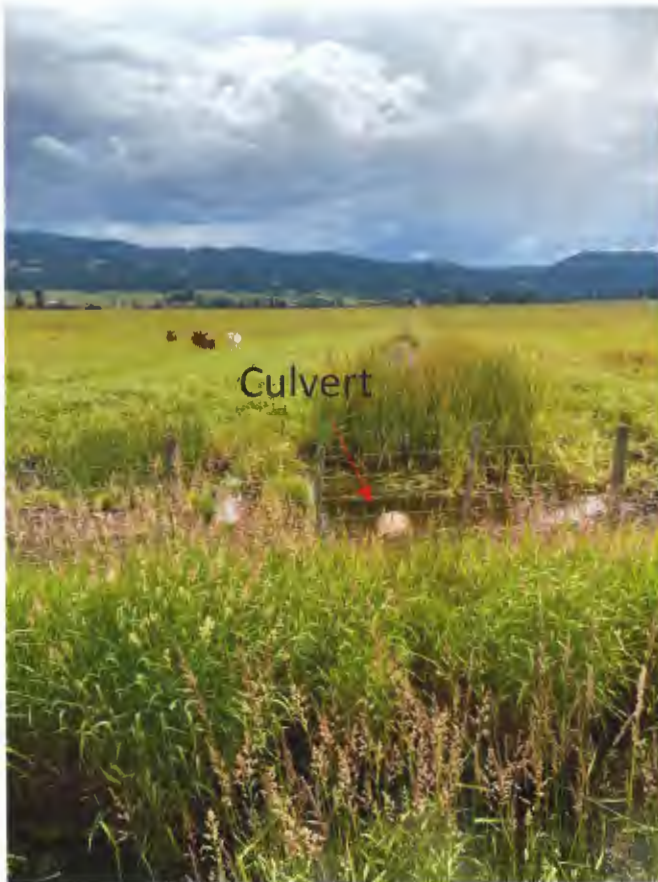


Fig. 4 – POD-2 in the Gvt Lot 4 SWSW QQ. Wastewater conveyed under the road through culvert to ditch. View looking SE.

GPS'd at:

44° 58' 47.89" N

116° 16' 12.26" W



Fig. 5 – POD-2 wastewater conveyed from under the road to the ditch flowing north. View looking SW.



Fig. 6 – Ditch conveying wastewater to POD-1 and the POU. View looking N.



Fig. 7 – Wasterwater ditch conveyance to the south of the POU. View looking S.



Fig. 8 – Wasterwater ditch conveyance parallel to the south of the POU. View looking W.

Timothy S. Farrell

WaterMaster of District 78-C
3667 Farrell Road
New Meadows, Idaho 83654
208-315-2355

4th June 2021

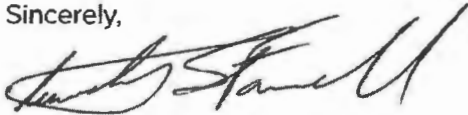
Idaho Department of Water Resources

Debbi Judd
P.O. Box 83720
Boise, Idaho 83720-0098

Dear Mrs Judd,

As WaterMaster of Water District 78-C and after inspecting the wastewater permit #78-12520, I have determined that a lockable headgate, measuring device, and fish screen are not necessary or applicable to this permit.

Sincerely,

A handwritten signature in black ink, appearing to read 'Timothy S. Farrell', written in a cursive style.

Timothy S. Farrell

WaterMaster 78-C