

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 47-8086

Exam Date: 08/29/2019

1. Current Owner:

AMALGAMATED SUGAR CO
PO BOX 127
TWIN FALLS ID 83303-0127

2. Accompanied by: Ryan Gustafson, Amalgamated Sugar

Phone No: 208-735-5471

Address: same as above

Relationship to permit Holder: District Environmental Manager for Amalgamated Sugar

3. **SOURCE:**

DRAIN TUNNEL

Tributary

ROCK CREEK

Method of Determination: Site visit and maps/documents on drain tunnel available on Twin Falls County P & Z website.**B. OVERLAP REVIEW**

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

Water Right No.	Source	Purpose of Use	Basis
47-4051	Ground water	Industrial	Decree
47-2116	Rock Creek	Commercial	Decree
47-7093	Ground water	Industrial	Decree
47-2383	Ground water	Industrial	Decree

Comments: 47-2116 (Rock Creek) is the only other right used in the same system for the same purpose.

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

Water Right No.	Source	Purpose of Use	Basis
NA			

Comments: This is the only right diverted from this POD.

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

DRAIN TUNNEL SE¼ NW¼, Sec. 26, Twp 10S, Rge 17E, B.M. TWIN FALLS County

Method of Determination: Site visit, ArcMap aerial imagery, Google Earth aerial imagery.

PLACE OF USE: INDUSTRIAL

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
10S	17E	26					X												

Method of Determination: This was confirmed by Mr. Gustafson.

3.

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

☒ 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.

☒☒ Aerial Photo Attached (required for irrigation of 10+ acres).☒☒ 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
Site Tag A0013589					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Flowmeter	Ultrasonic	GE	Panametrics PT 878			Spring 2019

2. Measurements: Flow was measured in the pipe from the collection box at a point just before it empties into the sump where it mixes with the Rock Creek water.

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method:

On the day of the exam, the flow was measured at 2576 gpm, or 5.74 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: NA

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses: Calculated volume at flowing constantly at permitted rate year-round. V = flow rate x 1.9835 AF/day x days of use, so $V = 1.00 \text{ cfs} \times 1.9835 \text{ AF/day} \times 365 \text{ days} = 724.0 \text{ AF}$.

G. NARRATIVE/REMARKS/COMMENTS

The field exam for permit 47-8086 was completed on August 29, 2019 with Ryan Gustafson, Amalgamated Sugar District Environmental Manager in attendance. An earlier visit was made in the spring of 2019, but the flow was at its yearly low point at that time, so photos were taken of the facilities, but no measurements were made.

Water from a Twin Falls Canal Company drainage tunnel is captured in a concrete collection box on the south side of the Rock Creek canyon, and is piped in a 12" diameter pipe across Rock Creek where it is dumped into a sump, along with Rock Creek water (right 47-2116). Any Rock Creek or drain tunnel water not pumped simply runs back into Rock Creek. The comingled water is then pumped up and out of the canyon to the sugar factory where it is used for cooling before returning to Rock Creek via pipeline.

A measurement was made of the flow rate during the August field exam that yielded a flow of 2576 gpm, or 5.74 cfs, which is more than sufficient to satisfy the permitted rate of 1.00 cfs. Allowing for the 1.0 cfs flowing year-round, a volume of 724.0 AF is produced; a combined volume limitation with right 47-2116 will be added to the permit upon licensing, as the total volume used does not equal the allowed volume for the Rock Creek right, 47-2116. The combined volume data for 47-2116 and permit 47-8086 for years 2016 and 2017 were provided by Mr. Gustafson and are included in this field report.

At first glance, the ArcMap imagery appears to show the POD is located in the NWSW, which would require an amendment, since the permitted POD is in the SENW. However, portions of Twin Falls County are known to have an offset between the Geographic Coordinate Data Base and the imagery, and this seems to be the case here. By measuring from the corner of the mile section (the southeastern most tax parcel), it appears that the POD is actually where it was permitted, in the SENW.

Finally, the field exam revealed that the drain tunnel appears to be the only source of water for the permit, so the spring source will be dropped at licensing.

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>
INDUSTRIAL	1/01 to 12/31	1.00 CFS	724.0 AF
<u>Totals:</u>		1.00 CFS	724.0 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

Field Examiner's Name


Jim Bitzenburg - Senior Water Resource Agent

Date

9-17-19

Reviewer

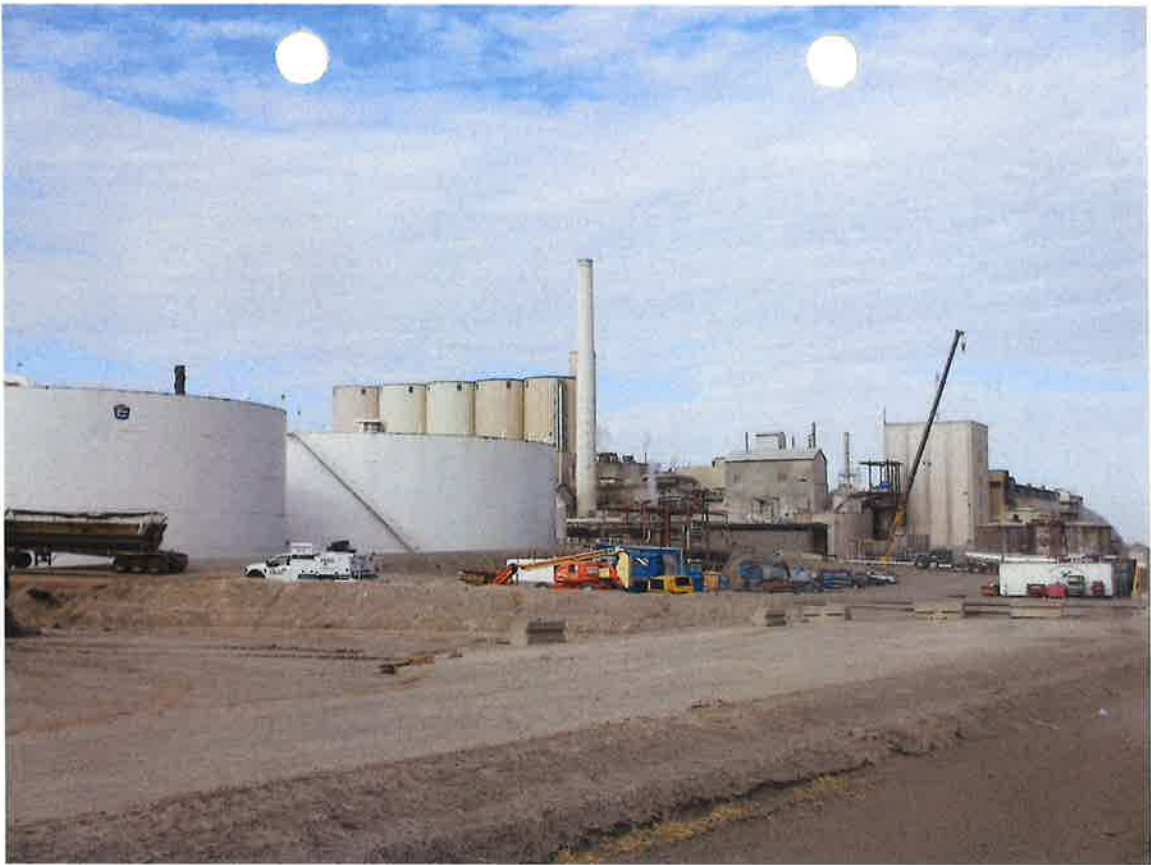
Date



POD – Concrete collection box at drain tunnel

Pump house and associated piping





POU – The 'Sugar Factory'

Plumbing inside the pump house



47-8086 Amalgamated Sugar Co.



Return water from factory dumps into diversion channel before entering Rock Creek

Overhead view of pump house and diversion channel





Permit diversion rate measured before drain tunnel water is comingled with Rock Creek water. The 2575.9 gpm rate converts to 5.7 cfs, which is well above the permitted rate of 1.00 cfs.

47-8086 Amalgamated Sugar - POD, POU, & System Diagram Map



Field Exam 47-8086

0 0.04 0.08 0.16 Miles



Combined Use Volume Limitation between rights 47-2116 and 47-8086

Right 47-2116 allows for 10.0 cfs and 5,128.0 AF from 9/15 to 6/01 (261 days)

Permit 47-8086 allows for 1.0 cfs year round (366 days assuming leap year)

Data provided by permit holder indicates that combined diversion between 47-2116 and 47-8086 does not exceed 10 cfs any day of year. Therefore, right 47-2116 already covers maximum combined volume from 9/15 to 6/01. Since right 47-2116 does not cover period of use from 6/02 – 9/14 (105 days) this volume has to come from 47-8086...

Volume = 1.0 cfs x 1.9835 AF per cfs x 105 days = 208.3 AF.

Total combined volume = 208.3 + 5128 = 5336.3 AF

Amalgamated Sugar, Twin Falls Plant, flow volumes from Rock Creek and Drain Tunnel combined to facility

2016	January	February	March	April	May	June	July	August	September	October	November	December
Date	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)
1	2.79	3.00	3.02	3.54	2.32	2.37	2.25	2.42	2.55	3.12	3.23	2.91
2	2.79	3.00	3.27	3.54	2.05	2.37	2.25	2.42	2.55	3.12	3.20	2.91
3	2.79	3.05	3.27	3.54	2.05	2.34	2.25	2.38	2.55	3.23	3.27	2.91
4	3.02	3.05	3.33	2.98	1.77	2.34	2.50	2.38	2.55	3.23	3.27	2.91
5	3.02	3.01	3.33	2.98	1.77	2.34	2.03	2.52	2.55	3.27	3.27	3.21
6	2.88	3.01	3.33	2.46	2.14	2.26	1.99	2.52	2.32	3.26	3.27	3.21
7	2.88	3.01	3.02	2.46	2.14	2.26	2.21	2.52	2.47	3.26	3.24	2.91
8	2.87	2.95	3.02	2.52	2.14	2.06	2.10	2.44	2.61	3.26	3.24	2.91
9	2.87	2.95	3.19	2.52	2.27	2.06	2.10	2.44	2.61	3.26	3.10	2.91
10	2.87	2.95	3.19	2.52	2.27	2.11	2.10	2.50	2.61	3.51	3.28	2.91
11	2.51	3.45	3.45	2.52	2.28	2.11	2.06	2.50	2.61	3.51	3.28	2.91
12	2.51	2.90	3.45	2.56	2.28	2.11	2.06	2.51	2.61	3.11	3.28	2.99
13	2.85	2.90	3.45	2.44	2.28	2.10	2.12	2.51	3.06	3.11	3.28	2.99
14	2.85	2.90	3.38	2.27	2.28	2.10	2.12	2.51	3.46	3.11	2.88	3.14
15	2.87	2.90	3.38	2.27	2.28	2.10	2.17	2.31	3.06	3.11	2.88	2.69
16	2.87	2.45	3.54	2.27	2.06	2.26	2.17	2.31	3.06	3.11	3.28	2.69
17	2.87	2.59	3.54	2.27	2.06	2.23	2.17	2.67	3.06	3.11	3.20	2.69
18	2.90	3.15	3.44	2.39	2.02	2.23	2.40	2.67	3.06	3.11	3.20	2.69
19	2.90	2.93	3.44	2.39	1.97	2.23	2.40	2.45	2.96	3.24	3.20	2.79
20	2.82	2.93	3.44	2.30	1.97	2.62	2.26	2.45	2.96	3.18	3.20	2.79
21	3.17	2.93	2.92	2.43	1.97	2.62	2.26	2.45	2.09	3.18	3.15	2.79
22	2.96	3.09	2.92	2.45	1.97	2.61	2.26	2.52	2.73	3.18	3.15	2.92
23	2.96	3.09	3.10	2.45	2.00	2.61	2.26	2.52	2.73	3.18	3.15	2.92
24	2.96	2.84	3.10	2.45	2.00	2.34	2.26	2.54	2.73	3.14	3.15	2.92
25	2.96	2.84	3.29	2.39	1.27	2.34	2.35	2.54	2.73	3.14	3.15	2.92
26	2.96	2.89	3.29	2.44	1.27	2.34	2.35	2.56	2.56	3.22	3.15	2.88
27	2.96	2.89	3.29	2.42	2.99	2.42	2.46	2.56	2.56	3.31	3.15	2.88
28	2.96	2.89	3.29	2.42	2.99	2.42	2.46	2.56	2.97	3.31	2.91	2.88
29	2.96	3.02	3.29	2.32	2.99	2.25	2.37	2.67	3.12	3.31	2.91	2.88
30	2.96		3.50	2.32	2.99	2.25	2.37	2.67	3.12	3.31	2.91	2.88
31	2.96		3.50		2.42		2.37	2.80		3.23		2.88
	89.50	85.56	101.97	76.83	67.26	68.8	69.48	77.82	82.61	99.73	94.83	89.82

Total Volume

1004.21 MG

3081.8 Acre-feet

Permit 47-8086 Amalgamated Sugar

Amalgamated Sugar, Twin Falls Plant, flow volumes from Rock Creek and Drain Tunnel combined to facility

2017	January	February	March	April	May	June	July	August	September	October	November	December
Date	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)	Flow (MGL)
1	2.88	3.09	2.72	3.04	2.18	3.48	3.22	2.42	2.61	3.21	3.17	2.83
2	2.88	3.09	2.72	3.04	1.09	3.48	3.22	2.44	2.72	3.10	3.32	2.99
3	2.85	3.09	2.72	3.05	2.21	3.48	3.22	2.41	2.74	3.15	3.36	2.83
4	3.06	3.09	2.72	3.05	2.58	3.48	3.22	2.39	2.74	3.12	3.39	2.56
5	3.06	3.09	2.72	3.32	2.60	3.60	3.22	2.36	2.66	3.06	3.36	2.97
6	3.06	3.14	2.89	2.93	2.60	3.60	3.22	2.30	2.68	3.09	3.35	2.80
7	3.06	3.14	2.89	2.93	2.60	3.71	3.15	2.28	2.67	3.17	3.36	2.79
8	3.06	3.11	2.89	2.93	2.99	3.71	3.15	2.32	2.85	2.92	2.89	2.95
9	2.69	3.11	2.89	2.93	2.99	2.94	3.15	2.32	3.09	3.11	3.22	2.86
10	2.69	3.11	2.89	2.76	2.91	2.94	2.71	2.23	3.13	3.06	3.38	2.91
11	2.69	3.11	2.89	2.76	3.45	2.94	2.88	2.36	3.12	3.18	2.66	2.67
12	2.69	3.11	2.89	3.00	3.45	2.96	2.97	2.45	2.72	2.86	2.78	2.91
13	2.69	3.01	2.98	2.90	3.45	2.96	2.99	2.59	2.78	2.89	3.08	2.71
14	2.69	3.01	2.98	2.90	3.45	2.96	3.01	2.71	3.20	2.81	2.94	2.88
15	2.69	3.03	2.81	2.90	3.45	2.96	2.99	1.99	2.19	3.32	2.79	2.69
16	2.70	2.94	3.02	2.90	2.45	2.96	2.94	2.22	2.77	3.22	3.10	2.85
17	2.70	2.94	3.02	2.80	3.25	2.96	2.97	2.18	2.77	3.14	2.91	2.96
18	2.94	2.94	3.02	2.80	2.94	2.96	3.03	2.49	2.71	3.23	2.81	2.75
19	3.04	2.94	3.02	2.47	3.05	3.21	3.07	2.43	2.59	3.47	2.87	2.96
20	3.04	2.84	3.01	2.61	3.05	3.21	3.06	2.43	2.73	3.03	2.94	2.68
21	3.04	2.84	3.01	2.41	3.05	3.04	3.00	2.32	2.73	3.03	3.19	2.65
22	3.04	2.63	3.19	2.41	3.16	3.04	3.00	2.43	2.57	3.02	2.93	2.73
23	2.92	2.39	3.04	2.41	3.04	3.08	3.04	2.47	2.81	2.91	3.47	2.79
24	2.92	2.39	3.04	2.46	2.83	3.08	2.80	2.57	2.84	2.82	3.04	2.78
25	3.09	2.39	3.04	2.46	2.87	3.08	2.80	2.43	2.53	2.97	2.94	2.66
26	3.10	2.39	3.04	2.43	2.87	3.14	2.82	2.42	2.83	3.01	3.20	2.83
27	3.10	2.46	2.90	2.43	2.87	3.14	2.73	2.40	3.06	3.01	2.88	2.88
28	3.10	2.46	2.90	2.43	2.87	3.03	2.50	2.72	3.14	3.14	2.72	2.78
29	3.10		3.00	2.43	2.87	3.03	2.70	2.74	3.16	3.23	2.56	2.88
30	3.04		3.04	2.43	3.07	3.22	2.69	2.71	3.08	3.13	2.66	2.85
31	3.04		3.04		3.07		2.64	2.66		3.14		2.76

Total volume (MG)

1054.95

3237.53 Acre feet

Permit 47-8086 Amalgamated Sugar



CONTRACT 164 & 23

J.L. Daube

Legal Description:
NWSE
NESW

Section 26
Township 10 South
Range 17 East

Legend

-  Man Holes
-  Observation Wells
-  Tunnel Portals
-  Vertical Shafts
-  Wells
-  Drains
-  Tunnels
-  City Limits
-  Canals
-  Roads
-  Section Line
-  Parcels



This map is for informational and reference purposes only and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data, and information sources to ascertain the usability of information.

Created: 8/2016