



Grande Ronde Subbasin Gauging Station Operations

Project # 1992-026-01  
Contract #77023

Performance Period  
October 1, 2017 – September 30, 2018

R. Coby Menton  
Grande Ronde Model Watershed  
La Grande, Oregon

December 2018

Table of Contents

Abstract .....Page 3.

Summary .....Page 3.

Flow Data Availability.....Page 4.

Final Budget.....Page 4.

Map .....Page 5.

Flow Gauging Station Descriptions .....Page 6.

2016 Final Flow Records .....Page 7.

## **Abstract**

The GRB covers over 5,000 square miles and includes several thousand miles of perennial flowing streams. This project is in place to operate 12 existing stream gauges in combination with USGS (3 gauges), Idaho Power (1 gauge) and OWRD (one gauge) who, independent of this project, operate five additional gauges (Grande Ronde at Troy, Imnaha R. at Imnaha, Minam R. at Minam, Lookingglass Creek, and Upper Catherine Cr.) to characterize flow in both the Grande Ronde and Imnaha subbasins. These gauges are intended to inform and provide data for irrigation water management, fisheries management, long term flow and trend analysis, TMDL and SB1010 water quality management plan effectiveness, subbasin plan implementation, restoration project development and provide essential information regarding cumulative effects response to conservation in the GRB. Headwater characteristics, land management influence, and basin outlet data are all selectively collected in this network of 17 flow gauges.

## **Summary**

This project continued the operation, maintenance, record production and review of twelve flow gauges in the GRB. The intent of this project is to produce the highest quality data possible that informs other actions. This project does not analyze actions, rather it produces data that informs and provides base stream flow data for conservation, restoration, and research activities ongoing in the basin. This has been achieved through a production partnership between the GRMW and OWRD where OWRD completes all work and GRMW is the project sponsor.

The project follows accepted USGS standards and protocols for flow measurement, data collection, analysis and reporting. This protocol is the standard flow gauging technique, rigorous, and is accepted in the scientific community. For more information regarding the protocol see Protocol 2169 at [MonitoringMethods.org](http://MonitoringMethods.org).

Examples of entities commonly requesting flow monitoring data and examples of use in the GRB include:

1. Nez Perce Tribe. Fisheries and project development.
2. Confederated Tribe Umatilla Indian Reservation. Fisheries and project development.
3. Natural Resources Conservation Service. Project development.
4. Soil and Water Conservation Districts. Project development.
5. GRMW. Project development.
6. Municipalities. Safety and storm water management.
7. Irrigation districts/companies. Irrigation water management.
8. Consultants. Project development & research.
9. Academia. Research.
10. ODFW. Fisheries and project development.
11. ODEQ. TMDL development and permitting.
12. ODSL. Permitting.
13. USFWS and NMFS. Consultation.

**Flow Data Availability**

All data, including daily, monthly, and annual statistics generated from this project and previously collected flow data are available at the following website:

[http://apps.wrd.state.or.us/apps/sw/hydro\\_near\\_real\\_time/](http://apps.wrd.state.or.us/apps/sw/hydro_near_real_time/) . Select Grande Ronde Basin.

**Final Budget**

**OWRD Cost Breakdown**

<b>Gage Number</b>	<b>Stream Name and Location</b>	<b>OWRD's Cost to Operate a Gage</b>	<b>Final Cost to GRMWP</b>
13329770	Wallowa River above Cross Country Canal near Enterprise	\$21,062	\$16,000
13330000	Lostine River near Lostine	\$21,062	\$16,000
13330300	Lostine River at Baker Road near Lostine	\$21,062	\$16,000
13330500	Bear Creek near Wallowa	\$21,062	\$16,000
13331450	Wallowa River below Water Canyon near Wallowa	\$21,062	\$16,000
13317850	Grande Ronde River below Clear Creek near Starkey	\$21,062	\$16,000
13318960	Grande Ronde River near Perry	\$21,062	\$16,000
13318060	Meadow Creek above Bear Creek near Starkey	\$21,062	\$16,000
13318210	Meadow Creek below Dark Canyon near Starkey	\$21,062	\$16,000
13318920	Five Point Creek near Hilgard	\$21,062	\$16,000
13319900	North Fork Catherine Creek near Union	\$21,062	\$16,000
13320300	Catherine Creek at Union	\$21,062	\$16,000
	<b>Total</b>	<b>\$252,744</b>	<b>\$192,000</b>

<b>OWRD Tasks</b>	<b>Two Year Cost for 5 Wallowa County and 7 Union County Gaging Stations Water Years 2015-2016</b>
Measure Discharge & Temperature, Service Equipment, Data Download	\$75,440
Station Maintenance & Equipment Replacement	\$50,280
Data Processing	\$32,682
Rating Table Maintenance & Shifts	\$17,598
Manage Real-Time Data, Web site, WISKI Database, and Final Record Review & Report	\$16,000
<b>Total</b>	<b>\$192,000</b>

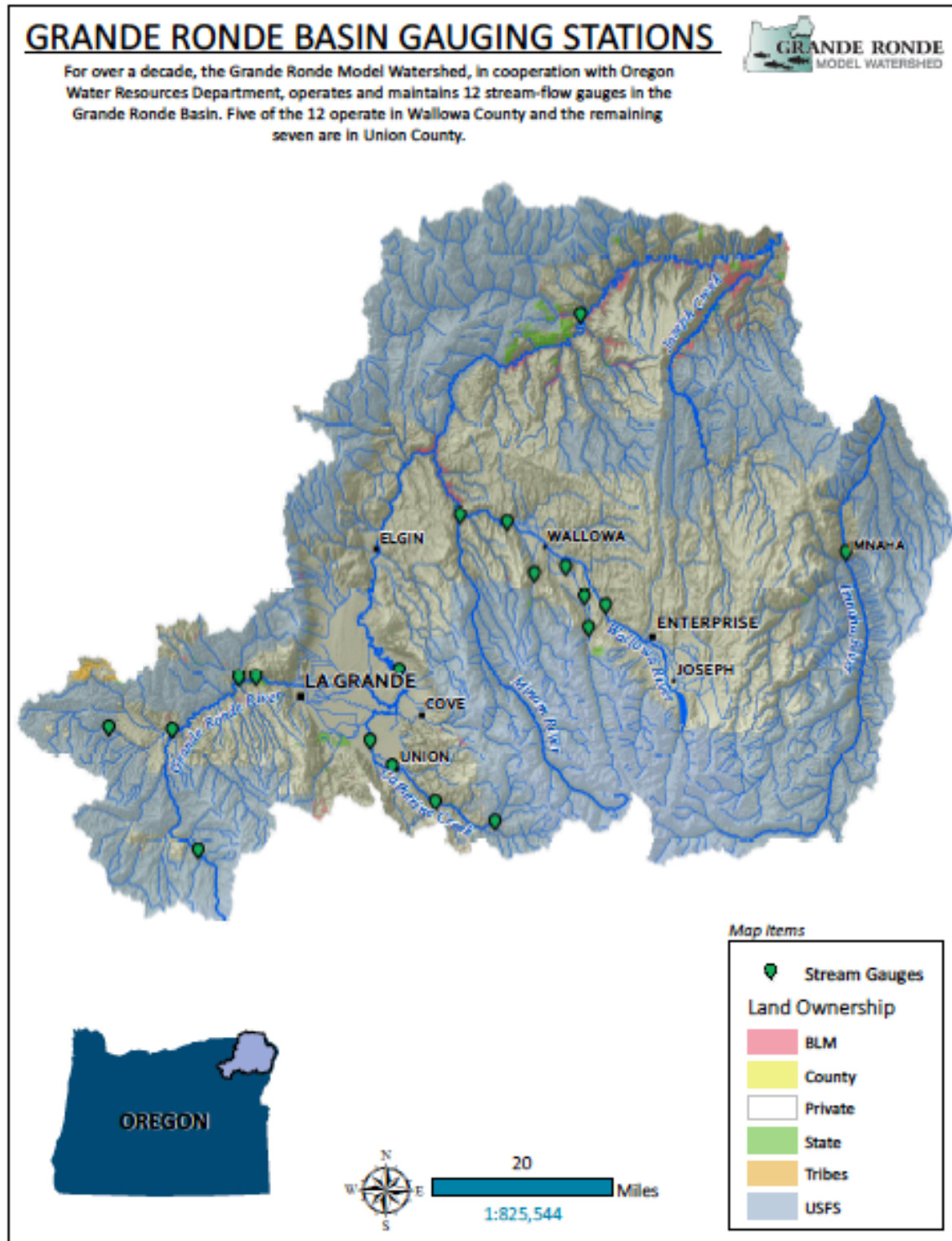
OWRD contribution = \$60,744 In-kind services over 2 water years and \$30,372 for 2018.

BPA Contribution = \$55,010 for 2018 Water Year.

OWEB Contribution = \$40,990 for 2018 Water Year.

Total 2017 Cost = \$126,372

# Map



### **Flow Gauging Station Descriptions**

13317850: Grande Ronde River below Clear Creek near Starkey; T.06S, R.36E, Sec. 4; Longitude 118 Degrees, 18 Minutes, 54 Seconds; Latitude 45 Degrees, 04 Minutes, 15 Seconds; Hydrologic unit 1706010405.

13318060: Meadow Creek above Bear Creek near Starkey; T.03S, R.34E, Sec. 35; Longitude 118 Degrees, 31 Minutes, 13 Seconds; 45 Degrees, 15 Minutes, 58 Seconds; Hydrologic unit 1706010416.

13318210: Meadow Creek below Dark Canyon Creek near Starkey; T.03S, R.35E, Sec. 36; Longitude 118 Degrees, 30 Minutes, 45 Seconds; 45 Degrees, 16 Minutes, 00 Seconds; Hydrologic unit 1706010417.

13318920: Five Point Creek at Hilgard; T.02S, R.37E, Sec. 31; Longitude 118 Degrees, 13 Minutes, 41 Seconds; Latitude 45 Degrees, 21 Minutes, 06 Seconds; Hydrologic unit 1706010419.

13319900: North Fork Catherine Creek near Medical Springs; T.05S, R.41E, Sec. 13; Longitude 117 Degrees, 37 Minutes, 57 Seconds; Latitude 45 Degrees, 07 Minutes, 45 Seconds; Hydrologic unit 1706010408.

13318960: Grande Ronde River near Perry; T.2S, R.37E, Sec. 33; Longitude 118 Degrees, 10 Minutes, 53 Seconds; Latitude 45 Degrees, 21 Minutes, 09 Seconds; Hydrologic unit 1706010405.

13320300: Catherine Creek at Union; T.4S, R.39E, Sec. 13; Longitude 117 Degrees, 52 Minutes, 10 Seconds; Latitude 45 Degrees, 12 Minutes, 43 Seconds; Hydrologic unit 1706010408.

13330500: Bear Creek near Wallowa; T1N, R43E, Sec. 34; Longitude 117 Degrees, 33 Minutes, 05 Seconds; Latitude 45 Degrees, 31 Minutes, 37 Seconds; Hydrologic Unit 1706010512.

13330000: Lostine River near Lostine; T1S, R43E, Sec. 34; Longitude 117 Degrees, 25 Minutes, 35 Seconds; Latitude 45 Degrees, 26 Minutes, 20 Seconds; Hydrologic Unit 1706010506.

13330300: Lostine River at Baker Road near Lostine; T1N, R43E, Sec. 29; Longitude 117 Degrees, 28 Minutes, 43 Seconds; Latitude 45 Degrees, 32 Minutes, 14 Seconds; Hydrologic Unit 1706010506.

13329765: Wallowa River near Enterprise; T1S, R43E, Sec. 13; Longitude 117 Degrees, 23 Minutes, 15 Seconds; Latitude 45 Degrees, 28 Minutes, 30 Seconds; Hydrologic Unit 1706010505.

13331450: Wallowa River below Water Canyon near Wallowa; T2N, R42E, Sec. 31; Longitude 117 Degrees, 36 Minutes, 55 Seconds; Latitude 45 Degrees, 36 Minutes, 30 Seconds; Hydrologic unit 1706010502.

**2017 Final Flow Records**

OREGON WATER RESOURCES DEPARTMENT												
13317850 GRANDE RONDE R BL CLEAR CR NR STARKEY												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	5.17	12.3	e8.50	e8.40	9.25	11.7	43.9	57.7	226	34.6	10.5	6.74
2	5.15	11.2	e8.50	e8.40	9.16	e10.0	43.7	58.2	206	33.5	10.3	6.46
3	5.51	10.5	e8.50	e8.40	9.18	e9.50	40.9	73.2	203	30.2	9.98	6.14
4	6.70	10.0	e8.50	e8.40	9.54	9.43	42.6	121	203	28.2	9.68	5.93
5	8.47	9.65	e8.50	8.36	9.75	e10.0	38.5	192	171	26.3	9.42	5.81
6	9.21	9.80	e8.50	8.39	9.95	e9.00	46.1	191	156	24.4	9.27	5.66
7	8.97	9.63	e8.50	8.53	9.58	e9.00	66.9	150	150	22.8	9.26	5.62
8	7.94	9.26	e8.50	9.42	9.67	9.11	61.0	143	148	21.6	9.05	6.23
9	6.99	9.06	e8.50	10.8	e10.0	10.3	52.1	152	156	20.5	8.76	7.24
10	7.51	8.83	e8.50	10.1	e10.0	17.7	47.8	171	140	19.7	8.71	6.48
11	7.42	8.77	e8.50	9.81	e10.0	e22.0	44.8	190	117	18.9	9.18	6.26
12	6.87	8.66	e8.50	9.43	e10.0	15.4	46.0	182	111	18.2	10.1	5.88
13	8.10	8.51	e8.50	9.17	e10.0	14.3	61.5	151	100	17.3	10.7	5.86
14	16.0	8.92	e8.50	9.08	e10.0	19.4	54.5	131	89.8	16.6	10.4	5.91
15	12.6	10.8	e8.50	9.00	e10.0	41.6	50.3	118	86.0	16.1	9.39	6.61
16	16.8	10.7	e8.50	8.95	e10.0	69.0	48.4	114	95.9	15.4	8.99	6.40
17	11.6	9.50	e8.40	9.06	e10.0	44.5	51.7	104	83.5	14.9	8.71	6.32
18	11.0	e9.30	e8.40	19.0	e10.0	82.7	51.6	110	76.3	14.5	8.41	7.55
19	10.8	8.93	e8.40	60.2	e10.0	94.2	50.7	111	73.1	14.4	8.29	10.6
20	10.5	8.98	e8.40	23.3	e11.0	67.4	53.0	117	70.2	13.8	8.32	12.7
21	12.2	9.23	e8.40	12.7	11.1	78.7	49.6	139	65.3	13.4	8.24	11.5
22	12.6	9.10	e8.40	11.1	10.4	74.2	50.7	175	60.6	13.0	8.07	10.6
23	10.7	8.84	e8.40	10.5	e12.4	58.5	59.5	218	56.2	12.7	7.90	10.2
24	9.64	e8.80	e8.40	10.2	e12.4	51.2	63.4	233	52.8	12.3	8.06	10.2
25	9.82	8.54	e8.40	9.91	e12.4	45.6	60.5	196	49.5	12.1	7.94	10.1
26	14.9	8.65	e8.40	9.73	e12.4	41.7	66.7	179	49.6	11.8	7.58	10.5
27	11.4	8.57	e8.40	9.35	12.3	39.5	64.2	180	48.2	11.9	7.33	9.92
28	10.7	8.52	e8.40	9.51	13.1	35.7	59.0	191	43.8	11.9	7.14	9.14
29	10.4	e8.50	e8.40	9.64	---	41.4	55.8	201	41.3	13.3	7.09	8.61
30	13.5	e8.50	e8.40	9.57	---	57.8	57.3	217	37.7	11.5	6.87	8.94
31	17.6	---	e8.40	9.52	---	46.6	---	231	---	10.9	6.75	---
<b>Total</b>	317	281	262	368	294	1147	1583	4797	3167	557	270	236
<b>Mean</b>	10.2	9.35	8.45	11.9	10.5	37.0	52.8	155	106	18.0	8.72	7.87
<b>Max</b>	17.6	12.3	8.50	60.2	13.1	94.2	66.9	233	226	34.6	10.7	12.7
<b>Min</b>	5.15	8.50	8.40	8.36	9.16	9.00	38.5	57.7	37.7	10.9	6.75	5.62
<b>AC-FT</b>	628	556	520	730	582	2275	3139	9515	6281	1104	536	468
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	8224	<b>MEAN</b>	22.5	<b>MAX</b>	153	<b>MIN</b>	4.58	<b>AC-FT</b>	16310	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	13280	<b>MEAN</b>	36.4	<b>MAX</b>	233	<b>MIN</b>	5.15	<b>AC-FT</b>	26340	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 11:08			<b>by nudcde</b>		

OREGON WATER RESOURCES DEPARTMENT												
13318060 MEADOW CR AB BEAR CR NR STARKEY												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	1.65	5.65	e6.40	e4.20	e6.00	41.9	201	107	10.5	2.64	1.26	0.94
2	1.65	4.58	e5.91	e3.71	e10.0	37.8	184	97.7	9.90	2.47	1.16	0.93
3	1.70	4.12	6.48	e3.55	16.9	36.6	158	87.0	8.58	2.31	1.12	0.90
4	1.86	3.87	6.60	e3.66	20.5	40.6	134	75.2	9.55	2.19	1.12	0.90
5	2.15	3.72	e6.07	e4.00	24.0	41.7	123	70.0	9.69	2.06	1.11	0.93
6	2.05	3.85	e5.49	e4.00	26.5	40.3	135	66.8	7.65	1.90	1.14	0.94
7	2.34	3.68	e5.30	e4.00	28.0	40.6	160	56.5	6.74	1.79	1.17	0.96
8	2.27	3.44	e5.20	e4.00	29.9	55.7	161	48.4	7.28	1.65	1.20	1.00
9	1.95	3.28	e5.57	e5.00	42.4	178	135	42.8	11.6	1.58	1.13	1.01
10	2.07	3.08	e5.60	e5.00	138	350	116	37.9	10.8	1.58	1.13	1.01
11	1.92	3.05	e5.03	e5.00	124	297	99.6	34.3	9.21	1.58	1.18	0.99
12	1.80	3.03	e4.46	e5.00	87.8	229	92.0	36.1	7.94	1.50	1.58	0.99
13	2.07	3.01	e4.20	e5.00	71.6	204	111	36.7	6.96	1.45	1.68	0.97
14	3.24	3.65	e4.44	e5.00	63.1	269	110	33.8	6.08	1.41	1.56	1.01
15	3.04	4.75	e4.33	e5.00	58.7	412	103	30.2	5.91	1.33	1.47	1.06
16	3.09	4.42	e4.46	e5.00	97.9	486	93.8	36.6	6.67	1.29	1.43	1.08
17	2.58	3.98	e3.78	e5.00	178	323	90.6	39.3	6.34	1.28	1.38	1.10
18	2.57	3.49	e4.02	e5.00	140	393	99.6	38.9	5.33	1.25	1.28	1.36
19	2.51	3.93	e4.64	e5.00	132	422	102	36.6	4.81	1.19	1.21	2.10
20	2.31	4.22	e5.09	e5.00	119	305	103	34.2	4.27	1.27	1.21	3.61
21	2.45	5.12	e5.10	e5.00	167	269	95.7	31.2	3.87	1.30	1.24	3.24
22	2.90	4.86	e5.00	e6.00	161	263	88.0	27.8	4.08	1.29	1.20	2.54
23	2.52	5.52	e5.22	e6.00	120	234	85.1	24.6	3.75	1.24	1.18	2.12
24	2.28	5.32	e5.24	e6.00	90.9	223	96.3	21.7	3.42	1.23	1.28	1.96
25	2.59	5.42	e4.71	e6.00	77.3	239	129	20.3	3.16	1.19	1.16	1.92
26	4.13	5.85	e4.23	e6.00	67.3	212	181	18.9	3.24	1.18	1.12	1.90
27	3.71	6.08	e4.72	e6.00	55.7	223	230	16.6	3.28	1.22	1.06	1.86
28	3.44	6.51	e4.73	e6.00	48.0	210	191	15.0	3.06	1.19	1.01	1.78
29	3.77	6.43	e4.75	e6.00	---	224	153	12.5	2.82	1.19	0.98	1.76
30	6.20	6.20	e4.74	e6.00	---	275	128	11.0	2.82	1.21	0.95	1.81
31	8.78	---	e4.20	e6.00	---	241	---	10.6	---	1.32	0.93	---
<b>Total</b>	87.6	134	156	156	2202	6816	3889	1256	189	47.3	37.6	44.7
<b>Mean</b>	2.83	4.47	5.02	5.04	78.6	220	130	40.5	6.31	1.52	1.21	1.49
<b>Max</b>	8.78	6.51	6.60	6.00	178	486	230	107	11.6	2.64	1.68	3.61
<b>Min</b>	1.65	3.01	3.78	3.55	6.00	36.6	85.1	10.6	2.82	1.18	0.93	0.90
<b>AC-FT</b>	174	266	309	310	4367	13520	7713	2492	375	93.8	74.6	88.6
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	8453	<b>MEAN</b>	23.1	<b>MAX</b>	208	<b>MIN</b>	1.0	<b>AC-FT</b>	16770	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	15020	<b>MEAN</b>	41.1	<b>MAX</b>	486	<b>MIN</b>	0.90	<b>AC-FT</b>	29780	
<b>Legend:</b>	'e' Estimated											
					<b>Created on</b>		12/13/18 11:12			<b>by</b>	nuddce	

OREGON WATER RESOURCES DEPARTMENT												
13318210 MEADOW CR BL DARK CANYON NR STARKEY												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	3.94	12.8	11.7	e8.00	e10.0	120	526	300	26.1	6.23	1.84	2.16
2	3.92	10.2	e11.0	e7.00	e10.0	110	476	269	25.1	5.77	1.79	2.15
3	4.09	9.19	13.2	e7.00	e15.0	115	417	231	22.6	5.30	1.76	2.10
4	4.67	8.66	13.7	e7.00	e15.0	153	345	199	21.7	5.04	1.76	2.08
5	5.54	8.35	e12.6	e7.00	e20.0	177	306	178	23.0	4.70	1.71	2.17
6	5.30	8.80	e11.4	e6.00	e20.0	164	312	165	20.1	4.28	1.79	2.24
7	5.65	8.54	e11.0	e7.00	e25.0	155	336	142	18.1	3.90	1.91	2.31
8	5.80	8.15	e10.8	e8.00	e25.0	272	343	121	17.7	3.57	2.01	2.63
9	5.24	7.78	e11.0	e8.00	e50.0	742	299	105	25.5	3.35	1.91	3.15
10	4.99	7.60	e10.0	e8.00	553	1210	258	90.6	26.1	3.25	1.88	2.72
11	4.93	7.41	e10.0	e7.00	376	972	221	79.5	24.0	3.22	1.86	2.68
12	4.66	7.39	e9.00	e8.00	250	748	202	79.3	20.9	3.14	2.34	2.65
13	4.91	7.38	e9.00	e8.00	199	652	236	85.7	18.5	3.00	2.83	2.63
14	6.57	7.81	e8.00	e8.00	194	797	238	80.9	16.6	2.81	2.91	2.66
15	7.32	9.40	e8.00	e8.00	165	1180	227	69.4	15.8	2.62	2.63	2.80
16	7.52	9.71	e8.00	e8.00	439	1480	209	73.2	16.6	2.50	2.47	2.91
17	6.67	9.02	e7.00	e8.00	631	961	203	84.3	16.5	2.51	2.33	3.02
18	6.33	8.39	e8.00	e8.00	492	1050	220	83.6	14.5	2.51	2.20	3.51
19	6.44	8.73	e8.00	e10.0	473	1240	233	78.1	13.1	2.41	2.12	4.71
20	6.06	8.75	e10.0	e10.0	530	857	236	72.8	11.6	2.36	2.16	6.65
21	6.39	9.85	e9.00	e10.0	708	702	222	66.3	10.4	2.42	2.18	7.25
22	7.60	10.1	e10.0	e10.0	559	670	203	58.3	9.56	2.40	2.22	5.90
23	6.79	10.7	e10.0	e10.0	377	601	194	51.1	8.96	2.33	2.23	5.09
24	6.25	11.2	e10.0	e10.0	273	547	223	44.6	8.34	2.23	2.55	4.63
25	6.61	10.7	e9.00	e10.0	211	599	309	40.8	7.82	2.17	2.65	4.44
26	9.29	11.0	e8.00	e10.0	186	519	474	38.4	9.21	2.12	2.50	4.28
27	8.59	11.4	e9.00	e10.0	159	583	654	35.0	10.5	2.10	2.39	4.17
28	8.07	12.7	e9.00	e10.0	139	573	537	32.1	8.34	2.02	2.29	4.11
29	8.54	13.0	e9.00	e10.0	---	567	425	29.3	7.30	1.96	2.31	4.01
30	11.4	12.8	e9.00	e10.0	---	740	358	27.2	6.73	1.90	2.19	4.00
31	16.4	---	e8.00	e10.0	---	656	---	26.1	---	1.87	2.13	---
<b>Total</b>	206	288	301	266	7104	19910	9442	3037	481	96.0	67.8	106
<b>Mean</b>	6.66	9.58	9.73	8.58	254	643	315	98.0	16.0	3.10	2.19	3.53
<b>Max</b>	16.4	13.0	13.7	10.0	708	1480	654	300	26.1	6.23	2.91	7.25
<b>Min</b>	3.92	7.38	7.00	6.00	10.0	110	194	26.1	6.73	1.87	1.71	2.08
<b>AC-FT</b>	410	570	598	528	14090	39500	18730	6023	955	190	135	210
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	32890	<b>MEAN</b>	89.9	<b>MAX</b>	1470	<b>MIN</b>	1.71	<b>AC-FT</b>	65230	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	41310	<b>MEAN</b>	113	<b>MAX</b>	1480	<b>MIN</b>	1.71	<b>AC-FT</b>	81930	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 11:14			<b>by nudcde</b>		

OREGON WATER RESOURCES DEPARTMENT												
13318920 FIVE POINTS CR AT HILGARD												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	e0.70	7.99	9.32	e8.67	e8.00	46.1	436	229	50.8	6.60	0.68	0.21
2	e0.70	6.31	8.91	e9.14	9.08	41.8	376	200	45.1	6.03	0.64	0.21
3	e0.80	5.29	9.30	e9.90	8.93	41.4	320	194	40.3	5.42	0.60	0.19
4	e0.90	4.57	10.9	e9.62	9.42	49.2	266	239	37.6	5.03	0.57	0.18
5	1.10	4.01	10.5	e9.71	10.3	57.5	234	347	33.8	4.56	0.54	0.18
6	1.39	3.85	10.4	e7.60	12.6	59.0	254	325	29.8	4.12	0.53	0.18
7	1.85	3.67	8.30	e9.23	15.3	56.8	309	226	27.3	3.75	0.51	0.18
8	1.97	3.39	9.02	e9.81	16.3	62.1	316	174	27.0	3.34	0.50	0.19
9	1.62	3.10	10.3	e11.0	26.8	181	249	153	34.9	3.06	0.48	0.19
10	1.49	2.88	10.3	e11.0	55.7	476	198	e145	35.6	2.91	0.46	0.20
11	1.35	2.72	9.50	e9.38	63.6	435	162	151	29.5	2.81	0.44	0.20
12	1.24	2.59	9.71	e8.80	55.9	353	148	145	25.9	2.60	0.41	0.21
13	1.38	2.60	9.16	e9.12	48.9	318	174	125	23.3	2.38	0.42	0.22
14	2.62	2.85	9.02	e9.03	46.4	448	171	106	21.2	2.17	0.41	0.26
15	2.68	3.62	9.57	e9.02	50.7	586	153	90.2	20.5	2.01	0.43	0.26
16	3.07	4.08	9.32	e9.00	86.1	740	139	92.2	21.2	1.92	0.43	0.27
17	2.78	4.40	e8.87	e9.00	128	567	140	95.2	19.6	1.82	0.40	0.29
18	3.16	4.10	e9.09	e9.00	153	587	155	97.0	17.4	1.71	0.37	0.34
19	3.58	3.89	e9.41	e9.00	181	655	167	96.0	15.8	1.57	0.34	0.42
20	3.39	3.77	e12.0	8.17	169	528	188	95.5	14.3	1.49	0.33	0.65
21	3.57	4.22	e11.3	7.57	241	554	184	96.2	13.2	1.44	0.31	1.04
22	3.99	5.02	e11.5	7.65	205	569	183	99.7	12.1	1.37	0.29	1.05
23	3.57	6.05	9.19	7.63	139	470	186	103	11.2	1.27	0.28	0.97
24	3.23	6.65	9.66	7.63	104	430	210	104	10.3	1.18	0.27	0.90
25	3.14	6.36	9.28	7.77	82.6	411	248	90.5	9.42	1.11	0.27	0.81
26	4.52	7.12	e9.59	8.03	70.5	366	369	76.0	9.37	1.07	0.26	0.75
27	4.60	7.18	e9.77	e8.00	61.7	427	464	67.7	9.75	1.02	0.26	0.73
28	4.61	8.31	9.74	e8.00	53.7	416	387	63.1	8.95	0.93	0.25	0.68
29	4.57	9.18	9.02	e8.00	---	523	307	60.9	8.07	0.85	0.24	0.68
30	6.32	9.64	9.18	8.63	---	676	261	58.4	7.37	0.78	0.23	0.69
31	8.49	---	e10.5	8.68	---	536	---	56.2	---	0.72	0.22	---
<b>Total</b>	88.4	149	302	273	2113	11670	7354	4201	671	77.0	12.4	13.3
<b>Mean</b>	2.85	4.98	9.73	8.80	75.4	376	245	136	22.4	2.49	0.40	0.44
<b>Max</b>	8.49	9.64	12.0	11.0	241	740	464	347	50.8	6.60	0.68	1.05
<b>Min</b>	0.70	2.59	8.30	7.57	8.00	41.4	139	56.2	7.37	0.72	0.22	0.18
<b>AC-FT</b>	175	296	598	541	4190	23140	14590	8332	1330	153	24.5	26.4
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	19770	<b>MEAN</b>	54.0	<b>MAX</b>	581	<b>MIN</b>	0.17	<b>AC-FT</b>	39210	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	26920	<b>MEAN</b>	73.8	<b>MAX</b>	740	<b>MIN</b>	0.18	<b>AC-FT</b>	53390	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 11:17			<b>by nuddce</b>		

**OREGON WATER RESOURCES DEPARTMENT**

**13318960 GRANDE RONDE R NR PERRY  
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017  
Daily Mean Values**

Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	16.1	73.3	54.4	e46.4	e60.0	335	1990	1370	551	95.0	21.1	12.3
2	16.0	57.2	49.9	e44.1	e55.0	309	1770	1270	541	93.7	20.5	11.9
3	16.5	49.7	60.1	e45.0	e55.0	319	1550	1220	466	87.4	18.8	11.4
4	19.4	45.5	64.0	e45.0	e65.0	387	1340	1310	454	81.1	15.3	10.9
5	22.3	42.8	e43.2	e40.0	e110	449	1190	1740	412	76.6	17.3	10.9
6	24.9	42.3	e38.9	e40.0	e350	417	1190	1920	358	71.8	18.8	10.9
7	28.2	41.6	e38.9	e45.0	468	394	1310	1560	328	64.6	19.8	11.0
8	28.9	40.4	e41.5	e50.0	433	501	1410	1310	315	57.2	19.7	12.0
9	26.1	38.5	e46.3	e50.0	413	1290	1300	1170	362	52.5	13.8	13.9
10	23.8	37.6	e51.5	e50.0	1030	2430	1120	1110	357	49.2	14.9	18.7
11	23.4	36.3	e55.3	e45.9	945	2310	976	1150	321	45.2	15.5	16.2
12	24.0	35.3	e50.8	e37.4	623	1910	896	1180	282	44.3	15.5	15.0
13	24.9	35.3	e47.3	e36.4	490	1680	1010	1080	256	41.1	17.7	14.3
14	28.3	36.9	e48.0	e28.7	445	2000	1020	937	227	38.8	21.9	14.2
15	44.6	41.2	e51.3	e32.0	428	2810	989	798	212	38.3	23.9	14.9
16	44.4	46.6	e48.1	e38.3	830	4080	928	748	220	35.1	21.5	17.1
17	49.4	47.6	e43.9	e62.2	1350	2980	912	754	217	35.6	19.3	18.4
18	42.2	43.3	e45.3	e89.2	1190	2960	952	707	189	34.8	17.0	20.3
19	40.0	41.5	e49.0	e108	1240	3710	1000	684	174	32.8	16.0	27.5
20	39.4	42.9	e61.1	e132	1240	2830	1040	669	160	32.8	16.1	38.3
21	39.0	44.4	e55.0	e149	1550	2470	1030	688	148	26.6	16.2	47.3
22	44.2	46.7	e50.8	e133	1340	2450	988	761	137	28.4	16.2	42.2
23	44.0	48.4	e50.5	e98.8	945	2170	1000	833	131	31.2	16.3	35.4
24	38.8	50.0	e50.9	e80.0	692	1930	1140	904	125	23.4	16.5	31.5
25	36.2	47.7	e50.7	e80.0	537	1930	1310	827	116	24.3	16.1	29.6
26	44.7	48.2	e47.5	e75.0	506	1700	1730	714	118	25.7	16.0	28.1
27	54.8	49.2	e49.4	e70.0	435	1880	2290	645	125	24.5	15.2	26.6
28	47.6	53.3	e48.1	e65.0	380	1810	2050	605	108	22.4	14.6	25.2
29	46.1	57.1	e49.4	e65.0	---	1940	1720	588	98.7	25.0	14.3	23.8
30	55.2	58.0	e48.9	e60.0	---	2700	1510	572	95.2	25.8	13.2	22.8
31	73.1	---	e46.7	e60.0	---	2330	---	585	---	22.5	12.7	---
<b>Total</b>	1106	1379	1537	2001	18200	57410	38660	30410	7604	1388	532	633
<b>Mean</b>	35.7	46.0	49.6	64.6	650	1852	1289	981	254	44.8	17.2	21.1
<b>Max</b>	73.1	73.3	64.0	149	1550	4080	2290	1920	551	95.0	23.9	47.3
<b>Min</b>	16.0	35.3	38.9	28.7	55.0	309	896	572	95.2	22.4	12.7	10.9
<b>AC-FT</b>	2195	2735	3048	3970	36110	113900	76680	60320	15080	2753	1055	1255
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	98520	<b>MEAN</b>	269	<b>MAX</b>	3430	<b>MIN</b>	11.5	<b>AC-FT</b>	195400	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	160900	<b>MEAN</b>	441	<b>MAX</b>	4080	<b>MIN</b>	10.9	<b>AC-FT</b>	319100	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 11:18			<b>by nuddce</b>		

OREGON WATER RESOURCES DEPARTMENT												
13319900 N FK CATHERINE CR NR MEDICAL SPRINGS												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	12.9	26.7	17.8	e13.3	13.1	18.3	101	118	382	101	24.6	15.0
2	12.9	24.9	e17.0	e13.4	12.9	17.6	94.9	118	397	96.6	23.8	14.7
3	13.1	23.6	e17.0	e13.4	13.4	17.3	87.1	132	322	90.9	23.2	14.2
4	15.0	22.6	17.2	e13.2	13.7	18.0	81.5	188	329	85.3	22.6	14.0
5	15.2	21.6	e17.0	e13.0	13.8	18.6	78.5	327	354	79.7	22.4	13.9
6	14.9	21.5	e16.0	e12.9	14.2	18.7	89.8	431	336	76.5	22.0	13.8
7	18.2	20.3	e16.0	e13.2	14.2	18.6	123	386	351	71.3	21.8	13.8
8	16.6	19.7	e16.0	e13.5	14.2	18.2	129	358	360	66.5	20.9	13.8
9	14.6	19.1	e16.0	e13.7	18.8	22.8	112	363	316	62.0	20.5	13.9
10	14.4	18.5	e17.0	e14.0	23.9	46.8	98.7	393	266	57.7	20.3	13.8
11	14.1	18.1	e16.0	e14.0	21.5	51.1	87.7	454	229	54.4	19.8	13.6
12	13.9	17.6	e16.0	13.6	19.7	49.1	84.7	480	225	51.6	19.7	13.5
13	18.1	17.4	e15.0	13.4	18.8	49.5	113	426	215	49.0	21.4	13.7
14	19.7	20.4	e15.0	13.7	18.8	58.8	110	326	201	47.0	20.5	13.7
15	22.5	25.3	e15.0	13.5	20.0	76.0	103	279	197	45.2	19.5	13.4
16	26.4	22.0	e15.0	13.8	27.0	101	94.5	254	232	43.2	18.8	12.7
17	23.2	20.0	e14.1	14.3	29.5	88.7	107	221	223	41.6	18.5	12.6
18	21.3	18.7	e13.9	14.0	32.9	91.3	112	203	218	40.0	17.9	18.3
19	19.3	19.0	e13.8	14.0	36.2	120	117	197	233	38.6	17.8	23.3
20	18.9	19.5	e14.2	13.9	33.9	118	120	208	268	37.2	17.5	28.2
21	27.0	19.3	e13.9	13.9	38.7	151	116	247	239	36.0	17.4	22.9
22	24.2	18.5	e14.0	13.7	35.8	171	112	334	215	34.7	17.0	22.4
23	20.5	19.3	e14.1	13.6	30.5	137	122	396	174	33.6	16.7	18.3
24	19.2	18.5	e14.4	13.5	26.4	118	127	318	155	32.5	16.8	18.0
25	20.6	18.3	e14.4	13.5	23.5	102	129	279	155	31.5	16.5	12.9
26	26.7	18.0	e14.0	13.5	21.9	93.0	133	252	148	30.6	16.0	13.0
27	22.3	17.9	e13.9	13.0	20.7	86.2	134	242	145	29.6	15.6	12.0
28	21.0	16.7	e13.9	13.2	19.7	79.6	126	253	128	28.9	15.5	12.9
29	21.7	19.2	e13.9	13.2	---	92.8	115	288	116	27.9	15.3	11.4
30	27.7	18.1	e13.6	13.2	---	114	116	316	107	26.5	15.6	13.9
31	29.9	---	e13.4	13.4	---	107	---	364	---	25.7	15.6	---
<b>Total</b>	606	600	468	420	628	2270	3274	9151	7236	1573	592	462
<b>Mean</b>	19.5	20.0	15.1	13.5	22.4	73.2	109	295	241	50.7	19.1	15.4
<b>Max</b>	29.9	26.7	17.8	14.3	38.7	171	134	480	397	101	24.6	28.2
<b>Min</b>	12.9	16.7	13.4	12.9	12.9	17.3	78.5	118	107	25.7	15.3	11.4
<b>AC-FT</b>	1202	1191	929	832	1245	4503	6495	18150	14350	3120	1173	916
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	20510	<b>MEAN</b>	56.0	<b>MAX</b>	332	<b>MIN</b>	12.8	<b>AC-FT</b>	40680	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	27280	<b>MEAN</b>	74.7	<b>MAX</b>	480	<b>MIN</b>	11.4	<b>AC-FT</b>	54110	
<b>Legend:</b>	e' Estimated				<b>Created on</b>		12/13/18 11:20			<b>by nuddce</b>		

**OREGON WATER RESOURCES DEPARTMENT**

**13320300 CATHERINE CR AT UNION  
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017  
Daily Mean Values**

Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	12.3	46.6	32.6	e22.0	e20.0	46.4	270	321	523	96.0	12.6	9.10
2	12.4	42.1	27.5	e22.0	e20.0	42.4	257	312	445	88.7	11.3	9.15
3	12.5	39.1	34.7	e22.0	e21.0	40.9	243	332	430	80.3	9.67	8.32
4	14.2	36.4	34.9	e22.0	e22.0	42.7	228	408	427	73.2	10.5	7.70
5	17.1	34.2	32.3	e21.0	e22.0	46.9	218	611	383	67.6	11.4	7.43
6	15.7	33.8	e29.0	e21.0	e22.0	44.4	235	727	345	59.3	9.03	8.50
7	15.9	32.8	e28.0	e21.0	e22.0	43.8	316	584	345	52.2	9.11	8.27
8	19.6	31.3	e28.0	e22.0	e24.0	45.6	348	517	386	46.5	8.44	8.60
9	15.3	30.9	e28.0	e22.0	e45.0	52.4	306	501	363	40.9	10.2	8.57
10	14.6	30.4	e28.0	e21.0	e60.0	90.7	271	510	298	37.2	11.2	8.80
11	14.7	29.8	e27.0	e21.0	e55.0	122	243	557	247	34.5	10.3	9.48
12	14.5	29.2	e27.0	e21.0	e52.0	128	232	583	242	30.0	11.0	9.17
13	15.5	28.9	e27.0	e20.0	e50.0	131	303	498	228	28.4	11.9	9.10
14	29.6	29.4	e27.0	e20.0	e50.0	149	313	425	215	23.5	12.1	8.82
15	24.9	40.6	e26.0	e20.0	e48.0	199	293	360	204	19.8	8.96	8.83
16	43.3	39.8	e26.0	e20.0	71.9	260	272	338	258	16.9	6.81	8.72
17	32.5	34.5	e26.0	e20.0	84.7	251	297	310	231	16.0	7.96	9.02
18	31.1	30.7	e26.0	e21.0	108	250	312	282	215	14.4	9.47	12.0
19	27.9	32.4	e25.0	e23.0	135	310	319	274	225	13.6	8.84	20.5
20	23.9	32.8	e25.0	e23.0	127	299	334	279	248	12.3	9.91	22.6
21	31.5	34.5	e25.0	e22.0	149	337	308	303	237	14.2	9.43	20.0
22	32.2	31.3	e25.0	e21.0	131	395	297	359	204	16.2	8.80	16.0
23	28.0	33.4	e24.0	e21.0	102	341	311	456	181	14.7	8.83	19.3
24	27.4	33.0	e24.0	e20.0	80.3	317	337	563	169	14.1	8.71	22.1
25	27.6	31.9	e23.0	e20.0	71.7	286	327	509	162	16.3	8.90	20.0
26	40.5	31.6	e24.0	e20.0	62.3	256	344	443	153	15.6	9.07	18.0
27	35.2	31.2	e23.0	e20.0	56.6	250	352	434	142	16.8	9.28	16.7
28	33.5	30.7	e23.0	e20.0	52.2	234	345	456	127	16.4	9.18	14.6
29	33.9	35.9	e23.0	e20.0	---	246	320	507	114	16.6	9.28	14.1
30	49.8	34.2	e23.0	e20.0	---	295	315	552	109	15.5	8.85	16.0
31	51.6	---	e22.0	e20.0	---	283	---	594	---	13.9	10.3	---
<b>Total</b>	799	1013	824	649	1765	5835	8866	13900	7856	1022	301	379
<b>Mean</b>	25.8	33.8	26.6	20.9	63.0	188	296	449	262	33.0	9.72	12.7
<b>Max</b>	51.6	46.6	34.9	23.0	149	395	352	727	523	96.0	12.6	22.6
<b>Min</b>	12.3	28.9	22.0	20.0	20.0	40.9	218	274	109	12.3	6.81	7.43
<b>AC-FT</b>	1584	2010	1634	1287	3500	11570	17590	27580	15580	2026	598	753
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	31290	<b>MEAN</b>	85.5	<b>MAX</b>	487	<b>MIN</b>	2.31	<b>AC-FT</b>	62070	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	43210	<b>MEAN</b>	118	<b>MAX</b>	727	<b>MIN</b>	6.81	<b>AC-FT</b>	85720	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 11:21			<b>by nuddce</b>		

OREGON WATER RESOURCES DEPARTMENT												
13329765 WALLOWA R NR ENTERPRISE												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	170	251	165	e160	131	213	526	349	735	682	173	188
2	169	229	160	160	132	209	521	348	696	712	174	192
3	180	203	165	e160	133	206	510	347	697	705	175	191
4	177	197	174	e150	141	211	504	354	762	673	181	196
5	174	191	154	e150	152	216	499	492	797	649	178	188
6	167	186	156	e145	215	225	515	629	713	664	182	188
7	162	181	150	e145	175	229	545	558	729	670	183	188
8	160	177	e140	e155	151	240	536	523	853	668	191	185
9	161	175	151	164	347	272	508	537	886	619	192	189
10	163	172	162	161	382	305	417	570	853	589	196	193
11	162	172	162	163	273	307	385	631	744	523	197	193
12	165	170	167	165	226	303	357	648	737	458	201	189
13	178	167	163	e140	204	295	335	643	657	380	204	188
14	227	172	173	e140	199	301	322	628	602	317	215	187
15	206	197	185	e140	206	337	324	603	597	297	214	187
16	254	195	179	e140	337	405	316	585	884	295	191	189
17	216	183	e165	e145	282	381	326	580	787	286	192	193
18	203	175	e155	153	249	457	317	568	804	272	193	191
19	191	178	e155	154	249	615	304	545	879	248	196	207
20	187	182	168	146	244	620	298	531	932	229	196	223
21	188	185	167	139	256	632	284	492	895	191	193	214
22	195	188	e160	138	247	654	266	515	791	157	196	242
23	187	188	166	135	231	649	293	605	682	159	200	248
24	183	185	172	135	221	612	308	637	704	158	193	253
25	193	181	171	136	217	570	295	592	733	160	187	250
26	286	180	e165	137	219	532	301	507	784	162	189	246
27	260	178	170	133	215	520	302	501	804	167	196	241
28	252	179	167	130	213	510	351	513	777	170	195	244
29	233	171	165	133	---	530	352	555	699	171	192	245
30	293	167	169	134	---	548	350	627	673	170	191	260
31	298	---	e165	135	---	522	---	649	---	172	187	---
<b>Total</b>	6240	5555	5086	4521	6247	12630	11470	16860	22890	11770	5943	6288
<b>Mean</b>	201	185	164	146	223	407	382	544	763	380	192	210
<b>Max</b>	298	251	185	165	382	654	545	649	932	712	215	260
<b>Min</b>	160	167	140	130	131	206	266	347	597	157	173	185
<b>AC-FT</b>	12380	11020	10090	8967	12390	25040	22740	33450	45390	23350	11790	12470
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	76280	<b>MEAN</b>	208	<b>MAX</b>	598	<b>MIN</b>	102	<b>AC-FT</b>	151300	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	115500	<b>MEAN</b>	316	<b>MAX</b>	932	<b>MIN</b>	130	<b>AC-FT</b>	229100	
<b>Legend:</b>	e' Estimated				<b>Created on</b>		12/13/18 11:23			<b>by nuddce</b>		

**OREGON WATER RESOURCES DEPARTMENT**

**13330000 LOSTINE R NR LOSTINE  
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017  
Daily Mean Values**

Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	29.3	199	70.7	e44.0	e36.0	68.0	214	157	1350	729	138	43.8
2	29.3	172	65.0	e44.0	e34.0	65.4	211	156	1180	778	131	41.8
3	29.3	153	67.5	e42.0	e32.0	64.1	196	174	1150	773	123	40.6
4	30.1	140	65.4	e44.0	e34.0	66.0	182	274	1250	685	117	46.1
5	30.9	129	58.7	e44.0	e36.0	65.0	175	577	1110	665	112	46.6
6	30.3	124	e58.9	e46.0	e45.0	61.6	218	705	958	710	107	45.5
7	35.4	114	e46.9	e46.0	e38.0	60.7	291	544	1070	702	101	44.8
8	47.6	110	e47.0	e48.0	e36.0	67.0	286	465	1270	669	95.5	44.3
9	35.9	107	59.2	e50.0	79.6	82.0	257	463	1150	655	91.0	43.8
10	37.2	101	63.7	e60.0	94.9	156	230	510	819	595	87.1	42.6
11	36.2	96.9	59.8	e60.0	71.8	148	205	618	634	507	85.6	41.5
12	33.4	94.2	57.2	e70.0	61.9	150	194	786	624	437	84.7	40.1
13	44.9	91.5	52.1	e60.0	57.5	145	247	598	598	422	89.2	39.4
14	114	103	49.9	e55.0	54.7	177	224	481	615	436	83.8	38.7
15	76.9	161	53.4	e50.0	60.1	321	202	407	660	442	77.5	39.8
16	134	132	50.3	e50.0	145	447	189	372	1200	405	72.9	39.0
17	89.3	116	e42.9	e55.0	138	327	196	331	1040	333	69.8	38.0
18	78.5	106	e45.4	e60.0	120	455	187	303	1030	289	67.0	39.6
19	71.2	113	e48.6	e65.0	115	549	180	300	1190	273	64.4	46.1
20	68.3	119	e47.7	e55.0	107	432	180	313	1520	264	62.6	50.1
21	109	111	e43.9	e40.0	109	412	171	363	1380	246	60.4	45.7
22	111	97.3	e39.1	e38.0	102	435	168	496	1030	221	56.2	43.5
23	93.6	93.9	e38.0	e37.0	93.0	373	182	744	859	211	52.0	39.2
24	92.8	89.0	e38.0	e36.0	83.8	330	185	978	810	213	51.8	37.2
25	133	90.7	e38.0	e33.0	79.9	293	179	765	838	201	51.1	36.4
26	291	103	e40.0	e34.0	76.3	261	185	618	918	188	48.9	38.9
27	233	94.3	e40.0	e35.0	72.9	239	178	632	968	177	47.5	40.8
28	211	84.2	e41.3	e34.0	70.9	216	169	750	882	174	46.8	40.2
29	175	79.0	e43.0	e35.0	---	237	159	967	743	169	45.7	39.6
30	255	73.8	e44.0	e34.0	---	278	159	1170	706	161	45.3	44.0
31	256	---	e46.0	e34.0	---	235	---	1340	---	151	46.8	---
<b>Total</b>	3042	3398	1562	1438	2084	7216	5999	17360	29550	12880	2413	1258
<b>Mean</b>	98.1	113	50.4	46.4	74.4	233	200	560	985	416	77.8	41.9
<b>Max</b>	291	199	70.7	70.0	145	549	291	1340	1520	778	138	50.1
<b>Min</b>	29.3	73.8	38.0	33.0	32.0	60.7	159	156	598	151	45.3	36.4
<b>AC-FT</b>	6035	6740	3097	2852	4134	14310	11900	34430	58620	25550	4785	2495
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	72360	<b>MEAN</b>	198	<b>MAX</b>	1400	<b>MIN</b>	24.4	<b>AC-FT</b>	143500	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	88200	<b>MEAN</b>	242	<b>MAX</b>	1520	<b>MIN</b>	29.3	<b>AC-FT</b>	174900	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 11:27			<b>by nudcde</b>		

OREGON WATER RESOURCES DEPARTMENT												
13330300 LOSTINE R AT BAKER RD NR LOSTINE												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	70.8	213	74.1	e48.0	e38.0	72.9	190	e139	1310	e620	92.9	39.0
2	69.2	169	65.9	e46.0	e36.0	69.1	186	e138	1090	e660	e98.0	35.3
3	68.4	162	70.9	e46.0	e34.0	69.2	176	e154	1020	e690	92.6	35.5
4	69.4	151	70.7	e46.0	36.1	78.0	165	e242	1170	e610	86.1	36.0
5	69.7	139	60.5	e48.0	40.4	80.8	157	e510	1040	e580	82.1	29.5
6	69.1	133	61.0	e48.0	55.8	79.9	183	e623	848	e590	83.8	34.5
7	74.9	123	50.9	e50.0	48.4	78.4	239	e480	950	e610	74.6	42.5
8	85.9	118	51.5	e50.0	46.2	86.1	241	e411	1280	e560	72.7	46.2
9	79.3	115	62.3	e55.0	99.7	100	221	e409	1200	e560	66.5	42.8
10	79.3	111	68.4	e65.0	129	150	199	e450	770	e520	49.6	40.7
11	80.8	106	65.2	e65.0	96.9	152	180	e546	e550	e340	51.4	52.1
12	73.4	103	63.3	e75.0	80.9	149	170	e694	e530	e260	51.2	57.6
13	52.7	99.9	59.7	e65.0	73.1	141	213	e528	e500	e250	51.8	61.1
14	126	105	64.7	e60.0	65.3	146	200	e425	e510	e255	57.4	70.8
15	92.9	153	62.9	e55.0	65.5	242	183	e359	576	270	54.6	76.3
16	147	138	59.2	e55.0	157	364	171	e328	1120	e260	49.6	75.5
17	109	121	e52.0	e55.0	153	276	176	e292	1030	196	48.3	76.0
18	97.1	113	e55.0	e70.0	130	363	170	e268	1010	152	48.7	74.9
19	79.2	116	e55.0	e80.0	124	464	164	e265	1150	e130	51.9	81.6
20	75.1	121	e50.0	e60.0	116	363	163	e276	1600	e120	51.3	96.9
21	108	118	e48.0	e40.0	118	341	156	e321	1460	109	51.4	102
22	116	105	e46.0	38.8	111	366	153	e438	1070	93.9	52.3	102
23	102	101	e42.0	38.3	101	320	e161	e657	869	79.8	48.8	99.1
24	98.9	96.5	e42.0	e37.0	91.2	284	e163	e864	811	79.0	48.3	97.0
25	132	93.8	e42.0	35.1	86.9	249	e158	e676	815	e77.0	50.5	96.0
26	285	107	e44.0	35.5	84.1	222	e163	e590	889	84.8	47.6	96.6
27	241	99.2	e44.0	e36.0	79.6	206	e157	e600	933	76.4	52.3	98.1
28	223	90.8	e46.0	e35.0	76.9	190	e149	e650	857	84.3	38.6	95.0
29	179	84.1	e46.0	35.7	---	198	e140	784	682	88.2	41.1	94.1
30	258	79.0	e48.0	e35.0	---	237	e140	996	e620	84.4	38.6	97.4
31	272	---	e48.0	e36.0	---	205	---	1250	---	e86.0	42.2	---
<b>Total</b>	3684	3584	1719	1544	2374	6342	5287	15360	28260	9176	1827	2082
<b>Mean</b>	119	120	55.5	49.8	84.7	205	176	496	941	296	58.9	69.4
<b>Max</b>	285	213	74.1	80.0	157	464	241	1250	1600	690	98.0	102
<b>Min</b>	52.7	79.0	42.0	35.0	34.0	69.1	140	138	500	76.4	38.6	29.5
<b>AC-FT</b>	7307	7109	3410	3063	4709	12580	10490	30470	56050	18200	3623	4130
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	60110	<b>MEAN</b>	164	<b>MAX</b>	1100	<b>MIN</b>	13.8	<b>AC-FT</b>	119200	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	81240	<b>MEAN</b>	223	<b>MAX</b>	1600	<b>MIN</b>	29.5	<b>AC-FT</b>	161100	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 11:30			<b>by nuddce</b>		

OREGON WATER RESOURCES DEPARTMENT												
13330500 BEAR CR NR WALLOWA												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	7.90	85.7	42.0	e30.0	e21.4	69.7	251	168	1030	233	23.3	e11.0
2	7.87	78.7	40.3	e30.0	e20.0	65.1	236	162	844	232	24.6	10.3
3	8.00	73.4	40.3	e25.0	e20.0	62.6	214	172	841	218	21.7	9.87
4	9.64	69.2	41.3	e25.0	19.4	64.2	189	276	898	191	19.6	9.74
5	11.0	65.4	e40.0	21.9	18.5	64.7	171	731	693	180	21.2	9.72
6	9.85	64.6	e40.0	e21.7	24.3	63.7	185	993	594	175	21.8	9.42
7	11.0	60.0	e35.0	24.4	25.3	63.1	227	762	714	160	25.9	9.06
8	11.3	57.3	e35.0	29.6	24.5	70.7	233	583	799	142	24.3	9.10
9	9.12	55.7	e40.0	30.5	98.5	124	208	551	679	123	20.6	9.08
10	11.7	53.0	e50.0	28.2	e190	274	185	642	469	105	25.2	8.98
11	10.4	50.8	e50.0	27.3	173	283	164	904	343	89.8	29.8	8.74
12	9.77	49.2	e45.0	25.6	135	265	153	861	353	78.2	29.4	8.52
13	13.2	47.8	e40.0	24.0	109	248	221	730	331	70.4	20.9	8.92
14	21.4	49.6	e40.0	e25.0	95.3	288	230	530	321	65.1	21.4	8.82
15	18.7	65.0	e40.0	e25.0	95.1	718	215	364	323	60.1	17.2	9.28
16	29.8	61.0	e35.0	e25.0	232	1220	194	322	496	55.1	12.7	9.23
17	28.1	57.3	e30.0	e25.0	254	864	194	291	462	49.9	13.5	9.20
18	28.6	53.9	e30.0	e25.0	216	756	187	273	475	45.8	15.2	12.6
19	29.3	54.2	e30.0	e30.0	190	1250	179	278	554	42.3	15.5	17.9
20	29.9	53.7	e40.0	e36.7	168	846	180	296	646	39.2	14.3	25.3
21	43.8	53.2	e35.0	e36.9	159	662	166	334	519	38.0	14.8	19.1
22	50.7	50.8	e35.0	e34.5	145	602	162	461	357	35.4	15.0	14.7
23	46.6	50.9	e35.0	e35.0	125	445	173	898	315	35.9	14.7	13.6
24	45.7	49.0	e35.0	e30.0	107	347	182	997	303	37.7	14.9	13.1
25	50.2	48.0	e30.0	30.6	95.3	296	185	715	302	36.0	12.9	12.8
26	66.9	47.0	e30.0	e30.0	88.0	263	202	491	313	33.8	12.4	13.5
27	64.3	45.9	e35.0	e25.0	82.0	235	211	487	312	31.1	10.0	13.9
28	64.8	45.1	e40.0	e25.0	76.2	200	203	599	292	28.9	8.99	13.7
29	62.5	44.3	40.0	e25.0	---	215	182	829	258	26.9	13.1	13.5
30	84.3	43.0	36.9	e23.4	---	280	174	973	241	24.9	11.9	16.1
31	95.2	---	31.8	e22.0	---	269	---	1160	---	23.5	e11.0	---
<b>Total</b>	992	1683	1168	852	3007	11470	5856	17830	15080	2707	558	359
<b>Mean</b>	32.0	56.1	37.7	27.5	107	370	195	575	502	87.3	18.0	12.0
<b>Max</b>	95.2	85.7	50.0	36.9	254	1250	251	1160	1030	233	29.8	25.3
<b>Min</b>	7.87	43.0	30.0	21.7	18.5	62.6	153	162	241	23.5	8.99	8.52
<b>AC-FT</b>	1967	3338	2316	1691	5964	22760	11620	35370	29910	5369	1106	712
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	45270	<b>MEAN</b>	124	<b>MAX</b>	988	<b>MIN</b>	7.68	<b>AC-FT</b>	89790	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	61560	<b>MEAN</b>	169	<b>MAX</b>	1250	<b>MIN</b>	7.87	<b>AC-FT</b>	122100	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 12:21			<b>by nuddce</b>		

OREGON WATER RESOURCES DEPARTMENT												
13331450 WALLOWA R BL WATER CAN NR WALLOWA												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCT 2016 TO SEP 2017												
Daily Mean Values												
Day	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
1	282	549	332	297	261	548	1290	837	2890	1540	309	223
2	284	503	319	290	261	529	1210	809	2620	1580	308	216
3	284	476	329	292	263	523	1120	793	2540	1560	299	215
4	286	447	342	e280	285	594	1040	916	2740	1440	293	210
5	291	426	322	e280	325	685	983	1570	2510	1370	280	213
6	288	420	318	e260	462	627	1000	2310	2190	1400	284	222
7	292	403	288	e280	421	598	1130	1720	2300	1350	281	225
8	297	391	242	e300	384	825	1190	1460	2780	1270	278	227
9	284	387	278	e340	644	1430	1110	1410	2810	1210	268	234
10	288	375	309	296	1120	1820	994	1480	2400	1140	239	223
11	287	368	313	285	853	1600	901	1740	1910	1000	242	222
12	288	361	318	279	694	1420	852	2170	1920	867	249	227
13	301	352	306	e270	610	1290	1080	1800	1800	767	254	230
14	417	359	300	e250	555	1560	1040	1520	1780	716	265	243
15	378	441	321	e260	539	2220	977	1340	1740	683	234	252
16	463	432	316	e260	976	3210	912	1290	2670	665	218	246
17	411	401	316	e270	1150	2210	920	1240	2490	581	217	245
18	389	382	e300	e300	1030	3130	900	1160	2430	510	211	259
19	364	386	e300	e300	1060	3380	862	1130	2650	482	204	302
20	351	391	e300	287	1050	2600	876	1110	3210	461	199	344
21	390	396	293	279	1190	2170	820	1100	3120	436	202	345
22	423	377	289	275	1040	2220	781	1290	2420	379	210	347
23	397	379	289	269	846	1960	866	1720	2030	337	203	348
24	380	367	290	267	735	1650	969	2400	1900	312	212	344
25	408	359	290	266	670	1510	928	1950	1900	324	217	353
26	579	370	284	266	635	1360	1010	1510	2040	312	223	351
27	549	362	292	257	602	1360	1010	1450	2130	310	220	348
28	530	360	290	256	574	1240	981	1580	1990	322	222	342
29	482	346	289	262	---	1350	917	1970	1670	315	224	341
30	583	339	299	262	---	1700	873	2360	1540	303	230	348
31	639	---	292	268	---	1420	---	2840	---	302	236	---
<b>Total</b>	11880	11900	9366	8603	19240	48740	29540	47980	69120	24240	7531	8245
<b>Mean</b>	383	397	302	278	687	1572	984	1547	2304	782	243	275
<b>Max</b>	639	549	342	340	1190	3380	1290	2840	3210	1580	309	353
<b>Min</b>	282	339	242	250	261	523	781	793	1540	302	199	210
<b>AC-FT</b>	23570	23610	18580	17060	38150	96670	58600	95160	137100	48090	14940	16350
<b>CAL YEAR</b>	2016	<b>TOTAL</b>	191100	<b>MEAN</b>	522	<b>MAX</b>	2140	<b>MIN</b>	129	<b>AC-FT</b>	379100	
<b>WTR YEAR</b>	2017	<b>TOTAL</b>	296400	<b>MEAN</b>	812	<b>MAX</b>	3380	<b>MIN</b>	199	<b>AC-FT</b>	587900	
<b>Legend:</b>	'e' Estimated				<b>Created on</b>		12/13/18 12:22			<b>by nuddce</b>		