

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 21-7363

Exam Date: 8/14/2014

1. Current Owner: PACIFICORP AN ORGEON CORP
1407 W NORTH TEMPLE STE 110
SALT LAKE CITY UT 84116
(801)220-2252
2. Accompanied by: None
Phone No:
Address:
Relationship to Permit Holder:

3. SOURCE TRIBUTARY
HENRYS FORK SNAKE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 21-12915, 21-12916, 21-12917
2. Other water rights with the same point of diversion: 21-12915, 21-12916, 21-12917

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

HENRYS FORK NE1/4SE1/4 Sec. 28, Twp 09N, Rge 42E, B.M.
FREMONT County

Method of Determination: Aerial Photography and map

2.

PLACE OF USE: POWER FROM STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
09N	42E	28													X				

PLACE OF USE: POWER

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
09N	42E	28													X				

PLACE OF USE: POWER STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
09N	42E	13					X	X	X	X									
09N	42E	14	X		X	X		X	X				X	X	X	X	X		
09N	42E	15				X			X	X	X	X		X	X	X	X	X	
09N	42E	21	X		X	X									X	X	X	X	
09N	42E	22	X L 1				X	X	X			X	X						
09N	42E	23					X	X											
09N	42E	27						X	X			X							
09N	42E	28				X									X				

Method of Determination: Aerial Photography and maps

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.

D. FLOW MEASUREMENTS

No flow measurement taken. Flow rate for this license was determined using a PacifiCorp report to FERC. According to the report the rate capacity for this hydroelectric facility is 2,575 cfs.

E. FLOW CALCULATIONS☐ Additional Computation Sheets Attached

Measured Method:

Three vertical Reaction Turbines with a combined flow capacity of 2,575 cfs.

Water right 21-12915 = 1,000 cfs

Water right 21-12916 = 500 cfs

Water right 21-12917 = 1,000 cfs

Capacity = 2,575 cfs

2,575 cfs – 2,500 cfs = 75 cfs

Water right 21-7363 = 75 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{N/A}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \text{N/A}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \text{N/A}$$

2. Volume Calculations for Other Uses:

Power storage and power from storage volume is based on a PacifiCorp report to FERC. According to the report the reservoir volume capacity is 6,119 acre-feet.

Power storage and power from storage = 6,119.0 acre-feet.

G. NARRATIVE/REMARKS/COMMENTS

The Ashton Hydroelectric Facility is an on-stream hydro facility located on the Henry's Fork of the Snake River. This field exam was based on an IDWR dam safety report, and a PacifiCorp report to FERC. According to these reports the hydroelectric facility consists of three Vertical Reaction turbines with a combined power generating capacity of 6.7 megawatts. The rate capacity of the three turbines is 2,575 cfs. PacifiCorp holds three other existing water rights which authorize 2,500 cfs to be diverted for power generation. This water right will be licensed for 75.0 cfs. The surface area of the reservoir covers approximately 388 acres. The maximum volume of water that is stored in the reservoir is 6,119.0 acre-feet. This water right will be licensed to store 6,119.0 acre-feet. The place of use for the power storage component of the water right will need amended. The FERC License for the Ashton Hydroelectric Project is for 40 years and will expire on January, 1 2028.

The watermaster for Water District 1 does not need a measuring device at this time.

The place of use for Power Storage also includes Lot 1 (NENE), Lot 2 (SENE), Lot 3(SENE), Lot 4(NWSE), Lot 5(NWSE), Lot 6 (SWSW), Lot 8 (SWSW), Lot 7 (SWSE), Lot 9 (SWSE), 09N, 42E, Sec. 14; Lot 3(ESW), Lot 4 (SESW), Lot 2(SWSE), Lot 1(SESE), Lot 5(SESE), 09N, 42E, Sec. 15; Lot 1(SENE), Lot 2(NESE), Lot 3(SESE), Lot 4(SESE), 09N, 42E, Sec. 21; Lot 2(NENW), Lot 3(NENW), Lot 4(SWNW), Lot 5(SWNW), Lot 7(SWSW) 09N, 42E, Sec. 22; Lot 1(NWNW) 09N, 42E, Sec. 23; Lot 2(SWNW), 09N,42E, Sec. 27.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
POWER FROM STORAGE	01/01 to 12/31		6,119.00 AF
POWER	01/01 to 12/31	75.000 CFS	
POWER STORAGE	01/01 to 12/31		6,119.00 AF
<u>Totals:</u>		75.000 CFS	6,119.00 AF

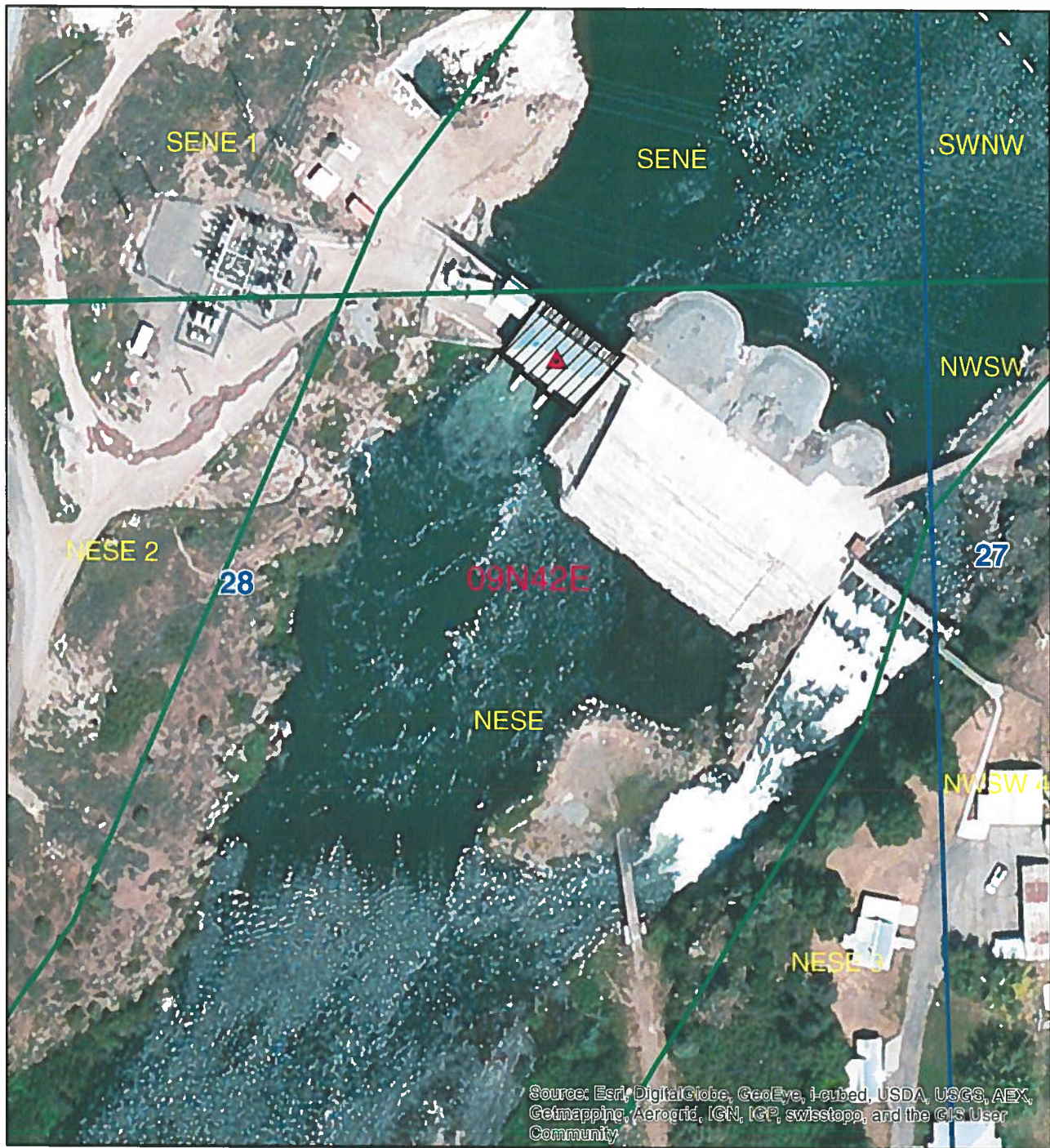
2. Recommended Amendments

☐ 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 ☐ Other

I. AUTHENTICATION

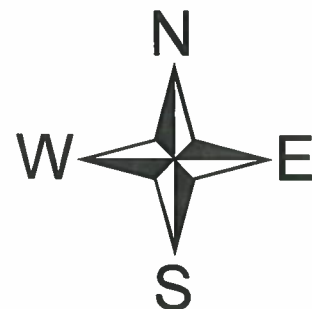
Field Examiner's Name Blake Jordan Date 8/14/2014

Reviewer _____ Date _____

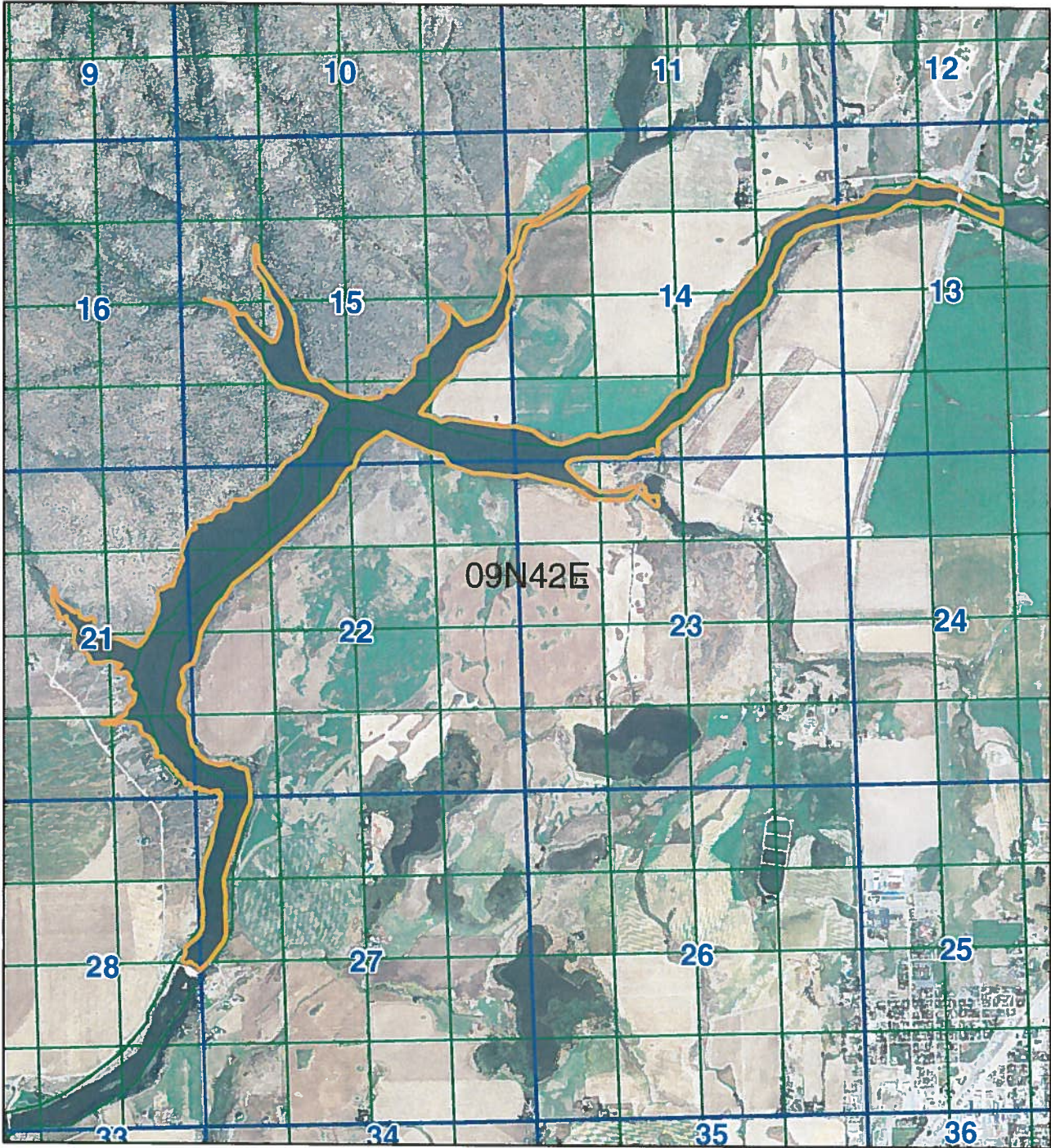


Legend

-  POD
-  Power and Power From Storage POU
-  Township/Range
-  Sections
-  QQ

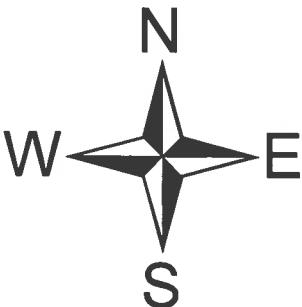


0 65 130 260 Feet
1 inch = 113 feet

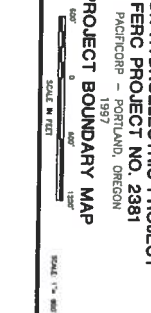
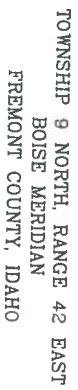


Legend

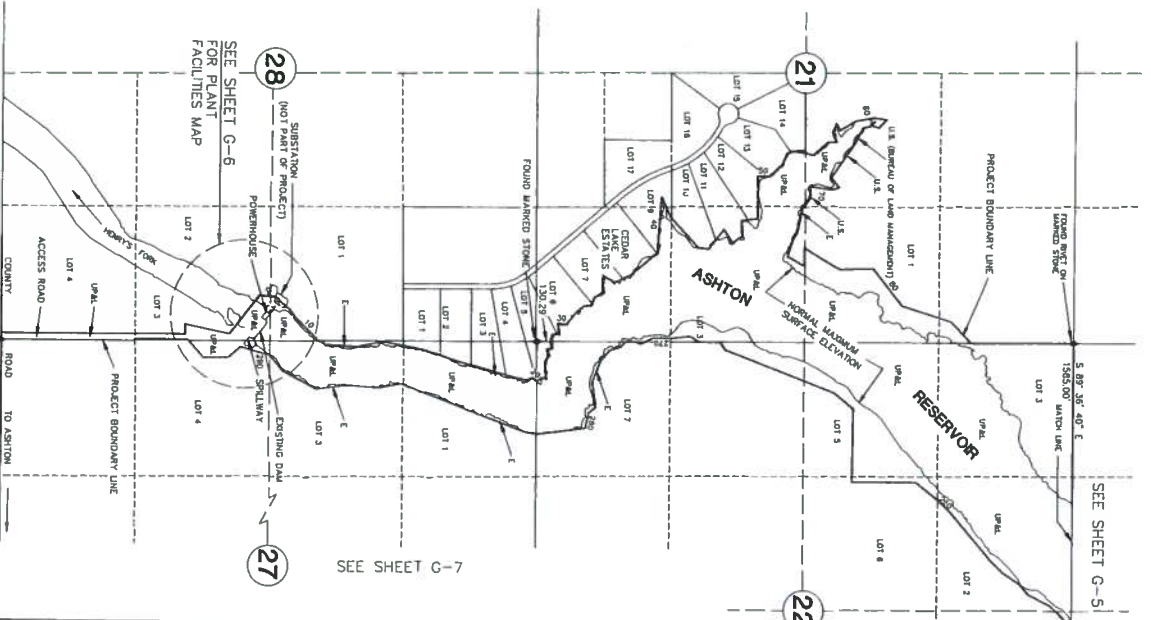
-  Storage POU
-  Township/Range
-  Sections
-  QQ



0 1,400 2,800 5,600 Feet
1 inch = 2,513 feet

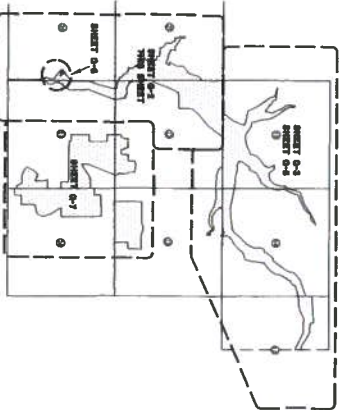


NOTE: THIS DRAWING SUPERSEDES
FERC NO. 2381-37



PROJECT BOUNDARY TRAVERSE CHART

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
1	N 00°12'00" E	50.00'	76	N 88°00'00" E	183.46'	151	S 82°52'00" W	131.00'
2	N 00°12'00" E	1.10'00"	77	N 88°00'00" E	173.34'	152	S 82°52'00" W	131.00'
3	N 00°12'00" E	446.17'	78	N 88°00'00" E	403.28'	153	S 82°52'00" W	131.00'
4	N 00°12'00" E	446.17'	79	N 88°00'00" E	403.28'	154	S 82°52'00" W	131.00'
5	N 00°12'00" E	446.17'	80	N 88°00'00" E	403.28'	155	S 82°52'00" W	131.00'
6	N 00°12'00" E	446.17'	81	N 88°00'00" E	403.28'	156	S 82°52'00" W	131.00'
7	N 00°12'00" E	446.17'	82	N 88°00'00" E	403.28'	157	S 82°52'00" W	131.00'
8	N 00°12'00" E	446.17'	83	N 88°00'00" E	403.28'	158	S 82°52'00" W	131.00'
9	N 00°12'00" E	446.17'	84	N 88°00'00" E	403.28'	159	S 82°52'00" W	131.00'
10	N 00°12'00" E	446.17'	85	N 88°00'00" E	403.28'	160	S 82°52'00" W	131.00'
11	N 00°12'00" E	446.17'	86	N 88°00'00" E	403.28'	161	S 82°52'00" W	131.00'
12	N 00°12'00" E	446.17'	87	N 88°00'00" E	403.28'	162	S 82°52'00" W	131.00'
13	N 00°12'00" E	446.17'	88	N 88°00'00" E	403.28'	163	S 82°52'00" W	131.00'
14	N 00°12'00" E	446.17'	89	N 88°00'00" E	403.28'	164	S 82°52'00" W	131.00'
15	N 00°12'00" E	446.17'	90	N 88°00'00" E	403.28'	165	S 82°52'00" W	131.00'
16	N 00°12'00" E	446.17'	91	N 88°00'00" E	403.28'	166	S 82°52'00" W	131.00'
17	N 00°12'00" E	446.17'	92	N 88°00'00" E	403.28'	167	S 82°52'00" W	131.00'
18	N 00°12'00" E	446.17'	93	N 88°00'00" E	403.28'	168	S 82°52'00" W	131.00'
19	N 00°12'00" E	446.17'	94	N 88°00'00" E	403.28'	169	S 82°52'00" W	131.00'
20	N 00°12'00" E	446.17'	95	N 88°00'00" E	403.28'	170	S 82°52'00" W	131.00'
21	N 00°12'00" E	446.17'	96	N 88°00'00" E	403.28'	171	S 82°52'00" W	131.00'
22	N 00°12'00" E	446.17'	97	N 88°00'00" E	403.28'	172	S 82°52'00" W	131.00'
23	N 00°12'00" E	446.17'	98	N 88°00'00" E	403.28'	173	S 82°52'00" W	131.00'
24	N 00°12'00" E	446.17'	99	N 88°00'00" E	403.28'	174	S 82°52'00" W	131.00'
25	N 00°12'00" E	446.17'	100	N 88°00'00" E	403.28'	175	S 82°52'00" W	131.00'
26	N 00°12'00" E	446.17'	101	N 88°00'00" E	403.28'	176	S 82°52'00" W	131.00'
27	N 00°12'00" E	446.17'	102	N 88°00'00" E	403.28'	177	S 82°52'00" W	131.00'
28	N 00°12'00" E	446.17'	103	N 88°00'00" E	403.28'	178	S 82°52'00" W	131.00'
29	N 00°12'00" E	446.17'	104	N 88°00'00" E	403.28'	179	S 82°52'00" W	131.00'
30	N 00°12'00" E	446.17'	105	N 88°00'00" E	403.28'	180	S 82°52'00" W	131.00'
31	N 00°12'00" E	446.17'	106	N 88°00'00" E	403.28'	181	S 82°52'00" W	131.00'
32	N 00°12'00" E	446.17'	107	N 88°00'00" E	403.28'	182	S 82°52'00" W	131.00'
33	N 00°12'00" E	446.17'	108	N 88°00'00" E	403.28'	183	S 82°52'00" W	131.00'
34	N 00°12'00" E	446.17'	109	N 88°00'00" E	403.28'	184	S 82°52'00" W	131.00'
35	N 00°12'00" E	446.17'	110	N 88°00'00" E	403.28'	185	S 82°52'00" W	131.00'
36	N 00°12'00" E	446.17'	111	N 88°00'00" E	403.28'	186	S 82°52'00" W	131.00'
37	N 00°12'00" E	446.17'	112	N 88°00'00" E	403.28'	187	S 82°52'00" W	131.00'
38	N 00°12'00" E	446.17'	113	N 88°00'00" E	403.28'	188	S 82°52'00" W	131.00'
39	N 00°12'00" E	446.17'	114	N 88°00'00" E	403.28'	189	S 82°52'00" W	131.00'
40	N 00°12'00" E	446.17'	115	N 88°00'00" E	403.28'	190	S 82°52'00" W	131.00'
41	N 00°12'00" E	446.17'	116	N 88°00'00" E	403.28'	191	S 82°52'00" W	131.00'
42	N 00°12'00" E	446.17'	117	N 88°00'00" E	403.28'	192	S 82°52'00" W	131.00'
43	N 00°12'00" E	446.17'	118	N 88°00'00" E	403.28'	193	S 82°52'00" W	131.00'
44	N 00°12'00" E	446.17'	119	N 88°00'00" E	403.28'	194	S 82°52'00" W	131.00'
45	N 00°12'00" E	446.17'	120	N 88°00'00" E	403.28'	195	S 82°52'00" W	131.00'
46	N 00°12'00" E	446.17'	121	N 88°00'00" E	403.28'	196	S 82°52'00" W	131.00'
47	N 00°12'00" E	446.17'	122	N 88°00'00" E	403.28'	197	S 82°52'00" W	131.00'
48	N 00°12'00" E	446.17'	123	N 88°00'00" E	403.28'	198	S 82°52'00" W	131.00'
49	N 00°12'00" E	446.17'	124	N 88°00'00" E	403.28'	199	S 82°52'00" W	131.00'
50	N 00°12'00" E	446.17'	125	N 88°00'00" E	403.28'	200	S 82°52'00" W	131.00'
51	N 00°12'00" E	446.17'	126	N 88°00'00" E	403.28'	201	S 82°52'00" W	131.00'
52	N 00°12'00" E	446.17'	127	N 88°00'00" E	403.28'	202	S 82°52'00" W	131.00'
53	N 00°12'00" E	446.17'	128	N 88°00'00" E	403.28'	203	S 82°52'00" W	131.00'
54	N 00°12'00" E	446.17'	129	N 88°00'00" E	403.28'	204	S 82°52'00" W	131.00'
55	N 00°12'00" E	446.17'	130	N 88°00'00" E	403.28'	205	S 82°52'00" W	131.00'
56	N 00°12'00" E	446.17'	131	N 88°00'00" E	403.28'	206	S 82°52'00" W	131.00'
57	N 00°12'00" E	446.17'	132	N 88°00'00" E	403.28'	207	S 82°52'00" W	131.00'
58	N 00°12'00" E	446.17'	133	N 88°00'00" E	403.28'	208	S 82°52'00" W	131.00'
59	N 00°12'00" E	446.17'	134	N 88°00'00" E	403.28'	209	S 82°52'00" W	131.00'
60	N 00°12'00" E	446.17'	135	N 88°00'00" E	403.28'	210	S 82°52'00" W	131.00'
61	N 00°12'00" E	446.17'	136	N 88°00'00" E	403.28'	211	S 82°52'00" W	131.00'
62	N 00°12'00" E	446.17'	137	N 88°00'00" E	403.28'	212	S 82°52'00" W	131.00'
63	N 00°12'00" E	446.17'	138	N 88°00'00" E	403.28'	213	S 82°52'00" W	131.00'
64	N 00°12'00" E	446.17'	139	N 88°00'00" E	403.28'	214	S 82°52'00" W	131.00'
65	N 00°12'00" E	446.17'	140	N 88°00'00" E	403.28'	215	S 82°52'00" W	131.00'
66	N 00°12'00" E	446.17'	141	N 88°00'00" E	403.28'	216	S 82°52'00" W	131.00'
67	N 00°12'00" E	446.17'	142	N 88°00'00" E	403.28'	217	S 82°52'00" W	131.00'
68	N 00°12'00" E	446.17'	143	N 88°00'00" E	403.28'	218	S 82°52'00" W	131.00'
69	N 00°12'00" E	446.17'	144	N 88°00'00" E	403.28'	219	S 82°52'00" W	131.00'
70	N 00°12'00" E	446.17'	145	N 88°00'00" E	403.28'	220	S 82°52'00" W	131.00'
71	N 00°12'00" E	446.17'	146	N 88°00'00" E	403.28'	221	S 82°52'00" W	131.00'
72	N 00°12'00" E	446.17'	147	N 88°00'00" E	403.28'	222	S 82°52'00" W	131.00'
73	N 00°12'00" E	446.17'	148	N 88°00'00" E	403.28'	223	S 82°52'00" W	131.00'
74	N 00°12'00" E	446.17'	149	N 88°00'00" E	403.28'	224	S 82°52'00" W	131.00'
75	N 00°12'00" E	446.17'	150	N 88°00'00" E	403.28'	225	S 82°52'00" W	131.00'



REXED EXHIBIT C SHEET G-4

APPLICATION FOR LICENSE FOR A MAJOR PROJECT
ASHTON HYDROELECTRIC PROJECT
FERC PROJECT NO. 2381
PACIFICORP - PORTLAND, OREGON
1987
PROJECT BOUNDARY MAP
SCALE: 1" = 400'



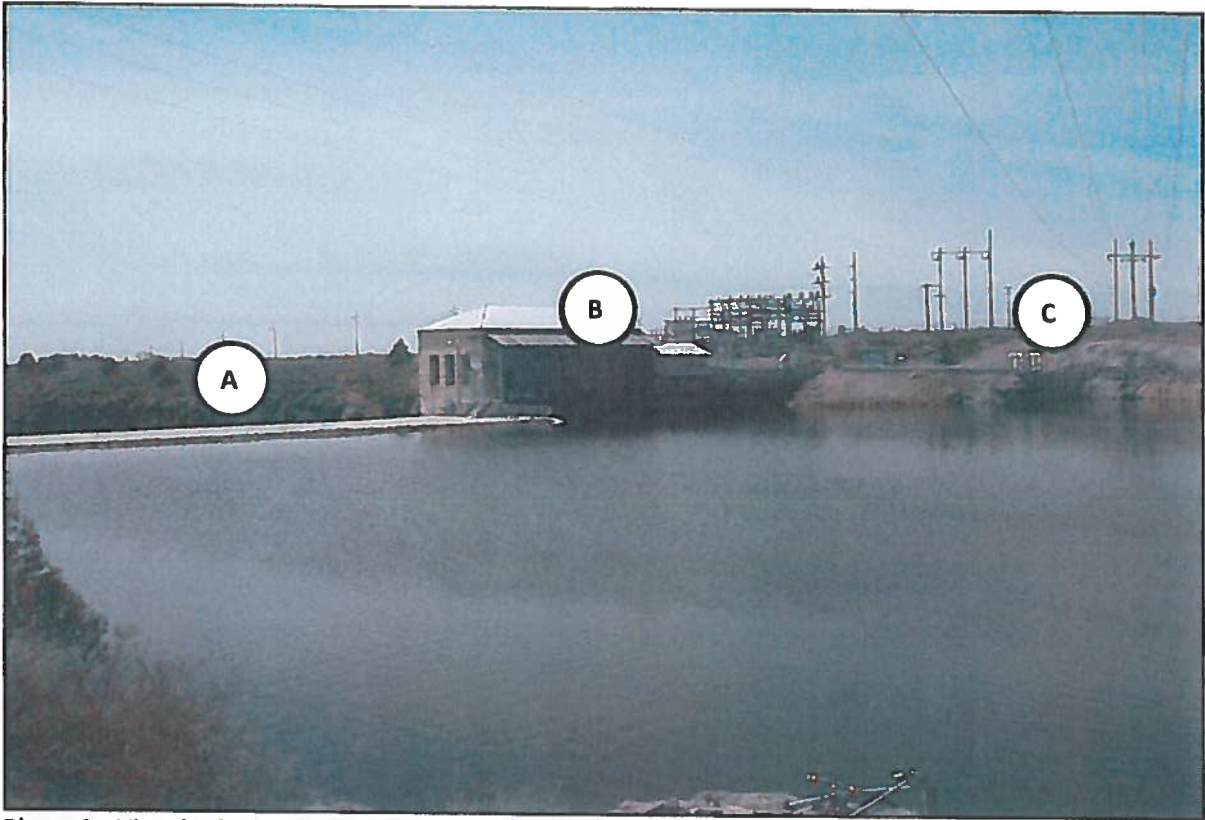


Photo 3 - View looking SW, left-to-right: A) Auxiliary Spillway, B) Powerhouse, C) Diversion Tunnel

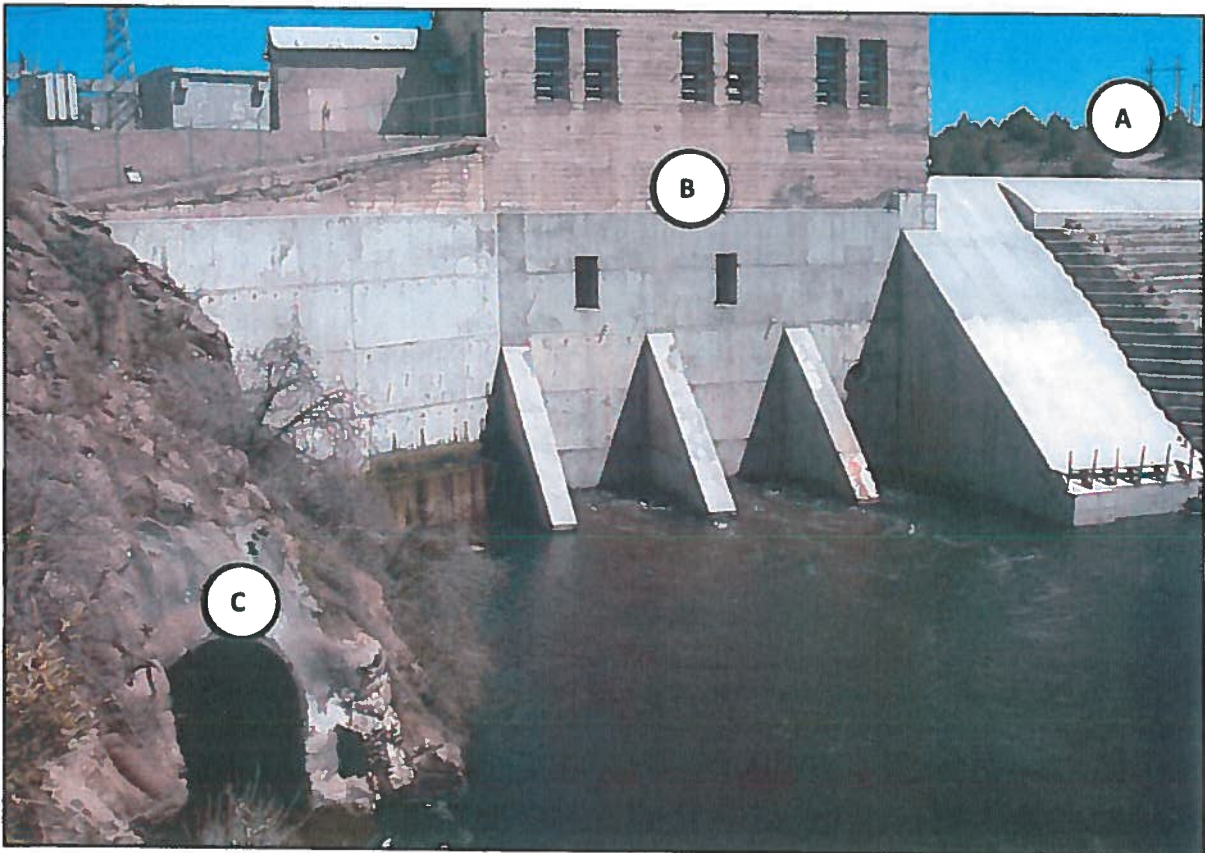


Photo 4 - Reverse view of photo (above) from the downstream side looking toward NE; left-to-right: C) Diversion Tunnel, B) Powerhouse, A) Auxiliary Spillway.

Idaho Department of Water Resources

Dam Safety Data Sheet

Dam Name: ASHTON
Other Dam Name:
State ID Number: 21-2164

Region: E
National ID Number: ID00178
Last Modified: 8/22/2013

General Information

Status: REGULATED
Purpose: HYDRO

Hazard: HIGH
Size Category: 1

Location

County: FREMONT
River or Stream: HENRYS FORK SNAKE RIVER
Township: 09N
Range: 42E
Section: 28
Quad Name: ASHTON

Latitude: 44.0774463351595
Longitude: -111.493069409155
IDTM X: 2700731.46
IDTM Y: 1433754.27
Location Method: NAIP-2006
Quad Number: V97

Dam Owner

PACIFICORP

ROGER RAEBURN, PACIFICORP, PH (503) 813-6667
SEE EAP FOR ALTERNATE CONTACTS.

Embankment Physical Characteristics

Dam Type: EARTH
Dam Height: 60 Feet
Dam Length: 226 Feet

Hydraulic Height: 60 Feet
Year Completed: 1913
Condition: SATISFACTORY

Regulatory Data

Inspection Date: 5/2/2013
Storage Authorization: 8/16/2013
Certificate Expired: 12/31/2014
Survey Date:
Condition Assessment: SATISFACTORY

Emergency Action Plan: Yes
Next Dam Inspection: 2014
Inspection Frequency: 2 Years
Joint Inspection: FERC

Idaho Department of Water Resources

Dam Safety Data Sheet

Dam Name: ASHTON

Region: E

Other Dam Name:

National ID Number: ID00178

State ID Number: 21-2164

Last Modified: 8/22/2013

Reservoir

Drainage Area: 1040 Sq Miles

Normal Storage: 9800 Acre feet

Surface Area: 404 Acres

Maximum Storage: Acre feet

Spillway

Spillway Depth: 10 Feet

Spillway Type: CONTROLLED

Spillway Channel Type: CONCRETE

Spillway Gates: RADIAL

Spillway Width: 82 Feet

Max Discharge: 6500 CFS

Inflow Design Flood (IDF): PMF = 69,890
HMR 57

Outlet

Outlet Conduit Type: STEEL

Outlet Gate: OTHER

Outlet Size:

Outlet Last Inspected:

Outlet Capacity: 2375 CFS

Outlet Video:

Deficiency:

IDWR Restrictions: - DAM IS REGULATED BY FERC, PROJECT ID 02381.
- THE DAM AND RESERVOIR SHALL BE OPERATED IN ACCORDANCE W/ THE APPROVED OPERATION PLAN.
- NORMAL MAX RESERVOIR OPERATING LEVEL IS ~ 0.8 FEET BELOW TOP OF PRIMARY SPILLWAY GATES

Comments: - PART OF RESERVOIR ON QUAD MAP V96.
- OUTLET CONSISTS OF 3 POWER UNITS
====> FLOW CAPACITY OF TURBINES 2 & 3 = 750 CFS EACH.
====> FLOW CAPACITY OF UNIT #1 = 875 CFS (REPLACED IN 1992).
- MAIN SPILLWAY IS SIX (6) 12' W x 10' H RADIAL GATES W/ CREST ELEVATION = 5156.6'.
- SPILLWAY WIDTH = 82 FEET, BUT INCLUDES FIVE (5) 2-FOOT WIDE PIERS.
- WATER RIGHT 21-4060 IS ACTUAL STORAGE RIGHT FOR 9800 ACFT.
- PMF CAN BE PASSED AT ELEV 5168.6', ~12' ABOVE DAM CREST.
- MAJOR CONSTRUCTION EVENTS:
====> 1991- DOWNSTREAM SLOPE MODIFIED W/ RCC OVERLAY AND LOW-LEVEL OUTLETS PLUGGED
====> 1991- CREST OF DAM TOPPED W/ REINFORCED CONCRETE @ ELEVATION 5156.6 FEET
====> 2011- DIVERSION TUNNEL CONSTRUCTED AT RIGHT ABUTMENT
====> 2012- REHABILITATION OF UPSTREAM DAM SLOPE, POWERHOUSE BUTTRESS, & SPILLWAY PIERS



ASHTON HYDROELECTRIC PROJECT

FERC No. P-2381

EXHIBIT A

Table of Contents

Introduction.....	1
Overview and History of the Project	1
Construction	1
Developments.....	2
Description of the Ashton Hydroelectric Project.....	3
Project Works.....	3
Powerhouse	3
Generators and Turbines.....	3
Appurtenant Electrical Equipment for Plant Operation	4
Embankment Dam.....	5
Abandoned Low Level Outlet Conduit	6
Diversion Tunnel.....	6
Gated Spillway	6
Overflow Spillway	6
Right Abutment Crib Wall.....	6
Access Road	7
Miscellaneous Structures.....	7
Transmission Lines	7
Reservoir	7
Recreation	7
Federally Owned Lands	8
Code of Federal Regulation Citation	9

Introduction

This Exhibit A is a description of the Ashton Hydroelectric Project. The project is, as of September 13, 2013, comprised of one development. Its description includes the location, general configuration, physical composition, and dimensions of the project structures. The descriptions also include information on the project reservoir, turbine-generator units, primary transmission lines, and appurtenant mechanical, electrical, and transmission equipment.

This Exhibit A is organized into five sections; introduction, an overview and history of the project, a description of project facilities, a description and tabulation of federally owned lands of the United States that are within the project boundary, and citations from the Code of Federal Regulations (CFR) applicable to this exhibit.

Overview and History of the Project

The Ashton Project is 2.5 miles west of the town of Ashton, in Fremont County, Idaho. It is located on the Henry's Fork of the Snake River.

Construction

In 1918, the Ashton and St. Anthony Power Company completed the dam and powerhouse that comprise the Ashton Project. The powerhouse was built to house three generating units, but was only outfitted with one in 1918. Six years later in 1924, Utah Power & Light Company acquired the project. The following year, Utah Power & Light set about installing two more generating units in the powerhouse and repairing sloughing on the upstream dam face that was apparent when the reservoir was lowered. In addition to the installation of the two units, the original unit and the station were modernized, the transformers were removed from the transformer room, a new 46 kV outdoor substation was constructed, and the dam was strengthened by changing the upstream slope from 2:1 to 2-1/2:1. In 1958, repairs were made to stabilize the powerhouse and a section of the dam west of the powerhouse to prevent erosion.

A major project to accommodate the maximum probable flood was undertaken in 1991 that entailed removing the top five feet of the dam crest to allow the dam crest to function as an overflow spillway. As part of this project, the dam crest and downstream dam face were covered in roller-compacted concrete, additional ballast rock was added to the upstream dam face for seismic loading, wood spillway gate skins were replaced with steel, a bypass valve was installed in the No. 1 turbine pit, and the original 1917 turbine No. 1 was replaced and its generator rewound.

Repeated discovery of sinkholes, evidence of piping, and embankment settlement issues on the Ashton Dam lead to the start of a project in 2006 to remediate these defects. The new facilities constructed as part of this project are described in subsequent sections of this Exhibit A and include reconstruction of the rock- and earth-fill embankment structure, repair of powerhouse and crib wall buttress structures, repair of spillway gates, and construction of the right embankment bypass tunnel. To guide the project, an Ashton Board of Consultants was convened and maintained technical review of the mitigation design, construction, and surveillance monitoring along with the

Federal Energy Regulatory Commission-Department of Dam Safety and Inspections both in Washington, DC (FERC-D2SI-DC) and at the regional office in Portland, OR (FERC-D2SI-PRO). FERC-D2SI-PRO granted authorization to commence construction in an August 2, 2010 letter, and Phase 1 of the construction began that month. The first monthly construction report was filed September 15, 2010, and monthly construction reports continued until the construction and post-construction dam safety and surveillance and monitoring activities were completed on January 23, 2013. The final construction report with certifications of completion was filed on April 23, 2013.

Developments

The Ashton Hydroelectric Project was originally licensed to Utah Power and Light Company on December 19, 1977¹ as the Ashton-St. Anthony Hydroelectric Project. This original license had an effective date of 1938. Although licensed together, the St. Anthony and the Ashton Projects shared no facilities, lands or any portion of project boundaries. The Ashton-St. Anthony Hydroelectric Project received a new 40-year license under the same name on August 3, 1987². Following the merger of Pacific Power and Utah Power & Light, the project was transferred to PacifiCorp on November 23, 1988³.

On June 11, 2013, in a Notice of Application for Partial Transfer and Amendment of License and Request for Expedited Action, and Soliciting Comments and Motions to Intervene, PacifiCorp Energy and St. Anthony Hydro, LLC jointly proposed their mutual terms of sale and transfer of the entirety of St. Anthony Development from PacifiCorp Energy to St. Anthony Hydro, LLC. FERC accepted the proposal and sale and, in a September 13, 2013 Order⁴, removed the St. Anthony Development from the project. The Order renamed the Ashton portion to Ashton Hydroelectric Project and retained its original FERC No. P-2381 project designation.

¹ *Utah Power & Light Co.* 1 FERC ¶ 61,263 (1977). The license was made effective January 1, 1938, with an expiration date of December 31, 1987.

² *Utah Power & Light Co.* 40 FERC ¶ 61,139 (1987). The new license was issued effective January 1, 1988, with an expiration date of December 31, 2027.

³ *Utah Power & Light Co. and PC/UP&L Merging Corp.*, 45 FERC ¶ 62,145 (1988). The license transfer was a result of a merger of PacifiCorp and Utah Power & Light Corp. into PacifiCorp.

⁴ Order Amending License, Designating New Docket Number, Approving Transfer of License, and Revising Annual Charges; Ashton Hydroelectric Project FERC No. P-2381, and St. Anthony Hydroelectric Project FERC No. P-14552: 144 FERC ¶ 62,239: September 13, 2013

Description of the Ashton Hydroelectric Project

When licensed in 1987 and as stated in the September 13, 2013 Order, the Ashton Project is comprised of the following:

Project Works

- a) a 56-foot-high, 222-foot-long, earth- and rock-filled dam having its downstream slope covered with roller-compacted concrete and a crest elevation at 5,156.6 feet mean sea level (msl);
- b) an 82-foot-long reinforced concrete spillway surmounted by six 10-foot-high radial gates;
- c) a reservoir having a surface area of 388 acres, a volume of 6,119 acre-feet at normal water surface elevation 5,156.0 feet msl⁵;
- d) a reinforced-concrete powerhouse located at the right bank, having integral intakes controlled by vertical slide gates and containing three generating units, two rated at 2,000 kW, and one rated at 2,700 kW;
- e) a tailrace;
- f) a 46/2.3-kV step-up transformer;
- g) a 133-foot-long, 46-kV transmission line;
- h) a 2,160-foot-long access road; and
- i) appurtenant facilities.

Powerhouse

The powerhouse is a reinforced concrete structure 71 feet wide in the cross-canyon direction and extending 65 feet 8 inches in the upstream-downstream direction, including the buttress slab. It is founded on a reinforced concrete slab with an average thickness of two feet and a base elevation of 5,094.0 feet msl. A 2.5-foot thick concrete armoring layer was placed on the downstream side of the powerhouse from Elevation 5114 to 5150 feet msl in 2012. There is also a small office/equipment structure 16 feet by 27 feet attached to the west end of the building (formerly the bus room). An electrically-operated 20-ton traveling crane is located within the powerhouse.

Generators and Turbines

The powerhouse contains three vertical Francis turbine-generator units having a combined capacity of 6.7 megawatts (see Table 1). Integral to the powerhouse are three intakes and tailraces serving all three generating units. Unit 1 has a vertical shaft and no spiral case (open flume), with three intake gates 5 feet 4 inches wide by 8 feet high. Units 2 and 3 have intake spiral cases and three intake gates 5 feet 4 inches wide by 11 feet 5 inches high.

⁵ Ashton Dam Hydroelectric Project Bathymetry and Sediment Study, Cirrus Ecological Solutions & Ecosystems Research Institute, July 16, 2010.

Table 1. Description of Generators and Turbines at the Ashton Hydroelectric Project when licensed in 1987 and as stated in the September 13, 2013 Order.

Equipment	Unit 1	Unit 2	Unit 3
Generator			
Date Installed	1992	1925	1925
Generator Mfg.	G.E.	G.E.	G.E.
Capacity (kW)	2,700	2,000	2,000
kVA	3,000	2,500	2,500
Voltage	2,400	2,400	2,400
Power Factor	0.9	0.8	0.8
Exciter	Solid State	Solid State	Solid State
Governor	Woodward	Woodward	Woodward
Turbine			
Turbine	Vertical Reaction	Vertical Reaction	Vertical Reaction
Manufacturer	American Hydro	S. Morgan Smith	S. Morgan Smith
Rated H. P.	4,000	3,000	3,000
Gross Head	48'	48'	48'
CFS Capacity	875	850	850
Water Passage	Open Wheel Pit	Concrete Scroll Case	Concrete Scroll Case
RPM	225	180	180

A 42-inch bypass valve was installed in the No. 1 turbine pit as part of the 1991-1992 upgrade work on No. 1 Unit. The valve centerline is at elevation 5123.0 feet msl, and the hydraulic operator for the valve (with manual backup) is located on the generator floor. The valve is used to pass a minimum of 300 cfs downstream, should the plant trip off for any reason.

Appurtenant Electrical Equipment for Plant Operation

The items listed in Table 2 are installed at the Ashton Hydroelectric Project as appurtenant electrical equipment to the operation of the plant. Not included are electrical items considered to be part of the overall PacifiCorp Energy "system" – items which are independent of the Ashton plant in use.

Table 2. Appurtenant Electrical Equipment Installed at the Ashton Hydroelectric Project.

Appurtenant Equipment	Quantity	Type	Details
Generator Breakers	3	Vacuum circuit	5 kV, 1200 ampere
Generator Step-Up Transformer	1	Three phase	9,375 kVA, 46-2.3 kV
Station Service Transformer	1	Dry Three phase	75 kVA, 2,400-120/240 v.
Station Service Back-up Transformer	1	Three-single phase	15 kVA, 2,400-120/240 v.
Battery Bank	1	DC	48 v.
Battery Bank	1	DC	125 v.
Emergency Generator	1	Three phase	75 kW

Embankment Dam

Ashton Dam is a zoned earth- and rock-fill embankment dam that has a maximum height of 56 feet, a length of 222 feet, and a crest at Elevation 5156.6 feet msl. The crest of the dam consists of a reinforced concrete crest slab 50 feet wide by 3.5 feet thick and a 10-foot-deep concrete cutoff wall on the upstream edge. The downstream face of the earth- and rock-fill embankment is protected with roller-compacted concrete (RCC) to accommodate passage of the probable maximum flood (overflow spillway). The upstream rock fill has an upstream slope of 4 horizontal to 1 vertical. The earth- and rock-fill embankment was reconstructed in 2012, and consists upstream-to-downstream of a rock-fill buttress, a granular transition/bedding zone, a compacted silt core, and a three-stage filter zone placed against the original rock-fill embankment. The upstream side of the original rock-fill embankment is inclined at a slope of 1 horizontal to 1 vertical. A foundation transition zone was placed beneath the silt core footprint.

The foundation contact beneath the embankment generally occurs between Elevation 5104 and 5100 feet msl, and consists of dense to very dense alluvial deposits of sands, gravels and cobbles ranging between 3 to 6 inches in diameter with the interstitial spaces tightly filled by well-graded, dense to very dense sands and gravels. A 2.5-foot-thick concrete core wall with a top at Elevation 5110.0 feet msl is located approximately 100 feet upstream from the centerline of the concrete crest slab and extends the full width of the valley.

The left abutment contact for the embankment dam consists of basalt rock that was treated during the 2012 modifications. The right abutment contact for the embankment dam consists of a retaining headrace wall 50-foot high composed of reinforced concrete. It is founded on top of the abandoned low-level conduits, and extends 50 feet upstream from the powerhouse.

Abandoned Low Level Outlet Conduit

The original project included a low level outlet consisting of two 7-foot-wide by 10-foot-high, 215-foot-long reinforced concrete conduits extending under the embankment, and a control shaft adjacent to the powerhouse extending to the crest of the dam. The conduits were abandoned by grouting in 1991, and the upper portion of the control shaft was removed to elevation 5129.0 feet msl during the dam remediation project in 2012.

Diversion Tunnel

The diversion tunnel extending through the right abutment is 280 feet long and 15 feet high. The tunnel walls and arched roof are shotcrete-lined and supported by steel sets, rock bolts, cable bolts, and spiling. The floor is reinforced concrete. The intake consists of a reinforced concrete control structure, two 7.5-foot-wide by 15-foot-tall stainless steel slide gates with electrically-powered hoists, steel trash racks, a single removable bulkhead gate, and an invert at Elevation 5110.0 feet msl. The maximum invert to the approach channel to the intake control structure is at Elevation 5114.0 feet msl. The exit portal is located approximately 100 feet downstream of the powerhouse, and has an invert at Elevation 5107.8 feet msl.

Gated Spillway

The 82-foot-wide gated spillway is located on the left abutment, and is separated from the dam-crest-overflow spillway by a reinforced concrete training wall. The reinforced concrete spillway gate piers are 2 feet wide, and are anchored to the bedrock at the heel with eight ¾-inch bars embedded 2 feet into rock. The six 10-foot-high by 12-foot-wide radial spillway gates sit on a sill at Elevation 5,146.6 feet msl with their top at Elevation 5156.6 feet msl. The approach channel and spillway chute are excavated into bedrock. The spillway gates are operated using a single movable electric hoist or a single hand-operated, overhead chain hoist.

Overflow Spillway

The roller-compacted concrete (RCC) overflow spillway located on the downstream side of the earth- and rock-fill embankment is 222 feet wide and 12 to 20 feet thick, and has an effective slope of 1 vertical to 1.5 horizontal with 2-foot-high by 3-foot-wide steps. The overflow transition section consists of a short ogee section from the concrete crest slab to the RCC. An RCC apron extends approximately 40 feet downstream from the toe of the embankment toe with a top at elevation 5100 feet msl. Three levels of horizontal drains are located at Elevations 5101, 5110, and 5120 feet msl. The RCC overflow spillway adjacent to the powerhouse extends the full width of the downstream slope with its reinforced concrete slab varying in width from 14 to 19 feet.

Right Abutment Crib Wall

The right abutment crib wall structure is composed of three concrete walls anchored in series to the right abutment rock and founded on alluvial foundation material. The upstream wall extends from the right abutment to the headrace wall upstream of the powerhouse at Elevation 5130 feet msl and into the foundation to an unknown depth. The central and downstream walls are approximately 66 feet long by 56 feet high and extend from the right abutment to the powerhouse with the top of the central wall at Elevation 5169.6 feet msl. The crib wall structure retains grouted rock fill. A

reinforced concrete stability block at the toe and a 3.5-foot thick concrete armoring layer from Elevation 5114 to 5150 feet msl were added to the downstream wall in 2012.

Access Road

Access to the facility is a two-lane road beginning at the county road, extending northerly 2,160 feet, and terminating near the left abutment of the dam.

Miscellaneous Structures

Other structures included in this project are four cottages, one garage, two shop buildings, two sheds, two boat launch ramps, one dock at the recreation site, and two railroad flat-car bridges. There is also a small structure on the west end of the crib wall that houses the emergency power unit transformer.

Transmission Lines

The transmission line from the powerhouse to the substation is a 133-foot-long, 46,000 volt overhead line.

Reservoir

The normal maximum water surface area of Ashton Reservoir is 388 acres at Elevation 5156.0 feet msl. The maximum water surface elevation is 5156.6 msl. The gross storage capacity of the reservoir is 6,119 acre-feet.

Recreation

The Ashton Reservoir and tailrace waters provide desirable fishing opportunities. The reservoir is stocked annually in compliance with the License-mandated fish stocking plan. The reservoir fishery is utilized for bank fishing at the upstream end and near residences, and for boat fishing and winter ice fishing. Upstream access to the reservoir is provided at the Ashton Boat Launch. This recreation site has two launch ramps: one for drift boaters to take out when they reach the reservoir headwater and the second for reservoir power boat access. The recreation site has accessible parking and toilet facilities. Angler access to the river is provided along a project access road directly downstream of the dam. This road allows anglers to access an island directly below the dam, and also the downstream river reach to Ora Bridge.

Federally Owned Lands

The Ashton Hydroelectric Project Boundary includes 0.39 acres that are administered by the US Bureau of Land Management (Table 3). The federal lands within the Project boundary are not occupied by Project transmission lines.

Table 3. Description of Federal Lands within the Ashton Hydroelectric Project Boundary				
PLSS Township and Range, Boise Meridian	PLSS Section	Subdivision Description	Acres	Agency Jurisdiction
T9N, R42E	21	Portions of the SW1/4 of the NE1/4	0.39	BLM

Code of Federal Regulation Citation

18 CFR, Subchapter B, Subpart E, 4.41(b) Exhibit A is a description of the project. If the project includes more than one dam with associated facilities, each dam and the associated component parts must be described together as a discrete development. The description for each development must contain:

- (1) The physical composition, dimensions, and general configuration of any dams, spillways, penstocks, powerhouses, tailraces or other structures proposed to be included as part of the project;
- (2) The normal maximum water surface area and normal maximum water surface elevation (mean sea level); gross storage capacity of any impoundments to be included as part of the project;
- (3) The number, type, and rated capacity of any proposed turbines or generators to be included as part of the project;
- (4) The number, length, voltage and interconnections of any primary transmission lines proposed to be included as part of the project [See 16 U.S.C. 796(11)];
- (5) The description of any additional mechanical, electrical, and transmission equipment appurtenant to the project; and
- (6) All lands of the United States, including lands patented subject to the provisions of section 24 of the Act, 16 U.S.C. 818, that are enclosed within the project boundary described under paragraph (h) of this section (Exhibit G), identified and tabulated by legal subdivisions of a public land survey by the best available legal description. The tabulation must show the total acreage of the lands of the United States within the project boundary.

Document Content(s)

2013 11-27 Ashton Remed-Lic Rev Exhs A-F for Apprval Ltr.PDF.....1-4

2013 11-27 Ashton Proj Exh A FINAL.PDF.....5-15