
Hydrostatic Test Plan



FERC Docket No. CP09-____000

January 2009

HYDROSTATIC TEST PLAN

INTRODUCTION

The Ruby Pipeline Project (Project), proposed by Ruby Pipeline, LLC (Ruby), is composed of approximately 675.2 miles of 42-inch diameter natural gas pipeline, along with associated compression and measurement facilities, located between Opal, Wyoming and Malin, Oregon. An approximate 2.6-mile lateral would also be constructed south from the Malin Hub in Klamath County, Oregon. The pipeline right-of-way (ROW) would cross four states: Wyoming, Utah, Nevada, and Oregon. Four new compressor stations would also be installed as part of the Project. Once constructed, in order to assure compliance with U.S. Department of Transportation regulations, Ruby must pressure test this pipeline in accordance with CFR Part 192 requirements. For this Project, Ruby plans to hydrostatically test the pipeline using water pressured to the appropriate level.

Agency Consultation

Ruby has consulted with the Oregon Department of Fish and Wildlife (ODFW) and the Wyoming Game and Fish Department (WGFD) to determine general (non-site-specific) requirements for water withdrawal or discharge. Although Ruby has also conducted initial consultations with state agencies in Utah (Utah Division of Wildlife Resources (UDWR)) and Nevada (Nevada Department of Wildlife (NDOW), Nevada Department of Environmental Protection (NDEP), and Nevada Division of Water Resources (NDWR)) regarding general requirements for water withdrawal or discharge, it was indicated by agency personnel in these states that this issue would be more appropriately addressed on a site-specific basis. No general water withdrawal or discharge requirements were provided by UDWR, NDOW, NDEP, or NDWR. Ruby is continuing to coordinate with these agencies regarding site-specific mitigation measures for water withdrawal or discharge, such as the treatment of water for water-borne diseases and parasites.

The WGFD recommends discharging waters used for hydrostatic testing to the same eight-digit fourth level Hydrologic Unit Code (HUC) from which it was collected. This would prevent the inadvertent transfer of fish/plant diseases and invasive organisms, and avoid the release of water collected outside the State of Wyoming from being discharged to a live drainage within the State of Wyoming.

WGFD also recommended the use of temporary sediment basins in any areas where

- the water discharge point is less than 0.5 miles from a perennial stream; and
- the water discharge point is more than 0.5 miles from a perennial stream but the discharge flow is greater than 0.5 cubic feet per second (cfs).

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Ruby has also received guidance from the ODFW regarding water withdrawal and discharge locations and methods. In compliance with this guidance, water intakes would be screened per ODFW guidelines, and Ruby would ensure that adequately sized screens and approach velocities are included in the water withdrawal plans. All water would be discharged into the same drainage basin from which it was withdrawn, to prevent the inadvertent transfer of fish/plant diseases and invasive organisms. Approximate withdrawal rates would be 2,500 gallons per minute. During all proposed surface water withdrawals and waterbody construction activities, Ruby would comply with ODFW fish passage statutes (OAR 635-412-0005). Ruby would maintain adequate fish passage at all Project crossings to provide passage of native migratory fish (OAR 509.610). Ruby would provide fish passage design plans for all intermittent and perennial streams crossed in Oregon. If necessary, Ruby would apply for a fish passage waiver (OAR 635-412-0025) during in-water construction activities in waterbodies that contain sensitive fish species (Resource Report No. 3, Table 3A-6). If water used for construction or hydrostatic testing is not obtained from municipal supplies, Ruby would comply with Oregon Administrative Rules regarding Water Use Authorization (OAR 690-340-0010).

Hydrostatic Test Water Uptake Locations

The Project would withdraw water for use during hydrostatic testing at nine separate locations:

Waterbody	Milepost	State	Fill Volume (gallons)
Hams Fork River	MP 0.8	WY	14,402,192
Bear River (east)	MP 52.9	UT	12,873,028
Little Bear River	MP 94.9	UT	10,227,637
Bear River (west)	MP 113.8	UT	41,332,356
Mary's River	MP 300.1	NV	73,709,928
Irrigation Quarter	MP 435.3	NV	49,720,997
Deep Creek	MP 601.8	OR	23,013,415
Irrigation Canal	MP 624.3	OR	13,828,771
Lost River Canal	MP 665.8	OR	10,178,770

A total of 249,287,094 gallons (763.12 acre-feet) of water are proposed to be used for hydrostatic testing.

If needed, the East Ditch Canal at MP 91.8 could be used as an alternate water source to Little Bear River. Additionally, Ruby is in the process of identifying new water well locations along the Project. Ruby would acquire the appropriate permits necessary for drilling these water wells to provide hydrostatic test and dust abatement water.

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Of these nine proposed water withdrawal locations listed above, six water sources, Hams Fork River, Bear River (east), Little Bear River, Bear River (west), Marys River, and Deep Creek potentially contain federally or state-listed (including BLM and USFS) sensitive fish species at or in the vicinity of the Project crossing (Resource Report No. 3, Table 3A-6, and Tables 3.4-2 through 3.4-5).

The Bear River is likely to contain the following sensitive fish species at or near the Project crossing: bluehead sucker, Bonneville cutthroat trout, and northern leatherside chub. All three species are listed as BLM sensitive and Utah sensitive.

The next nearest waterbodies with potential sensitive fish presence are Porcupine Reservoir (Cache County, Utah) and Mantua Reservoir (Box Elder County, Utah). In both instances, the location of discharge would be a mile or further from the potentially sensitive waterbody.

The intakes would be set in areas of flowing water to avoid sedimentation and the rate of withdrawal would assure a continued flow in the river, up to 2,500 gallons per minute (5.6 cubic feet per second). Water would be drawn out with a low pressure pump, pumping into the suction side of a high pressure pump that would move water into the pipeline. All pumps would be located in fuel/oil containment areas.

Any additional restrictions issued by the Federal Energy Regulatory Commission (FERC) would be observed where water is withdrawn. Withdrawal and discharge would likely begin between August 1 and December 31, 2010.

TESTING

The pipeline would be filled completely in 214 separate test sections; approximately 20 segments could be filled at one time from a single source. The following best management practices (BMPs) would be implemented.

If the pump head is located in the river channel the following practices would apply:

- a. the pump would not be situated in a low-flow or no-flow area, as these habitats tend to concentrate larval fishes;
- b. the amount of pumping rate would be limited, to the greatest extent possible, during that period of the year when larval fish may be present.
- c. the amount of pumping will be limited to the greatest extent possible, during the pre-dawn hours as larval drift studies indicate that this is a period of greatest daily activity.

During the filling of the pipeline, the water intake at the location where water is being taken would be screened with 0.25-inch mesh screen to prevent entrainment of fish and other aquatic organisms from the river.

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Any fish impinged on the intake screen or entrained into irrigation canals would be reported to the U.S. Fish and Wildlife Service (USFWS) or the appropriate state agency.

Ruby intends to use water for testing purposes for no more than three months. Discharges would occur at the locations described below. Prior to the hydro testing, the pipeline segment to be tested has been inspected and welds have been x-rayed. In the unlikely event that there should be an accidental release due to pipeline or valve failure, the location of the release would be contained as quickly as practicable and, once the facility has been repaired and retested, the right-of-way would be recontoured and reclaimed in compliance with the Reclamation Plan.

Hydrostatic Testing Water Discharge Locations

Ruby would test the Project in approximately 214 test sections. The number of test sections is necessitated by both the elevation changes and water source availability across the area of the Project. Sufficient sources of water, in close proximity to the Project, are not available in all cases. This would prevent Ruby from being able to discharge its test water within the same eight-digit fourth level HUC from which it was withdrawn. Additionally, cascading water back across elevation changes following testing would need to be accomplished using high-pressure air. Commercial air compressors cannot efficiently maintain the pressure required to move test water over large elevation changes and long distances. Further, the high-pressure air has a tendency to become entrained within the discharge water creating unpredictable and unsafe conditions (e.g., uncontrolled releases of high pressure air and water) at the discharge location.

Where Ruby cannot discharge into the same hydrologic region from which the water was withdrawn, Ruby would use industry-accepted and agency-approved biocides to appropriately treat testing water (with the exception of water obtained from wells [groundwater]), for pathogens in accordance with manufacturer specifications prior to discharge. If necessary, all biocide-treated water would be neutralized prior to discharge.

Discharges are planned to occur at the following locations identified in the table below:

Currently Proposed Hydrostatic Test Water Discharges for the Ruby Project			
Manifold Milepost	Discharge Volume Gallons	Water Source	Water Disposal Site
0.00	0	Hams Fork 0.00 To 39.15	Open Ground
0.98	4,299,058		Open Ground
11.68	2,618,454		Open Ground
18.80	3,635,735		Open Ground

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Currently Proposed Hydrostatic Test Water Discharges for the Ruby Project			
28.68	734,393		Open Ground
30.68	1,301,562		Open Ground
34.22	1,812,990		Open Ground
40.15	369,984	Bear River (East Crossing) 39.15 To 74.19	Open Ground
40.76	171,982		Open Ground
42.07	533,724		Open Ground
48.71	2,442,171		Open Ground
52.70	3,310,345		Open Ground
57.71	859,049		Open Ground
60.15	556,718		Open Ground
61.67	346,294		Open Ground
62.61	363,713		Open Ground
63.59	335,842		Open Ground
64.51	456,383		Open Ground
65.75	301,700		Open Ground
66.57	1,227,008		Open Ground
69.85	971,991		Open Ground
72.49	73,587		Open Ground
72.69	552,537		Open Ground
74.35	57,832	Little Bear River 74.19 To 101.94 East Ditch Canal (Alternate To Little Bear River) at MP 91.84	Open Ground
75.59	456,383		Open Ground
76.39	294,036		Open Ground
76.80	153,986		Open Ground
77.51	259,894		Open Ground
77.92	151,199		Open Ground
81.55	1,335,007		Open Ground
82.81	461,957		Open Ground
84.45	604,098		Open Ground
85.13	250,140		Open Ground
86.09	348,384		Open Ground
87.54	526,464		Open Ground
88.24	258,932		Open Ground
88.63	145,624		Open Ground
89.26	232,024		Open Ground
91.43	796,406		Open Ground
91.84	150,198	Open Ground	
92.88	355,352	Open Ground	
94.61	664,888	Open Ground	
94.87	264,772	Open Ground	
95.33	236,901	Open Ground	
95.92	381,048	Open Ground	
97.04	1,090,442	Open Ground	
100.01	232,024	Open Ground	
100.64	252,087	Open Ground	

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Currently Proposed Hydrostatic Test Water Discharges for the Ruby Project			
101.33	267,559		Open Ground
103.66	633,362		Open Ground
104.68	373,272		Open Ground
105.09	153,289		Open Ground
109.05	1,421,284		Open Ground
113.65	6,992,763		Open Ground
128.11	282,888		Open Ground
128.87	357,442		Open Ground
129.84	452,202		Open Ground
131.07	375,558		Open Ground
132.13	1,214,466		Open Ground
135.43	1,308,530		Open Ground
138.99	472,409		Open Ground
140.27	390,887		Open Ground
141.33	300,307		Open Ground
142.15	418,061		Open Ground
143.29	197,589		Open Ground
143.82	174,192	Bear River (West Crossing)	Open Ground
144.30	340,719		Open Ground
145.22	386,009		Open Ground
146.27	2,435,900		Open Ground
152.89	1,145,486		Open Ground
156.01	712,794		Open Ground
157.95	121,238		Open Ground
158.27	6,826,932		Open Ground
176.83	843,089		Open Ground
179.13	1,006,133		Open Ground
181.87	1,460,425		Open Ground
185.84	534,421		Open Ground
187.29	889,076		Open Ground
189.71	1,489,341		Open Ground
193.76	1,920,989		Open Ground
198.98	5,701,303		Open Ground
227.58	4,823,724	Mary's River 214.47 To 414.70	Open Ground
229.22	600,614		Open Ground
229.68	172,798		Open Ground
230.11	157,470		Open Ground
231.49	507,944		Open Ground
232.76	466,834		Open Ground
234.75	733,000		Open Ground
236.53	654,962		Open Ground
241.28	1,752,371		Open Ground
243.68	886,289		Open Ground
245.42	638,239		Open Ground

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Currently Proposed Hydrostatic Test Water Discharges for the Ruby Project			
246.81	512,124		Open Ground
252.84	2,221,296		Open Ground
256.65	1,399,807		Open Ground
269.40	4,689,945		Open Ground
272.16	1,017,978		Open Ground
273.25	399,248		Open Ground
274.70	543,479		Open Ground
278.44	1,373,329		Open Ground
281.30	986,623		Open Ground
281.69	209,030		Open Ground
282.98	475,892		Open Ground
283.30	116,360		Open Ground
283.93	232,720		Open Ground
288.09	1,533,586		Open Ground
291.17	1,130,854		Open Ground
303.65	7,789,168		Open Ground
312.34	1,597,689		Open Ground
316.68	560,201		Open Ground
318.20	213,908		Open Ground
318.78	1,149,667		Open Ground
321.91	587,375		Open Ground
323.50	2,348,108		Open Ground
329.89	3,148,694		Open Ground
338.44	1,230,492		Open Ground
341.78	1,284,840		Open Ground
345.27	372,074		Open Ground
346.28	339,743		Open Ground
347.19	87,793		Open Ground
347.45	422,512		Open Ground
348.60	177,676		Open Ground
349.08	203,456		Open Ground
349.64	118,659		Open Ground
349.96	177,676		Open Ground
350.44	238,295		Open Ground
351.09	1,029,823		Open Ground
353.89	843,089		Open Ground
356.17	466,138		Open Ground
357.44	1,047,242		Open Ground
360.28	1,197,047		Open Ground
363.54	2,003,208		Open Ground
368.96	1,281,356		Open Ground
372.46	1,403,987		Open Ground
376.27	4,656,500		Open Ground
388.92	747,632		Open Ground

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Currently Proposed Hydrostatic Test Water Discharges for the Ruby Project			
390.95	8,749,314		Open Ground
415.85	413,183		Open Ground
417.00	427,815		Open Ground
418.66	610,369		Open Ground
419.14	176,979		Open Ground
420.23	399,945		Open Ground
436.94	6,794,880		Open Ground
438.69	1,937,015		Open Ground
443.95	409,998		Open Ground
445.08	2,158,238		Open Ground
450.09	12,321,991		Open Ground
484.43	675,865		Open Ground
486.26	5,243,178		Open Ground
500.52	2,069,401		Open Ground
506.14	146,321		Open Ground
506.54	292,643		Open Ground
507.37	1,111,345		Open Ground
510.35	355,352		Open Ground
511.31	283,585		Open Ground
512.08	568,064		Open Ground
513.63	510,897	Irrigation Well 414.7 To 549.9	Open Ground
515.03	459,867		Open Ground
516.28	621,935		Open Ground
517.98	498,886		Open Ground
519.33	512,124		Open Ground
520.72	324,425		Open Ground
521.61	1,458,335		Open Ground
525.58	593,646		Open Ground
527.21	477,286		Open Ground
528.50	474,499		Open Ground
529.79	822,883		Open Ground
532.03	171,405		Open Ground
532.49	2,071,491		Open Ground
538.12	785,954		Open Ground
540.27	315,956		Open Ground
541.14	378,345		Open Ground
542.16	334,449		Open Ground
543.07	341,416	Open Ground	
544.00	849,959	Open Ground	
546.31	1,321,072	Open Ground	
572.46	8,304,079	Deep Creek 549.9 To 612.45	Open Ground
574.21	643,619		Open Ground
577.44	1,185,202		Open Ground
579.93	919,037		Open Ground

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Currently Proposed Hydrostatic Test Water Discharges for the Ruby Project			
584.24	1,501,535		Open Ground
587.94	1,444,400		Open Ground
588.85	328,874		Open Ground
591.02	801,283		Open Ground
592.10	395,764		Open Ground
599.82	2,840,723		Open Ground
602.22	1,789,997		Open Ground
604.68	418,757		Open Ground
605.82	1,774,668		Open Ground
610.64	200,669		Open Ground
611.19	464,808		Open Ground
612.45			Open Ground
612.96	186,037		Irrigation Canal 612.45 To 650.06
613.39	155,675	Open Ground	
613.72	122,620	Open Ground	
614.23	187,553	Open Ground	
627.85	7,506,280	Open Ground	
634.64	421,853	Open Ground	
635.79	3,605,774	Open Ground	
645.59	1,642,979	Open Ground	
653.69	1,312,711	Lost River Canal 650.06 To 675.2 plus 2.6 mile lateral	Open Ground
658.04	1,605,353		Open Ground
661.65	1,328,736		Open Ground
665.18	2,523,693		Open Ground
668.51	86,399		Open Ground
668.74	97,548		Open Ground
669.01	128,647		Open Ground
669.36	1,285,537		Open Ground
672.83	266,389		Open Ground
673.56	114,270		Open Ground
673.87	472,687	Open Ground	
675.20	956,800	Open Ground	
Total	249,287,044		

The pipe used for the Project would be new. Typically, hydrostatic test water will pick up some iron oxide (rust) from new pipeline, depending on the total duration the water remains in the pipeline. The quantity is generally fairly small and may give the discharge water a slight red color. The water may also pick up some sand or dirt left over from the installation. While night caps are always installed after a days work, dirt may still find its way into the pipeline.

Ruby would discharge hydrostatic test water in a manner that precludes erosion. Where the discharge point is more than 0.5 mile from a perennial stream and the flow is less than 0.5

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cfs, Ruby would discharge hydrostatic test water into a temporary sediment basin or structure consisting of both hay bales and/or silt fence for sediment control (Typical Drawings, Appendix 1C, Resource Report No. 1). Any contaminants in the discharge water would likely be below the required minimums. To ensure this conclusion, water would be collected and tested^a at a certified water testing laboratory^a. The discharge locations would consist of nearly level or gently rolling, vegetated upland areas to help avoid erosion issues. Sites with restrictive drainage features (e.g., shallow depth to clay or bedrock) would be avoided.

^aThe hydrostatic test discharge permit in Wyoming will require analysis of TSS, TDS, total iron, pH, and a visual for oil and grease (if a sheen is observed an oil and grease sample will be collected, if a sheen is not observed, it will be documented in field notes/reports). Utah will require TSS, pH, and a visual for oil and grease.