Appendix F

Wetlands and Waterbodies on BLM land

Appendix F - Wetlands Crossed by the Project on BLM Land [a]

Data contained within this table are based on the REV Lv18 centerline shapefile issued on 2/12/10

County	Project Component [h]	Feature Status [m]	Wetland I.D. [c, l]	Wetland Classification (NWI) [d]	Crossing MP [b]	Crossing Length [e] (feet)	Acreage Affected: Temp. [f]	Acreage Affected: Perm. [g]	Acreage Affected: EWS	Proposed Crossing Method (CM) [i,j]
Pipeline										
Wyoming										
Campbell	Pipeline	No Change	W6BCM010*	PEM	74.00	15.85	0.02	0.02	0.00	Open-Cut Wet
Montana										
Carter	Pipeline	No Change	W5KCA002*	PEM	96.59	4.16	0.01	0.00	0.00	Open-Cut Wet
Carter	Workspace	No Change	W2ACA033	PEM	121.78	10.00	0.00	0.00	0.00	N/A
Carter	Pipeline	No Change	W4FCA002*	PEM	124.29	73.84	0.12	0.09	0.00	Open-Cut Wet
North Dakota										
(none)										
Access Roads [k]										
Wyoming										
Campbell	#CM-96-1	Added	W3LCM003	PEM	19.94	N/A	N/A	N/A	N/A	N/A
Montana										
(none)										
North Dakota										
(none)										

Notes:

[a] The features listed within this table represent all wetland features that occur within the proposed Project area, including those that may be crossed by the Project centerline and those that are partially or wholly enclosed within the Project's temporary workspaces, facilities (yards or launcher, receiver and meter stations) or access roads. In addition, features that do not occur within the Project, but that may have been located within the 300-foot survey corridor and/or in the general vicinity of the Project, are also included within this table with a "Project Component" value of "Out of Scope"; crossing methods for such features are listed as "N/A," since these features are not applicable to the scope of the project. "Out of Scope" features are not included in any summaries or counts of Project impacts. Alignment maps included as part of this filing may depict additional wetlands that are located within the general vicinity of the Project, but which are not impacted by the Project nor included as "Out of Scope" features Features that are not applicable to the scope of the Project have been omitted from the cumulative crossings and acreage data that are provided.

[b] Mileposts (MP) are based on feature location along the project centerline.

[c] Feature IDs correspond to Wetland and Waterbody Reports.

[d] PEM = Palustrine Emergent Wetland; PSS = Palustrine Scrub-Shrub Wetland; PFO = Palustrine Forested Wetland.

[e] Crossing lengths of the features were obtained based on the length of the feature along the centerline. Crossing lengths for features not along the centerline were measured at the greatest length parallel to the centerline within the Construction Right-of-Way (ROW).

[f] Temporary acreage impacts represent the disturbance expected within the 120' Construction ROW, which includes Permanent ROW impacts, and represent the maximum total acreages expected to be impacted at each crossing. Additionally, temporary acreage impacts reflect a 75' neckdown of the Construction ROW through wetland areas.

[g] Permanent Impact Acreages were calculated along the 50-foot Permanent ROW. After construction, PEM and PSS wetlands would be allowed to re-establish to pre-construction conditions.

[h] At this time no impacts to wetlands are anticipated within EWS or proposed Project facilities (yards or launcher, receiver and meter stations) that are not explicitly identified in the "Project Component" column. Therefore, no impacts are expected to result from EWS or Project facilities. This column has also been updated with approved Re-routes since REV Lv11 for the affected

[i] "Open-Cut Wet" = This method would be used in dry wetlands where soils are stable enough to support equipment without sinking (e.g., mineral hydric soils) or in wetlands that have previously been disturbed and can support equipment; a reduced Construction ROW width and overland construction techniques would be used without matting, if conditions are stable.

[j] Wetland crossing methods would be determined prior to the start of construction and would be based upon the saturation present at each wetland. Wetlands that are proposed for HDD crossings would not likely incur aboveground impacts; temporary and permanent impact values for such features are provided within this table as "0.00" (i.e., zero acres impacted).

[k] Wetlands or waterbodies along proposed access roads would be crossed using bridging or matting techniques in order to minimize impacts to these features. Acreages provided within this table for such features represent the acreage of the feature that will be crossed in this manner, and do not represent either temporary or permanent impacts to such features.

[l] Wetlands that are identified with an asterisk (*) are riparian wetlands.

[m] This column indicates a status change in a feature due to Re-routes and Access Roads approved since REV Lv11. Features noted as "Added" are newly surveyed features along the approved Re-route (s) or Access Road (s).

Appendix F - Waterbodies Crossed by the Bison Pipeline Project on BLM Land[a]

Data contained within this table are based on the REV Lv18 centerline shapefile issued on 2/12/10

County	Project Component [j]	MP[b]	Water Width/ Crossing Distance (feet) [c]	Channel Width (feet)[d]	Waterbody I.D.[e]	Waterbody Name	Type[f]	State Quality Class-ification[g]	Method to be used if flowing water is present (CM)[h]	Method proposed based on expected water conditions at time of crossing (CM)[k]
WYOMING										
Campbell	Pipeline	74.01	1.0	30.0	S4ICM006	Dry Trail Creek	INT	3B	Open-Cut Dry	Open-Cut Wet
MONTANA										
Carter	Pipeline	96.60	0.0	20.0	S5KCA002	Unnamed Trib To East Fork Little Powder River	EPH	E1	Open-Cut Dry	Open-Cut Wet
Carter	Pipeline	97.33	2.0	8.0	S7CCA002	Unnamed Waterbody	INT	C3	Open-Cut	Open-Cut Wet
Carter	Pipeline	97.37	3.0	5.0	S7CCA003	Unnamed Waterbody	INT	C3	Open-Cut	Open-Cut Wet
Carter	Pipeline	97.58	2.0	4.0	S9ACA002	Unnamed Waterbody	EPH	E1	Open-Cut	Open-Cut Wet
Carter	Pipeline	97.79	2.0	6.0	S9ACA003	Unnamed Waterbody	EPH	E1	Open-Cut	Open-Cut Wet
Carter	Pipeline	97.91	2.0	6.0	S9ACA004	Unnamed Waterbody	EPH	E1	Open-Cut	Open-Cut Wet
Carter	Pipeline	98.08	3.0	30.0	S7CCA004	Unnamed Waterbody	INT	C3	Open-Cut	Open-Cut Wet
Carter	Pipeline	121.66	2.0	3.5	S2ACA020	Whitetail Creek	INT	C3	Open-Cut	Open-Cut Wet
Carter	Workspace	121.68	2.0	3.5	S2ACA020	Whitetail Creek	INT	C3	N/A	N/A
Carter	Pipeline	121.68	1.0	6.0	S2ACA021	Whitetail Creek	INT	C3	Open-Cut	Open-Cut Wet
Carter	Workspace	122.42	0.0	5.0	S2ACA019	North Fork Whitetail Creek	EPH	E1	N/A	N/A
Carter	Pipeline	122.44	1.0	18.0	S2ACA018	North Fork Whitetail Creek	INT	C3	Open-Cut	Open-Cut Wet
Carter	Pipeline	122.55	3.5	4.0	S2ACA017	Unnamed Trib To North Fork Whitetail Creek	INT	C3	Open-Cut Dry	Open-Cut Wet
Carter	Pipeline	122.60	0.0	5.0	S2ACA016	Unnamed Trib To North Fork Whitetail Creek	INT	C3	Open-Cut Dry	Open-Cut Wet
Carter	Workspace	122.61	0.0	5.0	S2ACA016	Unnamed Trib To North Fork Whitetail Creek	INT	C3	N/A	N/A
Carter	Workspace	122.62	0.0	5.0	S2ACA016	Unnamed Trib To North Fork Whitetail Creek	INT	C3	N/A	N/A
Carter	Pipeline	123.78	0.0	6.0	S2ACA024	Unnamed Waterbody	INT	C3	Open-Cut	Open-Cut Wet
Carter	Pipeline	124.30	0.0	5.0	S4FCA007	Muskrat Creek	INT	C3	Open-Cut	Open-Cut Wet
Carter	Workspace	133.10	0.0	6.0	S4FCA015	McCarty Creek	INT	C3	N/A	N/A
Carter	Pipeline	133.12	0.0	6.0	S4FCA015	McCarty Creek	INT	C3	Open-Cut	Open-Cut Wet
Carter	Pipeline	133.72	0.0	3.0	S4FCA014	Unnamed Waterbody	INT	C3	Open-Cut	Open-Cut Wet
Carter	Pipeline	135.04	0.0	15.0	S4FCA013	Unnamed Waterbody	INT	C3	Open-Cut	Open-Cut Wet
Carter	Workspace	138.49	4.0	7.0	S4CCA007	Unnamed Trib To Dead Boy Creek	INT	C3	N/A	N/A
Carter	Workspace	138.54	4.0	7.0	S4CCA007	Unnamed Trib To Dead Boy Creek	INT	C3	N/A	N/A
Carter	Pipeline	138.56	4.0	9.0	S4CCA006	Unnamed Trib To Dead Boy Creek	INT	C3	Open-Cut Dry	Open-Cut Wet
Carter	Pipeline	138.60	12.0	15.0	S4CCA005	Dead Boy Creek	INT [l]	C3	Open-Cut	Open-Cut Wet

Appendix F - Waterbodies Crossed by the Bison Pipeline Project on BLM Land[a]

Data contained within this table are based on the REV Lv18 centerline shapefile issued on 2/12/10

County	Project Component [j]	MP[b]	Water Width/ Crossing Distance (feet) [c]	Channel Width (feet)[d]	Waterbody I.D.[e]	Waterbody Name	Type[f]	State Quality Class-ification[g]	Method to be used if flowing water is present (CM)[h]	Method proposed based on expected water conditions at time of crossing (CM)[k]
Carter	Pipeline	138.96	0.0	4.0	S4CCA004	Unnamed Trib To Dead Boy Creek	EPH	E1	Open-Cut Dry	Open-Cut Wet
Carter	Pipeline	140.23	4.0	6.0	S4CCA003	North Fork Dead Boy Creek	INT	C3	Open-Cut	Open-Cut Wet
Carter	Pipeline	140.29	0.0	9.0	S4CCA002	Unnamed Trib To North Fork Dead Boy Creek	INT	C3	Open-Cut Dry	Open-Cut Wet
Carter	Pipeline	140.30	0.0	9.0	S4CCA002	Unnamed Trib To North Fork Dead Boy Creek	INT	C3	Open-Cut Dry	Open-Cut Wet
Carter	Pipeline	140.38	0.0	9.0	S4CCA002	Unnamed Trib To North Fork Dead Boy Creek	INT	C3	Open-Cut Dry	Open-Cut Wet
Carter	Pipeline	141.81	0.0	9.0	S4CCA001	Keltner Draw	EPH	E1	Open-Cut	Open-Cut Wet
NORTH DAKOTA										
Bowman	Pipeline	178.38	0.0	10.0	S6BBO013	Unnamed Waterbody	EPH	III	Open-Cut	Open-Cut Wet
Bowman	Pipeline	178.47	0.0	4.0	S6BBO015	Unnamed Waterbody	EPH	III	Open-Cut	Open-Cut Wet
Bowman	Pipeline	178.84	4.0	4.0	S4IBO019	Unnamed Trib To Little Missouri River	INT	III	Open-Cut Dry	Open-Cut Wet
Bowman	Pipeline	179.08	3.0	4.0	S4IBO020	Unnamed Waterbody	INT	III	Open-Cut	Open-Cut Wet
Bowman	Pipeline	179.56	1.0	10.0	S4IBO021	Unnamed Waterbody	INT	III	Open-Cut	Open-Cut Wet
Bowman	Pipeline	180.33	1.0	20.0	S4IBO022	Unnamed Waterbody	INT	III	Open-Cut	Open-Cut Wet
Bowman	Workspace	180.60	2.0	15.0	S4IBO023	Unnamed Waterbody	INT	III	N/A	N/A
Bowman	Pipeline	180.61	0.0	2.0	S6BBO016	Unnamed Trib To Little Missouri River	EPH	III	Open-Cut Dry	Open-Cut Wet
Bowman	Workspace	180.61	4.0	15.0	S4IBO024	Unnamed Trib To Little Missouri River	INT	III	N/A	N/A
Bowman	Workspace	180.99	0.0	10.0	S4IBO025	Unnamed Trib To Little Missouri River	INT	III	N/A	N/A
Bowman	Pipeline	181.18	0.0	10.0	S4IBO025	Unnamed Trib To Little Missouri River	INT	III	Open-Cut Dry	Open-Cut Wet
Bowman	Pipeline	181.33	2.0	25.0	S4IBO026	Unnamed Trib To Little Missouri River	INT	III	Open-Cut Dry	Open-Cut Wet
Bowman	Workspace	181.51	0.0	30.0	S4IBO027	Unnamed Waterbody	EPH	III	N/A	N/A
Bowman	Pipeline	181.53	0.0	30.0	S4IBO027	Unnamed Waterbody	EPH	III	Open-Cut	Open-Cut Wet
Bowman	Pipeline	181.88	0.0	18.0	S5KBO001	Unnamed Waterbody	EPH	III	Open-Cut	Open-Cut Wet
Bowman	Workspace	181.88	0.0	18.0	S5KBO001A	Unnamed Waterbody	EPH	III	N/A	N/A
Bowman	Pipeline	191.25	0.0	5.0	S5KBO006	Unnamed Waterbody	EPH	III	Open-Cut	Open-Cut Wet

Notes:

Appendix F - Waterbodies Crossed by the Bison Pipeline Project on BLM Land[a]

Data contained within this table are based on the REV Lv18 centerline shapefile issued on 2/12/10

County	Project Component [j]	MP[b]	Water Width/ Crossing Distance (feet) [c]	Channel Width (feet)[d]	Waterbody I.D.[e]	Waterbody Name	Type[f]	State Quality Class-ification[g]	Method to be used if flowing water is present (CM)[h]	Method proposed based on expected water conditions at time of crossing (CM)[k]

[a] The features listed within this table represent all waterbody features that occur within the proposed Project area, including those that may be crossed by the Project centerline and those that are partially or wholly enclosed within the Project's temporary workspaces, facilities (yards or launcher, receiver and meter stations) or access roads. In addition, features that do not occur within the Project, but that may have been located within the 300-foot survey corridor and/or in the general vicinity of the Project, are also included within this table with a "Project Component" value of "Out of Scope"; crossing methods for such features are listed as "NA," since these features are not applicable to the scope of the project. "Out of Scope" features are not included in any summaries or counts of Project impacts. Alignment maps included as part of this filing may depict additional waterbodies that are located within the general vicinity of the Project, but which are not impacted by the Project nor included as "Out of Scope" features. Features that are not applicable to the scope of the Project have been omitted from the cumulative crossings and acreage data that are provided.

[b] Mileposts (MP) are based on feature location along the project centerline. Those waterbodies listed multiple times are crossed by the Project more than once.

[c] Water width based upon width of water observed within the channel at the time of field or desktop survey analysis. Water width values of "0.00" indicate that no water was observed within the channel at the time of the survey.

[d] Channel width based upon biological field survey data, and is equivalent to "Top-of-Bank to Top-of-Bank" survey estimates of each waterbody feature.

[e] Feature IDs correspond to Wetland and Waterbody Reports.

[f] Water type: INT = Intermittent; PER = Perennial; EPH = Ephemeral; OW = Open Water

[g] State Water Quality Classifications:
3B = Wyoming tributary waters including adjacent wetlands that are not known to support fish populations or drinking water supplies and where those uses are not attainable.
C-3 = Montana waters classified C-3 are to be maintained suitable for bathing, swimming, and recreation, and growth and propagation of non-salmonid fishes and associated
E-1 = Montana waters classified E-1 are to be maintained suitable for agricultural purposes, secondary contact recreation, and wildlife.
III = North Dakota required that the quality of this class of waters shall be suitable for industrial and agricultural uses, i.e., cooling, washing, irrigation, and stock watering. These

[h] "Open-Cut Wet" = Wet Crossing (water width less than 50 feet), involves open cutting of the trench without diversion of non-flowing water that might be present. This method may be applied to waterbodies without perceptible flow at the time of construction.
"Open-Cut Dry" = Dry Crossing, involves diverting any flowing water in the waterbody around the crossing work area via dam-and-pump or flume techniques;
"NA" = Indicates this feature is not crossed by the Project centerline.

[i] Waterbody type changed in the DEIS from the June Filing. The listed OW features were found to be non-flowing at time of survey and therefore left as OW. Other type designations, such as EPH and INT were left as listed in the June Filing since this was the type designated by field crews during time of survey.

[j] At this time no impacts to waterbodies are anticipated within EWS or proposed Project facilities (yards or launcher, receiver and meter stations) that are not explicitly identified in the "Project Component" column. Therefore, no impacts are expected to result from EWS or Project facilities. This column has also been updated with approved Re-routes since REV Lv11 for the affected features.

[k] Contingency crossing methods are based on the amount of water present in the channel at the time of construction. Proposed crossing methods have been assigned based on the field survey and the presence/absence of water in the channel. During construction, if water is either present/absent, contingency methods have been proposed.