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	FERC Docket No. PF09-11-000	

APPENDIX 1K ALASKA PIPELINE PROJECT'S WETLAND AND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES

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Acronyms and Abbreviations

APP	Alaska Pipeline Project
BMP	best management practice
COE	U.S. Army Corps of Engineers
DOT	U.S. Department of Transportation
EI	Environmental Inspector
FERC	Federal Energy Regulatory Commission
HDD	horizontal directional drilling
MP	milepost
N/A	not available
NWI	National Wetlands Inventory
SWPPP	Storm Water Pollution Prevention Plan

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APP has developed these Wetland and Waterbody Construction and Mitigation Procedures (APP Procedures) to be applied to the Project. The APP Procedures address the requirements of the FERC Procedures, except where measures in the FERC Procedures, as modified in 2003, are considered unnecessary, technically infeasible, or unsuitable due to local conditions.

APP modifications to the FERC Procedures are specified by section number at the end of this document along with a justification for the proposed changes.

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I. APPLICABILITY

- A. These Procedures identify baseline mitigation measures for minimizing the extent and duration of project-related disturbance on wetlands and waterbodies. Once a project is certificated, further changes can be approved. Any such changes from the measures in these Procedures (or the applicant's approved procedures) will be approved by the Director of the Office of Energy Projects (Director), upon the applicant's written request, if the Director agrees than an alternative measure:

1. Provides equal or better environmental protection;
2. Is necessary because a portion of these Procedures is infeasible or unworkable based on project-specific conditions; or
3. Is specifically required in writing by another federal, state, or Native American land management agency for the portion of the project on its land or under its jurisdiction.

Any requirements in these Procedures to file material with the Secretary of the FERC (Secretary) do not apply to projects undertaken under the provisions of the blanket certificate program. This exemption does not apply to a request for alternative measures.

Measures to address erosion and sediment controls in uplands, wetlands, and waterbody crossings are addressed in the APP Erosion Control, Revegetation, and Maintenance Plan (APP Plan).

B. DEFINITIONS

1. "Waterbody" includes stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds or lakes:
 - a) "Minor waterbody" includes waterbodies less than or equal to 10 feet wide at the water's edge at the time of crossing;
 - b) "Intermediate waterbody" includes waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of crossing; and
 - c) "Major waterbody" includes waterbodies greater than 100 feet wide at the water's edge at the time of crossing.
2. "Wetland" includes any area that is not in actively cultivated or rotated cropland and that satisfies the requirements of the current federal methodology for identifying and delineating wetlands.

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II. PRECONSTRUCTION FILING

- A. The following information shall be filed with the Secretary prior to the beginning of construction:
1. The hydrostatic testing information specified in Section IX.B.3 and a wetland delineation report as described in Sections VII.A.1 and VIII.A.1, if applicable; and
 2. A schedule identifying when trenching or blasting would occur within each waterbody greater than 10 feet wide, or within a designated cold-water fishery. The project sponsor shall revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period must provide for at least 48 hours advance notice.
- B. The following information required by these Procedures must be filed with the Secretary for the review and written approval by the Director:
1. Extra work areas that would be closer than 50 feet from a waterbody or wetland (for summer wetland crossings only where right-of-way reduction is required);
 2. Major waterbody crossings;
 3. The use of a construction right-of-way greater than 100 feet wide in wet and unstable wetlands and a minimum of 160 feet wide if it is stable; and
 4. Horizontal directional drill (HDD) "crossings" of wetlands or waterbodies.

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III. ENVIRONMENTAL INSPECTORS

- A. At least one Environmental Inspector (EI) having knowledge of the wetland and waterbody conditions in the project area is required for each construction spread. The number and experience of EIs assigned to each construction spread should be appropriate for the length of the construction spread and the number/significance of resources affected.
- B. EI's roles and responsibilities are outlined in the APP Erosion Control, Revegetation, and Maintenance Plan (Plan).

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IV. PRECONSTRUCTION PLANNING

- A. The APP Storm Water Pollution Prevention Plan (SWPPP) prepared for compliance with the U.S. Environmental Protection Agency's National Stormwater Program General Permit requirements must be available in the field on each construction spread. The SWPPP shall contain Spill Prevention and Response Procedures that meet the requirements of federal and state agencies.
1. It shall be the responsibility of the project sponsor and its contractors to structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands. The project sponsor and its contractors must, at a minimum, ensure that:
 - a) All employees handling fuels and other hazardous materials are properly trained;
 - b) All equipment is in good operating order and inspected on a regular basis;
 - c) Fuel trucks transporting fuel to on-site equipment travel only on approved access roads;
 - d) All equipment is parked overnight and/or fueled at least 100 feet from a waterbody or in an upland area at least 100 feet from a wetland boundary. These activities can occur closer only if the EI finds, in advance, no reasonable alternative and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
 - e) Hazardous materials, including chemicals, fuels, and lubricating oils are not stored within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas; and
 - f) Concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use. These activities can occur closer only if the EI finds, in advance, no reasonable alternative and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill.
 2. The project sponsor and its contractors must structure their operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. At a minimum, the project sponsor and its contractors must:

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- a) Ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills;
- b) Ensure that each construction crew has on hand sufficient tools and material to stop leaks;
- c) Know the contact names and telephone numbers for all local, state, and Federal agencies (including, if necessary, the U. S. Coast Guard and the National Response Center) that must be notified of a spill; and
- d) Follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.

B. AGENCY COORDINATION

The project sponsor must coordinate with the appropriate local, state, and Federal agencies as outlined in these Procedures and in the Certificate.

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V. WATERBODY CROSSINGS – SUMMER CONSTRUCTION

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate wetland and waterbody crossing permits.
2. Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least one week before beginning work in the waterbody, or as otherwise specified by that authority.
3. Apply for state-issued waterbody crossing permits and obtain individual or generic Section 401 water quality certification or waiver.
4. Notify appropriate state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in state permits.

B. INSTALLATION

1. Timing Window for Construction:

The Project will adhere to in-water work windows and conditions as required by federal and state agencies. In-water work includes, but is not limited to, installation and removal of equipment bridges, installation of the pipe crossing section, and water withdrawal.

2. Extra Work Areas:

- a) Locate extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land;
- b) The project sponsor shall file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50-foot setback from the water's edge, (except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback;
- c) Limit clearing of vegetation between extra work areas and the edge of the waterbody to the certificated construction right-of-way; and
- d) Limit the size of extra work areas to that needed to construct the waterbody crossing.

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3. General Crossing Procedures:

- a) Comply with the COE, or its delegated agency, permit terms and conditions;
- b) Construct crossings as reasonably close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit;
- c) If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody and the construction right-of-way;
- d) Where waterbodies meander or have multiple channels, route the pipeline to reduce the number of waterbody crossings;
- e) Maintain adequate flow rates to protect aquatic life, and prevent the substantial interruption of existing downstream uses; and
- f) Waterbody buffers (extra work area setbacks, refueling restrictions, etc.) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground-disturbing activities are complete.

4. Spoil Pile Placement and Control:

- a) All spoil from minor waterbody crossings, and bank spoil from intermediate and major waterbody crossings, will be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in Section VI.B.2; and
- b) Use sediment barriers to reduce the flow of spoil or heavily silt-laden water into a waterbody.

5. Equipment Bridges:

- a) Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment, unless access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.
- b) Construct equipment bridges to maintain unrestricted flow and to reduce soil from entering the waterbody. Examples of such bridges include:
 - (1) Equipment pads and culvert(s);
 - (2) Single-span structure, equipment pads or railroad car bridges without culverts;

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- (3) Clean rock fill or timber and culvert(s); and
- (4) Flexi-float or portable bridges;

Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges unless appropriate erosion and sediment controls are implemented;

- c) Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to reduce bank erosion or streambed scour. If necessary, install energy-dissipating devices downstream of the culverts;
- d) Design and maintain equipment bridges to reduce soil from entering the waterbody;
- e) Final removal of temporary equipment bridges will occur as soon as practicable after post-construction reclamation or as permitted; and
- f) If temporary bridges are designed to the specified design flood return period, bridges will be left in place until completion of post-construction reclamation where access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.

6. Isolated Crossing Methods:

- a) Unless approved otherwise by the appropriate state agency, install the pipeline using one of the isolated methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, and where the stream flow, soil, and terrain conditions at the time of construction allow.
- b) Dam and Pump:
 - (1) The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage;
 - (2) Implementation of the dam-and-pump crossing method must meet the following performance criteria:
 - (i) Use sufficient pumps, including on-site backup pumps, to maintain downstream flows;

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- (ii) Construct dams with materials that reduce sediment and prevent pollutants from entering the waterbody (e.g. sandbags or clean gravel with plastic liner);
- (iii) Screen pump intakes;
- (iv) Reduce streambed scour at pump discharge; and
- (v) Monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.

c) Flume Crossing:

The flume crossing method requires implementation of the following steps:

- (1) Install flume pipe after blasting (if necessary), but before trenching;
- (2) Use sandbag or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required to achieve an effective seal);
- (3) Properly align flume pipe(s) to reduce bank erosion and streambed scour;
- (4) Do not remove flume pipe during trenching, pipe laying, or backfilling activities, or initial streambed reclamation efforts; and
- (5) Remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the streambed and bank is complete.

d) Channel Diversion

- (1) The channel diversion method may be used at waterbodies with more than one channel, such as braided streams.
- (2) Use sandbag or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow away from the channel where the pipe section will be installed to another channel away from the installation section (some modifications to the stream bottom may be required to achieve an effective seal);
- (3) Install the pipe section, backfill the trench, remove excess spoil, and stabilize the channel prior to removing diversion dams before proceeding with diversion of the next channel section;
- (4) Complete tie-ins in areas that are isolated from stream flow;

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(5) After completion of the final channel section, remove dams that are not also part of an equipment bridge.

e) Horizontal Directional Drill (HDD):

To the extent they were not provided as part of the pre-certification process, for each waterbody that would be crossed using the HDD method, provide a plan that includes:

- (1) Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and areas to be disturbed or cleared for construction;
- (2) A description of how an inadvertent release of drilling mud would be contained and cleaned up; and
- (3) A contingency plan for crossing the waterbody in the event the directional drill is unsuccessful and how the abandoned drill hole would be sealed, if necessary.

f) Aerial-Span

The aerial-span crossing method involves suspending an aboveground pipeline over the geographic feature to be crossed. The aerial span crossing method types are as follows:

- (1) Single-span bridge with no supports in the waterbody. Supports for the bridge will be located on each bank at either end of the bridge. The pipeline will be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge;
- (2) A multi-span bridge with bridge supports on each bank and one or more supports within the waterbody. The pipeline could be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge; and
- (3) A cable suspension bridge with or without an in-stream support, depending upon the width of the crossing.

7. Crossings of Minor Waterbodies:

Where an isolated crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

- a) Except for blasting and other rock-breaking measures, complete in-stream construction activities (including trenching, pipe installation, backfill, and grading of the streambed contours) within 24 hours unless site-specific conditions make

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completion within 24 hours infeasible. Streambanks and unconsolidated streambeds may require additional reclamation after this period;

- b) Limit use of equipment operating in the waterbody to that needed to construct the crossing; and
- c) Equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification (e.g., agricultural or intermittent drainage ditches). However, if an equipment bridge is used it must be constructed as described in Section V.B.5.

8. Crossings of Intermediate Waterbodies:

Where an isolated crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

- a) Complete in-stream construction activities (not including blasting and other rock-breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible;
- b) Limit use of equipment operating in the waterbody to that needed to construct the crossing; and
- c) All other construction equipment must cross on an equipment bridge as specified in Section V.B.5.

9. Crossings of Major Waterbodies:

Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying areas to be disturbed by construction for each major waterbody crossing. This plan should be developed in consultation with the appropriate federal and state agencies and should include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.

The EI may adjust the final placement of the erosion and sediment control structures in the field to enhance effectiveness.

10. Temporary Erosion and Sediment Control:

Install sediment barriers (as defined in the APP Plan) immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls. The APP

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Plan will address both temporary and permanent controls; however, the following specific measures must be implemented at stream crossings:

- a) Install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. In the travel lane, these may consist of removable sediment barriers or driveable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;
- b) Where waterbodies are adjacent to a cut and fill on the construction right-of-way and the right-of-way slopes toward the waterbody, install sediment barriers along the downslope edge of the construction right-of-way as necessary to reduce sediment flow into the waterbody; and
- c) Use trench plugs at waterbody crossings, as necessary, to prevent diversion of stream water into adjacent upland portions of the pipeline trench and to keep accumulated trench water out of the waterbody.

11. Trench Dewatering:

If necessary to dewater the trench (either on or off the construction right-of-way), do so in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into a waterbody. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

C. RECLAMATION

1. Use clean gravel or native materials, per permit requirements, for the upper 1 foot of trench backfill in waterbodies that contain coldwater fisheries.
2. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing in-stream construction activities. For isolated crossings, complete initial streambed and bank stabilization before returning flow to the waterbody channel.
3. Return waterbody banks to preconstruction contours, as practical, or to a stable angle of repose as approved by the EI.
4. Application of riprap for bank stabilization must comply with COE, or its delegated agency, permit terms, and conditions.
5. Use riprap in areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric or as otherwise allowed by state permit.

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6. Stabilize and revegetate disturbed riparian areas per the APP Plan.
7. Install permanent erosion and sediment control in accordance with the APP Plan and associated BMPs. In some areas, with the approval of the EI, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.
8. Sections VI.C.3. through VI.C.6. also apply to those perennial or intermittent streams not flowing at the time of construction.

D. POST-CONSTRUCTION MAINTENANCE

1. Limit vegetation maintenance adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that are greater than 15 feet in height may be cut.

Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the permanent right-of-way may be performed.

Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.

2. Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency.

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VI. WATERBODY CROSSINGS– WINTER CONSTRUCTION

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply to the COE, or its delegated agency, for the appropriate waterbody crossing permits.
2. Not used.
3. Apply for state-issued waterbody crossing permits and obtain individual or generic Section 401 water quality certification or waiver.
4. Notify appropriate state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in state permits.

B. INSTALLATION

During winter construction where the waterbody is frozen to the stream bed, but ground water is encountered, APP will construct through the waterbody using an open cut crossing method. In the following sections, “waterbody” will not include waterbodies that are frozen to the stream bed as described above.

1. Timing Window for Construction:

The Project will adhere to in-water work windows and conditions as required by federal and state agencies for waterbodies. In-water work includes, but not is limited to, installation and removal of equipment bridges, installation of the pipe crossing section, and water withdrawal.

2. Extra Work Areas:

- a) Locate extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water’s edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land;
- b) The project sponsor shall file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50-foot setback from the water's edge, (except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback;
- c) Limit clearing of vegetation between extra work areas and the edge of the waterbody, to the certificated construction right-of-way; and

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- d) Limit the size of extra work areas to that needed to construct the waterbody crossing.
3. General Crossing Procedures:
- a) Comply with the COE, or its delegated agency, permit terms and conditions;
 - b) Construct crossings as reasonably close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit;
 - c) If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody and the construction right-of-way;
 - d) Where waterbodies meander or have multiple channels, route the pipeline to reduce the number of waterbody crossings;
 - e) Maintain adequate flow rates to protect aquatic life, and reduce the interruption of existing downstream uses; and
 - f) Waterbody buffers (extra work area setbacks, refueling restrictions, etc.) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground-disturbing activities are complete.
4. Spoil Pile Placement and Control:
- a) All spoil from minor waterbody crossings, and bank spoil from intermediate and major waterbody crossings, will be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in Section VI.B.2; and
 - b) Use sediment barriers to reduce the flow of spoil or heavily silt-laden water into a waterbody.
5. Equipment Bridges:
- a) Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment unless access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.
 - b) Construct equipment bridges to maintain unrestricted flow and to reduce soil from entering the waterbody. Examples of such bridges include:
 - (1) Equipment pads and culvert(s);

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- (2) Single-span structure, equipment pads or railroad car bridges without culverts;
- (3) Clean rock fill or timber and culvert(s);
- (4) Flexi-float or portable bridges; and
- (5) Ice or snow fill if frozen to stream bed and with a culvert if limited flow is present.

Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges, unless appropriate erosion and sediment controls are implemented.

- c) Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to reduce bank erosion or streambed scour. If necessary, install energy-dissipating devices downstream of the culverts;
- d) Design and maintain equipment bridges to reduce soil from entering the waterbody; and
- e) Final removal of temporary equipment bridges will occur as soon as practicable after reclamation or as permitted.
- f) If temporary bridges are designed to the specified design flood return period, bridges will be left in place until completion of post-construction reclamation where access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.

6. Isolated Crossing Methods

- a) Unless approved otherwise by the appropriate state agency, install the pipeline using one of the isolated methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, and where the stream flow, soil, and terrain conditions at the time of construction allow;
- b) Dam and Pump:
 - (1) The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage; and

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(2) Implementation of the dam-and-pump crossing method must meet the following performance criteria:

- (i) Use sufficient pumps, including on-site backup pumps, to maintain downstream flows;
- (ii) Construct dams with materials that reduce sediment and prevent pollutants from entering the waterbody (e.g. sandbags or clean gravel with plastic liner);
- (iii) Screen pump intakes;
- (iv) Reduce streambed scour at pump discharge; and
- (v) Monitor the dam and pumps to ensure proper operation throughout the waterbody crossing;

c) Flume Crossing:

The flume crossing method requires implementation of the following steps:

- (1) Install flume pipe after blasting (if necessary), but before trenching;
- (2) Use sandbag or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required to achieve an effective seal);
- (3) Properly align flume pipe(s) to reduce bank erosion and streambed scour;
- (4) Do not remove flume pipe during trenching, pipe laying, or backfilling activities, or initial streambed reclamation efforts; and
- (5) Remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the streambed and bank is complete;

d) Channel Diversion

- (1) The channel diversion method may be used at waterbodies with more than one channel, such as braided streams.
- (2) Use sandbag or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow away from the channel where the pipe section will be installed to another channel away from the installation section (some modifications to the stream bottom may be required to achieve an effective seal);

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- (3) Install the pipe section, backfill the trench, remove excess spoil, and stabilize the channel prior to removing diversion dams before proceeding with diversion of the next channel section;
 - (4) Complete tie-ins in areas that are isolated from stream flow;
 - (5) After completion of the final channel section, remove dams that are not also part of an equipment bridge.
- e) Horizontal Direct Drill (HDD):

To the extent they were not provided as part of the pre-certification process, for each waterbody that would be crossed using the HDD method, provide a plan that includes:

- (1) Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and areas to be disturbed or cleared for construction;
 - (2) A description of how an inadvertent release of drilling mud would be contained and cleaned up; and
 - (3) A contingency plan for crossing the waterbody in the event the HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary.
- f) Aerial-Span

The aerial-span crossing method involves suspending an aboveground pipeline over the geographic feature to be crossed. The aerial span crossing method types are as follows:

- (1) Single-span bridge with no supports in the waterbody. Supports for the bridge will be located on each bank at either end of the bridge. The pipeline will be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge;
- (1) A multi-span bridge with bridge supports on each bank and one or more supports within the waterbody. The pipeline could be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge; and
- (2) A cable suspension bridge with or without an in-stream support, depending upon the width of the crossing.

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7. Crossings of Minor Waterbodies:

Where an isolated crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

- a) Except for blasting and other rock breaking measures, complete in-stream construction activities (including trenching, pipe installation, backfill, and grading of the streambed contours) within 24 hours unless site-specific conditions make completion within 24 hours infeasible. Streambanks and unconsolidated streambeds may require additional reclamation after this period;
- b) Limit use of equipment operating in the waterbody to that needed to construct the crossing; and
- c) Equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification (e.g., agricultural or intermittent drainage ditches). However, if an equipment bridge is used it must be constructed as described in Section VI.B.5.

8. Crossings of Intermediate Waterbodies:

Where an isolated crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:

- a) Complete in-stream construction activities (not including blasting and other rock-breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible;
- b) Limit use of equipment operating in the waterbody to that needed to construct the crossing; and
- c) All other construction equipment must cross on an equipment bridge as specified in Section VI.B.5.

9. Crossings of Major Waterbodies:

Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying areas to be disturbed by construction for each major waterbody crossing. This plan should be developed in consultation with the appropriate federal and state agencies and should include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.

The EI may adjust the final placement of the erosion and sediment control structures in the field to enhance effectiveness.

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10. Temporary Erosion and Sediment Control:

Install sediment barriers (as defined in the APP Plan) prior to thaw of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. The APP Plan will address both temporary and permanent controls, however, the following specific measures must be implemented at stream crossings:

- a) Install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. In the travel lane, these may consist of removable sediment barriers or driveable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;
- b) Where waterbodies are adjacent to a cut and fill on the construction right-of-way and the right-of-way slopes toward the waterbody, install sediment barriers along the downslope edge of the construction right-of-way as necessary to reduce sediment flow into the waterbody; and
- c) Use trench plugs at waterbody crossings, as necessary, to prevent diversion of stream water into adjacent portions of the pipeline trench and to keep accumulated trench water out of the waterbody.

11. Trench Dewatering:

If necessary to dewater the trench (either on or off the construction right-of-way) do so in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into a waterbody. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

C. RECLAMATION

1. Use clean gravel or native materials, per permit requirements, for the upper 1 foot of trench backfill in waterbodies that contain coldwater fisheries.
2. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing in-stream construction activities. For isolation crossings, complete initial streambed and bank stabilization before returning flow to the waterbody channel.
3. Return waterbody banks to preconstruction contours, as practical, or to a stable angle of repose as approved by the EI.

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4. Application of riprap for bank stabilization must comply with COE, or its delegated agency, permit terms and conditions.
5. Use riprap in areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric or as otherwise allowed by state permit.
6. Stabilize and revegetate disturbed riparian areas per the APP Plan. Reclamation work will commence during the winter season of construction and will continue with revegetation during the subsequent summer season if necessary.
7. Install permanent erosion and sediment control in accordance with the APP Plan and associated BMP's. In some areas, with the approval of the EI, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.
8. Sections VI.C.3. through VI.C.6. also apply to those perennial or intermittent streams not flowing at the time of construction.

D. POST-CONSTRUCTION MAINTENANCE

1. Limit vegetation maintenance adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that are greater than 15 feet in height may be cut.

Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the permanent right-of-way may be performed.

Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.

2. Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency.

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VII. WETLAND CROSSINGS – SUMMER CONSTRUCTION

A. GENERAL

1. The project sponsor shall conduct a wetland delineation using the current federal methodology for Alaska and file a wetland delineation report with the Secretary before construction. This report shall identify:
 - a) By milepost (MP), wetlands that would be affected;
 - b) The National Wetlands Inventory (NWI) classification for each wetland;
 - c) The crossing length of each wetland in feet; and
 - d) The area of permanent and temporary disturbance that would occur in each wetland by NWI classification type.

The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including workspace and top-soiling requirements, apply to these agricultural wetlands.

2. Route the pipeline to minimize the length of the pipeline crossing wetlands while generally following existing linear disturbances.
3. During **winter or summer** construction where wetland soils can support equipment without significant rutting or soil mixing and maintain stable trench walls, then typical upland right-of-way preparation techniques and widths will be used.

For **summer crossings** of wetlands that cannot support equipment without significant rutting or soil-mixing, the following crossing techniques will be considered:

- a) Limit construction right-of-way width to 100 feet;
- b) Construct a shoo-fly around the area;
- c) Utilize timber riprap, mats, or similar materials to distribute equipment loads.

4. Not applicable (Marking wetland boundaries)

5. Implement the waterbody procedures in the event a waterbody crossing is located within or adjacent to a wetland crossing.

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6. Due to the extensive contiguous nature of the wetlands, aboveground facilities will likely be located within wetlands to comply with the spacing requirements of U.S. Department of Transportation (DOT) regulations.

B. INSTALLATION

1. Extra Work Areas and Access Roads:

- a) Not applicable; (Setback for extra work areas.)
- b) Not applicable; (Site-specific plans.)
- c) Not applicable: (Limit clearing of vegetation);
- d) The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats). In wetlands that cannot be appropriately stabilized, construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access is prohibited due to limited existing infrastructure (ie. access roads), weather conditions, or impassible terrain, limit the construction equipment passing through the construction right-of-way where practicable; and
- e) Use existing access roads where possible. New access roads will be located outside of wetlands where practicable.

2. Crossing Procedures:

- a) Comply with COE, or its delegated agency, permit terms and conditions;
- b) Assemble the crossing sections in temporary work space areas adjacent to or near the crossing locations that are firm enough to support construction equipment and to avoid soil-mixing or deep rutting.
- c) Not applicable (Push-pull or float techniques.)
- d) Minimize the length of time that topsoil/loose surface material is segregated and the trench is open;
- e) Limit construction equipment operating in wetland areas that cannot support construction equipment without significant rutting or soil mixing to that needed to clear the construction right-of-way, excavate the trench, install the crossing section, backfill the trench, and reclaim the construction right-of-way;

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- f) Where present, cut vegetation just above ground-level, leaving existing root systems in place. Grinding of stumps to achieve a trafficable working surface is allowed, provided the **stump base** and root system are left intact.
 - g) For areas that do not require right-of-way grading, limit pulling of tree stumps and grading activities to directly over the trench line. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and EI determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way;
 - h) Except in areas where standing water is present or soils are saturated, segregate the loose surface materials from wetlands. These materials will be temporarily windrowed along the construction right-of-way;
 - i) Do not use tree stumps, or brush riprap to support equipment on the construction right-of-way;
 - j) If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil/loose surface materials and subsoil in wetlands, use timber riprap, prefabricated equipment mats, terra mats, or other means. Soil fill or rock riprap may be used to stabilize the right-of-way where authorized as permanent fill by permit;
 - k) Do not cut trees outside of the approved construction work area to obtain timber for riprap or equipment mats;
 - l) Attempt to use no more than two layers of timber riprap to support equipment on the construction right-of-way except where stabilization of the right-of-way with permanent fill is not authorized.
 - m) Remove all project-related material used to support equipment on the construction right-of-way upon completion of post-construction reclamation except where stabilization of the right-of-way with permanent fill is authorized.
3. Temporary Sediment Control:

Install sediment barriers (as defined in the APP Plan) immediately after initial disturbance of the wetlands. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls. The APP Plan will address both temporary and permanent controls:

- a) Install sediment barriers across the entire construction right-of-way on a site-specific basis at upland/wetland boundaries where necessary to prevent

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sediment flow into the wetland. In the travel lane, these may consist of removable sediment barriers or drivable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;

- b) On a site-specific basis where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to reduce sediment flow into the wetland;
 - c) Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands on a site-specific basis. Remove these sediment barriers during right-of-way post-construction reclamation; and
4. Trench Dewatering:

Dewater the trench (either on or off the construction right-of-way) in a manner that does not result in heavily silt-laden water flowing into wetlands to the extent practicable. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

C. RECLAMATION

1. Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary.
2. Install permanent erosion and sediment control in accordance with the APP Plan.
3. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or state agency or the APP Plan.
4. Restore wetlands as outlined in the appropriate land management or state agency permits/approvals. The permits/approvals may include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts.
5. Not applicable. (Temporary revegetation.)
6. Per the APP Plan, disturbed areas will be stabilized and revegetated, as appropriate.
7. Remove temporary sediment barriers located at the site-specific boundary between wetlands and adjacent upland areas after stabilization.

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8. Where grading is required along side hill or longitudinal slopes the construction right-of-way will be stabilized after post-construction reclamation but not necessarily returned to the original grade.

D. POST-CONSTRUCTION MAINTENANCE

1. Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. To facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be cut from the permanent right-of-way.

Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the right-of-way may be performed.

Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.

2. Do not use herbicides or pesticides in or within 100 feet of a wetland except as allowed by the appropriate land management or state agency.
3. In those cases where wetlands are revegetated, the Project will monitor and record the success of wetland revegetation as outlined in the appropriate land management or state agency permits/approvals.
4. Wetland revegetation shall be considered successful per the APP Plan.

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VIII. WETLAND CROSSINGS – WINTER CONSTRUCTION

A. GENERAL

1. The project sponsor shall conduct a wetland delineation using the current federal methodology for Alaska and file a wetland delineation report with the Secretary before construction. This report shall identify:
 - a) By MP, wetlands that would be affected;
 - b) The NWI classification for each wetland;
 - c) The crossing length of each wetland in feet; and
 - d) The area of permanent and temporary disturbance that would occur in each wetland by NWI classification type.

The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including workspace and top-soiling requirements, apply to these agricultural wetlands.

2. Route the pipeline to minimize the length of the pipeline crossing wetlands while generally following existing linear disturbances.
3. During winter construction where wetland soils can support equipment without significant rutting or soil-mixing and maintain stable trench walls, then typical upland right-of-way preparation techniques and widths will be used. For winter construction in wetlands where right-of-way grading (cuts and/or fills) are required and where sub-soils can support construction equipment, no reduction from the applicable construction right-of-way is necessary. width will be made.

For winter crossings of wetlands that cannot support equipment without significant rutting or soil-mixing, the following alternative crossing techniques will be considered:

- a) Limit construction right-of-way width to 100 feet except for where existing soils lack adequate strength to maintain near vertical trench side slopes which results in excessively wide ditches or difficulty to contain ditch spoil piles;
 - b) Construct a shoo-fly around the area;
 - c) Utilize timber riprap, mats, or similar materials to distribute equipment loads.
4. Not applicable. (Marking wetland boundaries.)

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5. Implement the waterbody procedures in the event a waterbody crossing is located within or adjacent to a wetland crossing.
6. Due to the extensive contiguous nature of the wetlands, aboveground facilities will likely be located within wetlands to comply with the spacing requirements of DOT regulations.

B. INSTALLATION

1. Extra Work Areas and Access Roads:
 - a) Not applicable (Setback for extra work areas.)
 - b) Not applicable (Site-specific plans.)
 - c) Not applicable (Limit clearing of vegetation);
 - d) The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, terra mats, or through ground-freezing). In wetlands that cannot be appropriately stabilized construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access is prohibited due to limited existing infrastructure (ie. access roads), weather conditions, or impassible terrain, limit the construction equipment passing through the construction right-of-way, where practicable; and
 - e) Use existing access roads where possible. New access roads will be located outside of wetlands where practicable.
2. Crossing Procedures:
 - a) Comply with COE, or its delegated agency, permit terms and conditions; for Alaska North Slope coastal and foothill zones, comply with the tundra travel criteria as specified by the Alaska Department of Natural Resources
 - b) Assemble the crossing sections in temporary work space areas adjacent to or near the crossing locations that are firm enough to support construction equipment and to avoid soil-mixing or deep rutting;
 - c) Not applicable (Push-pull or float techniques.)
 - d) Not used; (Length of time topsoil/loose surface material is segregated.)
 - e) **Limit construction equipment operating in wetland areas that cannot support construction equipment without significant rutting or soil mixing to that needed to**

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clear the construction right-of-way, excavate the trench, install the crossing section, backfill the trench, and reclaim the construction right-of-way;

- f) Where present, cut vegetation just above ground-level, leaving existing root systems in place. Grinding of stumps to achieve a trafficable working surface is allowed, provided the stump base and root system are left intact. After a trafficable working surface has been created use frost-packing techniques to increase the depth of frozen soil so that it can support heavy equipment without rutting
- g) For areas that do not require right-of-way grading, limit pulling of tree stumps and grading activities to directly over the trench line. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and EI determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way;
- h) Segregation of the topsoil/loose surface material from the area disturbed by trenching is not required during winter construction. Where applicable, loose surface material may be temporarily windrowed along the construction right-of-way;
- i) Do not use tree stumps, or brush riprap to support equipment on the construction right-of-way;
- j) If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil/loose surface material and subsoil in wetlands, use timber riprap, prefabricated equipment mats, terra mats or ground-freezing (frost-packing) or other means. Soil fill or rock riprap may be used to stabilize the right-of-way where authorized as permanent fill by permit;
- k) Do not cut trees outside of the approved construction work area to obtain timber for riprap or equipment mats;
- l) Attempt to use no more than two layers of timber riprap to support equipment on the construction right-of-way except where stabilization of the right-of-way with permanent fill is not authorized;
- m) Remove all project-related material used to support equipment on the construction right-of-way upon completion of post-construction reclamation except where stabilization of the right-of-way with permanent fill is authorized; and
- n) Where practicable use ice and or snow pads to create a trafficable surface after the specified depths of frozen soil and snow have been achieved.

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3. Temporary Sediment Control:

Where soils are frozen at the time of soil disturbance there will be low erosion and sedimentation potential. The APP Plan will address both temporary and permanent control.

- a) Install sediment barriers across the entire construction right-of-way on a site-specific basis at upland/wetland boundaries where necessary to prevent sediment flow into the wetland. In the travel lane, these may consist of removable sediment barriers or drivable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;
- b) On a site-specific basis where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to reduce sediment flow into the wetland;
- c) Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands on a site-specific basis. Remove these sediment barriers during right-of-way post-construction reclamation.

4. Trench Dewatering:

Dewater the trench (either on or off the construction right-of-way) in a manner that does not result in heavily silt-laden water flowing into a wetland to the extent practicable. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

C. RECLAMATION

1. Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary.
2. Install permanent erosion and sediment control in accordance with the APP Plan.
3. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or state agency or the APP Plan.
4. Restore wetlands as outlined in the appropriate land management or state agency permits/approvals. The permits/approvals may include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts.

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5. Not applicable. (Temporary seeding.)
6. Per the APP Plan, disturbed areas will be stabilized and revegetated, as appropriate.
7. Remove temporary sediment barriers located at the site-specific boundary between wetland and adjacent upland areas after stabilization.
8. Where grading is required along side hill or longitudinal slopes, the construction right-of-way will be stabilized after post-construction reclamation but not necessarily returned to the original grade.

D. POST-CONSTRUCTION MAINTENANCE

1. Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. To facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be cut from the permanent right-of-way.

Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the permanent right-of-way may be performed.

Where it is necessary for helicopters to land, an area up to 100 feet wide and 100 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.

2. Do not use herbicides or pesticides in or within 100 feet of a waterbody except as allowed by the appropriate land management or state agency.
3. In those cases where wetlands are revegetated, the Project will monitor and record the success of wetland revegetation as outlined in the appropriate land management or state agency permits/approvals.
4. Wetland revegetation shall be considered successful per the APP Plan.

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IX. HYDROSTATIC TESTING

A. NOTIFICATION PROCEDURES AND PERMITS

1. Apply for state-issued water withdrawal permits, as required.
2. Apply for National Pollutant Discharge Elimination System (NPDES) or state-issued discharge permits, as required.
3. Notify appropriate state agencies of intent to use specific sources at least 48 hours before testing activities unless they waive this requirement in writing.

B. GENERAL

1. Perform non-destructive testing of all pipeline section welds before installation under waterbodies or wetlands.
2. If pumps used for hydrostatic testing are within 100 feet of a waterbody or wetland, address the operation and refueling of these pumps in the project's Spill Prevention and Response Procedures.
3. The project sponsor shall file with the Secretary before construction a list identifying the location of waterbodies proposed for use as a hydrostatic test water source or discharge location.
4. Water for hydrostatic testing will be obtained from both surface water and groundwater sources as allowed by federal, state, and local regulations.

C. INTAKE SOURCE AND RATE

1. Screen the intake hose to reduce entrainment of fish.
2. Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and/or local permitting agencies grant written permission.
3. Maintain adequate flow rates to protect aquatic life, provide for waterbody uses, and provide for downstream withdrawals of water by existing users.
4. Locate hydrostatic test manifolds outside wetlands and riparian areas to the extent practicable.

	ALASKA PIPELINE PROJECT DRAFT RESOURCE REPORT 1 GENERAL PROJECT DESCRIPTION APPENDIX 1K	USAG-UR-SGREG-000002 DECEMBER 2011 REVISION 0
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D. DISCHARGE LOCATION, METHOD, AND RATE

1. Regulate discharge rate, use energy-dissipation device(s), and install sediment barriers, as necessary, to reduce erosion, streambed scour, suspension of sediments, or excessive stream flow.
2. Do not discharge into federal- and state-designated exceptional value waters, which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate permitting agencies grant written permission.

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**Alaska Pipeline Project
Comparison Between Standard Federal Energy Regulatory Commission and the Alaska Pipeline Project Procedures and Justification of Changes**

Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
I.A	These Procedures identify baseline mitigation measures for minimizing the extent and duration of project-related disturbance on wetlands and waterbodies.	The intent of These Procedures is to assist applicants by identifying identify baseline mitigation measures for minimizing the extent and duration of project-related disturbance on wetlands and waterbodies. The project sponsors should specify in their applications for a FERC Certificate (Certificate) any individual measures in these Procedures they consider unnecessary, technically infeasible, or unsuitable due to local conditions and to fully describe any alternative measures they would use. Applicants should also explain how those alternative measures would achieve a comparable level of mitigation.	Changes the author of the Procedures from the FERC to APP. Improves readability.
I.A	Measures to address erosion and sediment controls in uplands, wetlands, and waterbody crossings are addressed in the APP Erosion Control, Revegetation, and Maintenance Plan (APP Plan).	Project-related impacts on non-wetland areas Measures to address erosion and sediment controls in uplands, wetlands, and waterbody crossings are addressed in the staff's Upland APP Erosion Control, Revegetation, and Maintenance Plan (APP Plan).	Clarifies the scope soil erosion and sediment controls in uplands, wetlands, and waterbodies and explains that the measures are identified in APP's Plan.
I.B.1	"Waterbody" includes a stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds or lakes:	"Waterbody" includes any natural or artificial a stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and or lakes:	Improves clarity.
I.B.1.a	"Minor waterbody" includes waterbodies less than or equal to 10 feet wide at the water's edge at the time of crossing;	"Minor waterbody" includes all waterbodies less than or equal to 10 feet wide at the water's edge at the time of construction crossing;	Improves clarity.
I.B.1.b	"Intermediate waterbody" includes waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of crossing; and	"Intermediate waterbody" includes all waterbodies greater than 10 feet wide but less than or equal to 100 feet wide at the water's edge at the time of construction crossing; and	Improves readability and clarity. Not a material change.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
I.B.1.c	"Major waterbody" includes waterbodies greater than 100 feet wide at the water's edge at the time of crossing.	"Major waterbody" includes all waterbodies greater than 100 feet wide at the water's edge at the time of construction crossing.	Improves clarity.
II.A.1	The hydrostatic testing information specified in Section IX.B.3 and a wetland delineation report as described in Sections VII.A.1 and VIII.A.1, if applicable; and	The hydrostatic testing information specified in Section VIII .B.3. and a wetland delineation report as described in section VI.A.1.1 Sections VII.A.1 and VIII.A.1, if applicable; and	Corrects document references. Not a material change.
II.A.2	A schedule identifying when trenching or blasting would occur within each waterbody greater than 10 feet wide, or within a designated cold-water fishery. The project sponsor shall revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period must provide for at least 48 hours advance notice.	A schedule identifying when trenching or blasting would occur within each waterbody greater than 10 feet wide, or within any a designated Coldwater cold-water fishery. The project sponsor shall revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period must provide for at least 48 hours advance notice.	Improves readability and clarity. Not a material change.
II.B	The following information required by these Procedures must be filed with the Secretary for the review and written approval by the Director:	The following site-specific construction plans information required by these Procedures must be filed with the Secretary for the review and written approval by the Director:	Improves readability and clarity. The intent is to develop construction and mitigation strategies that reflect the widespread presence of wetland and waterbody terrain conditions in Alaska, and to use a toolbox approach for repetitive use of procedures.
II.B.1	Extra work areas that would be closer than 50 feet from a waterbody or wetland (for summer wetland crossings only where right-of-way reduction is required);	plans for Extra work areas that would be closer than 50 feet from a waterbody or wetland (for summer wetland crossings only where right-of-way reduction is required) ;	Improves clarity and recognizes that the locations for extra work areas will be identified on alignment sheets. Also limits the need for filing detailed extra work space information to situations where the principal mitigation is not already part of the construction approach (i.e., winter construction or summer construction with reduced right-of-way).

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
II.B.2	Major waterbody crossings;	plans for Major waterbody crossings;	Improves clarity and recognizes that information about major waterbody crossings is being provided by APP as part of its other application materials (i.e., Appendix 2C).
II.B.3	The use of a construction right-of-way greater than 100 feet wide in wet and unstable wetlands and a minimum of 160 feet wide if it is stable; and	plans for The use of a construction right-of-way greater than 75 100 feet wide in wet and unstable wetlands and a minimum of 160 feet wide if it is stable; and	Improves clarity and recognizes that APP is planning to use wider baseline right-of-way widths due to the prevalence of wetland crossings in Alaska.
II.B.4	Horizontal directional drill (HDD) "crossings" of wetlands or waterbodies.	plans for Horizontal directional drill (HDD) "crossings" of wetlands or waterbodies.	Improves clarity and recognizes that information about HDD crossings is being provided by APP as part of its other application materials (i.e., Appendix 2C).
III.B	EI's roles and responsibilities are outlined in the APP Erosion Control, Revegetation, and Maintenance Plan (Plan).	The Environmental Inspector's EI's roles and responsibilities are outlined in the Upland APP Erosion Control, Revegetation, and Maintenance Plan (Plan).	Improves clarity. Acknowledges that erosion/sediment control measures for wetlands will be addressed in the Plan.
IV.A	The APP Storm Water Pollution Prevention Plan (SWPPP) prepared for compliance with the U.S. Environmental Protection Agency's National Stormwater Program General Permit requirements must be available in the field on each construction spread. The SWPPP shall contain Spill Prevention and Response Procedures that meet the requirements of federal and state agencies.	Stormwater The APP Storm Water Pollution Prevention Plan (SWPPP) prepared for compliance with the U.S. Environmental Protection Agency's (EPA) National Stormwater Stormwater Program General Permit requirements must be available in the field on each construction spread. The SWPPP shall contain Spill Prevention and Response Procedures that meet the requirements of federal and state and Federal agencies.	Improves readability and clarity. Changes author of the Procedures from FERC to APP.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
IV.A.1.f	Concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use. These activities can occur closer only if the EI finds, in advance, no reasonable alternative and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill.	Concrete coating activities are not performed within 100 feet of a wetland or waterbody boundary, unless the location is an existing industrial site designated for such use. These activities can occur closer only if the EI finds, in advance, no reasonable alternative and the project sponsor and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill.	Improves clarity for implementation of exceptions, if needed. Not a material change.
V	WATERBODY CROSSINGS – SUMMER CONSTRUCTION	WATERBODY CROSSINGS – SUMMER CONSTRUCTION	Provides framework for discussion of project-specific construction methods for waterbodies crossed during summer season.
V.B.1	Timing Window for Construction: The Project will adhere to in-water work windows and conditions as required by federal and state agencies. In-water work includes, but is not limited to, installation and removal of equipment bridges, installation of the pipe crossing section, and water withdrawal.	Time Timing Window for Construction Unless expressly permitted or further restricted by the appropriate state agency in writing on a site-specific basis, instream work, except that required to install or remove equipment bridges, must occur during the following time windows: a. coldwater fisheries – June 1 through September 30; and b. coolwater and warmwater fisheries – June 1 through November 30. The Project will adhere to in-water work windows and conditions as required by federal and state agencies. In-water work includes, but is not limited to, installation and removal of equipment bridges, installation of the pipe crossing section, and water withdrawal.	Improves clarity on what in-water work includes, and provides flexibility to follow state-specified timing windows which are expected to provide an equal or greater level of protection.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.2.a	Locate extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land;	Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land;	Improves reasonability of this performance standard considering that large tracts of wetlands are crossed, and many are contiguous to waterbodies or will be crossed during winter. As a result, it will not be practical, reasonable, or feasible to locate all extra workspace at least 50 feet away from water's edge.
V.B.2.d	Limit the size of extra work areas to that needed to construct the waterbody crossing.	Limit the size of extra work areas to the minimum that needed to construct the waterbody crossing.	Provides APP the flexibility to adapt to unforeseen site-specific conditions that may require additional workspace.
V.B.3.b	Construct crossings as reasonably close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit	Construct crossings as reasonably close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit	Provides APP greater flexibility to address potential routing constraints in proximity to waterbodies.
V.B.3.c	If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody and the construction right-of-way	If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way	Improves reasonability, considering that large tracts of wetlands are crossed and many are contiguous to waterbodies.
V.B.3.d	Where waterbodies meander or have multiple channels, route the pipeline to reduce the number of waterbody crossings	Where waterbodies meander or have multiple channels, route the pipeline to minimize reduce the number of waterbody crossings	Improves readability and clarity.
V.B.3.e	Maintain adequate flow rates to protect aquatic life, and prevent the substantial interruption of existing downstream uses.	Maintain adequate flow rates to protect aquatic life, and prevent the substantial interruption of existing downstream uses.	Provides APP greater flexibility to temporarily reduce or modify downstream uses during the construction period, if applicable, without a material change to the intended goal.
V.B.4.a	All spoil from minor waterbody crossings, and bank spoil from intermediate and major waterbody crossings, will be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in Section VI.B.2; and	All spoil from minor and intermediate waterbody crossings, and upland bank spoil from intermediate and major waterbody crossings, must will be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in Section V.B.2.; and	Provides clarity and flexibility to address potential difficulties placing instream spoil back from the water's edge in larger intermediate (e.g., 80 feet wide) and major waterbodies.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.4.b	Use sediment barriers to reduce the flow of spoil or heavily silt-laden water into a waterbody	Use sediment barriers to prevent reduce the flow of spoil or heavily silt-laden water into any a waterbody	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
V.B.5.a	Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment, unless access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.	Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment, unless access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.	Provides additional clarity and flexibility to address potential constraints due to the remote and limited access issues in Alaska.
V.B.5.b	Construct equipment bridges to maintain unrestricted flow and to reduce soil from entering the waterbody. Examples of such bridges include:	Construct equipment bridges to maintain unrestricted flow and to prevent reduce soil from entering the waterbody. Examples of such bridges include:	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
V.B.5.b(2)	Single-span structure, equipment pads or railroad car bridges without culverts;	Single-span structure, equipment pads and or railroad car bridges without culverts;	Provides clarity on types of crossings to be most suitable for utilizing by APP.
V.B.5.b(3)	Clean rock fill or timber and culvert(s); and	Clean rock fill or railroad car bridges without or timber and culvert(s); and	Provides clarity on types of crossings to be most suitable for utilizing by APP.
V.B.5.b	Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges unless appropriate erosion and sediment controls are implemented;	Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges- unless appropriate erosion and sediment controls are implemented;	Provides APP flexibility to address potential limitations in materials needed for bridge construction due to limited existing infrastructure, availability of suitable materials, weather conditions, or impassible terrain.
V.B.5.c	Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to reduce bank erosion or streambed scour. If necessary, install energy-dissipating devices downstream of the culverts.	Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to prevent reduce bank erosion or streambed scour. If necessary, install energy-dissipating devices downstream of the culverts.	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.5.d	Design and maintain equipment bridges to reduce soil from entering the waterbody.	Design and maintain equipment bridges to prevent reduce soil from entering the waterbody.	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
V.B.5.e	Final removal of temporary equipment bridges will occur as soon as practicable after post-construction reclamation or as permitted; and	Remove Final removal of temporary equipment bridges will occur as soon as possible practicable after permanent seeding unless the COE, post-construction reclamation or its delegated agency, authorizes it as a permanent bridge permitted; and	Provides improved clarity and flexibility to address potential delays in the removal of temporary bridges due to limited existing infrastructure, weather conditions, or impassible terrain. The revised wording reflects the remoteness of many of the water crossing sites, the difficulty in accesses these sites and right-of-way areas beyond the water crossing and other issues. For example, the need to maintain a crossing structure may be control by construction and/or reclamation activities taking place on a pipeline section some distance remote from the crossing structure.
V.B.5.f	If temporary bridges are designed to the specified design flood return period, bridges will be left in place until completion of post-construction reclamation where access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.	If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, remove equipment bridges as soon as possible after final cleanup. If temporary bridges are designed to the specified design flood return period, bridges will be left in place until completion of post-construction reclamation where access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.	Given the remoteness of some of the water crossings and difficulty in gaining or maintaining access to the right-of-way, this modification provides flexibility needed to keep temporary bridges in place where necessary based on local conditions.
V.B.6	Isolated Crossing Methods	Isolated Crossing Methods	The term "Isolated" more accurately reflects the technology and method of crossing. In some instances, the pipe trench across a watercourse will not be completely dry during installation.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.6.a	Unless approved otherwise by the appropriate state agency, install the pipeline using one of the isolated methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, and where the stream flow, soil, and terrain conditions at the time of construction allow.	Unless approved otherwise by the appropriate state agency, install the pipeline using one of the dry-ditch isolated methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, and where the stream flow, soil, and terrain conditions at the time of construction allow.	Improves readability and clarity. Not a material change.
V.B.6.b(2)(ii)	Construct dams with materials that reduce sediment and prevent pollutants from entering the waterbody (e.g. sandbags or clean gravel with plastic liner);	Construct dams with materials that prevent reduce sediment and either prevent pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
V.B.6.b(2)(iv)	Reduce streambed scour at pump discharge; and	prevent Reduce streambed scour at pump discharge; and	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
V.B.6.c(1)	Install flume pipe after blasting (if necessary), but before trenching;	Install flume pipe after blasting (if necessary), but before any trenching;	Provides flexibility for APP to conduct some trenching prior to blasting, if needed.
V.B.6.c(3)	Properly align flume pipe(s) to reduce bank erosion and streambed scour;	Properly align flume pipe(s) to reduce prevent bank erosion and streambed scour;	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
V.B.6.c(4)	Do not remove flume pipe during trenching, pipe laying, or backfilling activities, or initial streambed reclamation efforts; and	Do not remove flume pipe during trenching, pipelaying pipe laying , or backfilling activities, or initial streambed restoration reclamation efforts; and	Improves readability and provides a more accurate description of performance standard.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.6.d	<p>Channel Diversion</p> <p>(1) The channel diversion method may be used at waterbodies with more than one channel, such as braided streams.</p> <p>(2) Use sandbag or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow away from the channel where the pipe section will be installed to another channel away from the installation section (some modifications to the stream bottom may be required to achieve an effective seal);</p> <p>(3) Install the pipe section, backfill the trench, remove excess spoil, and stabilize the channel prior to removing diversion dams before proceeding with diversion of the next channel section;</p> <p>(4) Complete tie-ins in areas that are isolated from stream flow;</p> <p>(5) After completion of the final channel section, remove dams that are not also part of an equipment bridge.</p>	<p>Channel Diversion</p> <p>(1) The channel diversion method may be used at waterbodies with more than one channel, such as braided streams.</p> <p>(2) Use sandbag or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow away from the channel where the pipe section will be installed to another channel away from the installation section (some modifications to the stream bottom may be required to achieve an effective seal);</p> <p>(3) Install the pipe section, backfill the trench, remove excess spoil, and stabilize the channel prior to removing diversion dams before proceeding with diversion of the next channel section;</p> <p>(4) Complete tie-ins in areas that are isolated from stream flow;</p> <p>(5) After completion of the final channel section, remove dams that are not also part of an equipment bridge.</p>	<p>Provides description of crossing methods that may be utilized in waterbodies with more than one channel, such as braided streams.</p>
V.B.6.e	<p>Horizontal Directional Drilling</p> <p>To the extent they were not provided as part of the pre-certification process, for each waterbody that would be crossed using the HDD method, provide a plan that includes:</p>	<p>Horizontal Directional Drilling</p> <p>To the extent they were not provided as part of the pre-certification process, for each waterbody or wetland that would be crossed using the HDD method, provide a plan that includes:</p>	<p>Improves clarity in that this section pertains to waterbody crossings, not wetland crossings. Also, provides a more accurate description what can be portrayed during planning while recognizing some information may not be known until actual construction. These are not material changes.</p>
V.B.6.e(1)	<p>Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and areas to be disturbed or cleared for construction;</p>	<p>Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;</p>	<p>Improves readability and clarity. Not a material change.</p>

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.6.e(3)	A contingency plan for crossing the waterbody in the event the directional drill is unsuccessful and how the abandoned drill hole would be sealed, if necessary.	A contingency plan for crossing the waterbody or wetland in the event the directional drill is unsuccessful and how the abandoned drill hole would be sealed, if necessary.	Improves clarity in that this section pertains to waterbody crossings, not wetland crossings. Not a material change.
V.B.6.f	<p>Aerial-Span</p> <p>The aerial-span crossing method involves suspending an aboveground pipeline over the geographic feature to be crossed. The aerial span crossing method types are as follows:</p> <p>(1) Single-span bridge with no supports in the waterbody. Supports for the bridge will be located on each bank at either end of the bridge. The pipeline will be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge;</p> <p>(2) A multi-span bridge with bridge supports on each bank and one or more supports within the waterbody. The pipeline could be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge; and</p> <p>(3) A cable suspension bridge with or without an in-stream support, depending upon the width of the crossing.</p>	<p>Aerial-Span</p> <p>The aerial-span crossing method involves suspending an aboveground pipeline over the geographic feature to be crossed. The aerial span crossing method types are as follows:</p> <p>(1) Single-span bridge with no supports in the waterbody. Supports for the bridge will be located on each bank at either end of the bridge. The pipeline will be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge;</p> <p>(2) A multi-span bridge with bridge supports on each bank and one or more supports within the waterbody. The pipeline could be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge; and</p> <p>(3) A cable suspension bridge with or without an in-stream support, depending upon the width of the crossing.</p>	Provides a description of the anticipated types of aerial crossing methods that may be utilized across waterbodies.
V.B.7	<p>Crossing of Minor Waterbodies:</p> <p>Where an isolated crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:</p>	<p>Crossing of Minor Waterbodies:</p> <p>Where a dry-ditch an isolated crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:</p>	The term "Isolated" more accurately reflects the technology and method of crossing. In some instances, the pipe trench across a watercourse will not be completely dry during installation.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.7.a	Except for blasting and other rock-breaking measures, complete in-stream construction activities (including trenching, pipe installation, backfill, and grading of the streambed contours) within 24 hours unless site-specific conditions make completion within 24 hours infeasible. Streambanks and unconsolidated streambeds may require additional reclamation after this period;	Except for blasting and other rockbreaking measures, complete in-stream construction activities (including trenching, pipe installation, backfill, and restoration grading of the streambed contours) within 24 hours unless site-specific conditions make completion within 24 hours infeasible . Streambanks and unconsolidated streambeds may require additional restoration reclamation after this period;	Provides clarity on the timing for implementation of performance standard, and provides flexibility to allow for potential delays during reclamation due site-specific conditions. APP may not restore contours but they will be graded to a similar topography as prior to construction, where circumstances allow. In addition, good effort will be made by APP to complete instream work in 24 hours; however, given the weight/size of pipe, equipment needs, potential adverse weather conditions (summer storms, snow), some flexibility in this timeline is needed.
V.B.8	Crossings of Intermediate Waterbodies: Where an isolated crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:	Crossings of Intermediate Waterbodies: Where a dry-ditch an isolated crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:	The term "Isolated" more accurately reflects the technology and method of crossing. In some instances, the pipe trench across a watercourse will not be completely dry during installation.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.9	<p>Crossings of Major Waterbodies:</p> <p>Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying areas to be disturbed by construction for each major waterbody crossing. This plan should be developed in consultation with the appropriate federal and state agencies and should include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.</p> <p>The EI may adjust the final placement of the erosion and sediment control structures in the field to enhance effectiveness.</p>	<p>Crossings of Major Waterbodies:</p> <p>Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan should be developed in consultation with the appropriate federal and state and Federal agencies and should include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.</p> <p>The Environmental Inspector EI may adjust the final placement of the erosion and sediment control structures in the field to maximize enhance effectiveness.</p>	<p>Improves readability and clarity.</p> <p>APP has no "offshore portions" of the pipeline.</p> <p>The term "enhance" reflects APP's desire to ensure that the erosion and sediment techniques applied are the most appropriate for the site-specific conditions.</p>
V.B.10	<p>Temporary Erosion and Sediment Control:</p> <p>Install sediment barriers (as defined in the APP Plan) immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls. The APP Plan will address both temporary and permanent controls; however, the following specific measures must be implemented at stream crossings:</p>	<p>Temporary Erosion and Sediment Control:</p> <p>Install sediment barriers (as defined in section IV.F.2.a. of the APP Plan) immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion The APP Plan will address both temporary and sediment control measures are addressed in more detail in the Plan permanent controls; however, the following specific measures must be implemented at stream crossings:</p>	<p>Provides clarity on the timing for implementation of this performance standard, and on the location where control measures are defined.</p>

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.B.10.a	Install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. In the travel lane, these may consist of removable sediment barriers or driveable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;	Install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. In the travel lane, these may consist of removable sediment barriers (or driveable berms) must be installed across the travel lane. These Removable sediment barriers can be removed during the construction day, but must be re-installed re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;	Improves readability and clarity. Not a material change.
V.B.10.b	Where waterbodies are adjacent to a cut and fill on the construction right-of-way and the right-of-way slopes toward the waterbody, install sediment barriers along the downslope edge of the construction right-of-way as necessary to reduce sediment flow into the waterbody; and	Where waterbodies are adjacent to a cut and fill on the construction right-of-way and the right-of-way slopes toward the waterbody , install sediment barriers along the downslope edge of the construction right-of-way as necessary to contain spoil and reduce sediment within flow into the construction right-of-way waterbody; and	Improves clarity on where performance standard will be implemented, and more accurately reflects where APP anticipates sediment barriers will need to be installed.
V.B.10.c	Use trench plugs at waterbody crossings, as necessary, to prevent diversion of stream water into adjacent upland portions of the pipeline trench and to keep accumulated trench water out of the waterbody.	Use trench plugs at all waterbody crossings, as necessary, to prevent diversion of stream water into adjacent upland portions of the pipeline trench and to keep any accumulated trench water out of the waterbody.	Revised wording reflects that not all portions of the pipeline at watercrossings are adjacent to "uplands". The revised wording more accurately reflects APP's desire to prevent any water from laterally entering the pipeline trench.
V.B.11	Trench Dewatering: If necessary to dewater the trench (either on or off the construction right-of-way), do so in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into a waterbody a waterbody . Remove the dewatering structures as soon as practicable after the completion of dewatering activities.	Trench Dewatering: If necessary to dewater the trench (either on or off the construction right-of-way), do so in a manner that does not cause erosion and does not result in heavily siltladen water flowing into anya waterbody. Remove the dewatering structures as soon as possible practicable after the completion of dewatering activities.	Improves readability and clarity without a material change. Revision to wording more accurately reflect APP's intentions and the actual construction practicability.

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V.C	RECLAMATION	RESTORATION RECLAMATION	The term reclamation provides a more accurate description of what APP expects to accomplish following installation of the pipeline. APP will not undertake "restoration" but will provide "reclamation".
V.C.1	Use clean gravel or native materials, per permit requirements, for the upper 1 foot of trench backfill in waterbodies that contain coldwater fisheries.	Use clean gravel or native cobbles materials , per permit requirements, for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries.	Provides improved clarity and flexibility to use materials other than cobbles if needed due to local conditions, and if permitted. The original wording does not reflect the fact that many fish bearing streams in Alaska do not have a gravel or cobble substrate, and may comprise more fine grained soils. APP will comply with State regulatory permits with regard to backfilling the pipeline trench across the water bodies.
V.C.2	For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing in-stream construction activities. For isolated crossings, complete initial streambed and bank stabilization before returning flow to the waterbody channel.	For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing in-stream construction activities. For dry-ditch isolated crossings, complete initial streambed and bank stabilization before returning flow to the waterbody channel.	Improves readability and clarity without a material change. Revised wording reflects the fact that not all pipeline trenches will be dry during pipe installation, and reflects the reality that although good efforts will be undertaken to complete the installation and bank stabilization in a timely manner, some circumstances (e.g., pipe size, pipe trench width and depth, weather, including summer snow storms and freezing temperatures) may delay implementation of these measures.
V.C.3	Return waterbody banks to preconstruction contours, as practical, or to a stable angle of repose as approved by the EI.	Return all waterbody banks to preconstruction contours, as practical , or to a stable angle of repose as approved by the Environmental Inspector EI .	Provides flexibility for performance without a material change.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.C.5	Use riprap in areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric or as otherwise allowed by state permit.	Unless otherwise specified by state permit, limit the use of riprap to Use riprap in areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric. or as otherwise allowed by state permit.	Provides improved clarity where riprap will be used. APP expects that the use of riprap will be directed by Alaska State regulatory agencies and will be completed in accordance with river crossing permit requirements.
V.C.6	Stabilize and revegetate disturbed riparian areas per the APP Plan.	Stabilize and revegetate disturbed riparian areas with conservation grasses and legumes or native plant species, preferably woody species per the APP Plan.	Provides clarity that stabilization and revegetation measures are defined in the APP Plan. The use of conservation grasses, legumes and native plants may not be entirely practicable in Alaska. APP will apply a project specific erosion and sediment control plan and associated BMPs to address revegetation of riparian areas.
V.C.7	Install permanent erosion and sediment control in accordance with the APP Plan and associated BMPs. In some areas, with the approval of the EI, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.	Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the waterbody, or as needed to prevent erosion and sediment transport into the waterbody. In addition, install sediment barriers as outlined in the Plan control in accordance with the APP Plan and associated BMPs. In some areas, with the approval of the Environmental Inspector EI , an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.	Provides clarity that permanent erosion and sediment control measures are defined in the APP Plan. The revised wording reflects the intent of APP to develop and apply a comprehensive erosion control and sediment control Plan, together with engineering specifications and Best Management Practices.
V.C.8	Sections VI.C.3. through VI.C.6. also apply to those perennial or intermittent streams not flowing at the time of construction.	Sections VI.C.3. through VI.C.6. above also apply to those perennial or intermittent streams not flowing at the time of construction.	Improves readability and clarity. Not a material change.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
V.D.1	<p>Limit vegetation maintenance adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that are greater than 15 feet in height may be cut.</p> <p>Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the permanent right-of-way may be performed.</p> <p>Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.</p>	<p>Limit vegetation maintenance adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's waterbody mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that are greater than 15 feet in height may be cut and removed from the permanent right-of-way.</p> <p>Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the permanent right-of-way may be performed.</p> <p>Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.</p>	<p>Provides necessary flexibility to allow additional clearing, if needed, for maintenance and repairs, and for helicopter access.</p> <p>APP understands that Alaska State regulatory agencies will expect that shrubs and brush be left on the right-of-way to decompose. It is not expected that trees within the unvegetated zone will even reach greater than 15 feet high before being cut.</p>
V.D.2	<p>Do not use herbicides or pesticides in or within 100 feet of a wetlands except as allowed by the appropriate land management or state agency.</p>	<p>Do not use herbicides or pesticides in or within 100 feet of a wetlands except as allowed by the appropriate land management agency or state agency.</p>	<p>Improves clarity and readability.</p>
VI.A	<p>WATERBODY CROSSINGS – WINTER CONSTRUCTION</p>	<p>WETLAND CROSSINGSWATERBODY CROSSINGS – WINTER CONSTRUCTION</p>	<p>New section added to describe winter crossing procedures. Wetland crossing procedures are described in the following two sections.</p>
VI.A.1	<p>Apply to the COE, or its delegated agency, for the appropriate waterbody crossing permits.</p>	<p>Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate wetland and waterbody crossing permits.</p>	<p>Improves clarity in that this section pertains to waterbody crossings, not wetland crossings. Not a material change.</p>

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.A.2	Not used.	Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least 4 week before beginning work in the waterbody, or as otherwise specified by that authority. Not used.	APP has not identified any potable water supply intakes in the Project area that would trigger the need for this measure; therefore, it has been deleted.
VI.B	<p>INSTALLATION</p> <p>During winter construction where the waterbody is frozen to the stream bed, but ground water is encountered, APP will construct through the waterbody using an open cut crossing method. In the following sections, "waterbody" will not include waterbodies that are frozen to the stream bed as described above.</p>	<p>INSTALLATION</p> <p>During winter construction where the waterbody is frozen to the stream bed, but ground water is encountered, APP will construct through the waterbody using an open cut crossing method. In the following sections, "waterbody" will not include waterbodies that are frozen to the stream bed as described above.</p>	Describes the typical method that will be used to cross waterbodies that are frozen to the stream bed at the time of construction and provides additional clarity on the definition of waterbody during winter conditions.
VI.B.1	<p>Timing Window for Construction:</p> <p>The Project will adhere to in-water work windows and conditions as required by federal and state agencies for waterbodies. In-water work includes, but not is limited to, installation and removal of equipment bridges, installation of the pipe crossing section, and water withdrawal.</p>	<p>TimeTiming Window for Construction:</p> <p>Unless expressly permitted or further restricted by the appropriate state agency in writing on a site-specific basis, instream work, except that required to install or remove equipment bridges, must occur during the following time windows:</p> <p>a. coldwater fisheries— June 1 through September 30; and</p> <p>b. coolwater and warmwater fisheries— June 1 through November 30.</p> <p>The Project will adhere to in-water work windows and conditions as required by federal and state agencies for waterbodies. In-water work includes, but not is limited to, installation and removal of equipment bridges, installation of the pipe crossing section, and water withdrawal.</p>	Timing windows of FERC may not be applicable and APP will follow State Agency requirements. Text provides additional clarity on what activities are to be subject to timing windows.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.B.2.a	Locate extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land;	Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from water's edge, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land;	Improves reasonability of this performance standard considering that large tracts of wetlands are crossed, and many are contiguous to waterbodies or will be crossed during winter. As a result, it will not be practical, reasonable, or feasible to locate all extra workspace at least 50 feet away from water's edge.
VI.B.2.d	Limit the size of extra work areas to that needed to construct the waterbody crossing.	Limit the size of extra work areas to the minimum that needed to construct the waterbody crossing.	Provides APP the flexibility to adapt to unforeseen site-specific conditions that may require additional workspace.
VI.B.3.b	Construct crossings as reasonably close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit;	Construct crossings as reasonably close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit;	Provides APP greater flexibility to address potential routing constraints in proximity to waterbodies.
VI.B.3.c	If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody and the construction right-of-way;	If the pipeline parallels a waterbody, attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way;	Improves reasonability considering that large tracts of wetlands are crossed and many are contiguous to waterbodies.
VI.B.3.d	Where waterbodies meander or have multiple channels, route the pipeline to reduce the number of waterbody crossings;	Where waterbodies meander or have multiple channels, route the pipeline to minimize reduce the number of waterbody crossings;	Improves readability and clarity. Not a material change.
VI.B.3.e	Maintain adequate flow rates to protect aquatic life, and reduce the interruption of existing downstream uses; and	Maintain adequate flow rates to protect aquatic life, and reduce prevent the interruption of existing downstream uses; and	Provides APP greater flexibility to temporarily reduce or modify downstream uses during the construction period, if applicable, without a material change to the intended goal.
VI.B.4.a	All spoil from minor waterbody crossings, and bank spoil from intermediate and major waterbody crossings, will be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in Section VI.B.2; and	All spoil from minor and intermediate waterbody crossings, and upland bank spoil from intermediate and major waterbody crossings, must will be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in Section VI.B.2; and	Provides clarity and flexibility to address potential difficulties placing instream spoil back from the water's edge in larger intermediate (e.g., 80 feet wide) and major waterbodies.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.B.4.b	Use sediment barriers to reduce the flow of spoil or heavily silt-laden water into a waterbody.	Use sediment barriers to prevent reduce the flow of spoil or heavily silt-laden water into any a waterbody.	Proves a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
VI.B.5.a	Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment unless access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.	Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment unless access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.	Provides additional clarity and flexibility to address potential constraints due to the remote and limited access issues in Alaska.
VI.B.5.b	Construct equipment bridges to maintain unrestricted flow and to reduce soil from entering the waterbody. Examples of such bridges include:	Construct equipment bridges to maintain unrestricted flow and to prevent reduce soil from entering the waterbody. Examples of such bridges include:	Provides a more accurate description of the ability to achieve an acceptable reduction, without a meterail change to the intended goal.
VI.B.5.b(2)	Single-span structure, equipment pads or railroad car bridges without culverts;	Single-span structure, equipment pads and or railroad car bridges without culverts;	Provides clarity on types of equipment crossings to be used by APP.
VI.B.5.b(3)	Clean rock fill or timber and culvert(s); and	Clean rock fill or railroad car bridges or timber and without culvert(s); and	Provides clarity on types of equipment crossings to be used by APP.
VI.B.5.b(5)	Ice or snow fill if frozen to stream bed and with a culvert if limited flow is present.	Ice or snow fill if frozen to stream bed and with a culvert if limited flow is present.	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
VI.B.5	Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges unless appropriate erosion and sediment controls are implemented.	Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges; unless appropriate erosion and sediment controls are implemented.	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.B.5.c	Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to reduce bank erosion or streambed scour. If necessary, install energy-dissipating devices downstream of the culverts.	Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to prevent reduce bank erosion or streambed scour. If necessary, install energydissipating devices downstream of the culverts.	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
VI.B.5.d	Design and maintain equipment bridges to reduce soil from entering the waterbody.	Design and maintain equipment bridges to prevent reduce soil from entering the waterbody.; and	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
VI.B.5.e	Final removal of temporary equipment bridges will occur as soon as practicable after post-construction reclamation or as permitted; and	Remove Final removal of temporary equipment bridges will occur as soon as possible practicable after permanent seeding unless the COE, reclamation or its delegated agency, authorizes it as a permanent bridge permitted.	Provides improved clarity and flexibility to address potential delays in the removal of temporary bridges due to limited existing infrastructure, weather conditions, or impassible terrain. The revised wording reflects the remoteness of many of the water crossing sites, the difficulty in accesses these sites and right-of-way areas beyond the water crossing and other issues. For example, the need to maintain a crossing structure may be control by construction and/or reclamation activities taking place on a pipeline section some distance remote from the crossing structure.

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VI.B.5.f	If temporary bridges are designed to the specified design flood return period, bridges will be left in place until completion of post-construction reclamation where access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.	If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, remove equipment bridges as soon as possible after final cleanup. Ditch If temporary bridges are designed to the specified design flood return period, bridges will be left in place until completion of post-construction reclamation where access is prohibited due to limited existing infrastructure, weather conditions, or impassible terrain.	Provides flexibility needed to keep temporary bridges in place where necessary based on local conditions. APP considers this requirement too restrictive given the remoteness of some of the water crossings and difficulty in gaining or maintaining access to the right-of-way.
VI.B.6	Isolated Crossing Methods	Isolated Dry-Ditch Crossing Methods	The term "Isolated" more accurately reflects the technology and method of crossing. In some instances, the pipe trench across a watercourse will not be completely dry during installation.
VI.B.6.a	Unless approved otherwise by the appropriate state agency, install the pipeline using one of the isolated methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, and where the stream flow, soil, and terrain conditions at the time of construction allow;	Unless approved otherwise by the appropriate state agency, install the pipeline using one of the dry-ditch isolated methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, and where the stream flow, soil, and terrain conditions at the time of construction allow;	Improves readability and clarity. Not a material change.
VI.B.6.b(2)(ii)	Construct dams with materials that reduce sediment and prevent pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);	Construct dams with materials that prevent reduce sediment and other prevent pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
VI.B.6.b(2)(iv)	Reduce streambed scour at pump discharge; and	prevent Reduce streambed scour at pump discharge; and	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.B.6.c(1)	Install flume pipe after blasting (if necessary), but before trenching;	Install flume pipe after blasting (if necessary), but before any trenching;	Provides flexibility for APP to conduct some trenching prior to blasting, if needed.
VI.B.6.c(3)	Properly align flume pipe(s) to reduce bank erosion and streambed scour;	Properly align flume pipe(s) to prevent reduce bank erosion and streambed scour;	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.
VI.B.6.c(4)	Do not remove flume pipe during trenching, pipe laying, or backfilling activities, or initial streambed reclamation efforts; and	Do not remove flume pipe during trenching, pipe laying, or backfilling activities, or initial streambed restoration reclamation efforts; and	Improves readability and provides a more accurate description of performance standard.
VI.B.6.d	<p>Channel Diversion</p> <p>(1) The channel diversion method may be used at waterbodies with more than one channel, such as braided streams.</p> <p>(2) Use sandbag or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow away from the channel where the pipe section will be installed to another channel away from the installation section (some modifications to the stream bottom may be required to achieve an effective seal);</p> <p>(3) Install the pipe section, backfill the trench, remove excess spoil, and stabilize the channel prior to removing diversion dams before proceeding with diversion of the next channel section;</p> <p>(4) Complete tie-ins in areas that are isolated from stream flow;</p> <p>(5) After completion of the final channel section, remove dams that are not also part of an equipment bridge.</p>	<p>Channel Diversion</p> <p>(1) The channel diversion method may be used at waterbodies with more than one channel, such as braided streams.</p> <p>(2) Use sandbag or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow away from the channel where the pipe section will be installed to another channel away from the installation section (some modifications to the stream bottom may be required to achieve an effective seal);</p> <p>(3) Install the pipe section, backfill the trench, remove excess spoil, and stabilize the channel prior to removing diversion dams before proceeding with diversion of the next channel section;</p> <p>(4) Complete tie-ins in areas that are isolated from stream flow;</p> <p>(5) After completion of the final channel section, remove dams that are not also part of an equipment bridge.</p>	Provides description of crossing methods that may be utilized in waterbodies with more than one channel, such as braided streams.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.B.6.e	Horizontal Direct Drill (HDD): To the extent they were not provided as part of the pre-certification process, for each waterbody that would be crossed using the HDD method, provide a plan that includes:	Horizontal Directional Direct Drill (HDD) To the extent they were not provided as part of the pre-certification process, for each waterbody or wetland that would be crossed using the HDD method, provide a plan that includes:	Improves clarity in that this section pertains to waterbody crossings, not wetland crossings.
VI.B.6.e(1)	Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and areas to be disturbed or cleared for construction;	Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;	Improves readability and clarity. Not a material change.
VI.B.6.e(3)	A contingency plan for crossing the waterbody in the event the HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary.	A contingency plan for crossing the waterbody or wetland in the event the directional drill HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary.	Improves clarity and readability. Not a material change.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.B.6.f	<p>Aerial-Span</p> <p>The aerial-span crossing method involves suspending an aboveground pipeline over the geographic feature to be crossed. The aerial span crossing method types are as follows:</p> <p>(1) Single-span bridge with no supports in the waterbody. Supports for the bridge will be located on each bank at either end of the bridge. The pipeline will be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge;</p> <p>(2) A multi-span bridge with bridge supports on each bank and one or more supports within the waterbody. The pipeline could be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge; and</p> <p>(3) A cable suspension bridge with or without an in-stream support, depending upon the width of the crossing.</p>	<p>Aerial-Span</p> <p>The aerial-span crossing method involves suspending an aboveground pipeline over the geographic feature to be crossed. The aerial span crossing method types are as follows:</p> <p>(1) Single-span bridge with no supports in the waterbody. Supports for the bridge will be located on each bank at either end of the bridge. The pipeline will be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge;</p> <p>(2) A multi-span bridge with bridge supports on each bank and one or more supports within the waterbody. The pipeline could be supported on the bridge or by a steel-girder or steel-plate structure under or on the side of the bridge; and</p> <p>(3) A cable suspension bridge with or without an in-stream support.</p>	<p>Provides a description of the anticipated types of aerial crossing methods that may be utilized across waterbodies.</p>
VI.B.7	<p>Crossings of Minor Waterbodies:</p> <p>Where an isolated crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:</p>	<p>Crossings of Minor Waterbodies</p> <p>Where a dry-ditch an isolated crossing is not required, minor waterbodies may be crossed using the open-cut crossing method, with the following restrictions:</p>	<p>The term "Isolated" more accurately reflects the technology and method of crossing. In some instances, the pipe trench across a watercourse will not be completely dry during installation.</p>

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VI.B.7.a	Except for blasting and other rock breaking measures, complete in-stream construction activities (including trenching, pipe installation, backfill, and grading of the streambed contours) within 24 hours unless site-specific conditions make completion within 24 hours infeasible. Streambanks and unconsolidated streambeds may require additional reclamation after this period;	Except for blasting and other rock breaking measures, complete in-stream construction activities (including trenching, pipe installation, backfill, and restoration grading of the streambed contours) within 24 hours unless site-specific conditions make completion within 24 hours infeasible . Streambanks and unconsolidated streambeds may require additional restoration reclamation after this period;	Provides clarity on the timing for implementation of performance standard, and provides flexibility to allow for potential delays during reclamation due site-specific conditions. APP may not restore contours but they will be graded to a similar topography as prior to construction, where circumstances allow. In addition, good effort will be made by APP to complete instream work in 24 hours; however, given the weight/size of pipe, equipment needs, potential adverse weather conditions (summer storms, snow), some flexibility in this timeline is needed.
VI.B.8	Where an isolated crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:	Where a dry-ditch an isolated crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:	The term "Isolated" more accurately reflects the technology and method of crossing. In some instances, the pipe trench across a watercourse will not be completely dry during installation.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.B.9	<p>Crossing of Major Waterbodies:</p> <p>Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying areas to be disturbed by construction for each major waterbody crossing. This plan should be developed in consultation with the appropriate federal and state agencies and should include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.</p> <p>The EI may adjust the final placement of the erosion and sediment control structures in the field to enhance effectiveness.</p>	<p>Crossing of Major Waterbodies:</p> <p>Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan should be developed in consultation with the appropriate federal and state and Federal agencies and should include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues.</p> <p>The Environmental Inspector EI EI may adjust the final placement of the erosion and sediment control structures in the field to maximize enhance effectiveness.</p>	<p>Improves readability and clarity.</p> <p>APP has no "offshore portions" of the pipeline.</p> <p>The term "enhance" reflects APP's desire to ensure that the erosion and sediment techniques applied are the most appropriate for the site-specific conditions.</p>
VI.B.10	<p>Temporary Erosion and Sediment Control:</p> <p>Install sediment barriers (as defined in the APP Plan) prior to thaw of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. The APP Plan will address both temporary and permanent controls, however, the following specific measures must be implemented at stream crossings:</p>	<p>Temporary Erosion and Sediment Control:</p> <p>Install sediment barriers (as defined in section IV.F.2.a. of the APP Plan immediately after initial disturbance prior to thaw of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion The APP Plan will address both temporary and sediment control measures are addressed in more detail in the Plan permanent controls; however, the following specific measures must be implemented at stream crossings:</p>	<p>Provides clarity on the timing for implementation of this performance standard, and on the location where control measures are defined.</p>

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.B.10.a	Install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. In the travel lane, these may consist of removable sediment barriers or driveable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;	Install sediment barriers across the entire construction right-of-way at all waterbody crossings, where necessary to prevent the flow of sediments into the waterbody. In the travel lane, these may consist of removable sediment barriers (or driveable berms) must be installed across the travel lane. These Removable sediment barriers can be removed during the construction day, but must be re-installed re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;	Improves readability and clarity. Not a material change.
VI.B.10.b	Where waterbodies are adjacent to a cut and fill on the construction right-of-way and the right-of-way slopes toward the waterbody, install sediment barriers along the downslope edge of the construction right-of-way as necessary to reduce sediment flow into the waterbody; and	Where waterbodies are adjacent to a cut and fill on the construction right-of-way and the right-of-way slopes toward the waterbody , install sediment barriers along the downslope edge of the construction right-of-way as necessary to contain spoil and reduce sediment within flow into the construction right-of-way waterbody ; and	Improves clarity on where performance standard will be implemented, and more accurately reflects where APP anticipates sediment barriers will need to be installed
VI.B.10.c	Use trench plugs at waterbody crossings, as necessary, to prevent diversion of stream water into adjacent portions of the pipeline trench and to keep accumulated trench water out of the waterbody.	Use trench plugs at all waterbody crossings, as necessary, to prevent diversion of stream water into upland adjacent portions of the pipeline trench and to keep any accumulated trench water out of the waterbody.	Revised wording reflects that not all portions of the pipeline at watercrossings are adjacent to "uplands". The revised wording more accurately reflects APP's desire to prevent any water from laterally entering the pipeline trench.
VI.B.11	Trench Dewatering: If necessary to dewater the trench (either on or off the construction right-of-way) do so in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into a waterbody. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.	Trench Dewatering: If necessary to dewater the trench (either on or off the construction right-of-way) do so in a manner that does not cause erosion and does not result in heavily siltladen water flowing into any a waterbody. Remove the dewatering structures as soon as possible practicable after the completion of dewatering activities.	Improves readability and clarity without a material change. Revision to wording more accurately reflect APP's intentions and the actual construction practicability.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.C	RECLAMATION	RESTORATION RECLAMATION	The term reclamation provides a more accurate description of what APP expects to accomplish following installation of the pipeline. APP will not undertake "restoration" but will provide "reclamation".
VI.C.1	Use clean gravel or native materials, per permit requirements, for the upper 1 foot of trench backfill in waterbodies that contain coldwater fisheries.	Use clean gravel or native cobbles materials , per permit requirements, for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries.	Provides improved clarity and flexibility to use materials other than cobbles if needed due to local conditions, and if permitted. The original wording does not reflect the fact that many fish bearing streams in Alaska do not have a gravel or cobble substrate, and may comprise more fine grained soils. APP will comply with State regulatory permits with regard to backfilling the pipeline trench across the water bodies.
VI.C.2	For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing in-stream construction activities. For isolation crossings, complete initial streambed and bank stabilization before returning flow to the waterbody channel.	For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing in-stream construction activities. For dry-ditch isolation crossings, complete initial streambed and bank stabilization before returning flow to the waterbody channel.	Improves readability and clarity without a material change. Revised wording reflects the fact that not all pipeline trenches will be dry during pipe installation, and reflects the reality that although good efforts will be undertaken to complete the installation and bank stabilization in a timely manner, some circumstances (e.g., pipe size, pipe trench width and depth, weather, including summer snow storms and freezing temperatures) may delay implementation of these measures.
VI.C.3	Return waterbody banks to preconstruction contours, as practical, or to a stable angle of repose as approved by the EI.	Return all waterbody banks to preconstruction contours, as practical , or to a stable angle of repose as approved by the Environmental Inspector EI .	Provides flexibility for performance without a material change.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.C.5	Use riprap in areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric or as otherwise allowed by state permit.	Unless otherwise specified by state permit, limit the use of riprap to Use riprap in areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric. or as otherwise allowed by state permit.	Provides improved clarity where riprap will be used. APP expects that the use of riprap will be directed by Alaska State regulatory agencies and will be completed in accordance with river crossing permit requirements.
VI.C.6	Stabilize and revegetate disturbed riparian areas per the APP Plan. Reclamation work will commence during the winter season of construction and will continue with revegetation during the subsequent summer season if necessary.	Stabilize and revegetate disturbed riparian areas per the APP Plan. Reclamation work will commence during the winter season of construction and will continue with conservation grasses and legumes or native plant species, preferably woody species. Revegetation during the subsequent summer season if necessary.	Provides clarity that stabilization and revegetation measures are defined in the APP Plan. The use of conservation grasses, legumes and native plants may not be entirely practicable in Alaska. APP will apply a project specific erosion and sediment control plan and associated BMPs to address revegetation of riparian areas.
VI.C.7	Install a permanent erosion and sediment control in accordance with the APP Plan and associated BMP's. In some areas, with the approval of the EI, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.	Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent that are less than 50 feet from the waterbody, or as needed to prevent erosion and sediment transport into the waterbody. In addition, install sediment barriers as outlined control in accordance with the APP Plan and associated BMPs. In some areas, with the approval of the Environmental Inspector EI , an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.	Provides clarity that permanent erosion and sediment control measures are defined in the APP Plan. The revised wording reflects the intent of APP to develop and apply a comprehensive erosion control and sediment control Plan, together with engineering specifications and Best Management Practices.
VI.C.8	Sections VI.C.3 through VI.C.6 also apply to those perennial or intermittent streams not flowing at the time of construction.	Sections VI.C.3. through VI.C.6. above also apply to those perennial or intermittent streams not flowing at the time of construction.	Improves readability and updates cross-references. Not a material change.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VI.D.1	<p>Limit vegetation maintenance adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that are greater than 15 feet in height may be cut.</p> <p>Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the permanent right-of-way may be performed.</p> <p>Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.</p>	<p>Limit vegetation maintenance adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's waterbody mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that are greater than 15 feet in height may be cut and removed from the permanent right-of-way.</p> <p>Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the permanent right-of-way may be performed.</p> <p>Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.</p>	<p>Provides necessary flexibility to allow additional clearing, if needed, for maintenance and repairs, and for helicopter access.</p> <p>APP understands that Alaska State regulatory agencies will expect that shrubs and brush be left on the right-of-way to decompose. It is not expected that trees within the unvegetated zone will even reach greater than 15 feet high before being cut.</p>
VI.D.2	<p>Do not use herbicides or pesticides in or within 100 feet of a wetlands except as allowed by the appropriate land management or state agency.</p>	<p>Do not use herbicides or pesticides in or within 100 feet of a wetlands except as allowed by the appropriate land management agency-or state agency.</p>	<p>Improves clarity and readability.</p>
VII.A.1	<p>The project sponsor shall conduct a wetland delineation using the current federal methodology for Alaska and file a wetland delineation report with the Secretary before construction. This report shall identify:</p>	<p>The project sponsor shall conduct a wetland delineation using the current federal methodology for Alaska and file a wetland delineation report with the Secretary before construction. This report shall identify:</p>	<p>Improves readability and clarifies scope of delineation will be consistent with Alaska methodology.</p> <p>The addition of "for Alaska" ensures that the Federal methodology for wetland delineation reflects the specific attributes and pervasiveness of wetlands in Alaska.</p>

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.A.1.a	By milepost (MP), wetlands that would be affected;	By milepost all (MP), wetlands that would be affected;	Improves readability.
VII.A.2	Route the pipeline to minimize the length of the pipeline crossing wetlands while generally following existing linear disturbances.	Route the pipeline to minimize the length of the pipeline crossing wetlands while generally following existing linear disturbances-avoid wetland areas to the maximum extent possible.-If a wetland cannot be avoided or crossed by following an existing right-of-way, route the new pipeline in a manner that minimizes disturbance to wetlands.-Where looping an existing pipeline, overlap the existing pipeline right-of-way with the new construction right-of-way. In addition, locate the loop line no more than 25 feet away from the existing pipeline unless site-specific constraints would adversely affect the stability of the existing pipeline.	The revised wording and additional text are intended to reflect the widespread presence of wetlands of various values in Alaska. Further, while it is recognized that the pipeline must be constructed across many wetland sections in winter because of the presence of weak or unstable surface soils that are susceptible to rutting or damage when thawed, there are expected to some wetland terrain sections, that notwithstanding their classification as wetlands, will provide a stable and trafficable surface to allow summer construction.
VII.A.3	During winter or summer construction where wetland soils can support equipment without significant rutting or soil mixing and maintain stable trench walls, then typical upland right-of-way preparation techniques and widths will be used.	Limit the width of the construction right-of-way to 75 feet or less.-Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet.-Early in the planning process the project sponsor is encouraged to identify site-specific areas where existing soils lack adequate unconfined compressive strength that would result in excessively wide ditches and/or difficult to contain spoil piles. During winter or summer construction where wetland soils can support equipment without significant rutting or soil mixing and maintain stable trench walls, then typical upland right-of-way preparation techniques and widths will be used.	The revised text reflects APP's philosophy that construction of the pipeline can be completed without damage to the ground surface in those terrain sections that support summer activities.

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VII.A.3	<p>During winter or summer construction where wetland soils can support equipment without significant rutting or soil mixing and maintain stable trench walls, then typical upland right-of-way preparation techniques and widths will be used.</p> <p>For summer crossings of wetlands that cannot support equipment without significant rutting or soil-mixing, the following crossing techniques will be considered:</p> <ul style="list-style-type: none"> a) Limit construction right-of-way width to 100 feet; b) Construct a shoo-fly around the area; and c) Utilize timber riprap, mats, or similar materials to distribute equipment loads. 	<p>Limit the width of the construction right-of-way to 75 feet or less. Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process the project sponsor is encouraged to identify site specific areas where existing soils lack adequate unconfined compressive strength that would result in excessively wide ditches and/or difficult to contain spoil piles.</p> <p>During winter or summer construction where wetland soils can support equipment without significant rutting or soil mixing and maintain stable trench walls, then typical upland right-of-way preparation techniques and widths will be used.</p> <p>For summer crossings of wetlands that cannot support equipment without significant rutting or soil-mixing, the following crossing techniques will be considered:</p> <ul style="list-style-type: none"> a) Limit construction right-of-way width to 100 feet; b) Construct a shoo-fly around the area; and c) Utilize timber riprap, mats, or similar materials to distribute equipment loads. 	<p>The revised text reflects APP's philosophy to achieve summer construction over terrain that will support safe and efficient construction operations. In some cases an increased right-of-way width will be necessary or use of surface reinforcement/support will be needed.</p>
VII.A.4	<p>Not applicable (Marking wetland boundaries)</p>	<p>Wetland boundaries and buffers must be clearly marked in the field with signs and/or highly visible flagging until construction related ground disturbing activities are complete. Not applicable (Marking wetland boundaries)</p>	<p>APP believes this section is not necessary or practical in that the construction right-of-way boundaries and extra work spaces will be surveyed and flagged regardless, and that no additional flagging is needed in light of the pervasive presence of wetlands.</p>

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VII.A.5	Implement the waterbody procedures in the event a waterbody crossing is located within or adjacent to a wetland crossing.	Implement the measures of sections V and VI waterbody procedures in the event a waterbody crossing is located within or adjacent to a wetland crossing.	This revised text reflects APP's plan to change to a waterbody crossing methodology and techniques where necessary.
VII.A.6	Due to the extensive contiguous nature of the wetlands, aboveground facilities will likely be located within wetlands to comply with the spacing requirements of U.S. Department of Transportation (DOT) regulations.	Due to the extensive contiguous nature of the wetlands, aboveground facilities in any will likely be located within wetlands except where to comply with the location spacing requirements of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation (DOT) regulations.	This revised text reflects the widespread presence of wetlands of various types and values along the route in Alaska and the expected inability of the Project to comply with the original subsection wording. APP will comply with pipeline regulations of the US DOT.
VII.B.1.a	Not applicable; (Setback for extra work areas.)	Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. Not applicable; (Setback for extra work areas.)	APP believes the number and proximity of wetlands makes it impractical to locate extra work areas outside wetland boundaries.
VII.B.1.b	Not applicable; (Site-specific plans.)	The project sponsor shall file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50-foot setback from wetland boundaries (except where adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback. Not applicable; (Site-specific plans.)	APP believes the number and proximity of wetlands makes it impractical to develop site-specific plans for each extra work area within 50 feet of, or within, wetland boundaries. However, extra work areas and wetland boundaries are shown on the Project alignment sheets.
VII.B.1.c	Not applicable: (Limit clearing of vegetation);	Not applicable: (Limit clearing of vegetation between extra work areas and the edge of the wetland to the certificated construction right-of-way.);	APP believes the number and proximity of wetlands makes it impractical to limit clearing within 50 feet of wetland boundaries.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.B.1.d	The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats). In wetlands that cannot be appropriately stabilized, construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access is prohibited due to limited existing infrastructure (ie. access roads), weather conditions, or impassible terrain, limit the construction equipment passing through the construction right-of-way where practicable; and	The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats). In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access roads in upland areas do not provide reasonable is prohibited due to limited existing infrastructure (i.e., access roads), weather conditions, or impassible terrain, limit all other the construction equipment to one pass passing through the wetland using the construction right-of-way- where practicable; and	Revised wording provided to reflect logistical and operational constraints of working in a predominant wetland environment.
VII.B.1.e	Use existing access roads where possible. New access roads will be located outside of wetlands where practicable.	The only access roads, other than the construction right-of-way, that can be used in wetlands without Director approval, are those existing roads that can be used with no modification and no impact on the wetlands. Use existing access roads where possible. New access roads will be located outside of wetlands where practicable.	Given the pervasiveness of wetlands of varying types and quality along the route, it is not practical to limit access to the construction right-of-way and to existing roads. New access to the right-of-way, across some wetlands will be required.
VII.B.2.b	Assemble the crossing sections in temporary work space areas adjacent to or near the crossing locations that are firm enough to support construction equipment and to avoid soil-mixing or deep rutting.	Assemble the pipeline in an upland area unless the wetland is dry crossing sections in temporary work space areas adjacent to or near the crossing locations that are firm enough to adequately support skids and pipe construction equipment and to avoid soil-mixing or deep rutting.	The revised text reflects the pervasiveness of wetlands along the route in Alaska the impracticability of assembling the pipeline outside of wetland areas.
VII.B.2.c	Not applicable; (Push-pull or float techniques.)	Not applicable; (Push-pull" or "float" techniques to place the pipe in the trench where water and other site conditions allow.)	The use of push-pull techniques is now covered by another section.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.B.2.d	Minimize the length of time that topsoil/loose surface material is segregated and the trench is open;	Minimize the length of time that topsoil/ loose surface material is segregated and the trench is open-;	Improves clarity on what materials will be segregated.
VII.B.2.e	Limit construction equipment operating in wetland areas that cannot support construction equipment without significant rutting or soil mixing to that needed to clear the construction right-of-way, excavate the trench, install the crossing section, backfill the trench, and reclaim the construction right-of-way;	Limit construction equipment operating in wetland areas that cannot support construction equipment without significant rutting or soil mixing to that needed to clear the construction right-of-way, dig excavate the trench, fabricate and install the pipeline crossing section, backfill the trench, and restore reclaim the construction right-of-way-;	Given the pervasiveness of wetlands of differing type and value along the route in Alaska, additional clarity is provided to describe the basis for limiting equipment operation.
VII.B.2.f	Where present, cut vegetation just above ground-level, leaving existing root systems in place. Grinding of stumps to achieve a trafficable working surface is allowed, provided the stump base and root system are left intact.	Where present, cut vegetation just aboveground above ground-level, leaving existing root systems in place, and remove it from the wetland for disposal . Grinding of stumps to achieve a trafficable working surface is allowed, provided the stump base and root system are left intact.	Improves clarity on construction procedures.
VII.B.2.g	For areas that do not require right-of-way grading, limit pulling of tree stumps and grading activities to directly over the trench line. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and EI determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way;	Limit For areas that do not require right-of-way grading, limit pulling of tree stumps and grading activities to directly over the trenchline-trench line . Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector EI determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way-;	Improves clarity on construction procedures.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.B.2.h	Except in areas where standing water is present or soils are saturated, segregate the loose surface materials from wetlands. These materials will be temporarily windrowed along the construction right-of-way;	Segregate the top 1 foot of topsoil from the area disturbed by trenching, except Except in areas where standing water is present or soils are saturated or frozen. Immediately after backfilling is complete, restore the segregated topsoil to its original location, segregate the loose surface materials from wetlands. These materials will be temporarily windrowed along the construction right-of-way;	Improves readability and clarity.
VII.B.2.i	Do not use tree stumps, or brush riprap to support equipment on the construction right-of-way;	Do not use rock, soil imported from outside the wetlands tree stumps, or brush riprap to support equipment on the construction right-of-way;	Project may, where necessary, use imported rock or soil to construct a safe workpad within wetland areas.
VII.B.2.j	If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil/loose surface materials and subsoil in wetlands, use timber riprap, prefabricated equipment mats, terra mats, or other means. Soil fill or rock riprap may be used to stabilize the right-of-way where authorized as permanent fill by permit;	If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil/ loose surface materials and subsoil in wetlands, use low-ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats, or other means. Soil fill or rock riprap may be used to stabilize the right-of-way where authorized as permanent fill by permit;	Given the pervasiveness of wetlands and the size of the pipeline, it is not practicable to use "low ground pressure vehicles". Project may, where necessary, use imported rock or soil to construct a safe workpad within wetland areas.
VII.B.2.l	Attempt to use no more than two layers of timber riprap to support equipment on the construction right-of-way except where stabilization of the right-of-way with permanent fill is not authorized.	Attempt to use no more than two layers of timber riprap to support equipment on the construction right-of-way except where stabilization of the right-of-way with permanent fill is not authorized.	Improves clarity of construction procedures.
VII.B.2.m	Remove all project-related material used to support equipment on the construction right-of-way upon completion of post-construction reclamation except where stabilization of the right-of-way with permanent fill is authorized.	Remove all project-related material used to support equipment on the construction right-of-way upon completion of construction post-construction reclamation except where stabilization of the right-of-way with permanent fill is authorized.	Provides flexibility for the Project, where necessary, to use imported rock or soil to construct a safe workpad within wetland areas.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.B.3	<p>Temporary Sediment Control: Install sediment barriers (as defined in the APP Plan) immediately after initial disturbance of the wetlands. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls. The APP Plan will address both temporary and permanent controls:</p>	<p>Temporary Sediment Control: Install sediment barriers (as defined in section IV.F.2.a of the APP Plan) immediately after initial disturbance of the wetland or adjacent upland sediment wetlands. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c, maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion. The APP Plan will address both temporary and sediment control measures are addressed in more detail in the Plan. permanent controls:</p>	<p>Revised text reflects the realities of pipeline construction in wetland areas subject to severe conditions, such as summer snow storms, problematic site and ground conditions, etc.</p>
VII.B.3.a	<p>Install sediment barriers across the entire construction right-of-way on a site-specific basis at upland/wetland boundaries where necessary to prevent sediment flow into the wetland. In the travel lane, these may consist of removable sediment barriers or drivable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;</p>	<p>Install sediment barriers across the entire construction right-of-way immediately upslope of the on a site-specific basis at upland/wetland boundary at all wetland crossings boundaries where necessary to prevent sediment flow into the wetlandswetland. In the travel lane, these may consist of removable sediment barriers or drivable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;</p>	<p>Improves readability and clarity.</p>
VII.B.3.b	<p>On a site-specific basis where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to reduce sediment flow into the wetland;</p>	<p>WhereOn a site-specific basis where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetlandswetland, install sediment barriers along the edge of the construction right-of-way as necessary to preventreduce sediment flow into the wetlandswetland;</p>	<p>Improves readability and clarity.</p>

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.B.3.c	Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands on a site-specific basis. Remove these sediment barriers during right-of-way post-construction reclamation; and	Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands- on a site-specific basis. Remove these sediment barriers during right-of-way cleanup -post-construction reclamation; and	Improves clarity of construction procedures and timing of post-construction activities. Not a material change.
VII.B.4	Trench Dewatering: Dewater the trench (either on or off the construction right-of-way) in a manner that does not result in heavily silt-laden water flowing into wetlands to the extent practicable. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.	Trench Dewatering: Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any wetlands to the extent practicable. Remove the dewatering structures as soon as possible practicable after the completion of dewatering activities.	Revised text reflects the realities of pipeline construction in wetland areas subject to severe conditions, such as summer snow storms, problematic site and ground conditions, etc.
VII.C	RECLAMATION	RESTORATION RECLAMATION	The term reclamation provides a more accurate description of what APP expects to accomplish following installation of the pipeline. APP will not undertake "restoration" but will provide "reclamation".
VII.C.1	Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary.	Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary- to maintain the original wetland hydrology.	There are a other reasons to install trench breakers than just to maintain the original wetland hydrology. The Project may decide to install trench breakers for other purposes.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.C.2	Install permanent erosion and sediment control in accordance with the APP Plan.	<p>For each wetland crossed, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the wetland. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.</p> <p>Install permanent erosion and sediment control in accordance with the APP Plan.</p>	The APP Plan addresses permanent and temporary erosion and sediment control measures adjacent to wetlands and waterbodies.
VII.C.3	Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or state agency or the APP Plan.	Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or state agency or the APP Plan.	The APP Plan contains an erosion control technique that includes the use of mulch.
VII.C.4	Restore wetlands as outlined in the appropriate land management or state agency permits/approvals. The permits/approvals may include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts.	<p>Consult with Restore wetlands as outlined in the appropriate land management or state agency to develop a project-specific wetland restoration plan-permits/approvals. The restoration plan should permits/approvals may include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. Provide this plan to the FERC staff upon request.</p>	The revised text is intended to reflect the application of the APP Plan, and the use of the Erosion and Sediment Control and Revegetation Engineering Design and Specifications document, and the fact that revegetation may take many years.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.C.5	Not applicable. (Temporary revegetation.)	Until a project-specific wetland restoration plan is developed and/or implemented, temporarily revegetate the construction right-of-way with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present).	APP understand that some Alaska agencies do not support the use of temporary vegetation.
VII.C.6	Per the APP Plan, disturbed areas will be stabilized and revegetated, as appropriate.	Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species. Per the APP Plan, disturbed areas will be stabilized and revegetated, as appropriate.	The revised text is intended to reflect the application of the APP Plan, and the use of the Erosion and Sediment Control and Revegetation Engineering Design and Specifications document, and the fact that revegetation may take many years
VII.C.7	Remove temporary sediment barriers located at the site-specific boundary between wetlands and adjacent upland areas after stabilization.	Remove temporary sediment barriers located at the site-specific boundary between wetland wetlands and adjacent upland areas after upland revegetation and stabilization of adjacent upland areas are judged.	Revised text to reflect the fact the stabilization of the ground surface is the primary objective in the reclamation phase and that revegetation may take many years to complete.
VII.C.8	Where grading is required along side hill or longitudinal slopes the construction right-of-way will be stabilized after post-construction reclamation but not necessarily returned to the original grade.	Where grading is required along side hill or longitudinal slopes the construction right-of-way will be stabilized after post-construction reclamation but not necessarily returned to be successful as specified in section VII.A.5. of the Plan. the original grade.	This new section is intended to reflect the reality of pipeline construction in that some permanent grading will occur. All areas will be stabilized but not all areas will be returned to the original grade and profile.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.D.1	<p>Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. To facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be cut from the permanent right-of-way.</p> <p>Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the right-of-way may be performed.</p> <p>Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.</p>	<p>Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. However, toTo facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be selectively cut and removedcut from the permanent right-of-way.</p> <p>Do notWhere required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the right-of-way may be performed.</p> <p>Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.</p>	<p>Revised text reflects the Project need to maintain a vegetation free area over the pipeline, as well as at sites subject to routine helicopter landings, and at other areas where pipeline and facility repairs and maintenance activities will be performed.</p>
VII.D.3	<p>In those cases where wetlands are revegetated, the Project will monitor and record the success of wetland revegetation as outlined in the appropriate land management or state agency permits/approvals.</p>	<p>MonitorIn those cases where wetlands are revegetated, the Project will monitor and record the success of wetland revegetation annually for the first 3 yearsas outlined in the appropriate land management or state agency permits/approvals. after construction or until wetland revegetation is successful. At the end of 3 years after construction, file a report with the Secretary identifying the status of the wetland revegetation efforts. Include the percent cover achieved and problem areas (weed invasion issues, poor revegetation, etc.). Continue to file a report annually until wetland revegetation is successful.</p>	<p>The revised text acknowledges that revegetation is variable and will be monitored as provided in permit conditions.</p>

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VII.D.4	Wetland revegetation shall be considered successful per the APP Plan.	Wetland revegetation shall be considered successful per the APP Plan. if the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. if revegetation is not successful at the end of 3 years, develop and implement (in consultation with a professional wetland ecologist) a remedial revegetation plan to actively revegetate the wetlands. Continue revegetation efforts until wetland revegetation is successful.	The revised text reflects the Alaska reality that revegetation can take many years and that the intent of the Project is to establish a stable ground surface and that erosion and sediment control are effective.
VIII	WETLAND CROSSINGS – WINTER CONSTRUCTION	WETLAND CROSSINGS – WINTER CONSTRUCTION	New section.
VIII.A.1	The project sponsor shall conduct a wetland delineation using the current federal methodology for Alaska and file a wetland delineation report with the Secretary before construction. This report shall identify:	The project sponsor shall conduct a wetland delineation using the current federal methodology for Alaska and file a wetland delineation report with the Secretary before construction. This report shall identify:	Improves readability and clarity. Not a material change.
VIII.A.1.a	By MP, wetlands that would be affected;	by milepost all By MP, wetlands that would be affected;	Improves readability and clarity. Not a material change.
VIII.A.2	Route the pipeline to minimize the length of the pipeline crossing wetlands while generally following existing linear disturbances.	Route the pipeline to avoid wetland areas to minimize the maximum extent possible. If a wetland cannot be avoided or crossed by following an existing right-length of-way, route the new pipeline in a manner that minimizes disturbance to crossing wetlands. Where looping an while generally following existing pipeline, overlap the existing pipeline linear disturbances.	The revised wording and additional text are intended to reflect the widespread presence of wetlands of various values in Alaska. As a result, avoiding wetland crossings is not feasible or practical.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.A.3	<p>During winter construction where wetland soils can support equipment without significant rutting or soil-mixing and maintain stable trench walls, then typical upland right-of-way preparation techniques and widths will be used. For winter construction in wetlands where right-of-way grading (cuts and/or fills) are required and where sub-soils can support construction equipment, no reduction from the applicable construction right-of-way width will be made.</p> <p>For winter crossing of wetlands that cannot support equipment without significant rutting or soil-mixing, the following crossing techniques will be considered:</p> <p>a) Limit construction right-of-way width to 100 feet except for where existing soils lack adequate strength to maintain near vertical trench side slopes which results in excessively wide ditches or difficulty to contain ditch spoil piles;;</p> <p>b) Construct a shoo-fly around the area; and Utilize timber riprap, mats, or similar materials to distribute equipment loads.</p>	<p>Limit the width of the construction right-of-way to 75 feet or less. Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process the project sponsor is encouraged to identify site specific areas where existing soils lack adequate unconfined compressive strength that would result in excessively wide ditches and/or difficult to contain spoil piles.</p> <p>During winter construction where wetland soils can support equipment without significant rutting or soil mixing and maintain stable trench walls, then typical upland right-of-way preparation techniques and widths will be used. For winter construction in wetlands where right-of-way grading (cuts and/or fills) are required and where sub-soils can support construction equipment, no reduction from the applicable construction right-of-way is necessary.</p> <p>For winter crossing of wetlands that cannot support equipment without significant rutting or soil-mixing, the following crossing techniques will be considered:</p> <p>a) Limit construction right-of-way width to 100 feet except for where existing soils lack adequate strength to maintain near vertical trench side slopes which results in excessively wide ditches or difficulty to contain ditch spoil piles;;</p> <p>b) Construct a shoo-fly around the area; and Utilize timber riprap, mats, or similar materials to distribute equipment loads.</p>	<p>The revised wording and additional text are intended to reflect the widespread presence of wetlands of various values in Alaska. Further, it is recognized that the pipeline must be constructed across many wetland sections in winter because of the presence of weak or unstable surface soils that are susceptible to rutting or damage when thawed.</p> <p>In addition, the revised text reflects APP's philosophy to conduct winter construction over terrain that will support safe and efficient construction operations. In some cases an increased right-of-way width will be necessary or use of surface reinforcement/support will be needed.</p>

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.A.4	Not applicable (Marking wetland boundaries)	Wetland boundaries and buffers must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete.	APP believes this section is not necessary or practical in that the construction right-of-way boundaries and extra work spaces will be surveyed and flagged regardless, and that no additional flagging is needed in light of the pervasive presence of wetlands.
VIII.A.5	Implement the waterbody procedures in the event a waterbody crossing is located within or adjacent to a wetland crossing.	Implement the measures of sections V and VI waterbody procedures in the event a waterbody crossing is located within or adjacent to a wetland crossing.	This revised text reflects APP's plan to change to a waterbody crossing methodology and techniques where necessary.
VIII.A.6	Due to the extensive contiguous nature of the wetlands, aboveground facilities will likely be located within wetlands to comply with the spacing requirements of DOT regulations.	Due to the extensive contiguous nature of the wetlands, aboveground facilities in any will likely be located within wetlands except where to comply with the location spacing requirements of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation DOT regulations.	This revised text reflects the widespread presence of wetlands of various types and values along the route in Alaska and the expected inability of the Project to comply with the original subsection wording. APP will comply with pipeline regulations of the US DOT.
VIII.B.1.a	Not applicable (Setback for extra work areas.)	Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. Not applicable; (Setback for extra work areas.)	APP believes the number and proximity of wetlands makes it impractical to locate extra work areas outside wetland boundaries.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.B.1.b	Not applicable (Site-specific plans.)	<p>The project sponsor shall file with the Secretary for review and written approval by the Director, a site-specific construction plan for each extra work area with a less than 50-foot setback from wetland boundaries (except where adjacent upland consists of actively cultivated or rotated cropland or other disturbed land) and a site-specific explanation of the conditions that will not permit a 50-foot setback.</p> <p>Not applicable; (Site-specific plans.)</p>	APP believes the number and proximity of wetlands makes it impractical to develop site-specific plans for each extra work area within 50 feet of, or within, wetland boundaries. However, extra work areas and wetland boundaries are shown on the Project alignment sheets.
VIII.B.1.c	Not applicable (Limit clearing of vegetation);	<p>Limit clearing of vegetation between extra work areas and the edge of the wetland to the certificated construction right-of-way.)</p> <p>Not applicable (Limit clearing of vegetation);</p>	APP believes the number and proximity of wetlands makes it impractical to limit clearing within 50 feet of wetland boundaries.
VIII.B.1.d	The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, terra mats, or through ground-freezing). In wetlands that cannot be appropriately stabilized, construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access is prohibited due to limited existing infrastructure (ie. access roads), weather conditions, or impassible terrain,, limit the construction equipment passing through the construction right-of-way, where practicable; and	<p>The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats, or through ground-freezing). In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where access roads in upland areas do not provide reasonable is prohibited due to limited existing infrastructure (i.e., access roads), weather conditions, or impassible terrain, limit all other the construction equipment to one pass passing through the wetland using the construction right-of-way where practicable; and</p>	Revised wording provided to reflect logistical and operational constraints of working in a predominant wetland environment. This includes the use of ground freezing to stabilize the right-of-way surface to facilitate traffic.

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VIII.B.1.e	Use existing access roads where possible. New access roads will be located outside of wetlands where practicable.	The only access roads, other than the construction right-of-way, that can be used in wetlands without Director approval, are those existing roads that can be used with no modification and no impact on the wetlands. Use existing access roads where possible. New access roads will be located outside of wetlands where practicable.	Given the pervasiveness of wetlands of varying types and quality along the route, it is not practical to limit access to the construction right-of-way and to existing roads. New access to the right-of-way, across some wetlands will be required.
VIII.B.2.a	Comply with COE, or its delegated agency, permit terms and conditions; for Alaska North Slope coastal and foothill zones, comply with the tundra travel criteria as specified by the Alaska Department of Natural Resources	Comply with COE, or its delegated agency, permit terms and conditions; for Alaska North Slope coastal and foothill zones, comply with the tundra travel criteria as specified by the Alaska Department of Natural Resources	Department of Natural Resources has developed recommendations for winter tundra travel based on experimental data that separate tundra into two distinct geographical areas (Coastal and Foothill Areas). Coastal Area Tundra Travel Criteria (Approximately MP 0 to MP 62): when soil temperatures are colder than or equal to -5 degrees C (23.1 degrees F) at a depth of 12 inches (30 cm) below the surface, and when at least 6 inches (15 cm) of snow is present. Foothills Area Tundra Travel Criteria (Approximately MP 62 to MP 145): when soil temperatures are colder than or equal to -5 degrees C (23.1 degrees F) at a depth of 12 inches (30 cm) below the surface, and at least 9 inches (23 cm) of cover snow is present.
VIII.B.2.b	Assemble the crossing sections in temporary work space areas adjacent to or near the crossing locations that are firm enough to support construction equipment and to avoid soil-mixing or deep rutting.	Assemble the pipeline in an upland area unless the wetland is dry crossing sections in temporary work space areas adjacent to or near the crossing locations that are firm enough to adequately support skids and pipe construction equipment and to avoid soil-mixing or deep rutting.	The revised text reflects the pervasiveness of wetlands along the route in Alaska the impracticability of assembling the pipeline outside of wetland areas.

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VIII.B.2.c	Not applicable (Push-pull or float techniques.)	Use "push-pull" or "float" techniques to place the pipe in the trench where water and other site conditions allow. Not applicable (Push-pull or float techniques.)	The use of push-pull techniques is now covered by another section.
VIII.B.2.d	Not used; (Length of time topsoil/loose surface material is segregated.)	Minimize the length of time that topsoil is segregated and the trench is open. Not used; (Length of time topsoil/loose surface material is segregated.)	Topsoil will not be segregated during winter construction.
VIII.B.2.e	Limit construction equipment operating in wetland areas that cannot support construction equipment without significant rutting or soil mixing to that needed to clear the construction right-of-way, excavate the trench, install the crossing section, backfill the trench, and reclaim the construction right-of-way;	Limit construction equipment operating in wetland areas that cannot support construction equipment without significant rutting or soil mixing to that needed to clear the construction right-of-way, digexcavate the trench, fabricate and install the pipelinecrossing section, backfill the trench, and restorereclaim the construction right-of-way;	Given the pervasiveness of wetlands of differing type and value along the route in Alaska, it is not feasible to impose the proposed subsection conditions on the Project.
VIII.B.2.f	Where present, cut vegetation just above ground-level, leaving existing root systems in place. Grinding of stumps to achieve a trafficable working surface is allowed, provided the stump base and root system are left intact. After a trafficable working surface has been created use frost-packing techniques to increase the depth of frozen soil so that it can support heavy equipment without rutting.	Where present, cut vegetation just aboveground above ground-level, leaving existing root systems in place, and remove it from the wetland for disposal. Grinding of stumps to achieve a trafficable working surface is allowed, provided the stump base and root system are left intact. After a trafficable working surface has been created use frost-packing techniques to increase the depth of frozen soil so that it from the wetland for disposal can support heavy equipment without rutting.	Improves clarity on construction procedures and reflects APP's philosophy is not remove cut vegetation from wetlands.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.B.2.g	For areas that do not require right-of-way grading, limit pulling of tree stumps and grading activities to directly over the trench line. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and EI determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way;	Limit For areas that do not require right-of-way grading, limit pulling of tree stumps and grading activities to directly over the trench line. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector EI determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way;	Improves clarity on construction procedures.
VIII.B.2.h	Segregation of the topsoil/loose surface material from the area disturbed by trenching is not required during winter construction. Where applicable, loose surface material may be temporarily windrowed along the construction right-of-way;	Segregate Segregation of the top 4 feet of topsoil/loose surface material from the area disturbed by trenching, except in areas where standing water is present or soils are saturated or frozen. Immediately after backfilling is complete, restore the segregated topsoil to its original location is not required during winter construction. Where applicable, loose surface material may be temporarily windrowed along the construction right-of-way;	APP will only segregate loose organic material during winter construction where applicable.
VIII.B.2.i	Do not use tree stumps, or brush riprap to support equipment on the construction right-of-way	Do not use rock, soil imported from outside the wetlands tree stumps, or brush riprap to support equipment on the construction right-of-way.	Project may, where necessary, use imported rock or soil to construct a safe workpad within wetland areas.
VIII.B.2.j	If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil/loose surce material and subsoil in wetlands, use timber riprap, prefabricated equipment mats, terra mats or ground-freezing (frost-packing) or other means. Soil fill or rock riprap may be used to stabilize the right-of-way where authorized as permanent fill by permit;	If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil/ loose surce material and subsoil in wetlands, use low ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats- or ground-freezing (frost-packing) or other means. Soil fill or rock riprap may be used to stabilize the right-of-way where authorized as permanent fill by permit;	Given the pervasiveness of wetlands and the size of the pipeline, it is not practicable to use "low ground pressure vehicles". Ground freezing (frost packing) is a principal means of improving ground support for construction equipment. Project may, where necessary, use imported rock or soil to construct a safe workpad within wetland areas.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.B.2.l	Attempt to use no more than two layers of timber riprap to support equipment on the construction right-of-way except where stabilization of the right-of-way with permanent fill is not authorized.	Attempt to use no more than two layers of timber riprap to support equipment on the construction right-of-way except where stabilization of the right-of-way with permanent fill is not authorized.	Improves clarity of construction procedures. Not a material change.
VIII.B.2.m	Remove all project-related material used to support equipment on the construction right-of-way upon completion of post-construction reclamation except where stabilization of the right-of-way with permanent fill is authorized; and	Remove all project-related material used to support equipment on the construction right-of-way upon completion of construction post-construction reclamation except where stabilization of the right-of-way with permanent fill is authorized; and	Provides flexibility for the Project, where necessary, to use imported rock or soil to construct a safe workpad within wetland areas.
VIII.B.2.n	Where practicable use ice and or snow pads to create a trafficable surface after the specified depths of frozen soil and snow have been achieved.	Where practicable use ice and or snow pads to create a trafficable surface after the specified depths of frozen soil and snow have been achieved.	New section that highlights the intent of APP is to use apply snow and ice pad methods to construct a safe and stable work pad for pipeline construction.
VIII.B.3	Temporary Sediment Control: Where soils are frozen at the time of soil disturbance there will be low erosion and sedimentation potential. The APP Plan will address both temporary and permanent control.	Temporary Sediment Control: Install sediment barriers (as defined in section IV.F.2.a. of the Plan) immediately after initial disturbance of the wetland or adjacent upland. sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c., maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan. Where soils are frozen at the time of soil disturbance there will be low erosion and sedimentation potential. The APP Plan will address both temporary and permanent control.	The revised text reflects that reality of winter construction where the ground surface is frozen and not susceptible to erosion. However, erosion and sediment controls will need to be installed prior to ground thawing.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.B.3.a	Install sediment barriers across the entire construction right-of-way on a site-specific basis at upland/wetland boundaries where necessary to prevent sediment flow into the wetland. In the travel lane, these may consist of removable sediment barriers or drivable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;	Install sediment barriers across the entire construction right-of-way immediately upslope of the on a site-specific basis at upland/wetland boundary at all wetland crossings boundaries where necessary to prevent sediment flow into the wetland wetland. In the travel lane, these may consist of removable sediment barriers or drivable berms. Removable sediment barriers can be removed during the construction day, but must be re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;	Improves readability and clarity.
VIII.B.3.b	On a site-specific basis where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to reduce sediment flow into the wetland;	Where On a site-specific basis where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland wetland, install sediment barriers along the edge of the construction right-of-way as necessary to prevent reduce sediment flow into the wetland wetland;	Improves readability and clarity.
VIII.B.3.c	Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands on a site-specific basis. Remove these sediment barriers during right-of-way post-construction reclamation.	Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands on a site-specific basis . Remove these sediment barriers during right-of-way cleanup post-construction reclamation.	Improves clarity of construction procedures and timing of post-construction activities. Not a material change.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.B.4	Trench Dewatering: Dewater the trench (either on or off the construction right-of-way) in a manner that does not result in heavily silt-laden water flowing into wetlands to the extent practicable. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.	Trench Dewatering: Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in heavily silt-laden water flowing into any wetlands to the extent practicable. Remove the dewatering structures as soon as possible practicable after the completion of dewatering activities.	Revised text reflects the realities of pipeline construction in wetland areas subject to severe conditions, such as summer snow storms, problematic site and ground conditions, etc.
VIII.C	RECLAMATION	RESTORATION RECLAMATION	The term reclamation provides a more accurate description of what APP expects to accomplish following installation of the pipeline. APP will not undertake "restoration" but will provide "reclamation".
VIII.C.1	Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary.	Where the pipeline trench may drain a wetland, construct trench breakers and/or seal the trench bottom as necessary to maintain the original wetland hydrology.	There are a other reasons to install trench breakers than just to maintain the original wetland hydrology. The Project may decide to install trench breakers for other purposes.
VIII.C.2	Install permanent erosion and sediment control in accordance with the APP Plan.	For each wetland crossed, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the wetland. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland. Install permanent erosion and sediment control in accordance with the APP Plan.	The APP Plan addresses permanent and temporary erosion and sediment control measures adjacent to wetlands and waterbodies.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.C.3	Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or state agency or the APP Plan.	Do not use fertilizer, lime, or mulch unless required in writing by the appropriate land management or state agency or the APP Plan.	The APP Plan contains an erosion control technique that includes the use of mulch.
VIII.C.4	Restore wetlands as outlined in the appropriate land management or state agency permits/approvals. The permits/approvals may include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts.	Consult with Restore wetlands as outlined in the appropriate land management or state agency to develop a project-specific wetland restoration plan-permits/approvals. The restoration plan should permits/approvals may include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. -Provide this plan to the FERC staff upon request.	The revised text is intended to reflect the application of the APP Plan, and the use of the Erosion and Sediment Control and Revegetation Engineering Design and Specifications document, and the fact that revegetation may take many years.
VIII.C.5	Not applicable. (Temporary seeding)	Until a project-specific wetland restoration plan is developed and/or implemented, temporarily revegetate the construction right-of-way with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present). Not applicable. (Temporary seeding)	APP understand that some Alaska agencies do not support the use of temporary vegetation.
VIII.C.6	Per the APP Plan, disturbed areas will be stabilized and revegetated, as appropriate.	Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species. Per the APP Plan, disturbed areas will be stabilized and revegetated, as appropriate.	The revised text is intended to reflect the application of the APP Plan, and the use of the Erosion and Sediment Control and Revegetation Engineering Design and Specifications document, and the fact that revegetation may take many years
VIII.C.7	Remove temporary sediment barriers located at the site-specific boundary between wetlands and adjacent upland areas after stabilization.	Remove temporary sediment barriers located at the site-specific boundary between wetland wetlands and adjacent upland areas after upland revegetation and stabilization of adjacent upland areas are judged.	Revised text to reflect the fact the stabilization of the ground surface is the primary objective in the reclamation phase and that revegetation may take many years to complete.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.C.8	Where grading is required along side hill or longitudinal slopes the construction right-of-way will be stabilized after post-construction reclamation but not necessarily returned to the original grade.	Where grading is required along side hill or longitudinal slopes the construction right-of-way will be stabilized after post-construction reclamation but not necessarily returned to the original grade. in section VII.A.5. of the Plan.	This new section is intended to reflect the reality of pipeline construction in that some permanent grading will occur. All areas will be stabilized but not all areas will be returned to the original grade and profile.
VIII.D.1	Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. To facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be cut from the permanent right-of-way. Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the right-of-way may be performed. Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.	Do not conduct vegetation maintenance over the full width of the permanent right-of-way in wetlands. However, to To facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be maintained in an herbaceous state. In addition, trees within 15 feet of the pipeline that are greater than 15 feet in height may be selectively cut and removed cut from the permanent right-of-way. Do not Where required for pipeline and facility maintenance or repairs, additional clearing up to the full width of the right-of-way may be performed. Where it is necessary for helicopters to land, an area up to 1000 feet wide and 250 feet along the length of the right-of-way may be cleared of all vegetation greater than 8 inches high.	Revised text reflects the Project need to maintain a vegetation free area over the pipeline, as well as at sites subject to routine helicopter landings, and at other areas where pipeline and facility repairs and maintenance activities will be performed.
VIII.D.2	Do not use herbicides or pesticides in or within 100 feet of a wetlands except as allowed by the appropriate land management or state agency.	Do not use herbicides or pesticides in or within 100 feet of a wetlands except as allowed by the appropriate land management agency or state agency.	Improves clarity and readability.
VIII.D.3	In those cases where wetlands are revegetated, the Project will monitor and record the success of wetland revegetation as outlined in the appropriate land management or state agency permits/approvals.	Monitor In those cases where wetlands are revegetated, the Project will monitor and record the success of wetland revegetation annually for the first 3-years as outlined in the appropriate land management or state agency permits/approvals.	The revised text reflects the fact that "construction" may be a variable term whereas "pipeline installation" has a specific date associated with it.

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
VIII.D.4	Wetland revegetation shall be considered successful per the APP Plan.	Wetland revegetation shall be considered successful per the APP Plan.	The revised text reflects the Alaska reality that revegetation can take many years and that the intent of the Project is to establish a stable ground surface and that erosion and sediment control are effective.
IX.B.1	Perform non-destructive testing of all pipeline section welds before installation under waterbodies or wetlands.	Perform 100-percent radiographic inspection non-destructive testing of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands.	Improves readability and clarity. Not a material change.
IX.B.2	If pumps used for hydrostatic testing are within 100 feet of a waterbody or wetland, address the operation and refueling of these pumps in the project's Spill Prevention and Response Procedures.	If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetlands wetland , address the operation and refueling of these pumps in the project's project's Spill Prevention and Response Procedures.	Improves readability and clarity. Not a material change.
IX.B.3	The project sponsor shall file with the Secretary before construction a list identifying the location of waterbodies proposed for use as a hydrostatic test water source or discharge location.	The project sponsor shall file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location.	APP is identifying waterbodies proposed for use water sources. Additional water sources may be identified during permitting and construction.
IX.B.4	Water for hydrostatic testing will be obtained from both surface water and groundwater sources as allowed by federal, state, and local regulations.	Water for hydrostatic testing will be obtained from both surface water and groundwater sources as allowed by federal, state, and local regulations.	New section to clarify intent of APP utilize available water sources.
IX.C.1	Screen the intake hose to reduce entrainment of fish.	Screen the intake hose to prevent reduce entrainment of fish.	Improves readability and clarity. Not a material change.
IX.C.2	Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and/or local permitting agencies grant written permission.	Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal federal , state, and/or local permitting agencies grant written permission.	Improves readability and clarity. Not a material change..

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Section No.	APP's Proposed Measure	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change
IX.C.3	Maintain adequate flow rates to protect aquatic life, provide for waterbody uses, and provide for downstream withdrawals of water by existing users.	Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users.	APP intends to maintain adequate flow rates to provided for known waterbody uses.
IX.C.4	Locate hydrostatic test manifolds outside wetlands and riparian areas to the extent practicable.	Locate hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.	APP intends to locate hydrotest manifolds outside wetlands and riparian areas.
IX.D.1	Regulate discharge rate, use energy-dissipation device(s), and install sediment barriers, as necessary, to reduce erosion, streambed scour, suspension of sediments, or excessive stream flow.	Regulate discharge rate, use energy- dissipation device(s), and install sediment barriers, as necessary, to prevent reduce erosion, streambed scour, suspension of sediments, or excessive streamflow stream flow.	Improves readability and clarity. Not a material change.
IX.D.2	Do not discharge into federal- and state-designated exceptional value waters, which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate permitting agencies grant written permission.	Do not discharge into federal- and state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate Federal, state, and local permitting agencies grant written permission.	Improves readability and clarity. Not a material change.