FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
TransCanada Alaska Company, LLC
Alaska Pipeline Project
Docket No. PF09-11-000

April 18, 2012

Ms. Irene T. Garcia
EIS Project Manager
Alaska Pipeline Project
16945 Northchase Drive; Room 422
Houston, TX 77060

Re: Comments on TC Alaska's Draft Plan and Procedures

Dear Ms. Garcia:

The enclosure contains comments on TransCanada Alaska Company, LLC's (TC Alaska) draft Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures) for the Alaska Pipeline Project. With these comments, the staffs of the Federal Energy Regulatory Commission (Commission) and the cooperating agencies ask for clarification and further justification of certain construction and reclamation measures.

The March 30, 2012 agency comments on TC Alaska's draft environmental resource reports 1-11 (at comment number G-2) noted that we would provide these comments on the draft Plan and Procedures under separate cover. Therefore, TC Alaska should consider these comments a supplement to the March 30 letter and submit a revised Plan and Procedures with its revised draft environmental resource reports.

Thank you for your continued cooperation. If you have any questions regarding these comments, please contact Dave Swearingen at (202) 502-6173.

Sincerely,

Michael J. Boyle
Deputy Director
Division of Gas – Engineering
and Environment

Enclosures

cc: Public File, Docket No. PF09-11-000

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APPENDIX 1J

Alaska Pipeline Project
Comparison Between the Standard Federal Energy Regulatory Commission Plan and the Alaska Pipeline Project Draft Plan and Justification of Changes

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
I	The intent of this Plan is to ~~assist applicants by identifying~~identify baseline mitigation measures for minimizing erosion and enhancing revegetation. ~~The project sponsors should specify in their applications for a FERC Certificate (Certificate) any individual measures in this Plan 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 Plan from the FERC to APP. Improves readability.	Describe how borrow areas would be reclaimed.	OFC
I	~~Project-related impacts on wetland and waterbody systems are addressed in the staff's Wetland and waterbody Construction and Mitigation Procedures (Procedures).M~~easures to address erosion and sediment controls in this APP Plan are applicable to uplands, wetlands, and waterbody crossings.	Expands the scope soil erosion and sediment control at wetlands and waterbodies to include the measures identified in this Plan.	Acceptable.	
II.A.1	At least one Environmental Inspector (EI) ~~is required~~will be assigned by the Project for each construction spread during construction and ~~restoration~~reclamation (as defined ~~by~~in Section V). The number and experience of EIs assigned to each construction spread ~~should~~will be appropriate for the length of the construction spread and the number/significance of resources affected.	Improves readability. Not a material change.	Acceptable.	
II.A.2	EIs shall have peer status with ~~all~~ other activity inspectors.	EIs will maintains peer with other activity inspectors, but will report to the Chief Inspector.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
IIA.3	Provided safety considerations, including U.S. Occupational Health and Safety Administration regulations, are not compromised, EIs shall have the authority to stop activities that violate the environmental conditions of the Certificate, federal~~state~~ and state~~Federal~~ environmental permit conditions, or landowner requirements; and to order appropriate corrective action.	Places priority on safety.	Acceptable.	
II.B.3.	Verifying that the limits of authorized construction work areas and locations of access roads are properly marked before ~~clearings~~starting construction activities.	Allows for the fact that some construction activities will precede clearing.	Acceptable.	
II.B.5	Identifying erosion/sediment control and soil stabilization needs in all areas per the APP Plan and associated BMP documentation.	Clarifies that there will be erosion/ sediment control BMPs documented separately from the Plan.	Acceptable.	
II.B.6	Ensuring that the location of dewatering and water diversion structures ~~and slope breakers~~ will not direct water into known cultural resources sites or locations of sensitive species.	Provides APP flexibility to adapt to site-specific conditions where water diversion structures other than slope breakers are more appropriate.	Acceptable.	
II.B.7	Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a wetland ~~or~~and waterbody. If such deposition is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to ~~prevent~~reduce reoccurrence.	Improves reasonability of this performance standard.	Provide Further Justification: Explain how this provides equal or greater protection. Reducing fill in wetlands is not the same as preventing.	FERC
II.B.8	Ensuring that subsoil and topsoil are tested in ~~agricultural~~actively cultivated and residential areas to measure compaction and determine the need for corrective action.	Clarifies where compaction measurements will be taken.	Provide Further Justification: Explain how this provides equal or greater protection. All agricultural lands, including those not currently farmed, should be tested for compaction so as not to preclude future use.	FERC

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
II.B.10	Ensuring ~~restoration of~~that the disturbed construction surface contours ~~and topsoil~~are stable.	Clarifies that disturbed areas will be stabilized after construction, but not necessarily re-established to original contours. Restoring disturbed areas to original contours may not be desirable for erosion control or for other reasons.	Provide Further Justification: Explain how this provides equal or greater protection. Justify the specific location where this would not be practical. Provide specific examples. Additionally, we suggest a wording change to "Ensuring that surface contours <u>are restored and</u> stable."	FERC
II.B.12	Determining the need for and ~~ensure~~ ensuring that erosion controls are properly installed, as necessary to ~~prevent~~control sediment flow into wetlands, waterbodies, sensitive areas, and onto roads per the APP Plan and associated BMP documents.	Improves readability. Clarifies that there will be erosion/sediment control BMPs documented separately from the Plan.	Provide Further Justification: Explain how this provides equal or greater protection. Controlling fill in wetlands is not the same as preventing.	FERC
II.B.13	During unfrozen conditions or during winter when a potential for runoff or snow melt may occur, inspecting and ensuring the maintenance of temporary erosion control measures per applicable permit requirements.~~at least:~~ ~~a. on a daily basis in areas of active construction or equipment operation;~~ ~~b. on a weekly basis in areas with no construction or equipment operation; and~~ ~~c. within 24 hours of each 0.5 inch of rainfall;~~	Clarifies when inspection will occur and that inspection will comply with [APDES] permit requirements.	Provide Further Justification: Explain how this provides equal or greater protection. Why would TC Alaska not monitor ECD's, where practicable, all year, in order to prevent erosion during unfrozen conditions?	FERC
II.B.14	Ensuring the repair of ~~all~~ ineffective temporary erosion control measures ~~within 24 hours of identification;~~as soon as conditions allow for personnel, material and equipment access to the area.	Allows flexibility for repairing erosion control measures to when access is available.	Provide Further Justification: Explain how this provides equal or greater protection. Explain how TC Alaska would monitor and repair ineffective temporary erosion controls if this measure were implemented. How frequent would inspections be? It seems that temporary erosion control measures would be able to be monitored more closely.	FERC

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
II.B.15	Keeping records of compliance with the environmental conditions of the FERC certificate, and the mitigation measures proposed by ~~the project sponsor~~APP in the application submitted to the FERC, and other Federal or state environmental permits during active construction and ~~restorationr~~eclamation.	Changes the author of the Plan from the FERC to APP. Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.	Acceptable.	
II.B.16	Identifying areas that should be given special attention to ensure stabilization and ~~restorationr~~eclamation after the construction phase.	Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.	Acceptable.	
III	The Project ~~sponsor shall dow~~ill perform the following before construction.	Improves readability. Not a material change.	Acceptable.	
III.A.1	Identify all construction work areas (e.g., construction right-of-way, extra work space areas, pipe storage and contractor yards, borrow and disposal areas, access roads~~, etc.~~) that would be needed for safe construction. The Project ~~sponsor must~~will ensure that appropriate cultural resources and biological surveys have been conducted.	Improves readability. Not a material change.	Acceptable.	
III.A.2	The Project ~~sponsors are encouraged to~~will consider expanding ~~any~~ required cultural resources and endangered species surveys in anticipation of the need for activities outside of certificated work areas.	Changes the author of the Plan from the FERC to APP. Improves readability.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
III.B	Not Used (DRAIN TILE AND IRRIGATION SYSTEMS) ~~1. Attempt to locate existing drain tiles and irrigation systems.~~ ~~2. Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction.~~ ~~3. Develop procedures for constructing through draintiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction.~~ ~~4. Engage qualified drain tile specialists, as needed to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area, if available.~~	Not applicable to the Project because this Project does not affect irrigated or tiled land.	Acceptable.	
III.D	ROAD ~~CROSSINGSC~~ROSSING AND ACCESS POINTS	Improves readability. Not a material change.	Acceptable.	
III.D	Plan for safe and accessible conditions at all roadway crossings and access points during construction and ~~restoration~~reclamation.	Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.	Provide Further Justification: Explain how TC Alaska would ensure its reclamation meets the standards and requirements of the permitting agencies and landowners.	FERC
III.E	Determine methods and locations for the disposal of construction debris (e.g., timber, slash, mats, garbage, drilling fluids and cuttings, excess rock, ~~etc~~ejected spoil materials). Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and ~~mitigation~~permit requirements.	Improves readability. Not a material change.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
III.F	The Project ~~sponsor must~~will coordinate with the appropriate ~~local~~federal, state, and ~~Federal~~local agencies as outlined in this Plan and in the Certificate.	Improves readability. Not a material change.	Acceptable.	
III.F.2	Develop specific procedures in coordination with the appropriate agency to prevent the introduction or spread of noxious weeds and soil pests resulting from construction and ~~restoration~~reclamation activities.	Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate	Acceptable.	
IV	~~INSTALLATION~~CONSTRUCTION	Recognizes that the measures in this section will need to be applied throughout construction, not just during pipe installation.	Acceptable.	
IV.A.1	Project-related ground disturbance shall be limited to the construction right-of-way, extra work space areas, pipe storage yards, borrow and disposal areas, access roads, and other areas approved in the Certificate. Any Project-related ground disturbing activities outside these Certificated areas, except those needed to comply with the Plan and Procedures (e.g., slope breakers, energy-dissipating devices, dewatering structures~~, drain tile system repairs~~) will require prior Director approval. All construction or ~~restoration~~reclamation activities outside of the Certificated areas are subject to all applicable survey and mitigation requirements.	Recognizes that the Project does not affect tiled land. Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
IV.A.2	The construction right-of-way width for ~~a~~ the project ~~shall not exceed 75 feet or that~~is described in the FERC application unless otherwise modified by a Certificate condition. ~~However, in limited, non-wetland areas,~~ This construction right-of-way width may be expanded by up to ~~25~~50 feet without Director approval to ~~accommodate full construction right-of-way topsoil segregation and to~~ ensure safe and efficient construction where climatic, topographic ~~conditions (such as side-slopes) or,~~ soil limitations or other conditions require ~~it. Twenty-five~~expansion. Fifty feet of extra construction right-of-way width may be also ~~be~~ used ~~in limited, non-wetland or non-forested areas~~ for truck ~~turn-aroundst~~urnarounds where no reasonable alternative access exists.	Recognizes that APP is seeking a Certificated right-of- way greater than 75 feet. Also recognizes the potential need for greater-than-average additional workspace to accommodate the unique climatic, topographic, and soil conditions of the Project area.	Provide Further Justification: Explain how it provides equal or greater protection. The measure is intended for only "limited use," not for areas previously identified as required extra workspace. The additional impacts on wetlands do not seem justified. Likewise, the ability to expand the right-of-way 50 feet at TC Alaska's discretion has not been justified. Additionally, a U.S. Army Corps of Engineers permit modification could be necessary.	FERC, FWS
IV.A.2	Prior written approval of the Director is required when the Certificated construction right-of-way width would be expanded by more than ~~25~~ 50 feet.	Recognizes the potential need for greater-than-average additional workspace to accommodate the unique climatic, topographic, and soil conditions of the Project area.	Provide Further Justification: See above comment.	FERC
IV.B	TOPSOIL/LOOSE SURFACE MATERIAL SEGREGATION	Recognizes the lack of discernable topsoil and the presence of loose surface material (also known as duff) in parts of the project area.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
IV.B.1	During summer construction, unless the landowner or land management agency specifically approves otherwise, ~~prevent~~limit the mixing of topsoil/loose surface material with subsoil by stripping topsoil/loose surface material and segregating it from ~~either the full work area or from the trench and~~ the subsoil ~~storage area (ditch plus spoil side method)~~ in: a. Actively cultivated or rotated croplands~~ and pastures;~~ b. ~~residential areas;~~Residential area; c. ~~hayfields; and~~ (Not applicable) d. Other areas at the landowner's or land managing agency's request. e. Wetlands where standing water is not present or soils are not saturated. During winter construction, no stripping of topsoil will be performed. Where practical, loose surface material will be bladed, moved and stored on the right-of-way during winter construction.	Clarifies that topsoil stripping will only be feasible during the summer, although loose surface material may be stripped in the winter, where practical. Also recognizes topsoil/loose surface material may be stripped in unsaturated wetlands, but because hayfields are not present in the Project area, it will not be stripped in those locations.	Provide Further Justification: Explain how it provides equal or greater protection. Clarify why topsoil stripping (at least to the permafrost layer) would not be possible. Further, this measure may need revisions because winter construction appears to disregard reclamation ability of mixed topsoil/subsoil. Further, refer to the Procedures for topsoil segregation in wetland areas.	FERC, FWS
IV.B.3	In deep soils (more than 12 inches of topsoil), during summer construction, segregate at least 12 inches of topsoil. During summer construction, in soils with less than 12 inches of topsoil make every effort to segregate the entire topsoil layer.	Clarifies that topsoil stripping will only be feasible during the summer.	Depending upon previous answer, this may be Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
IV.B.4	During summer construction where topsoil, including loose surface material, segregation is ~~required~~performed, maintain separation ~~of salvaged topsoil and~~from subsoil throughout ~~all~~the construction ~~activities.~~period.	Clarifies that topsoil stripping will only be feasible during the summer, although loose surface material may be stripped in the winter, where practical	Acceptable, depending upon answer to IV.B.1.	
IV.B.5	Segregated topsoil ~~may~~or loose surface materials will not be used for padding the pipe.	Clarifies that segregated loose surface materials will not be used for padding the pipe.	Acceptable.	
IV.C	Not Used. (DRAIN TILES) ~~1. Mark locations of drain tiles damaged during construction.~~ ~~2. Probe all drainage tile systems within the area of disturbance to check for damage.~~ ~~3. Repair damaged drain tiles to their original or better condition. Do not use filter-covered drain tiles unless the local soil conservation authorities and the landowner agree. Use qualified specialists for testing and repairs.~~ ~~4. For new pipelines in areas where drain tiles exist or are planned, ensure that the depth of cover over the pipeline is sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).~~	Not applicable to the Project because this Project does not affect irrigated or tiled land.	Acceptable.	
IV.D	Not Used. (IRRIGATION) ~~Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.~~	Not applicable to the Project because this Project does not affect irrigated or tiled land.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
IV.E.2	If crushed stone access pads are used in residential or active agricultural areas, place the stone on synthetic fabric to facilitate removal, as required.	Clarifies that APP will comply with applicable requirements.	Provide Further Justification: Clarify what the "as required" refers to. Does TC Alaska propose to use synthetic fabric only if required by the landowner or land managing agency?	FERC
IV.F	[The entire section was replaced with revised text. Refer to the Plan for the new text.]	APP is developing erosion and sedimentation controls (comprising a toolkit of BMPs) applicable to the unique conditions of the Project area. Example BMPs are provided in the Plan.	Provide Further Justification: Identify how erosion control devices would be maintained in working condition during summer and winter construction. Discuss seeding rates and types of mulch to be used (e.g., certified weed free straw). FWS does not recommend using straw or hay bales for erosion control, water control, or mulching. Identify if temporary and permanent work pads would be constructed the same. If they wouldn't clarify the differences. Suggest adding coir logs as a class to table 1J-1.	EPA, OFC, FWS
V	~~RESTORATIONR~~eclamation	Clarifies that the Project area will be reclaimed, but not necessarily returned identical to its original state. APP restricts the use of the term "restoration" to indicate returning an area identical to its original state.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
V.A.1	Commence cleanup operations immediately following backfill operations. Where practicable, complete final grading, topsoil replacement, and installation of permanent erosion control structures within ~~20~~30 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls ~~(temporary slope breakers and sediment barriers)~~ until conditions allow completion of final cleanup, which may be performed as required in the following winter or summer. ~~The project sponsor should file with the Secretary for the review and written approval of the Director, a winterization plan if construction will continue into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring.~~	Accounts for the potential increased duration between backfilling and cleanup on this Project due to Alaska-specific climatic, topographic, and soil conditions. Also recognizes that APP is proposing winter construction as part of its Project, and therefore, a winterization plan is not needed.	Provide Further Justification: Explain how it provides equal or greater protection. Provide TC Alaska's definition of final cleanup (e.g., does this include seeding) and explain why it would not be completed as soon as possible but could be delayed until the following spring or winter. Explain what criteria would qualify to delay final cleanup for extended periods.	FERC, OFC
V.A.2	A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in Section IV.F. and inspected and maintained (as specified in Sections II.B.12 through 14). When access is no longer required, ~~the travel lane must~~permanent erosion control structures will be ~~removed and the right-of-way restored~~installed as required.	Allows for a travel lane to be left in place for accessibility during post-construction reclamation.	Provide Further Justification: Explain how it provides equal or greater protection. Why would travel lanes not be reclaimed or restored?	FERC
V.A.3	In non-agricultural areas, rock excavated from the trench may be used to backfill the trench ~~only~~ to the top of the existing bedrock profile. Excess rock that is not returned to the trench ~~should~~may be ~~considered construction debris, unless approved for use as mulchs~~spoiled on the right-of-way or ~~for some~~ other ~~use on the~~ construction work areas as approved by the landowner or land managing agency.	Improves readability. Not a material change.	Provide Further Justification: Explain how it provides equal or greater protection.	FERC
V.A.4	As conditions allow, remove excess rock from at least the top 12 inches of soil in all actively cultivated or rotated cropland ~~and pastures, hayfields, ~~,and residential areas~~, as well as other areas at the landowner's request.~~ The size, density, and distribution of rock remaining after cleanup on the construction work area should be similar to adjacent areas not disturbed by construction. The landowner may approve other provisions in writing.	Clarifies that rock removal may not be feasible at all times. Also, recognizes that pastures hayfields are not present in the Project area.	Provide Further Justification: Explain how it provides equal or greater protection. Note that the right-of-way conditions should be similar to off right-of-way conditions, no matter what the conditions. If a landowner wants excess rock removed from the right-of-way on his property, it should be TC Alaska's responsibility. Landowner request needs to be revisited.	FERC

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V.A.5	Grade the construction right-of-way to ~~restore pre-construction~~ stable contours ~~and leave~~, with the ~~soil~~surface soils in ~~the propera~~ suitable condition for ~~planting.r~~eclamation.	Clarifies that disturbed areas will be stabilized after construction, but not necessarily re-established to original contours. Also, recognizes that not all stabilized areas will be replanted.	Acceptable.	
V.A.7	Remove temporary erosion and sediment ~~barriers~~ control measures when ~~replaced by~~ permanent erosion and sediment control measures are implemented or when ~~revegetation~~reclamation is successful.	Improves readability. Not a material change.	Acceptable.	
V.B	Not Used (PERMANENT EROSION CONTROL DEVICES – permanent and temporary erosion control devices are consolidated in the Plan). ~~1. Trench Breakers~~ ~~a. Trench breakers are intended to slow the flow of subsurface water along the trench. Trench breakers may be constructed of materials such as sand bags or polyurethane foam. Do not use topsoil in trench breakers.~~ ~~b. An engineer or similarly qualified professional shall determine the need for and spacing of trench breakers. Otherwise, trench breakers shall be installed at the same spacing as and upslope of permanent slope breakers.~~ ~~c. In agricultural fields and residential areas where slope breakers are not typically required, install trench breakers at the same spacing as if permanent slope breakers were required.~~ ~~d. At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and~~	APP is developing erosion and sedimentation controls (comprising a toolkit of BMPs) applicable to the unique conditions of the Project area. Example BMPs are provided in Section IV.F. of the Plan.	Provide Further Information: FERC will provide comments once we review the toolkit.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
	where needed to avoid draining a waterbody or wetland. 2. Permanent Slope Breakers a. Permanent slope breakers are intended to reduce runoff velocity, divert water off the construction right-of-way, and prevent sediment deposition into sensitive resources. Permanent slope breakers may be constructed of materials such as soil, sand bags, or some functional equivalent. b. Construct and maintain permanent slope breakers in all areas, except cultivated areas and lawns, using spacing recommendations obtained from the local soil conservation authority or land managing agency. In the absence of written recommendations, use the following spacing unless closer spacing is necessary to avoid excessive erosion on the construction right-of-way: Slope (%)Spacing (feet) 5 - 15 300 >15 - 30 200 >30 100 c. Construct slope breakers to divert surface flow to a stable area without causing water to pool or erode behind the breaker. In the absence of a stable area, construct appropriate energy-dissipating devices at			

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	~~the end of the breaker.~~ ~~d. Slope breakers may extend slightly (about 4 feet) beyond the edge of the construction right-of-way to effectively drain water off the disturbed area. Where slope breakers extend beyond the edge of the construction right-of-way, they are subject to compliance with all applicable survey requirements.~~			
V.C.1	Test topsoil and subsoil for compaction at regular intervals in ~~agricultural~~actively cultivated or rotated cropland and residential areas disturbed by construction activities. Conduct tests on the same soil type under similar moisture conditions in undisturbed areas to approximate preconstruction conditions. Use ~~penetrometers or other~~ appropriate devices to conduct tests.	Improves readability. Not a material change.	Provide Further Justification: Identify that compaction could occur in wetlands as well, and this is addressed further in the Procedures. Further, indicate how likely weather conditions could prevent cleanup form occurring within 30 days of backfill. Describe possible scenarios.	FWS, OFC
V.C.2	During summer construction plow severely compacted ~~agricultural~~actively cultivated or rotated cropland areas with ~~a paraplow or other~~ a deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing ~~thea~~ny segregated topsoil.	Recognizes that compaction is not likely during winter construction and that deep tilling is only feasible in the summer.	Acceptable.	
V.C.3	During summer construction, perform appropriate soil compaction mitigation in severely compacted residential areas.	Recognizes that compaction is not likely during winter construction and that deep tilling is only feasible in the summer.	Acceptable.	
V.D.1.a	The Project ~~sponsor is responsible for ensuring~~will promote successful revegetation of soils disturbed by project-related activities, in accordance with applicable BMPs, except as noted in Section V.D.1.b.	Improves readability. Not a material change.	Provide Further Justification: Explain how it provides equal or greater protection. Explain how promoting successful revegetation can be completed without active replanting or seeding of all disturbed areas.	FERC

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
V.D.1.b	~~Restore all~~Replace turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. ~~Restoration~~Reclamation work must be performed by appropriately qualified personnel ~~familiar with local horticultural and turf establishment practices~~.	Improves readability. Not a material change.	Acceptable.	
V.D.1.c	Requirements for revegetation of disturbed areas to facilitate and enhance APP revegetation by natural, non-introduced plant species will comply with the recommendations of land management agencies in the stipulations of their respective right-of-way lease documents. Conventional seed bed preparation, soil amendments, and seed mixtures will be customized to Arctic and sub-Arctic climactic zones and ecological regions.	Recognizes that the climactic zones and ecological regions will be foremost in establishing seed bed preparation, soil amendments, and seed mixtures.	Provide Further Justification: Explain how it provides equal or greater protection. Also explain why TC Alaska would abide by those who provide land leases, but not FERC guidelines which call for active restoration of the disturbed areas (including seeding, soil modifying additives, etc). Further, clarify that only native seed species would be used. Also, the ADNR suggests using the tern "native species" rather than "natural, non-introduced plant species."	FERC, OFC, EPA, ADNR
V.D.2	Not Used (Soil Additives – See V.D.1.c) ~~Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as possible after application.~~	Recognizes that the climactic zones and ecological regions will be foremost in establishing seed bed preparation, soil amendments, and seed mixtures.	Provide Further Justification: Provide BMPs for arctic and sub-arctic seed bed preparation, soil amendments, and seed mixtures. Describe TC Alaska's intention to implement these BMPs.	FERC
V.D.3	Not Used (Seeding Requirements – See V.D.1.c) ~~a. Prepare a seedbed in disturbed areas to a depth of 3 to 4 inches using appropriate equipment to provide a firm seedbed. When hydroseeding, scarify the seedbed to facilitate lodging and germination of seed.~~ ~~b. Seed disturbed areas in accordance with written recommendations for seed mixes, rates, and~~	Recognizes that the climactic zones and ecological regions will be foremost in establishing seed bed preparation, soil amendments, and seed mixtures.	See above.	FERC

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
	dates obtained from the local soil conservation authority or as requested by the landowner or land management agency. Seeding is not required in actively cultivated croplands unless requested by the landowner. c. Perform seeding of permanent vegetation within the recommended seeding dates. If seeding cannot be done within those dates, use appropriate temporary erosion control measures discussed in section IV.F. and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Lawns may be seeded on a schedule established with the landowner. d. In the absence of written recommendations from the local soil conservation authorities, seed all disturbed soils within 6 working days of final grading, weather and soil conditions permitting, subject to the specifications in section V.D.3.a-c. e. Base seeding rates on Pure Live Seed. Use seed within 12 months of seed testing. f. Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro). g. In the absence of written recommendations from the local soil conservation authorities, landowner, or land managing agency to the contrary, a seed drill equipped with a cultipacker is preferred for seed application.			

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	~~Broadcast or hydroseeding can be used in lieu of drilling at double the recommended seeding rates. Where seed is broadcast, firm the seedbed with a cultipacker or imprinter after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the Environmental Inspector.~~			
VI	~~To each owner or manager of forested lands offer to install~~ The Project will implement and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include: ~~A.1.~~ Signs; ~~B.2.~~ Fences with locking gates; ~~C.3.~~ Slash and timber barriers, pipe barriers, or a line of boulders across the right-of-way; and ~~D.4.~~ Conifers or other appropriate trees or shrubs across the right-of-way.	APP has made this measure broader and more inclusive.	Acceptable.	
VII.A.1	Conduct follow-up inspections of ~~all~~ disturbed areas after the first and second growing seasons to determine the success of revegetation.	Improves readability. Not a material change.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
VII.A.2	~~Revegetation~~If revegetation is required in non-agricultural areas~~ shall~~, it will be considered successful if upon visual survey the density and cover of non- nuisance vegetation ~~are similar in density~~have achieved stability and ~~cover to adjacent undisturbed lands.s~~elf-propagating state. In agricultural areas, revegetation shall be considered successful ~~if crop yields are similar to adjacent undisturbed portions of the same field.~~in accordance with agreed criteria with landowner. In non-agricultural lands, continue revegetation efforts until ~~revegetation is~~ successful; in agricultural lands, continue until agreed with the landowner.	Clarifies that disturbed areas will be stabilized after construction, but not necessarily actively revegetated. Where revegetation is required, self-propagating vegetation will be considered successful.	Provide Further Justification: Explain how it provides equal or greater protection. Further, identify where TC Alaska believes revegetation would not be necessary and why. The ADNR requests further definition of "non-nuisance vegetation" and of density and cover standards that would be used. The ADNR also requests a standard for how "stability and a self-propagating state" will be measured.	FERC, OFC, EPA, ADNR
VII.A.3	~~Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in active agricultural areas until restoration is successful.~~Not Used (Drainage and Irrigation Systems).	Recognizes that the Project does not affect irrigated or tiled land.	Acceptable.	
VII.A.4	~~Restoration~~Reclamation shall be considered successful if the right-of-way surface condition ~~is similar to adjacent undisturbed lands,~~ has achieved stability, construction debris ~~is removed~~removal (unless requested otherwise by the land owner or land managing agency), revegetation is successful, and proper drainage has been ~~restored~~re-established.	Clarifies that disturbed areas will be stabilized after construction, but not necessarily re-established to pre- construction conditions.	Provide Further Justification: See Section VII.A.2.	FERC
VII.A.5	Routine vegetation maintenance clearing ~~shall~~will not be done more frequently than every ~~3~~three years~~.~~, however, to facilitate periodic corrosion and leak surveys, a corridor not exceeding 10-feet in width centered on the pipeline except where a helicopter landing is required, may be maintained annually in ~~an~~a herbaceous state. ~~In no case shall~~ Routine vegetation maintenance clearing ~~occur between April 15 and August 1 of any year~~will not be performed during migratory bird nesting periods.	Clarifies that helicopter landing areas beyond the 10-foot width will need to be kept clear on a annually for safety and accessibility reasons. Recognizes that the migratory bird nesting period is different than the vegetation maintenance window identified in the FERC's Plan.	Acceptable.	

Section No.	Comparison of APP's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comment	Source of Comment (if not Coded "Acceptable")
VII.A.6	Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, ~~shall~~will continue throughout the life of the project. Maintain signs, and aboveground facility gates~~, and vehicle trails~~ as necessary.	APP will maintain sign signs and aboveground facility gates to control unauthorized off-road vehicle use.	Acceptable.	
VII.B.1	The Project ~~sponsor shall~~will maintain records that identify by milepost:	Improves readability. Not a material change.	Acceptable.	
VII.B.1.e	~~any~~ Problem areas and how they were addressed.	Improves readability. Not a material change.	Acceptable.	
VII.B.2	The Project ~~sponsor shall~~will file with the Secretary ~~quarterly~~annual activity reports documenting problems, including those identified by ~~the landowner~~landowners, and corrective actions taken for at least 2 years following construction.	APP is proposing to file annual activity reports after construction, not quarterly.	Provide Further Justification: Explain how it provides equal or greater protection. Explain why TC Alaska feels that only annual reports are needed to document problems. Quarterly reports indicate that the applicant is actively involved with restoration/reclamation and addressing issues that may arise. State what TC Alaska would do should revegetation not be successful within 2 years.	FERC, OFC, EPA, FWS

APPENDIX
1K

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

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
I.A	~~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.	Explain how each alternative measure would achieve a comparable level of mitigation.	FERC
I.A	~~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.	Acceptable.	
I.B.1	"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.	Acceptable.	
I.B.1.a	"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.	Acceptable.	
I.B.1.b	"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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
I.B.1.c	"Major waterbody" includes ~~all~~ waterbodies greater than 100 feet wide at the water's edge at the time of ~~construction~~ crossing.	Improves clarity.	Acceptable.	
II.A.1	The hydrostatic testing information specified in Section ~~VIII~~X.B.3. and a wetland delineation report as described in ~~section VI.A.1.1S~~ections VII.A.1 and VIII.A.1, if applicable; and	Corrects document references. Not a material change.	Acceptable.	
II.A.2	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.	Acceptable.	
II.B	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.	Acceptable grammatical change. Provide a full description of the toolbox approach for the Procedures and how the Procedures support the use of a toolbox approach.	FERC
II.B.1	~~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).	Provide Further Justification: All extra work areas that would be closer than 50 feet from a waterbody or wetland should be identified, regardless of time of construction.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
II.B.2	~~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).	Provide Further Justification: Site-specific construction drawings should be provided for each major waterbody crossing. Provide typical drawings in the resource reports to support analysis of the toolbox approach.	FERC
II.B.3	~~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.	Provide Further Justification: If wetland impacts can be reduced to 100 feet through unstable wetlands, then they should be able to be reduced in stable wetlands as well.	FERC
II.B.4	~~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).	Provide Further justification: Site-specific plans for each HDD should be filed with the Commission prior to construction. Provide typical drawings of HDD crossings in the resource reports to support analysis of the toolbox approach.	FERC
III.B	~~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.	Acceptable.	
IV.A	~~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 ~~Prevent~~ion 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.	Provide Further Clarification: Correct the citation from EPA National Stormwater Program General Permit requirements to Alaska Department of Environmental Conservation's Stormwater Program General Permit.	EPA

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
IV.A.1.f	Concrete coating activities are not performed within l00 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.	Provide Further Justification: This action should be the same for fueling and parking of vehicles overnight as well.	FERC
V	WATERBODY CROSSINGS – SUMMER CONSTRUCTION	Provides framework for discussion of project-specific construction methods for waterbodies crossed during summer season.	Acceptable.	
V.B.1	~~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 l 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.	Provide Further Justification: Provide estimates of the time-of-year in-water work windows and conditions imposed by federal and state agencies in the project area.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
V.B.2.a	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.	Acceptable. All non-essential work should be at least 100 feet from anadromous waterbodies.	FWS
V.B.2.d	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.	Provide Further Justification: The Commission's wording allows for unforeseen site-specific conditions.	FERC
V.B.3.b	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.	Provide Further Justification: The Commission's wording allows for potential routing constraints.	FERC
V.B.3.c	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.	Provide Further Justification: 57 percent of the project would be constructed in uplands, which means there are a lot of transitional areas, where wetland impacts could be avoided.	FERC
V.B.3.d	Where waterbodies meander or have multiple channels, route the pipeline to ~~minimize~~ reduce the number of waterbody crossings	Improves readability and clarity.	Provide Further Justification: Fail to see how the change improves clarity.	FERC
V.B.3.e	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.	Provide Further Justification: Any interruption of existing downstream uses would change this measure's intended goal.	FERC, OFC
V.B.4.a	All spoil from minor ~~and intermediate~~ waterbody crossings, and ~~upland~~ bark 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.	Provide Further Justification: Every other project is able to store spoil at least 10 feet from the water's edge for intermediate waterbody crossings.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
V.B.4.b	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.	Provide Further Justification: The current measure excludes spoil and heavily silt-laden water, which should be achievable for this project.	FERC
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.	Provides additional clarity and flexibility to address potential constraints due to the remote and limited access issues in Alaska.	Provide Further Justification: State why the installation of equipment bridges could not occur to eliminate the need for this change.	FERC
V.B.5.b	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.	Provide Further Justification: The current measure excludes soil from entering the waterbody, which should be achievable for this project.	FERC
V.B.5.b(2)	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.	Acceptable.	
V.B.5.b(3)	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.	Acceptable.	
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;	Provides APP flexibility to address potential limitations in materials needed for bridge construction due to limited existing infrastructure, weather conditions, or impassible terrain.availability of suitable materials,	Provide Further Justification: Clarify that soil would not be used to construct the bridge and would be excluded from the stream bed.	FERC
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 ~~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.	Provide Further Justification: Culverts should be aligned to prevent, not reduce, bank erosion.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
V.B.5.d	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.	Provide Further Justification: Equipment bridges should be designed to prevent, not reduce, soil from entering the waterbody.	FERC
V.B.5.e	~~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.	Acceptable.	
V.B.5.f	~~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.	Provide Further Justification: Provide a commitment that TC Alaska would obtain appropriate permits from the U.S. Army Corps of Engineers for conversion of the bridge to a "permanent" structure.	FERC
V.B.6	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.	The ADFG comments that the dam and pump method will require an ADFG Title 16 Fish Habitat Permit in all fish-bearing streams. Intake screens on all pumps in fish-bearing waters will need to meet ADFG specifications. Measures will need to be developed at permitting to ensure any fish trapped in the isolated crossing are properly and safely moved out of the construction area.	ADFG

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
V.B.6.a	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.	Provide Further Justification: State which streams would not allow an isolated construction method.	FERC
V.B.6.b(2)(ii)	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.	Provide Further Justification: The construction of dams should prevent, not reduce, sediment from the right-of-way from entering the waterbody.	FERC
V.B.6.b(2)(iv)	~~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.	Provide Further Justification: The location, and possible energy dissipating devices, of the pump discharge should prevent streambed scour.	FERC
V.B.6.c(1)	Install flume pipe after blasting (if necessary), but before ~~any~~ trenching;	Provides flexibility for APP to conduct some trenching prior to blasting, if needed.	Provide Further Justification: Explain why trenching would be needed prior to blasting.	FERC
V.B.6.c(3)	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.	Provide Further Justification: Flume pipes should be aligned to prevent bank erosion.	FERC
V.B.6.c(4)	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.	Acceptable.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
V.B.6.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; (5) After completion of the final channel section, remove dams that are not also part of an equipment bridge.	Provides description of crossing methods that may be utilized in waterbodies with more than one channel, such as braided streams.	Provide Further Justification: Clarify if channel diversion would occur off of the temporary right-of-way. If it would, state each stream crossing where this would occur and the extra workspace that would be needed to construct these dams.	FERC
V.B.6.e	Horizontal Directional Drilling 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. 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.	Provide Further Justification: Clarify that wetlands that would be avoided by the HDD method would also be provided to the commission in a plan that includes the information in the following sections. Specify if HDD or aerial spans would be used on streams less than 30 feet wide.	FERC, EPA
V.B.6.e(1)	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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
V.B.6.e(3)	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.	Provide Further Justification: Clarify that the contingency plan also applies to wetlands.	FERC
V.B.6.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.	Provides a description of the anticipated types of aerial crossing methods that may be utilized across waterbodies.	Provide Further Justification: If an aerial span crossing would require the use of in-water supports, then first TC Alaska would need approval by the appropriate state and federal agencies. Further, provide a commitment that TC Alaska would obtain appropriate permits and approvals prior to construction of an aerial-span.	FERC
V.B.7	Crossing of Minor Waterbodies: 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:	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.	Acceptable.	

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V.B.7.a	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.	Provide Further Justification: State why restoration of the stream was excluded and why grading through a stream would be necessary. Explain what site-specific conditions could delay completion of construction within 24 hours. Further, stream crossings should be conducted with impending weather in mind.	FERC
V.B.8	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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
V.B.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 ~~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. The ~~Environmental Inspector~~ EI may adjust the final placement of the erosion and sediment control structures in the field to ~~maximize~~ enhance effectiveness.	Improves readability and clarity. APP has no "offshore portions" of the pipeline. 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.	Provide Further Justification: The EI should attempt to maximize effectiveness of erosion and sediment control.	FERC
V.B.10	Temporary Erosion and Sediment Control: 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:	Provides clarity on the timing for implementation of this performance standard, and on the location where control measures are defined.	Provide Further Justification: Clarify why TC Alaska would remove restoration of adjacent upland areas.	FERC

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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) ~~must be installed across the travel lane. These~~ Removable sediment barriers can be removed during the construction day, but must be ~~reinstalled~~ re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;	Improves readability and clarity. Not a material change.	Acceptable.	
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 ~~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.	Provide Further Justification: A cut and fill area would not be the only area following removal of vegetation where sediment from the right-of-way could impact waterbodies. Further, erosion control devices should contain spoil from entering waterbodies.	FERC
V.B.10.c	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.	Acceptable.	
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 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.	Acceptable.	

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V.C	~~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".	Acceptable.	
V.C.1	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.	Provide Clarification: Clarify if this means that the upper 1 foot of coldwater fisheries would only receive clean gravel or native materials if specified in a permit.	FERC
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 ~~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.	Provide Further Justification: TC Alaska could state that it would complete streambed and bank stabilization of all dry-ditch crossings, such as dam-and-pump, flume, and aerial spans with no in-water supports, before returning flow to the waterbody channel.	FERC
V.C.3	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.	Provide Further Justification: Existing measure already allows flexibility.	FERC

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V.C.5	~~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.	Provide Further Justification: Existing measure already allows for regulatory agencies to allow the use of riprap. Riprap alone should be avoided. Use of biologically engineered bank protection (e.g., root wads) would be preferred. Include vegetated spreambed stabilization, per the ADFG's Streambank Revegetation and Protection, A Guide for Alaska.	FERC, FWS, EPA
V.C.6	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.	Provide Further Justification: Identify species that TC Alaska would use to revegetate the riparian areas. To provide improved clarity, insert TC Alaska would apply a project specific erosion and sediment control plan and associated BMP's to address revegetation of riparian areas to its proposed measure.	FERC
V.C.7	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.	Provide Further Justification: Erosion controls should prevent sediment transport into the waterbody. Clarify that TC Alaska's measures would accomplish that goal.	FERC
V.C.8	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.	This should be V.C.3 through V.C.6 in this section.	FERC

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V.D.1	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~~. 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.	Provides necessary flexibility to allow additional clearing, if needed, for maintenance and repairs, and for helicopter access. 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.	Provide Further Justification: TC Alaska should leave a 50-foot riparian strip for non-anadromous streams and 100-foot riparian strip for anadromous streams. Explain why vegetation would not be removed from the permanent right-of-way. Clarify that additional clearing would only be done as necessary during repairs. Identify in the resource reports which waterbodies would require clearing within 25 feet of the water's edge for a helicopter landing and takeoff area.	FERC, FWS
V.D.2	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.	Provide Further Justification: This should read within 100 feet of a waterbody.	FERC
VI.A	~~WETLAND CROSSINGSW~~ATERBODY CROSSINGS – WINTER CONSTRUCTION	New section added to describe winter crossing procedures. Wetland crossing procedures are described in the following two sections.	Acceptable. However, explain how TC Alaska would apply the toolbox approach in its resource reports (e.g., when temperatures are below X degrees, TC Alaska would use the winter construction Procedures).	FERC
VI.A.1	Apply to the ~~U.S. Army Corps of Engineers (~~COE~~),,~~ or its delegated agency, for the appropriate ~~wetland and~~ waterbody crossing permits.	Improves clarity in that this section pertains to waterbody crossings, not wetland crossings. Not a material change.	Acceptable.	

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VI.A.2	~~Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles downstream of the crossing at least 1 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.	Acceptable. However, clarify in the resource reports that should one be identified that TC Alaska would comply with this mitigation measure.	FERC
VI.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.	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.	Acceptable.	
VI.B.1	~~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 l 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 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.	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.	Provide Further Justification: Provide estimates of the time-of-year in-water work windows and conditions imposed by federal and state agencies in the project area.	FERC

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VI.B.2.a	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.	Acceptable.	
VI.B.2.d	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.	Provide Further Justification: The Commission's wording allows for unforeseen site-specific conditions.	FERC
VI.B.3.b	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.	Provide Further Justification: The Commission's wording allows for potential routing constraints.	FERC
VI.B.3.c	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.	Provide Further Justification: 57 percent of the project would be constructed in uplands, which means there are a lot of transitional areas, where wetland impacts could be avoided.	FERC
VI.B.3.d	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.	Provide Further Justification: Fail to see how the change improves clarity.	FERC
VI.B.3.e	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.	Provide Further Justification: Any interruption of existing downstream uses would change this measure's intended goal.	FERC
VI.B.4.a	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 ~~VV~~I.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.	Provide Further Justification: Every other project is able to store spoil at least 10 feet from the water's edge for intermediate waterbody crossings.	FERC

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VI.B.4.b	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.	Provide Further Justification: The current measure excludes spoil and heavily silt-laden water, which should be achievable for this project.	FERC
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 impassable terrain.	Provides additional clarity and flexibility to address potential constraints due to the remote and limited access issues in Alaska.	Provide Further Justification: Explain why the installation of equipment bridges could not occur to eliminate the need for this change.	FERC
VI.B.5.b	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.	Provide Further Justification: The current measure excludes soil from entering the waterbody, which should be achievable for this project.	FERC
VI.B.5.b(2)	Single-span structure, equipment pads ~~and~~ or railroad car bridges without culverts;	Provides clarity on types of equipment crossings to be used by APP.	Acceptable.	
VI.B.5.b(3)	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.	Acceptable.	
VI.B.5.b(5)	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.	Acceptable.	
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.	Provides a more accurate description of the ability to achieve an acceptable reduction, without a material change to the intended goal.	Provide Further Justification: Clarify that soil would not be used to construct the bridge and would be excluded from the stream bed.	FERC

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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 ~~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.	Provide Further Justification: Culverts should be aligned to prevent, not reduce, bank erosion.	FERC
VI.B.5.d	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.	Provide Further Justification: Equipment bridges should be designed to prevent, not reduce, soil from entering the waterbody.	FERC
VI.B.5.e	~~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.	Acceptable.	

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VI.B.5.f	~~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.	Provide Further Justification: Provide a commitment that TC Alaska would obtain appropriate permits by the U.S. Army Corps of Engineers prior to conversion of a temporary bridge to a "permanent" bridge.	FERC
VI.B.6	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.	Acceptable.	
VI.B.6.a	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.	Provide Further Justification: Identify which streams would not allow an isolated construction method.	FERC
VI.B.6.b(2)(ii)	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.	Provide Further Justification: The construction of dams should prevent, not reduce, sediment from the right-of-way from entering the waterbody.	FERC
VI.B.6.b(2)(iv)	~~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.	Provide Further Justification: The location, and possible energy dissipating devices, of the pump discharge should prevent streambed scour.	FERC

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VI.B.6.c(1)	Install flume pipe after blasting (if necessary), but before ~~any~~ trenching;	Provides flexibility for APP to conduct some trenching prior to blasting, if needed.	Provide Further Justification: Explain why trenching would be needed prior to blasting.	FERC
VI.B.6.c(3)	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.	Provide Further Justification: Flume pipes should be aligned to prevent bank erosion.	FERC
VI.B.6.c(4)	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.	Acceptable.	
VI.B.6.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; (5) After completion of the final channel section, remove dams that are not also part of an equipment bridge.	Provides description of crossing methods that may be utilized in waterbodies with more than one channel, such as braided streams.	Provide Further Justification: Clarify if channel diversion would occur off of the temporary right-of-way. If it would, state each stream crossing where this would occur and the extra workspace that would be needed to construct these dams.	FERC

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VI.B.6.e	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.	Provide Further Justification: Clarify that wetlands that would be avoided by the HDD method would also be provided to the commission in a plan that includes the information in the following sections.	FERC
VI.B.6.e(1)	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.	Acceptable.	
VI.B.6.e(3)	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.	Provide Further Justification: State that the contingency plan also applies to wetlands.	FERC

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VI.B.6.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.	Provides a description of the anticipated types of aerial crossing methods that may be utilized across waterbodies.	Provide Further Justification: If an aerial span crossing would require the use of in-water supports, then first TC Alaska would need approval by the appropriate state and federal agencies. Provide a commitment that TC Alaska would obtain appropriate permits and approvals prior to construction of an aerial-span crossing.	FERC
VI.B.7	Crossings of Minor Waterbodies 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:	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.	Acceptable.	

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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 ~~restoration~~ grading of the streambed contours) within 24 hours unless site-specific conditions make completion within 24 hours infeasbile. 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.	Provide Further Justification: State why restoration of the stream was excluded and why grading through a stream would be necessary. Explain what site-specific conditions could delay completion of construction within 24 hours. Further, stream crossings should be conducted with impending weather in mind.	FERC
VI.B.8	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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VI.B.9	Crossing 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 ~~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. The ~~Environmental Inspector~~ EI may adjust the final placement of the erosion and sediment control structures in the field to ~~maximize~~ enhance effectiveness.	Improves readability and clarity. APP has no "offshore portions" of the pipeline. 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.	Provide Further Justification: The EI should attempt to maximize effectiveness of erosion and sediment control.	FERC
VI.B.10	Temporary Erosion and Sediment Control: 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:	Provides clarity on the timing for implementation of this performance standard, and on the location where control measures are defined.	Provide Further Justification: Clarify why TC Alaska would remove restoration of adjacent upland areas.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
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~~) must be installed across the travel lane. These~~ Removable sediment barriers can be removed during the construction day, but must be ~~reinstalled~~ re-installed after construction has stopped for the day and/or when heavy precipitation is imminent;	Improves readability and clarity. Not a material change.	Acceptable.	
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 ~~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.	Provide Further Justification: A cut and fill area would not be the only area following removal of vegetation where sediment from the right-of-way could impact waterbodies. Further, erosion control devices should contain spoil from entering waterbodies.	FERC
VI.B.10.c	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.	Acceptable.	
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 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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VI.C	~~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".	Acceptable.	
VI.C.1	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.	Provide Clarification: Clarify if this means that the upper 1 foot of coldwater fisheries would only receive clean gravel or native materials if specified in a permit.	FERC
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 ~~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.	Provide Further Justification: TC Alaska could state that it would complete streambed and bank stabilization of all dry-ditch crossings, such as dam-and-pump, flume, and aerial spans with no in-water supports, before returning flow to the waterbody channel.	FERC
VI.C.3	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.	Provide Further Justification: Existing measure allows for flexibility in bank restoration.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VI.C.5	~~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.	Provide Further Justification: Existing measure already allows for regulatory agencies to allow the use of riprap.	FERC
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 ~~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.	Provide Further Justification: Identify species that TC Alaska would use to revegetate the riparian areas. To provide improved clarity, insert TC Alaska would apply a project specific erosion and sediment control plan and associated BMP's to address revegetation of riparian areas to its proposed measure.	FERC
VI.C.7	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.	Provide Further Justification: Erosion controls should prevent sediment transport into the waterbody. Clarify that TC Alaska's measures would accomplish that goal.	FERC
VI.C.8	Sections ~~VV~~I.C.3. through ~~VV~~I.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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VI.D.1	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~~. 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.	Provides necessary flexibility to allow additional clearing, if needed, for maintenance and repairs, and for helicopter access. 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.	Provide Further Justification: State why vegetation would not be removed from the permanent right-of-way. Clarify that additional clearing would only be done as necessary during repairs. State in the resource reports which waterbodies would require clearing within 25 feet of the water's edge for a helicopter landing and takeoff area.	FERC
VI.D.2	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.	Provide Further Justification: This should read within 100 feet of a waterbody.	FERC
VII.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:	Improves readability and clarifies scope of delineation will be consistent with Alaska methodology. The addition of "for Alaska" ensures that the Federal methodology for wetland delineation reflects the specific attributes and pervasiveness of wetlands in Alaska.	Acceptable, provided we agree with the methodology.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.A.1.a	By milepost ~~all~~ (MP), wetlands that would be affected;	Improves readability.	Acceptable.	
VII.A.2	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.	Acceptable.	
VII.A.3	~~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.	Provide Further Justification: Given that TC Alaska states it would cross unstable wetlands with a 100-foot-wide right-of-way, it should be able to cross stable wetlands within the same width. Further, construction through wetlands should be limited to the minimal amount of time necessary. Additionally, TC Alaska should commit to implementing the measures listed as a) through c).	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.A.3	~~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. 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; and c) Utilize timber riprap, mats, or similar materials to distribute equipment loads.	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.	See previous.	FERC
VII.A.4	~~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)	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.	Provide Further Justification: All wetlands should be clearly marked in the field. If construction would occur through long stretches of wetland, then mark the boundaries (where entering and exiting) of the wetland.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.A.5	Implement the ~~measures of sections V. and VI.w~~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.	Acceptable.	
VII.A.6	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.	Provide Further Justification: TC Alaska should attempt to locate aboveground facilities to minimize impacts on wetlands, to the extent practicable.	FERC
VII.B.1.a	~~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.	Provide Further Justification: TC Alaska should attempt to located extra workspaces outside of wetlands, to the extent practicable.	FERC
VII.B.1.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 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.	Provide Further Justification: TC Alaska should provide a table of all wetlands that would be within 50 feet of wetlands. The table should include the MP, size, acreage of wetland impact and type, and justification for the workspace.	FERC
VII.B.1.c	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.	Provide Further Justification: To the extent practicable, TC Alaska should limit the vegetative clearing at wetland boundaries.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
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, ~~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.	Provide Further Justification: If a wetland is to be used as a travel lane, then it should be stabilized prior to this use.	FERC
VII.B.1.e	~~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.	Provide Further Justification: Clarify that TC Alaska would request approval by the Director of OEP prior to using access roads that require modifications.	FERC
VII.B.2.b	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.c~~onstruction equipment and to avoid soil-mixing or deep rutting.	The revised text reflects the pervasiveness of wetlands along the route in Alaska the impractibility of assembling the pipeline outside of wetland areas.	Acceptable.	
VII.B.2.c	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.	Provide Clarification: Clarify what section now covers these techniques.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.B.2.d	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.	Acceptable.	
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, ~~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.	Provide Further Justification: This seems to contradict section VII.B.1.d.	FERC
VII.B.2.f	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.	Provide Further Justification: State why vegetation would not be removed from wetlands.	FERC
VII.B.2.g	~~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~~E! 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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.B.2.h	~~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.	Provide Further Justification: Clarify why TC Alaska would not be able to segregate the top 1 foot of topsoil or to the permafrost layer. Further, state that the topsoil would be restored to its original location.	FERC, FWS
VII.B.2.i	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.	Acceptable.	
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 ~~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.	Provide Further Justification: Placing inorganic fill in wetlands for equipment access is discouraged. Working in the winter, or filter fabric on wetlands would facilitate clean up of any inorganic fill used.	FWS
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.	Improves clarity of construction procedures.	Provide Further Justification: Where matting would require more than two layers, clarify if it would be better to wait until winter conditions could be employed.	FERC
VII.B.2.m	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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.B.3	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:	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.	Provide Further Justification: Sediment barriers at adjacent uplands prevent sediment from being transported into the wetland. Explain how TC Alaska would minimize sediment transport from these adjacent uplands.	FERC
VII.B.3.a	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 ~~wetlands~~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.	Provide Further Justification: Clarify how this provides equal or better protection to the wetlands as the original measure.	FERC
VII.B.3.b	~~Where~~On a site-specific basis where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the ~~wetlands~~wetland, install sediment barriers along the edge of the construction right-of-way as necessary to ~~prevent~~reduce sediment flow into the ~~wetlands~~wetland;	Improves readability and clarity.	Provide Further Justification: Clarify how this provides equal or better protection to the wetlands as the original measure.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
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 ~~cleanup.~~ post-construction reclamation; and	Improves clarity of construction procedures and timing of post-construction activities. Not a material change.	Provide Further Justification: Clarify how this provides equal or better protection to the wetlands as the original measure.	FERC
VII.B.4	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.	Provide Further Justification: TC Alaska should explain how severe conditions would prevent it from dewatering the trench in a manner that does not cause erosion.	FERC
VII.C	~~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".	Acceptable.	
VII.C.1	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.	Provide Further Justification: This measure's sole purpose is to protect the hydrology of the wetland. Explain how this could be achieved without a performance standard.	FERC, FWS

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.C.2	~~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.	Acceptable.	
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.	The APP Plan contains an erosion control technique that includes the use of mulch.	Provide Further Justification: Clarify that the use of fertilizer, lime, or mulch is acceptable to state and federal agencies with jurisdiction over wetlands.	FERC
VII.C.4	~~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.	Provide Further Justification: TC Alaska should state measures it would take to re-establish herbaceous and woody species. Also, the ADNR suggests replacing "undesirable exotic species" with the term "invasive species" here and in section VIII.C.4.	FERC, ADNR

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.C.5	~~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.	Provide Further Justification: State which agencies do not support the use of temporary vegetation.	FERC
VII.C.6	~~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.	Provide Further Justification: Clarify that restoration would not be considered complete until revegetation is complete, though it may take many years.	FERC
VII.C.7	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.	Provide Further Justification: Clarify what site-specific adds to this section.	FERC
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 ~~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.	Provide Further Justification: State that restoration would be in compliance with state and federal permitting agencies requirements.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.D.1	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~~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. –	Provide Further Justification: Change the first paragraph to read "Do not conduct routine vegetation maintenance…". State why vegetation would not be removed from wetland areas. Change second paragraph to read "…may be performed, as necessary, to accomplish the activity." Provide a table stating what wetlands would be impacted by maintenance for helicopter landings (including MP, wetland type, acreage for maintenance, acreage of fill, etc…).	FERC
VII.D.3	~~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. ~~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.~~	The revised text acknowledges that revegetation is variable and will be monitored as provided in permit conditions.	Provide Further Justification: Provide a monitoring plan to document successful revegetation of the disturbed areas through wetlands. This plan should state how TC Alaska would ensure revegetation of disturbed areas. As 3 years may not be long enough for wetlands to restore through much of the project area, TC Alaska should suggest a period of time that would be appropriate for filing its report with the Secretary documenting restoration of disturbed wetland areas.	FERC, FWS, OFC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VII.D.4	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 revegegation 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.	Provide Further Justification: The monitoring plan should include criteria for determining wetland restoration success.	FERC, FWS, OFC
VIII	WETLAND CROSSINGS – WINTER CONSTRUCTION	New section.	Acceptable.	
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:	Improves readability and clarity. Not a material change.	Acceptable, provided we agree with the methodology.	FERC
VIII.A.1.a	~~by milepost all~~ By MP, wetlands that would be affected;	Improves readability and clarity. Not a material change.	Acceptable.	
VIII.A.2	Route the pipeline to ~~avoid wetland areas tom~~inimize 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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.A.3	~~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 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. For winter crossing 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 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; and Utilize timber riprap, mats, or similar materials to distribute equipment loads.	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. 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.	Provide Further Justification: Given that TC Alaska states it would cross unstable wetlands with a 100-foot-wide right-of-way, it should be able to cross stable wetlands within the same width. Further, construction through wetlands should be limited to the minimal amount of time necessary. Additionally, TC Alaska should commit to implementing the measures listed as a) through what should be c).	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.A.4	~~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.	Provide Further Justification: All wetlands should be clearly marked in the field. If construction would occur through long stretches of wetland, then mark the boundaries (where entering and exiting) of the wetland.	FERC, OFC
VIII.A.5	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.	Acceptable.	
VIII.A.6	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.	Provide Further Justification: TC Alaska should attempt to locate aboveground facilities to minimize impacts on wetlands, to the extent practicable.	FERC
VIII.B.1.a	~~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.	Provide Further Justification: TC Alaska should attempt to located extra workspaces outside of wetlands, to the extent practicable.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.B.1.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 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.	Provide Further Justification: TC Alaska should provide a table of all wetlands that would be within 50 feet of wetlands. The table should include the MP, size, acreage of wetland impact and type, and justification for the workspace.	FERC
VIII.B.1.c	~~Limit clearing of vegetation between extra work areas and the edge of the wetland to the certificated construction right-of-way.)~~ Not applicable (Limit clearing of vegetation);	APP believes the number and proximity of wetlands makes it impractical to limit clearing within 50 feet of wetland boundaries.	Provide Further Justification: To the extent practicable, TC Alaska should limit the vegetative clearing at wetland boundaries.	FERC
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, ~~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	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.	Provide Further Justification: If a wetland is to be used as a travel lane, then it should be stabilized prior to this use.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.B.1.e	~~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.	Provide Further Justification: Clarify that TC Alaska would request approval by the Director of OEP prior to using access roads that require modifications.	FERC
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	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.	Provide Reference: Provide a reference for the Alaska Department of Natural Resources' tundra travel criteria.	FERC
VIII.B.2.b	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.c~~onstruction 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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.B.2.c	~~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.	Provide Clarification: Clarify what section now covers these techniques.	FERC
VIII.B.2.d	~~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.	Provide Further Justification: Clarify why topsoil to the permafrost layer could not be segregated.	FERC, FWS
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, 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.	Provide Clarification: This seems to contradict section VII.B.1.d.	FERC
VIII.B.2.f	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.	Provide Further Justification: Identify why vegetation would not be removed from wetlands.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.B.2.g	~~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~~I 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.	Acceptable.	
VIII.B.2.h	~~Segregate~~ Segregation of the ~~top 1 foot 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.	Provide Further Justification: Clarify why TC Alaska would not be able to segregate the top 1 foot of topsoil or to the permafrost layer. Further state that the topsoil would be restored to its original location.	FERC, FWS
VIII.B.2.i	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.	Acceptable.	
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 ~~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.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
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.	Improves clarity of construction procedures. Not a material change.	Provide Further Justification: Explain why this would be necessary in the winter.	FERC
VIII.B.2.m	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.	Acceptable.	
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.	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.	Acceptable.	
VIII.B.3	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.	Provide Further Justification: Sediment barriers at adjacent uplands prevent sediment from being transported into the wetland. Explain how TC Alaska would minimize sediment transport from these adjacent uplands.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.B.3.a	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 crossingsb~~oundaries where necessary to prevent sediment flow into the ~~wetlands~~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.	Provide Further Justification: Clarify how this provides equal or better protection to the wetlands as the original measure.	FERC
VIII.B.3.b	~~Where~~On a site-specific basis where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the ~~wetlandsw~~etland, install sediment barriers along the edge of the construction right-of-way as necessary to ~~prevent~~reduce sediment flow into the ~~wetlands~~wetland;	Improves readability and clarity.	Provide Further Justification: Clarify how this provides equal or better protection to the wetlands as the original measure.	FERC
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 ~~cleanup.p~~ost-construction reclamation.	Improves clarity of construction procedures and timing of post-construction activities. Not a material change.	Provide Further Justification: Clarify how this provides equal or better protection to the wetlands as the original measure.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.B.4	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 ~~possiblep~~racticable 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.	Provide Further Justification: TC Alaska should explain how severe conditions would prevent it from dewatering the trench in a manner that does not cause erosion.	FERC
VIII.C	~~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".	Acceptable.	
VIII.C.1	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.	Provide Further Justification: While we agree that trench breakers could be used for other purposes, this measure's sole purpose is to protect the hydrology of the wetland.	FERC
VIII.C.2	~~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.	Acceptable.	

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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.	The APP Plan contains an erosion control technique that includes the use of mulch.	Provide Further Justification: Clarify that the use of fertilizer, lime, or mulch is acceptable to state and federal agencies with jurisdiction over wetlands.	FERC
VIII.C.4	~~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.	Provide Further Justification: TC Alaska should state measures it would take to re-establish herbaceous and woody species. Correct the example as phragmites is not present in Alaska. (FWS) See also ADNC comment for section VII.C.4.	FERC, FWS, ADNR
VIII.C.5	~~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.	Provide Further Justification: State which agencies do not support the use of temporary vegetation. The ADNR comments that some Alaska agencies fully support the use of temporary vegetation (e.g., annual ryegrass and, to a lesser extent, cereal grains) and that BMPs such as temporary seeding must not be ruled out of the potential tool kit for erosion control and storm water pollution prevention planning.	FERC, ADNR
VIII.C.6	~~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	Provide Further Justification: Clarify that restoration would not be considered complete until revegetation is complete, though it may take many years.	FERC
VIII.C.7	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.	Provide Further Justification: Clarify what site-specific adds to this section.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
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 ~~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.	Provide Further Justification: State that restoration would be in compliance with state and federal permitting agencies requirements.	FERC
VIII.D.1	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 ~~ana~~n 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.	Provide Further Justification: Change the first paragraph to read "Do not conduct routine vegetation maintenance…". State why vegetation would not be removed from wetland areas. Change second paragraph to read "…may be performed, as necessary, to accomplish the activity." Provide a table stating what wetlands would be impacted by maintenance for helicopter landings (including MP, wetland type, acreage for maintenance, acreage of fill, etc…).	FERC
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 ~~agency~~ or state agency.	Improves clarity and readability.	Acceptable.	
VIII.D.3	~~Monitor~~In those cases where wetlands are revegetated, the Project will monitor and record the success of wetland revegetation ~~annually for the first 3 yearsa~~s 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.	Provide Further Justification: Provide a monitoring plan to document successful revegetation of the disturbed areas through wetlands. As 3 years may not be long enough for wetlands to restore through much of the project area, TC Alaska should suggest a period of time that would be appropriate for filing its report with the Secretary documenting restoration of disturbed wetland areas.	FERC

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
VIII.D.4	Wetland revegetation shall be considered successful per the APP Plan.	The revised text reflects the Alaska reality that revegegation 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.	Provide Further Justification: The monitoring plan should include criteria for determining wetland restoration success.	FERC
IX.B.1	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.	Provide Further Justification: State that all testing of welds would be done in accordance with U.S. Department of Transportation requirements.	FERC
IX.B.2	If pumps used for hydrostatic testing are within 100 feet of ~~anya~~ waterbody or ~~wetlandsw~~etland, address the operation and refueling of these pumps in the ~~project'sp~~project's Spill Prevention and Response Procedures.	Improves readability and clarity. Not a material change.	Acceptable.	
IX.B.3	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.	Acceptable.	
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.	New section to clarify intent of APP utilize available water sources.	Acceptable.	
IX.C.1	Screen the intake hose to ~~prevent~~reduce entrainment of fish.	Improves readability and clarity. Not a material change.	Provide Further Justification: State the size mesh and flow rate that would be used on waterbodies containing fish.	FERC
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~~federal, state, and/or local permitting agencies grant written permission.	Improves readability and clarity. Not a material change.	Acceptable.	

Section No.	Comparison of TC Alaska's Proposed Measure to the FERC's Measure	TC Alaska's Explanation for the Change	Agency Comments	Source of Comment (if not coded "Acceptable")
IX.C.3	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.	Acceptable.	
IX.C.4	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.	Acceptable.	
IX.D.1	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.	Provide Further Justification: Discharge of hydrostatic test water should be regulated to prevent erosion and streambed scour.	FERC
IX.D.2	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.	Provide Further Justification: Should be federal **or** state-designated exceptional value waters. Further, the elimination of waterbodies reduces clarity. As it reads now TC Alaska would not discharge to a waterbody that is both an exceptional value water and provides habitat for federally listed threatened or endangered species.	FERC