

APPENDIX M

**Onshore Pipeline Construction Best Management Practices, Revised
November 2020**

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Annex #308 - Data Gap #308 Response



Sea Port Oil Terminal Project Offshore Brazoria County, Texas

OFFSHORE AND ONSHORE BEST MANAGEMENT PRACTICES FOR
THE SPOT DEEPWATER PORT

NOVEMBER 2020

THIS DOCUMENT SUPERSEDES PRIOR VERSIONS OF ANNEX #107 AND ANNEX #228

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ACRONYMS AND ABBREVIATIONS

Applicant	SPOT Terminal Services LLC
BMPs	Best Management Practices
CWA	Clean Water Act
dB	decibels
EI	Environmental Inspector
GLO	Texas General Land Office
HDD	horizontal directional drill/drilling
MARAD	U.S. Maritime Administration
MBTA	Migratory Bird Treaty Act
MLV	mainline valve
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Service
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Service
NPDES	National Pollution Discharge Elimination System
Oyster Creek Terminal	onshore crude oil storage facility and pumping station for the SPOT Project
PHMSA	Pipeline and Hazardous Materials Safety Administration
Project	Sea Port Oil Terminal Deepwater Port and Oyster Creek Terminal and associated pipelines
SPOT	Sea Port Oil Terminal
SWPPP	Stormwater Pollution Prevention Plan
TPWD	Texas Parks and Wildlife Department
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service

C OFFSHORE AND ONSHORE BEST MANAGEMENT PRACTICES

1 INTRODUCTION

The intent of the Offshore and Onshore Best Management Practices (BMPs) is to provide SPOT Terminal Services LLC (the Applicant) guidance to avoid, minimize, and mitigate environmental impacts as they relate to the construction and operation of the offshore and onshore components of the Sea Port Oil Terminal (SPOT) Project.

This document is intended to supersede Annex #107, *Onshore Pipeline Construction Best Management Practices*¹ and Annex #228, *Agency Recommended Best Management Practices*² (both revised from their original versions and most recently included as part of Data Gaps Responses #9, submitted to the U.S. Coast Guard [USCG] and U.S. Maritime Administration [MARAD] on October 20, 2020). This document will include all BMPs found within those previous documents and those recommended BMPs found in Data Request #10, Information Request #318. Any future BMPs that are developed will be added to this document, as well.

Based on input from the U.S. Environmental Protection Agency (Region 6), a National Pollution Discharge Elimination System (NPDES) general permit for construction stormwater discharges will be required for certain onshore portions of the SPOT Project, which include the proposed Oyster Creek Terminal, the Oyster Creek Terminal to Shore Crossing Pipeline, and the meter stations along the Oyster Creek Terminal to Shore Crossing Pipeline. A Stormwater Pollution Prevention Plan (SWPPP) will be drafted and implemented, per NPDES permit requirements, for those components of the SPOT Project. However, the BMPs outlined in this document are more detailed and restrictive than SWPPP BMPs and, as such, where there is overlap, the BMPs in this document will take precedent.

Once the SPOT Project is authorized, the Applicant may deviate from these BMPs in certain situations if:

- A different measure provides equal or better environmental protection; or
- It is necessary because a BMP is infeasible or unworkable based on Project-specific conditions.

At this time, these BMPs are considered *DRAFT*, as modifications or amendments may be necessary as agency consultation is completed and permit conditions are issued for the SPOT Project.

2 ONSHORE BEST MANAGEMENT PRACTICES IN UPLANDS

2.1 SUPERVISION AND INSPECTION

1. It is anticipated that a minimum of one designated Environmental Inspector (EI) would be required for the SPOT Project during construction and restoration.

¹ Annex #107 was originally submitted in Responses to Data Gaps #2 – Part C, on August 5, 2019.
² Annex #228 was originally submitted in Responses to Data Gaps #4 – Part B, on October 1, 2019.

2. An EI shall have the authority to stop activities that violate the environmental conditions of any applicable environmental permits and to order appropriate corrective action.
3. At a minimum, the EI shall be responsible for:
 - Inspecting construction activities for compliance with the requirements of these BMPs, the mitigation measures proposed by the Applicant, other environmental permits and approvals and environmental requirements in landowner easement agreements;
 - Identifying, documenting, and overseeing corrective actions, as necessary, to bring an activity back into compliance;
 - Advising the Chief Construction Inspector (or equivalent supervisory position) when environmental conditions (such as wet weather soils) make it advisable to restrict or delay construction activities;
 - Verifying that the limits of authorized construction work areas are visibly marked before clearing and are maintained throughout construction;
 - Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements along the construction work area;
 - Identifying erosion/sediment control and soil stabilization needs in all areas;
 - Ensuring that the design of erosion controls will not direct water or sediments into sensitive environmental resource areas;
 - Verifying that dewatering activities are properly monitored and do not result in the deposition of sand, silt, and/or sediment into sensitive environmental resource areas, stopping dewatering activities if such deposition is occurring and ensuring the design of the discharge is changed to prevent reoccurrence, and verifying that dewatering structures are removed after completion of dewatering activities;
 - Ensuring that subsoil and topsoil are tested in agricultural and residential areas to measure compaction and determine the need for corrective action;
 - Ensuring that appropriate topsoil segregation and restoration is completed in designated areas (i.e., agricultural, residential);
 - Verifying that the soils imported for agricultural or residential use are certified as free of noxious weeds and soil pests, unless otherwise approved by the landowner;
 - Inspecting and ensuring the maintenance of temporary erosion control measures, 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 0.5 inch of rainfall.

- Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification, or as soon as conditions allow if compliance with this time frame would result in greater environmental impacts;
- Ensuring that erosion control devices are properly installed, monitored, and maintained to prevent sediment flow into sensitive environmental resource areas and onto roads, and determining the need for additional erosion control devices per U.S. Army Corps of Engineers (USACE) Section 404/401 permit conditions and the Project's BMP Plan and/or SWPPP that would be developed prior to construction to comply with Section 402 of the Clean Water Act (CWA), NPDES;
- Keeping records of compliance with the environmental conditions of the License, and the mitigation measures proposed by the Applicant in the application submitted to the USCG and MARAD, and other federal or state environmental permits during active construction and restoration;
- Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase;
- Verifying that locations for any disposal of excess construction materials for beneficial reuse comply with Section 2.2.4 of this document; and
- Verifying that disposal of solid and hazardous waste is completed in accordance with federal, state, and local regulations.

2.2 PRECONSTRUCTION PLANNING

2.2.1 Construction Work Areas

1. Identify all construction work areas that would be needed for safe construction. The Applicant must ensure that appropriate cultural resources and wetland surveys are conducted, as determined necessary by the appropriate federal and state agencies.
2. Plan construction sequencing to limit the amount and duration of open trench sections, as necessary, to prevent excessive erosion or sediment flow into sensitive environmental resource areas.
3. Construction worker vehicles and construction vehicles not in operation would be parked in contractor yards or laydown yards. Construction worker vehicles and construction vehicles would not park on the sides of roadways, in private driveways, or in private parking lots without approval of the driveway or parking lot owner.

2.2.2 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 construction through drain-tiled 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.

2.2.3 Road Crossings and Access Points

All public road crossings will be crossed by either the horizontal direction drill (HDD) or bore construction technique. Should an HDD or bore be unsuccessful, the Applicant will coordinate with the relevant county or local highway department to determine the best times for temporary road closures in order to minimize impacts on local traffic.

2.2.4 Disposal Planning

Methods and locations for the regular collection, containment, and disposal of excess construction materials and debris (e.g., timber, slash, mats, garbage, drill cuttings and fluids, excess rock) should be determined throughout the construction process. Disposal of materials for beneficial reuse must not result in adverse environmental impacts and is subject to compliance with all applicable survey, landowner, or land management agency approvals and permit requirements.

2.2.5 Dust Control

The Applicant shall develop a Fugitive Dust Control Plan specifying mitigation measures that would be implemented to minimize impacts on air quality from fugitive dust.

2.2.6 Agency Coordination

The Applicant will coordinate with the appropriate local, state, and federal agencies as outlined herein and/or required by the License. The Applicant will obtain written recommendations from the local soil conservation authorities or land management agencies regarding permanent erosion control and revegetation specifications. In addition, the Applicant will develop specific procedures in coordination with the appropriate agencies to prevent the introduction or spread of invasive species, noxious weeds, and soil pests resulting from construction and restoration activities.

2.2.7 Spill Prevention and Response Procedures

1. The Applicant will develop Project-specific Spill Prevention and Response Procedures, as specified in Section 3.2 below. Prior to construction, a copy must be filed with the USCG and MARAD and made available in the field on each construction spread.
2. In the event of a release/spill in a wetland or waterbody, conduct an assessment of the impacts and any mitigation required with the Texas Parks and Wildlife Department (TPWD) Kills and Spills Team, Region 3 (281-534-0133 during business hours, 512-389-4848 for 24-hour support).

2.2.8 Residential Construction

For all properties with residences located within 50 feet (15.2 meters) of construction work areas, the Applicant shall:

1. Avoid removal of mature trees and landscaping within the construction work area, unless necessary for safe operation of construction equipment, or as specified in landowner agreements;

2. Fence the edge of the construction work area for a distance of 100 feet (30.5 meters) on either side of the residence;
3. Restore all lawn areas and landscaping immediately following cleanup operations, or as specified in landowner agreements; and
4. With the exception of HDDs, construction within 50 feet (15.2 meters) of a residential property would be conducted during daytime hours (7:00 a.m. to 7:00 p.m.).

If seasonal or other weather conditions prevent compliance with these time frames, then temporary erosion controls (sediment barriers and mulch) should be maintained and monitored until conditions allow completion of restoration.

2.3 INSTALLATION

2.3.1 Approved Areas of Disturbance

1. Project-related ground disturbance shall be limited to the construction right-of-way and other approved workspaces. Any Project-related ground disturbing activities outside these areas will require review to determine if there are any sensitive environmental or cultural resources.
2. To minimize wetland impacts, the Applicant would utilize a reduced construction right-of-way, where feasible, for wetland crossings. When applicable, the ECHO Terminal to Oyster Creek Terminal Pipeline would utilize a 75-foot (22.9-meter) wide construction right-of-way, which would include a 30-foot (9.1-meter) operational easement and 45 feet (13.7 meters) of temporary workspace. When applicable, the Oyster Creel Terminal Pipeline to Shore Crossing Pipeline is currently proposing 100-foot (30.5-meter) construction rights-of-way in wetlands where two pipelines would cross.
3. Project use of additional limited areas is subject to landowner approval and compliance with all applicable survey and permit requirements.

2.3.2 Topsoil Segregation

1. Unless the landowner or land management agency specifically approves otherwise, prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in:
 - a. Non-inundated jurisdictional wetlands;
 - b. Agricultural parcels;
 - c. Residential areas; and
 - d. Other areas, at the landowner's request.
2. In all areas, importation of topsoil is not an acceptable alternative to topsoil segregation unless otherwise requested by landowner.
3. Where topsoil segregation is required:

- a. Segregate at least 12 inches (30.5 centimeters) of topsoil in deep soils (more than 12 inches [30.5 centimeters] of topsoil) except in inundated or saturated wetlands;
 - b. Minimize the length of time that topsoil is segregated and the trench is open.; and
 - c. Make every effort to segregate the entire topsoil layer in soils with less than 12 inches (30.5 centimeters) of topsoil.
4. Maintain separation of salvaged topsoil and subsoil throughout all construction activities.
 5. Segregated topsoil may not be used for padding the pipe, constructing temporary slope breakers or trench plugs, improving or maintaining roads, or as a fill material.
 6. Stabilize topsoil piles to minimize loss due to wind and water erosion with the use of sediment barriers, mulch, temporary seeding, tackifiers, or functional equivalents, where necessary; and
 7. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, use low-ground-weight construction equipment or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats.

2.3.3 Equipment Bridges

1. 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.
2. Construct and maintain equipment bridges to allow unrestricted flow and to prevent soil from entering the waterbody. Examples of such bridges include:
 - a. equipment pads and culvert(s);
 - b. equipment pads or railroad car bridges without culverts;
 - c. clean rock fill and culvert(s); and
 - d. flexi-float or portable bridges.

Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges.

3. 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 bank erosion or streambed scour. If necessary, install energy dissipating devices downstream of the culverts.
4. Design and maintain equipment bridges to prevent soil from entering the waterbody.
5. Remove temporary equipment bridges as soon as practicable after permanent seeding.
6. 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 temporary equipment bridges as soon as practicable after final cleanup.

7. Obtain any necessary approval from the USACE, or the appropriate state agency, for permanent bridges.

2.3.4 Drain Tiles and Irrigation Systems

1. Mark the locations of drain tiles or irrigation systems 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).

2.3.5 Road Crossings and Access Points

1. Maintain safe and accessible conditions at all road crossings and access points during construction.
2. If crushed stone access pads are used in residential or agricultural areas, place the stone on synthetic fabric to facilitate removal.
3. Minimize the use of tracked equipment on public roadways. Remove any soil or gravel spilled or tracked onto roadways daily, or more frequently, to maintain safe road conditions. Repair any damage to roadway surfaces and rights-of-way.

2.3.6 Temporary Erosion Control

Install sediment barriers immediately after initial disturbance of the wetland, waterbody, or adjacent upland. Sediment barriers would 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.

1. Temporary Slope Breakers
 - a. Temporary slope breakers are intended to reduce runoff velocity and divert water off the construction right-of-way. Temporary slope breakers may be constructed of materials such as soil, silt fence, staked hay or straw bales, or sandbags.
 - b. Install temporary slope breakers on all disturbed areas, as necessary to avoid excessive erosion. Temporary slope breakers must be installed on slopes greater than 5 percent where the base of the slope is less than 50 feet (15.2 meters) from waterbody, wetland, and road crossings at the following spacing (closer spacing shall be used if necessary):

<u>Slope (%)</u>	<u>Spacing (feet [meters])</u>
5-15	300 (91.4)
>15-30	200 (60.9)
>30	100 (30.5)

- c. Direct the outfall of each temporary slope breaker to a stable, well vegetated area or construct an energy-dissipating device at the end of the slope breaker and off the construction right-of-way.
- d. Position the outfall of each temporary slope breaker to prevent sediment discharge into wetlands, waterbodies, or other sensitive environmental resource areas.

2. Sediment Barriers

- a. Sediment barriers may be constructed of materials such as silt fence, staked hay or straw bales, compacted earth (e.g., driveable berms across travelways), sandbags, or other appropriate materials.
- b. At a minimum, install and maintain temporary sediment barriers across the entire construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet (15.2 meters) from a waterbody, wetland, or road crossing until revegetation is successful as defined herein. Leave adequate room between the base of the slope and the sediment barrier to accommodate ponding of water and sediment deposition.
- c. Where wetlands or waterbodies are adjacent to and downslope of construction work areas, install sediment barriers along the edge of these areas, as necessary, to prevent sediment flow into the wetland or waterbody.
- d. Erosion control devices would be used around all water wells within the construction workspaces, including temporary workspace and additional temporary workspace.

3. Temporary Trench Plugs

- a. Temporary trench plugs may consist of unexcavated portions of the trench, compacted subsoil, sandbags, or some functional equivalent.
- b. Position temporary trench plugs, as necessary, to reduce trenchline erosion and minimize the volume and velocity of trench water flow at base of slopes.

4. Mulch

- a. Apply mulch on all slopes (except in cultivated cropland) concurrent with or immediately after seeding, where necessary, to stabilize the soil surface and to reduce wind and water erosion. Spread mulch uniformly over the area to cover at least 75 percent of the ground surface at a rate of 2 tons/acre of straw or its equivalent, unless the local soil conservation authority, landowner, or land managing agency approves otherwise in writing.
- b. Mulch can consist of weed-free straw or hay, wood fiber hydromulch, erosion control fabric, or some functional equivalent.
- c. Mulch all disturbed upland areas (except cultivated cropland) before seeding if:

- i. Final grading and installation of permanent erosion control measures will not be completed in an area within 20 days after the trench in that area is backfilled (10 days in residential areas); or
- ii. Construction or restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.
- d. If mulching before seeding, increase mulch application on all slopes within 100 feet (30.5 meters) of waterbodies and wetlands to a rate of 3 tons/acre of straw or equivalent.
- e. If wood chips are used as mulch, do not use more than 1 ton/acre and add the equivalent of 11 lbs/acre available nitrogen (at least 50 percent of which is slow release).
- f. Ensure that mulch is adequately anchored to minimize loss due to wind and water.
- g. When anchoring with liquid mulch binders, use rates recommended by the manufacturer. Do not use liquid mulch binders within 100 feet (30.5 meters) of wetlands or waterbodies, except where the product is certified environmentally non-toxic by the appropriate state or federal agency or independent standards-setting organization.
- h. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat, unless the product is specifically designed to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices.

2.4 RESTORATION

2.4.1 Clean Up

1. Commence cleanup operations immediately following backfill operations. Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 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 until conditions allow for the completion of cleanup.
2. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed. When access is no longer required, the travel lane must be removed and the right-of-way must be restored.
3. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench shall be considered construction debris, unless approved for use as mulch or for some other use on the construction work areas by the landowner or land managing agency.
4. Remove excess rock from at least the top 12 inches (30.5 centimeters) of soil in all cultivated or rotated cropland, managed pastures, hayfields, and residential areas, as well as other areas at the landowner's request. The size, density, and distribution of rock on the construction work area shall be similar to adjacent areas not disturbed by construction. The landowner or land management agency may approve other provisions in writing.

5. Grade the construction right-of-way to restore pre-construction contours and leave the soil in the proper condition for revegetation seeding and planting.
6. Remove construction debris from all construction work areas.
7. Remove temporary erosion controls when replaced by permanent erosion controls in accordance with the Project's BMP Plan and/or SWPPP that will be developed prior to construction.

2.4.2 Permanent Erosion Control Devices

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 sandbags 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 (15.2 meters) from a waterbody or wetland and where needed to avoid draining a waterbody or wetland. Do not install trench breakers within a 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, stone, or some functional equivalent.
- b. Construct and maintain permanent slope breakers in all areas, except cultivated areas and lawns, unless requested by the landowner, 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:

<u>Slope (%)</u>	<u>Spacing (feet)</u>
5-15	300 (91.4)
>15-30	200 (60.9)
>30	100 (30.5)

- 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 the end of the breaker.

- d. Slope breakers may extend slightly (about 4 feet [1.2 meters]) 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.

2.4.3 Soil Compaction Mitigation

1. Test topsoil and subsoil for compaction at regular intervals in agricultural 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.
2. Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.

2.4.4 Revegetation

The Applicant is responsible for ensuring successful revegetation of soils disturbed by Project-related activities. The Applicant will restore all turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Restoration work must be performed by personnel familiar with local horticultural and turf establishment practices.

1. General
 - a. The project sponsor is responsible for ensuring successful revegetation of soils disturbed by project-related activities, except as noted in Section 2.4.4, Item #1, General, Part #b, below.
 - b. Restore all turf, ornamental shrubs, and specialized landscaping in accordance with the landowner's request, or compensate the landowner. Restoration work must be performed by personnel familiar with local horticultural and turf establishment practices.
2. Soil Additives
 - a. Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner.
 - b. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches (5.1 centimeters) of soil as soon as practicable after application.
3. Seeding Requirements
 - a. Prepare a seedbed in disturbed areas to a depth of 3 to 4 inches (7.6 to 10.2 centimeters) 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 dates obtained from the local soil conservation authority or the request of the

landowner or land management agency. Seeding is not required in 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 2.3.6 and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Dormant seeding or temporary 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 2.3.6 and perform seeding of permanent vegetation at the beginning of the next recommended seeding season. Dormant seeding or temporary.
- 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 outlined above (Section 2.4.4, Item #3, Seeding Requirements, Parts #a, #b, and #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 (e.g., 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. 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 roller 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 EI.

2.4.5 Off-road Vehicle Control

The Applicant will install signage with fences and locking gates as measures to control unauthorized vehicle access to the right-of-way.

2.4.6 Post-Construction Activities and Reporting

1. Monitoring and Maintenance
 - a. Conduct follow-up inspections of all disturbed areas, as necessary, to determine the success of revegetation and address landowner concerns. At a minimum, conduct inspections after the first and second growing seasons.
 - b. Revegetation in non-agricultural areas shall be considered successful if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. In agricultural areas, revegetation shall be considered successful when upon visual survey, crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise. Continue revegetation efforts until revegetation is successful.

- c. Monitor and correct problems with drainage and irrigation systems resulting from pipeline construction in agricultural areas until restoration is successful.
- d. Restoration shall be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, construction debris is removed (unless otherwise approved by the landowner or land managing agency), revegetation is successful, and proper drainage has been restored.
- e. Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner, shall continue throughout the life of the Project. The Applicant shall maintain signs, gates, and permanent access roads, as necessary.

3 ONSHORE BEST MANAGEMENT PRACTICES WATERBODIES AND WETLANDS

3.1 SUPERVISION AND INSPECTION

- A. At least one EI having knowledge of the wetland and waterbody conditions in the Project area is required for each construction spread. The number and experience of EI's assigned to each construction spread shall be appropriate for the length of the construction spread and the number/significance of resources affected.
- B. The EI's responsibilities are detailed in Section 2.1 of this document.

3.2 PRECONSTRUCTION PLANNING

The Applicant shall develop Project-specific spill prevention and response procedures that meet applicable requirements of state and federal agencies. A copy must be filed with the USCG and MARAD prior to construction and made available in the field on each construction spread.

1. It shall be the responsibility of the Applicant and its contractors to structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to waterbodies or wetlands. The Applicant and its contractors must, at a minimum, ensure that:
 - a. All employees handling fuels and other hazardous materials are properly trained;
 - b. All equipment is in good operating order and inspected on a regular basis;
 - c. Fuel trucks transporting fuel to on-site equipment travel only on approved access roads;
 - d. All equipment is parked overnight and/or fueled at least 100 feet (30.5 meters) from a waterbody or in an upland area at least 100 feet (30.5 meters) from a wetland boundary. These activities can occur closer only if the EI determines that there is no reasonable alternative, and the Applicant and its contractors have taken appropriate steps (including secondary containment structures) to prevent spills and provide for prompt cleanup in the event of a spill;
 - e. Hazardous materials, including chemicals, fuels, and lubricating oils, are not stored within 100 feet (30.5 meters) of a wetland, waterbody, or designated municipal watershed area,

unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas;

- f. Concrete coating activities are not performed within 100 feet (30.5 meters) 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 determines that there is no reasonable alternative, and the Applicant 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;
 - g. Pumps operating within 100 feet (30.5 meters) of a waterbody or wetland boundary utilize appropriate secondary containment systems to prevent spills; and
 - h. Bulk storage of hazardous materials, including chemicals, fuels, and lubricating oils have appropriate secondary containment systems to prevent spills.
2. The Applicant and its contractors must structure their operations in a manner that provides for the prompt and effective cleanup of spills of fuel and other hazardous materials. At a minimum, the Applicant and its contractors must:
- a. Ensure that each construction crew (including cleanup crews) has on hand sufficient supplies of absorbent and barrier materials to allow the rapid containment and recovery of spilled materials and knows the procedure for reporting spills and unanticipated discoveries of contamination;
 - b. Ensure that each construction crew has on hand sufficient tools and material to stop leaks;
 - c. Know the contact names and telephone numbers for all local, state, and federal agencies (including, if necessary, the USCG and the National Response Center) that must be notified of a spill; and
 - d. Follow the requirements of those agencies in cleaning up the spill, in excavating and disposing of soils or other materials contaminated by a spill, and in collecting and disposing of waste generated during spill cleanup.

3.3 WATERBODY CROSSINGS

3.3.1 Notification Procedures and Permits

1. Apply to the USACE, or its delegated agency, for the appropriate wetland and waterbody crossing permits.
2. Provide written notification to authorities responsible for potable surface water supply intakes located within 3 miles (4.8 kilometers) downstream of the crossing at least 1 week before beginning work in the waterbody, or as otherwise specified by that authority.
3. Apply for state-issued waterbody crossing permits and obtain an individual or generic Section 401 Water Quality Certification or waiver.

4. Notify appropriate federal and state authorities at least 48 hours before beginning trenching or blasting within the waterbody, or as specified in applicable permits.

3.3.2 Installation

1. Time Window for Construction.

There are no coldwater, coolwater, or warmwater fisheries present in the Project area, to the Applicant's knowledge. The Applicant will coordinate with all necessary resource agencies to ensure construction of the Project minimizes impacts to fisheries within the Project area, as required

2. Extra Work Areas

- a. Locate extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet (15.2 meters) away from water's edge where possible, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.
- b. Limit the size of extra work areas to the minimum needed to construct the waterbody crossing.

3. General Crossing Procedures

- a. Comply with the USACE, or its delegated agency, permit terms, and conditions.
- b. Construct crossings as close to perpendicular to the axis of the waterbody channel as engineering and routing conditions permit.
- c. Where pipelines parallel a waterbody, maintain at least 15 feet (4.63 meters) of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way, except where maintaining this offset will result in greater environmental impact.
- d. Where waterbodies meander or have multiple channels, route the pipeline to minimize the number of waterbody crossings.
- e. Maintain adequate waterbody flow rates to protect aquatic life and prevent the interruption of existing downstream uses.
- f. Waterbody buffers (e.g., extra work area setbacks, refueling restrictions) must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground-disturbing activities are complete.
- g. Crossing of waterbodies when they are dry and not flowing may proceed using standard upland construction techniques in accordance with this document, as outlined above, provided that the EI verifies that water is unlikely to flow between initial disturbance and final stabilization of the feature. In the event of perceptible flow, the Applicant must comply with all applicable requirements for waterbodies from this document.

4. Spoil Pile Placement and Control

- a. All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, must be placed in the construction right-of-way at least 10 feet (3.0 meters) from the water's edge or in additional extra work areas, as described in Section 3.2.2, Item #2, Extra Work Spaces, above.
- b. Use sediment barriers to prevent the flow of spoil or silt-laden water into any waterbody.

5. Equipment Bridges

Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Detailed equipment bridge procedures are outlined in Section 2.3.3 of this document and apply to waterbody crossings, as well.

6. Dry-Ditch Crossing Methods

- a. Unless approved otherwise by the appropriate federal or state agency, install the pipeline using one of the dry-ditch methods outlined below for crossings of waterbodies up to 30 feet (9.1 meters) wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, or federally designated as critical habitat.
- b. Dam-and-Pump Crossing Method
 - i. The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage.
 - ii. Implementation of the dam-and-pump crossing method must meet the following performance criteria:
 - Use sufficient pumps, including on-site backup pumps, to maintain downstream flows;
 - Construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner)
 - Screen pump intakes to minimize entrainment of fish;
 - Prevent streambed scour at pump discharge; and
 - Continuously monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.
- c. Flume Crossing
 - i. Install flume pipe after blasting (if necessary), but before any trenching;

- ii. Use sandbags or sandbag and plastic sheeting diversion structures or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required to achieve an effective seal);
- iii. Properly align flume pipe(s) to prevent bank erosion and streambed scour;
- iv. Do not remove flume pipe(s) during trenching, pipelaying, or backfilling activities, or during initial streambed restoration efforts; and
- v. Remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.

d. HDD Method

For each waterbody or wetland that would be crossed using the HDD method, file with the USCG and MARAD for review and written approval, a plan that includes:

- i. Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;
- ii. Justification that disturbed areas are limited to the minimum needed to construct the crossing;
- iii. Identification of any aboveground disturbance or clearing between the HDD entry and exit workspaces during construction;
- iv. A description of how an inadvertent release of drilling mud would be contained and cleaned up; and
- v. A contingency plan for crossing the waterbody or wetland in the event the HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary.

7. Crossing of Minor Waterbodies (<10 feet [3.0 meters] wetted width at time of crossing)

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

- a. Except for blasting and other rock breaking measures, complete instream construction activities (including trenching, pipe installation, backfill, and restoration of the streambed contours) within 24 hours. Streambanks and unconsolidated streambeds may require additional restoration after this period;
- b. Limit the use of equipment operating in the waterbody to that needed to construct the crossing; and
- c. Equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification or protected status (e.g., agricultural or intermittent drainage ditches).

8. Crossing of Intermediate Waterbodies (10-100 feet [3.0-30.5 meters] wetted width at time of crossing)

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

- a. Complete instream construction activities (not including blasting and other rock breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible;
 - b. Limit the use of equipment operating in the waterbody to that needed to construct the crossing; and
 - c. All other construction equipment must cross on an equipment bridge as specified in Section 2.3.3, above.
9. Crossing of Major Waterbodies (>100 feet [30.5 meters] wetted width at time of crossing)

Before construction, the Applicant shall develop 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 must be developed in consultation with the Texas General Land Office (GLO) and USACE and shall include extra work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues. The EI may adjust the final placement of the erosion and sediment control structures in the field to maximize effectiveness.

10. Temporary Erosion and Sediment Control

Install sediment barriers (as defined in Section 2.3.6, Item #2 Sediment Barriers, above) 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. The following specific measures must be implemented at stream crossings:

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

11. 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 silt-laden water flowing into any waterbody. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

3.3.3 Restoration

1. For open-cut crossings, stabilize waterbody banks and install temporary sediment barriers within 24 hours of completing instream construction activities. For dry-ditch crossings, complete streambed and bank stabilization before returning flow to the waterbody channel.
2. Return all waterbody banks to preconstruction contours or to a stable angle of repose as approved by the EI.
3. Install erosion control fabric or a functional equivalent on waterbody banks at the time of final bank recontouring. Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat unless the product is specifically designed to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices.
4. Application of riprap for bank stabilization must comply with USACE, or its delegated agency, permit terms and conditions.
5. Unless otherwise specified by state permit, limit the use of riprap to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric.
6. Unless otherwise specified by state permit, limit the use of riprap to areas where flow conditions preclude effective vegetative stabilization techniques such as seeding and erosion control fabric.
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 (15.3 meters) from the waterbody, or as needed to prevent sediment transport into the waterbody. In addition, install sediment barriers as outlined in Section 2.3.6, Item #2 Sediment Barriers, above. In some areas, with the approval of the EI, an earthen berm may be suitable as a sediment barrier adjacent to the waterbody.

3.3.4 Post-Construction Maintenance

1. Limit routine vegetation mowing or clearing adjacent to waterbodies to allow a riparian strip at least 25 feet (7.6 meters) wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet (3.0 meters) wide may be cleared at a frequency necessary to maintain the 10-foot (3.0-meter) corridor in an herbaceous state. In addition, trees that are located within 15 feet (4.6 meters) of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in riparian areas that are between HDD entry and exit points.

2. Do not use herbicides or pesticides in or within 100 feet (30.5 meters) of a waterbody, except as allowed by the appropriate land management or state agency.

3.4 WETLAND CROSSINGS

3.4.1 General

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

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

2. Route the pipeline to 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 (7.6 meters) away from the existing pipeline, unless site-specific constraints would adversely affect the stability of the existing pipeline.
3. To minimize wetland impacts, the Applicant would utilize a reduced construction right-of-way, where feasible, for wetland crossings. When applicable, the ECHO Terminal to Oyster Creek Terminal Pipeline would utilize a 75-foot (22.9-meter) wide construction right-of-way, which would include a 30-foot (9.1-meter) operational easement and 45 feet (13.7 meters) of temporary workspace. When applicable, the Oyster Creel Terminal Pipeline to Shore Crossing Pipeline is currently proposing 100-foot (30.5-meter) construction rights-of-way in wetlands where the two pipelines would cross.
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.
5. Implement the measures of Sections 3.3 and 3.4 of this document in the event a waterbody crossing is located within or adjacent to a wetland crossing. If all measures of these sections cannot be met, the Applicant must file a site-specific crossing plan with the USCG and MARAD for review and approval before construction. This crossing plan shall address at a minimum:
 - a. Spoil control;
 - b. Equipment bridges;

- c. Restoration of waterbody banks and wetland hydrology;
 - d. Timing of waterbody crossing;
 - e. Method of crossing; and
 - f. Size and location of all extra work areas.
6. Do not locate aboveground facilities in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation regulations.

3.4.2 Installation

1. Extra Work Areas and Access Roads
 - a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet (15.2 meters) away from wetland boundary where possible, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.
 - b. 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 access, limit all other construction equipment to one pass through the wetland using the construction right-of-way.
 - c. The only access roads, other than the construction right-of-way, that can be used in wetlands are those existing roads that can be used with no modifications or improvements, other than routine repair, and no impact on the wetland.
2. Crossing Procedures
 - a. Comply with USACE, or its delegated agency, permit terms and conditions.
 - b. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.
 - c. Use “push-pull” or “float” techniques to place the pipe in the trench where water and other site conditions allow.
 - d. Minimize the length of time that topsoil is segregated and the trench is open. Do not trench the wetland until the pipeline is assembled and ready for lowering in.
 - e. Limit construction equipment operating in wetland areas to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way.
 - f. Cut vegetation just above ground level, leaving existing root systems in place, and remove it from the wetland for disposal. The Applicant can burn woody debris in wetlands, if

approved by the USACE and in accordance with state and local regulations, ensuring that all remaining woody debris is removed for disposal.

- g. Limit pulling of tree stumps and grading activities to directly over the trenchline. Do not grade or remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and EI determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way.
 - h. Segregate the top 1 foot (0.3 meter) of topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are saturated. Immediately after backfilling is complete, restore the segregated topsoil to its original location.
 - i. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to support equipment on the construction right-of-way.
 - j. The use of mats and boards in sensitive areas would be utilized when standing water or saturated soils are present. If construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands and/or unstable soils cause construction equipment stability issues, the use of low-ground-weight construction equipment would be implemented, or normal equipment would be operated on timber riprap, prefabricated equipment mats, or terra mats. Should none of these conditions exist at a wetland or waterbody crossing, matting is not anticipated.
 - k. Remove all Project-related material used to support equipment on the construction right-of-way upon completion of construction.
3. Temporary Sediment Control

Install sediment barriers, as defined in Section 3.3.2, Item #10 Temporary Erosion and Sediment Control, 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). Maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas. Sediment barriers installed along the edge of the construction right-of-way, as necessary to contain spoil and sediment within the construction right-of-way through wetlands, can be removed during right-of-way cleanup.

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 silt-laden water flowing into any wetland. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.

3.4.3 Restoration

- 1. Where the pipeline trench may drain a wetland, construct trench breakers at the wetland boundaries and/or seal the trench bottom, as necessary, to maintain the original wetland hydrology.
- 2. Restore pre-construction wetland contours to maintain the original wetland hydrology.

3. 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 (15.2 meters) from the wetland, or as needed to prevent sediment transport into the wetland. In some areas, with the approval of the EI, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.
4. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate federal or state agency.
5. Consult with the appropriate federal or state agencies to develop a Project-specific wetland restoration plan. The restoration plan shall include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of invasive species and noxious weeds (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. A plan for controlling invasive species and noxious weeds should include:
 - a. Pending revegetation requirements established by the landowner, revegetate impacted areas with herbaceous native plants as quickly as feasible in order to prevent establishment of undesirable species.
 - b. Pending revegetation requirements established by the landowner, incorporate native flowering plants, as well as native grasses, in revegetation, giving preference to locally-adapted varieties.
6. 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).
7. Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species.
8. Remove temporary sediment barriers located at the boundary between wetland and adjacent upland areas after revegetation and stabilization of adjacent upland areas are judged to be successful, as specified in Section 2.4.6 of this document.

3.4.4 Post-Construction Maintenance

1. Do not conduct routine vegetation mowing or clearing over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet (3.0 meters) wide may be cleared at a frequency necessary to maintain the 10-foot (3.0-meter) corridor in an herbaceous state. In addition, trees within 15 feet (4.6 meters) of the pipeline with roots that could compromise the integrity of pipeline coating may be selectively cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in wetlands that are between HDD entry and exit points.
2. Do not use herbicides or pesticides in or within 100 feet (30.5 meters) of a wetland, except as allowed by the appropriate federal or state agency.

3. Monitor and record the success of wetland revegetation in accordance with the USACE permit conditions.
4. Wetland revegetation shall be considered successful and success criteria set in accordance with the USACE permit conditions.
5. For any wetland where revegetation is not successful and success criteria are not reached, the Applicant will continue monitoring restoration and revegetation in accordance with the USACE permit conditions.

3.5 HYDROSTATIC TESTING

3.5.1 Notifications

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

3.5.2 General Information

1. Perform a 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections before installation under waterbodies or wetlands.
2. If pumps used for hydrostatic testing are within 100 feet (30.5 meters) of any waterbody or wetland, address secondary containment and refueling of these pumps in the Project's spill prevention and response procedures.
3. The Applicant shall file with the USCG and MARAD prior to construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location.

3.5.3 Intake Source and Rate

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

3.5.4 Discharge Location, Method, and Rate

1. Regulate discharge rate, use energy dissipation device(s), and install sediment barriers, as necessary, to prevent erosion, streambed scour, suspension of sediments, or excessive streamflow.
2. Do not discharge into 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.

4 OTHER MISCELLANEOUS BEST MANAGEMENT PRACTICES

4.1 OFFSHORE

1. All in-water construction activities would follow appropriate measures developed in consultation with National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) in order to provide protections to loggerhead and Kemp's ridley sea turtles.
2. All in-water construction activities would follow the Standard Manatee Conditions for In-Water Work when transiting to, from, and around the proposed Project site.
3. All construction-related and support vessels would follow NOAA Fisheries Vessel Strike Avoidance Measures and Reporting for Mariners when transiting to, from, and around the Project site.
4. Cushion blocks between the pile and the hammer would be used during the driving process for all piles larger than 30 inches (76.2 centimeters) in diameter.
5. All construction staff would be provided with descriptions and pictures of whooping cranes. If any whooping cranes are observed during construction activities (i.e., visible to the human eye), all construction activities occurring within visible range of the bird(s) would stop until the bird(s) vacate the area.
6. Monitors would be stationed at the proposed onshore HDD drill site to watch for sea turtles during HDD operations at the shore crossing.
7. Construction lighting would be down-shielded, and the minimum light intensity necessary for safety would be used to minimize light impacts on listed species.

4.2 ONSHORE

1. Operational lighting at the Oyster Creek Terminal and any mainline valve (MLV) sites would be down-shielded, and would use the minimum light intensity necessary for safety and security, to minimize impacts during Project operations.
2. During onshore construction, implement a noise reduction buffer of 100 meters (328 feet) around active raptor nests between February 1 and July 15. Within the buffer, the Applicant would implement noise reduction activities such as lower speed limits, any staging would take place outside the buffer where feasible, and drilling equipment would utilize noise dampening equipment.

3. During operation, conduct maintenance of the pipeline right-of-way (e.g., vegetation management) between September and December, when possible. Impediments may include required maintenance for periodic corrosion/leak surveys; landowner stipulations, PHSMA requirements for right-of-way surveillance; and common usage of right-of-ways with other companies.
4. To avoid lighting impacts, conduct appropriate mitigations as detailed in response to public comments on the USACE Permit Application (TPWD-12). It is included as Annex # 318 – Data Gap Response #318 of the DPLA.

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