

15.0 GROUNDWATER

15.1 Introduction

This section provides information regarding the occurrence of significant quantities of groundwater in the NECEC Project area, including potential threats to existing groundwater resources and measures proposed to prevent adverse impacts to groundwater. Potential threats to groundwater are discussed in subsection 15.2. Prevention and protection measures are discussed in subsection 15.3. Groundwater resources associated with each of the transmission line components and substations are described in section 15.4.

15.2 Potential Threats to Groundwater

15.2.1 Quantity

Construction and maintenance of the NECEC Project transmission lines or the new substation facilities will not require use of groundwater, therefore there will be no impact to groundwater quantity.

15.2.2 Quality

Potential sources of groundwater quality degradation differ during the construction, maintenance, and operation phases of transmission line and substation facilities, as discussed below. Measures that will be employed to minimize these potential threats are detailed in Section 15.3.

Construction

During the construction phase, potential sources of groundwater contamination will be limited to fuel and hydraulic and lubrication oils used in the operation and maintenance of vehicles and construction equipment. Spill reporting and cleanup procedures will be in place to promptly address any spills. To further minimize the potential for adverse water quality impacts from spills, no fuel storage, refueling, vehicle parking or vehicle maintenance will be performed within 100 feet of protected wetlands or other waterbodies, unless no practicable alternative exists and if secondary containment with 110% capacity is provided for any fuel storage containers and tanks. The above activities will also not occur within 200 feet of a private water supply or within 400 feet of a public water supply.

Maintenance and Operation

Potential sources of groundwater contamination will include fuel and hydraulic and lubrication oils used in the operation and maintenance of vehicles, as well as the application of herbicides to control vegetation. NECEC electrical transmission line corridor maintenance practices will encourage the growth

of herbaceous and scrub-shrub vegetation that will not present safety or electrical reliability problems. Trees within the corridor that have the potential to grow up into the conductor safety zone (“capable species”) must be removed for safety and reliability reasons. CMP will use a selective herbicide program to treat areas once every four years to maintain an early successional (i.e. scrub-shrub and herbaceous) stage of vegetation. All herbicide usage will be in compliance with all label requirements and standards established by the Maine Board of Pesticides Control (“MBPC”). Herbicides will be selectively applied to capable species, using low-pressure (hand-pressurized) backpack applicators, to prevent growth of individual capable specimens and to prevent regrowth of cut capable specimens. Individual capable specimens will be treated with herbicides, and no broadcast application will be done. CMP will not use herbicides within 25 feet of any waterbody or standing water. In addition, CMP will not use herbicides within 100 feet of a known well or spring or within 200 feet of any known public water supply. Furthermore, CMP will not store, mix, or load any herbicide within 100 feet of any surface water, unless performed on a public road. Only trained applicators working under the supervision of MBPC-licensed supervisors will apply herbicides. Herbicides will be applied only during periods when potential for rain wash off is minimal.

The selective use of herbicides on the NECEC Project’s transmission line corridors, following the requirements described above and as defined in CMP’s Post-Construction Vegetation Management Plan (VMP) provided in **Exhibit 10-2**, will not pose a threat to groundwater quality.

Substations and transmission line facilities constructed and/or modified as part of the NECEC Project will include equipment that contains fuels and lubricants, as well as oil-filled electrical components. As with existing CMP substations, Spill Prevention, Control, and Countermeasure (“SPCC”) Plans will be prepared to address potential leaks for each of these substations in accordance with the requirements of 40 C.F.R. Part 112. As well, NECEC substations (new and modified) will be constructed with engineered perimeter and/or subsurface oil containment in order to minimize the potential for oil releases to reach navigable waters.

15.3 Prevention and Protection

The multiple methods, plans, and procedures to prevent groundwater degradation during construction, operation, and maintenance of the NECEC Project are incorporated in CMP’s Environmental Control Requirements for Contractors and Subcontractors - Oil and Hazardous Material Contingency Plan (**Exhibit 15-1**). These procedures establish a set of minimum requirements for spill prevention and response. The procedures incorporated into the plan have proven effective for preventing spills and for

addressing spills if they occur. CMP's environmental inspectors will ensure that all personnel working on NECEC construction sites follow these procedures. Additionally, CMP will prepare an inventory of water wells and septic systems that require abandonment on properties acquired during the NECEC Project and will implement the procedures discussed in Section 15.3.2.

15.3.1 Spill Management and Prevention

CMP employees follow the procedures outlined in the Spill Management and Prevention section of CMP's Environmental Procedures Manual for response to any spills of oil, gasoline, hydraulic oil, or other similar substances. These procedures are similar to those outlined in **Exhibit 15-1** for contractors, and cover reporting, immediate response, cleanup, and documentation. Employees operating construction vehicles will be trained to promptly contain, report, and clean up any spill in accordance with standard procedures. As a standard CMP operating procedure, all substation vehicles carry an oil spill kit that contains materials for conducting initial containment and clean-up of spills. In the event of a spill of oil or hazardous material, on-site personnel will immediately implement standard spill reporting and clean-up procedures.

SPCC plans will be prepared or amended for each new or expanded substation in accordance with the requirements of 40 C.F.R. Part 112 once equipment has been selected for the station and its oil quantity known. The substations are designed to contain any spill within the fenceline of the station, and a goal of each SPCC plan will be to clean up spills before oil can migrate from the station or into the surface water or groundwater. This application does not include copies of the SPCC plans, however CMP expects the MDEP to make submission of the SPCC plans, prior to federally regulated quantities arriving on site, a condition of approval.

Spills that are properly cleaned-up will not pose a risk to groundwater quality. Based on normal operations and the typical timeliness and thoroughness of routine spill clean-ups, there is no need for ongoing groundwater monitoring during construction of the NECEC transmission lines.

15.3.2 Water Well and Septic System Abandonment

If it becomes necessary to raze any structures to facilitate the construction of NECEC, CMP will document the presence or absence of water wells and septic systems and follow proper abandonment procedures.

Water well abandonment procedures

All water wells on properties with structures designated for demolition will be abandoned in accordance with Maine Department of Health and Human Services (“Maine DHHS”) 144A CMR 232 Chapter 7. This regulation requires that any such work be performed by a licensed Master Well Driller employed by a well drilling company licensed in the State of Maine. A ‘Well Abandonment Record’, using the format established by the Maine Department of Environmental Protection, Bureau of Remediation and Waste Management, will be completed and signed by the licensed Well Driller. The water well abandonment operation will be witnessed by an inspector, on behalf of CMP, who will verify and document the following:

- a. the depth and diameter of the well;
- b. the type and volume of sealing material used;
- c. that the grout slurry has been mixed and used in accordance with manufacturer specifications; and
- d. that the abandonment procedures used, including volume of material used, incidences of bridging, corrective actions taken, and end results are all compliant with CMR 232 Chapter 5.

Well abandonment will begin by opening the well casing and removing submersible pumps, liner pipes, and any other equipment other than the casing. The well depth will be obtained from the information recorded on the casing or pressure tank, or by direct measurement. The theoretical volume of required grout or bentonite fill material will be calculated based on the measured or recorded dimensions of the well hole and used to fill the casing pipe. Theoretical and actual volumes of fill material will be recorded in the Well Abandonment Record. The well casing will be cut off to the elevation to which the casing is backfilled, approximately 18 to 24 inches below grade. Clean fill will be used to bury the casing and the disturbed area will be seeded.

The completed Well Abandonment Record and the report of the inspector will be furnished to the MDEP Project Manager, if so requested.

15.3.3 Groundwater Protection

The NECEC Project will not significantly alter existing surface water drainage characteristics. Groundwater recharge characteristics will not be permanently affected by the installation of the new transmission line. Temporary impacts to surface water drainage may occur during construction however these impacts will be short-term and limited to construction areas.

Surface water drainage may be slightly altered in limited areas due to construction of the new substation and converter substation. This alteration is addressed in the Stormwater Management Plan for each of these facilities (Section 12.0). The substation yards (designed with layers of stone and gravel) will not increase stormwater runoff above pre-existing conditions; therefore, groundwater recharge will not be significantly affected by the substation construction.

15.4 NECEC Groundwater Resources

15.4.1 Transmission Lines

Existing hydrogeologic conditions along the NECEC Project's transmission line route have been assessed by review of digital geographic data provided by the Maine Office of Geographic Information Systems ("MEGIS"). Digital datasets were utilized to create a site-specific map to facilitate the review of hydrogeologic conditions. A digital dataset containing location of significant sand and gravel aquifers was derived from aquifer boundaries delineated and digitized by the Maine Geological Survey ("MGS"). Significant aquifers are defined as bodies of coarse grained glacial material with the potential to yield 10 or more gallons-per-minute ("gpm") to a properly constructed well (MEGIS 2017). According to these data, the NECEC Project's transmission line traverses 30 significant sand and gravel aquifers (see **Attachment 3** -Aquifer Maps). For the reasons described in Section 15.2, and utilizing the protection measures described in Section 15.3, the transmission line construction and maintenance will not pose an unreasonable risk of a discharge to these aquifers.

15.4.2 Substations

The new Fickett Road Substation and the new Merrill Road Converter Station are not located in sole source aquifer areas or over significant sand and gravel aquifers.

Existing substations affected by the NECEC Project include Crowley Road, Coopers Mills, Larrabee Road, Maine Yankee, Raven Farm, and Surowiec substations. None of these facilities are located in sole source aquifer areas. Larrabee Road Substation is positioned over a sand and gravel aquifer. Water quality issues relevant to substation construction and maintenance are similar to those for transmission lines; these issues, including the development and implementation of SPCC plans, if needed, will be addressed as described in Sections 15.2 and 15.3. Therefore, the construction and operation of these facilities will not pose an unreasonable risk of a discharge to a groundwater aquifer.

Exhibit 15-1: CMP's Environmental Control Requirements for Contractors and Subcontractors

**ENVIRONMENTAL CONTROL REQUIREMENTS
FOR CENTRAL MAINE POWER COMPANY CONTRACTORS & SUBCONTRACTORS
OIL, HAZARDOUS MATERIALS, AND WASTE
*February 2017***

Following are requirements for the proper management of oil, hazardous materials, and waste, by contractors and subcontractors of Central Maine Power Company (CMP). All contractors and subcontractors are required to comply with these requirements while working for or on behalf of CMP.

Failure to abide by these requirements may constitute grounds for termination of contractor/subcontractor services.

General Requirements

- Contractors/subcontractors will manage, store, transport, and use oil, hazardous materials, and wastes in accordance with all applicable local, state, and federal laws and regulations, and consistent with these requirements.
- At a minimum, contractors/subcontractors will follow best management practices when storing, transporting or using oil, hazardous materials, and wastes.
- At all times contractors/subcontractors will take care not to cause a spill or release of oil or hazardous materials to the environment.
- Contractors/subcontractors will provide and maintain on-site, sufficient spill cleanup and containment supplies (absorbent pads, containment booms, protective clothing/PPE, debris containers, etc.) to facilitate the proper control, cleanup and packaging of releases of oil, hazardous materials, or wastes.
- Contractors/subcontractors will remove all oils, hazardous materials, wastes and unused materials from the work site at the completion of the job. This includes full and partial waste material containers such as, but not limited to, rags, gloves, trash, scrap material, and empty containers.

NOTE: If large quantities of oil or hazardous materials are involved, written agreements with emergency response contractors may be required.

Storage and Handling Requirements

- Contractors/subcontractors will store only the minimal amount of oil and hazardous material (at each work site) necessary to complete the work.

- Handling and application of pesticides and herbicides will comply with all regulations adopted pursuant to the Maine Pesticide Control Act of 1975, as amended, Title 7 M.R.S., Section 601.
- Oil, hazardous materials and waste materials will be stored in D.O.T. approved containers or approved tanks in areas not considered to be environmentally sensitive.
- Oil, hazardous materials, and waste containers will be kept closed at all times unless material is being transferred.
- Contractors/subcontractors will ensure that all oil, hazardous materials, and waste transfer operations are supervised.
- Oil, hazardous material, and waste containers will not be stored on the ground, but will be stored in a cabinet or on a firm working surface such as a portable trailer bed or other secure decking.
- If at any time a contractor/subcontractor needs to store oil (including but not limited to fuel oil, petroleum products, sludge, or oil refuse) in excess of a total of 1,320 gallons (excluding containers with a capacity less than 55 gallons) at a CMP construction site, U.S. Environmental Protection Agency (USEPA) oil pollution prevention requirements, as well as CMP policies and procedures, must be met. Specifically, a site-specific Spill Prevention, Control, and Countermeasure (SPCC) plan will be developed for the site, and this SPCC Plan will be implemented should any spills occur.
- Storage and handling of flammable and combustible liquids, including gasoline and diesel fuel, will be in accordance with rules adopted pursuant to Title 25 M.R.S. Section 2441 (Fire Prevention and Fire Protection), as amended (See also Code of Maine Rules 16-219 Chapter 317). These regulations include, but are not limited to, requirements relating to bonding and grounding during transfer operations, fire protection, storage quantity limitations, and spacing and location.
- All gasoline and fuel storage tanks must have secondary containment constructed of an impervious material, and must be capable of holding 110% of the capacity of the primary tank.
- Handling and disposal of hazardous wastes will be in accordance with Maine Department of Environmental Protection (DEP) Hazardous Waste Management rules (Chapters 850 through 858) developed pursuant to Title 38 M.R.S. Section 1301 et. seq., and U.S. Environmental Protection Agency regulations (40 CFR 260 through 272). Handling and disposal of waste oil will be in accordance with DEP Waste Oil Management Rules (Chapter 860) and USEPA regulations (40 CFR 279).

Spill Reporting Requirements

- All spill reporting requirements are the responsibility of the contractor/subcontractor. As required by Title 38 M.R.S. Section 543 and DEP regulations (Chapter 600 4.A. and Chapter 800 4.A.(1)), spills of oil or hazardous materials in any amount and under any circumstances must be reported to the Department (1-800-482-0777) within two hours from the time the spill was discovered.
- As required by the Federal Clean Water Act (40 CFR Part 110.4), a discharge of oil "which causes a sheen upon the surface of the water or adjoining shore line or oily sludge deposits beneath the surface of the water" must be reported within 24 hours to the National Response Center (1-800-424-8802).
- The need to report spills of hazardous materials other than oil to the National Response Center, will be determined by the contractor/subcontractor by consulting the CERCLA list of hazardous substances and reportable quantities (40 CFR Table 302.4). Any spills that involve a "reportable quantity" of any hazardous substance must be reported to the National Response Center by the contractor/subcontractor.
- The contractor/subcontractor must also report all spills immediately to CMP.

Spill Cleanup Requirements

- The contractor/subcontractor is responsible to ensure and oversee immediate and complete cleanup of all spills involving oil, hazardous materials, or waste from its equipment.
- The contractor/subcontractor is responsible for all health and safety issues related to the cleanup of oil, hazardous materials, or waste.
- The contractor/subcontractor is responsible for the proper and timely disposal of all resulting spill debris and spill waste, and for restoring the site to its original condition.