

EXECUTIVE SUMMARY

Maine Yankee is a former nuclear power electrical generating plant that, since ceasing generating electricity in August 1997, is being decommissioned and dismantled. This Resource Conservation and Recovery Act (RCRA) Corrective Measures Study (CMS) Report supports closure of the Bailey Point portion of the plant site in accordance with RCRA regulations (06-096 Code of Maine Rules (CMR) Chapter 851, Section 11, and Title 40 Code of Federal Regulations (CFR) Part 265). The focus of the report is on non-radiological, chemical constituents. Radiological closure is addressed in Maine Yankee's License Termination Plan. Several soil removal actions have already been implemented at the site and are discussed in the CMS. The primary purpose of this CMS is to screen and evaluate potential corrective measures alternatives and propose final remedies for remaining soil and groundwater concerns at the site. Recommended corrective measures are designed to mitigate soil contamination in the Bailey Point area of the Maine Yankee site, reduce risk to potential receptors, and support on-going natural attenuation of groundwater, while protecting human health and the environment based on current industrial land uses and future industrial/commercial land use.

Major subject Areas addressed in this document include the following:

- Background and Supporting Information: Including CMS regulatory framework, technical background information used to support the CMS, nature and extent of impacted media (i.e., soil, groundwater and sediment), risk assessment results.
- Corrective Measure Objectives: Including remedial objectives for soils and groundwater, target remediation areas, summary of previous soil removal actions or planned removal actions to be implemented in advance of the CMS.
- Technology Screening: Including identification and screening of appropriate remedial technologies and development of remedial alternatives
- Detailed Evaluation: Including an assessment of corrective measure alternatives against nine criteria which address considerations such as protectiveness, regulatory compliance, effectiveness and cost.
- Recommended Corrective Measure Alternatives: Includes recommendations for soil and groundwater corrective measures

The geographic scope of this CMS is limited to the Bailey Point peninsula, which including Foxbird Island, is about 150 acres. The Maine Yankee site also includes about 640 acres of largely undeveloped "Backlands", for which RCRA closure requirements have previously been completed. The Bailey Point peninsula is the portion of the site most impacted by construction and operation of the facility. Tidal waters of Montsweag Bay, a part of the Sheepscot River estuary system, surround the Bailey Point area. Prior to construction of the Maine Yankee facility, the Bailey Point area was used for residential and farming activities. During construction and operation of Maine Yankee between 1968 and 1997, this portion of the site was used to support industrial activities associated with nuclear power generation.

Risk assessments for human health and the environment were performed for the Bailey Point portion of the site, and are included as part of the RFI Report (Maine Yankee, 2004a). The Backlands acres were investigated during 2001-2002 and the results of the field sampling and risk characterization were documented in a separate Backlands RFI Report to allow Maine Yankee to expedite ownership transfer of the backlands portion of the site (Maine Yankee, 2004b). In August 2004, 431 acres of the Backlands were sold to Ferry Road Development Co., LLC.

The calculated risks associated with exposure to soils throughout Bailey Point by a construction worker were determined to be at or below MDEP target risk levels (10^{-5}). The calculated risks for a site worker were typically below or very near the MDEP target level. The risks associated with exposure to sediments were evaluated for the commercial fisherman harvesting shellfish and/or worms and an area resident wading in the tidal portion of the Back River. All risk estimates for sediment exposure were below the MDEP target risk level.

The risks associated with the ingestion of groundwater exceeded MDEP target risk range. In addition, eighteen contaminants were detected at concentrations exceeding their respective Maximum Exposure Guidelines (MEGs) or Maximum Contaminant Levels (MCLs).

An Ecological Risk Assessment (ERA) was prepared to evaluate the potential risk to ecological receptors associated with the marine habitat surrounding the Maine Yankee site in order to make informed risk management decisions. Based on the weight of evidence from the various studies and evaluations conducted for the ecological risk assessment, there are potentially moderate risks to fish and benthic invertebrates from site-related chemicals in the sediments at Outfall 009.

In addition remedial activities conducted prior to the RFI study, several areas in the Bailey Point portion of the site have been remediated within the last year. These recently remediated areas include Bailey Farm House, Outfall 009, Former Truck Maintenance Garage, MW-401B area, and Warehouse 2/3. Remediation plans for these areas were submitted to and approved by MDEP prior to the removal actions. Remediation reports for these areas have been submitted to MDEP or are appended to the CMS.

Two remedial alternatives have been developed for petroleum-contaminated soils across Bailey Point and include: Alternative Soil-1: No Additional Action; Alternative Soil-2: Soil excavation with to a cleanup level of 10 mg/kg DRO, backfill, and off-site disposal. Based on the evaluation of corrective measures and considering the previously completed removal at the site, the proposed remedy for the petroleum-contaminated soils is Alternative Soil-1.

Three alternatives were developed to address petroleum and metal contamination in groundwater at the Maine Yankee site. The groundwater alternatives include Alternative

GW-1: No action; Alternative GW-2: Long-Term Groundwater Monitoring, and
Alternative GW-3 Groundwater Extraction and Treatment.

To support the groundwater corrective measures, a site-wide groundwater model was developed. The model was used to evaluate the migration of dissolved chemicals in site groundwater and to predict groundwater concentrations in the future. Based on the results of the groundwater model and the evaluation of chemical factors that are associated with natural attenuation, most of the groundwater contamination at the site was shown to decrease to appropriate regulatory levels in less than 100 years. Based on these results, Alternative GW-2, Long Term Groundwater Monitoring was chosen for groundwater.