

APPENDIX 4
Oakland Hydroelectric Project
Location and Operations

APPENDIX 4

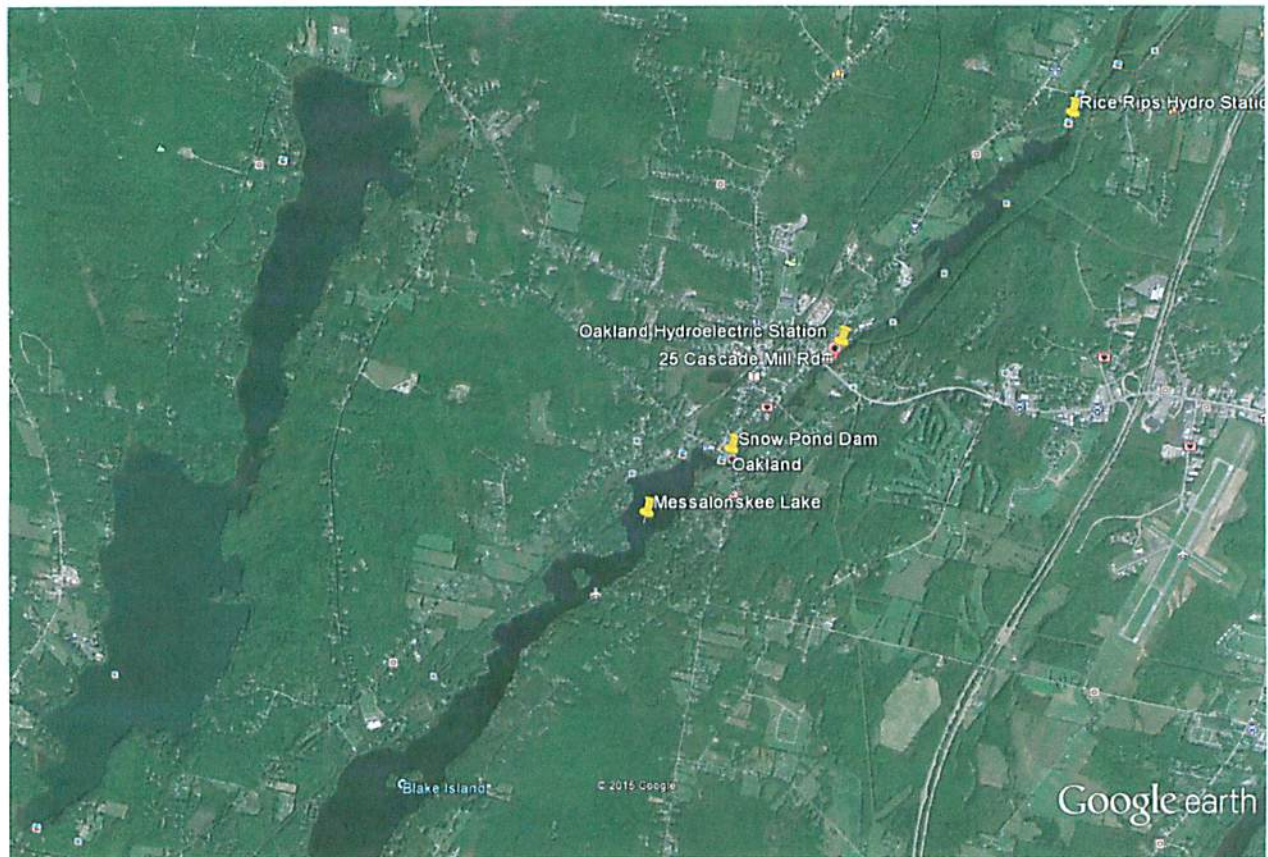
Oakland Hydroelectric Project Location and Operations

The Oakland hydroelectric facility (the Oakland Facility) is located 0.4 miles downstream of the Messalonskee Lake on the Messalonskee Stream in the town of Oakland, Maine (see Appendix 4-1). The hydroelectric station was constructed at the site of the existing Lord's South dam. The dam ("Lord's dam") was used until 1969 to provide waterpower to Benjamin and Allen's chair factory and street lighting and service to about 100 customers in the village of Oakland, Maine. Project works consist of a 115-foot-long, 14-foot-high dam with 4-foot-high flashboards; a 446-foot-long penstock; a powerhouse containing one 2.8-MW generator; and a 0.4-mile-long impoundment with a gross storage capacity of 50 acre-feet.

Operation of the Oakland Facility is dependent on inflow to Messalonskee Lake. When inflow to Messalonskee Lake is greater than approximately 570 cfs, the Oakland project is operated as a run-of-river project. When inflow is less than approximately 570 cfs the project is cycled. All water that does not go through the turbines is passed over the spillway. MSH utilizes the top 0.5 feet of Messalonskee Lake as storage for generation during the summer months (1.0 foot during the winter months). The applicant only utilizes the top 0.5 feet because the lake is regulated and operated for recreational purposes. During the summer months, if the lake level is reduced by more than 0.5 feet camp owners on the lake complain because of the effect on their docks. The top 0.5 feet of lake provides roughly 1,500 acre-feet of storage.

APPENDIX 4-1
Oakland Hydroelectric Station

Oakland Hydroelectric Station



APPENDIX 5
Oakland Hydroelectric Project
Description of Project Flows

Appendix 5

Oakland Hydroelectric Project Description of Project flows

As was previously mentioned in Appendix 2 and Appendix 4, flow into the Oakland Project is determined by releases from the Messalonskee Lake dam. The Messalonskee Lake dam is located approximately 0.4 miles upstream from the Oakland dam. The water quality certificate ("the WQC") issued to the Oakland project (see Appendix 5-1) recognized the effect the Messalonskee dam would have on the operation of the Oakland project. The water level of the Messalonskee Lake reservoir level is managed for recreational purposes. Messalonskee Lake receives the most recreational use of any other water bodies within the project boundaries. Existing recreational facilities include various hard-surface boat launch facilities and fishing sites along the Messalonskee stream. During summer months the WQC allows a reservoir draw down of up to 0.5 foot from an elevation of 235.4 feet. The applicant only utilizes the top 0.5 feet during the summer months because camp owners on the lake complain when the water goes lower than that. During winter months, a reservoir drawdown of 1.0 foot is allowed from an elevation of 235.4 feet. During shutdown periods a continuous flow of 15 cfs is required to be maintained through project developments until the reservoir level is built up to reestablish turbine operation and or spillage.

The Oakland Project is operated as a run of river facility. The Oakland Project impoundment level is maintained at the top of the spillway through operation of a pond level control system. When lake discharges are approximately 570 cfs or greater water is discharged through the turbine. When flows are approximately 570 cfs or less the turbines are cycled. If the turbine is not operating water is discharged over the Oakland dam spillway. The project is required to maintain a minimum flow of 15 cfs or project inflow, if less, through the project development.

APPENDIX 5-1
Oakland Hydroelectric Project
State of Maine Department of Environmental Protection
Water Quality Certification



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

(AUTOMATIC DEVELOPMENT)
(SUBSEQUENTLY TRANSFERRED)

DEPARTMENT ORDER

IN THE MATTER OF

CENTRAL MAINE POWER COMPANY)	
SIDNEY, BELGRADE, OAKLAND, WATERTVILLE)	MAINE WATER QUALITY PROGRAM;
KENNEBEC COUNTY, MAINE)	FEDERAL CLEAN WATER ACT
MESSALONSKEE PROJECT)	
#L-17585-33-D-N)	WATER QUALITY CERTIFICATION
#L-17585-32-D-N (APPROVAL))	

Pursuant to the provisions of 38 M.R.S.A. Section 464 et seq. and Section 401 of the Federal Water Pollution Control Act (a.k.a. Clean Water Act), the Department of Environmental Protection has considered the application of CENTRAL MAINE POWER COMPANY with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. APPLICATION SUMMARY

- a. Application: The applicant proposes the continued operation of the existing Messalonskee Project, located on Messalonskee Stream in the Towns of Sidney, Belgrade, Oakland, and the City of Waterville, Kennebec County, Maine (See Exhibit 1).
- b. Existing Project Features: The project consists of a water storage dam and 4 discrete hydroelectric generating facilities. The only commonality between the projects is that they are all operated to utilize flow provided by the uppermost dam, the Messalonskee Lake Dam.

Messalonskee Lake Development: The Messalonskee Lake Dam was rebuilt in 1992. The dam consists of a 54-foot long, 7-foot high concrete spillway dam with a crest elevation of 231.9 feet, plus 3.5 foot high flashboards, and a gatehouse section containing two 12-foot wide, 10.75 foot high, taintor gates (See Exhibit 2). The normal full pond level of Messalonskee Lake is at elevation 235.4 feet, has a surface area of 3,600 acres and an estimated 3,400 acre-ft of usable storage at a 1 foot drawdown. This dam is operated to maintain the level of Messalonskee Lake and provide storage for the 4 downstream hydro stations.

Oakland Development: Oakland consists of a dam, intake structure, penstock, powerhouse, and impoundment (See Exhibit 3). The dam is a gravity structure measuring 115 feet in length which includes a spillway and a gated section. The total head of the dam is 67.3 feet. The crest of the spillway is at elevation 207.1 feet. The intake is integral with the dam and has trashracks upstream of the gates. Water flows through the intake and into a 10-foot-diameter fiberglass and steel penstock. The concrete surge tank is 21 feet high. The powerhouse is a concrete structure measuring 38 feet 10 inches square. The powerhouse contains a single vertical Francis turbine rated at 2,800 kW at a head of 67.3 feet. The maximum hydraulic capacity of the unit is 590 cfs. The impoundment formed by the dam is 1,900 feet long, has a normal surface elevation of 207.1 feet, and has a surface area of 10 acres. The bypass reach that is created by the penstock is approximately 500 feet long and the substrate is exposed ledge.

APPENDIX 6
Oakland Hydroelectric Project
Water Quality

Appendix 6

Oakland Hydroelectric Project Water Quality

The Project received a 401 Water Quality Certificate (WQC) from the State of Maine Department of Environmental Protection (“MDEP”) on August 29, 1995 (see Appendix 5-1). The WQC noted that waters from the outlet of the Messalonskee Lake to its confluence with the Kennebec River including all waters within the parameters of the Oakland Project are currently designated Class C by the MDEP. Class C waters are of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, and navigation; and as habitat for fish and other aquatic life. The project is required to maintain a minimum flow of 15 cfs below the project in order to minimize the effect of internal recycling of phosphorus.

The Project received a Maine Pollutant Discharge Elimination System Permit and Maine Waste Discharge License from the Department of Environmental Protection, Bureau of Land and Water Quality on June 10, 2014 (Permit No. ME0001163) and remains in compliance with all terms and conditions of said permit (see Appendix 6-1).

APPENDIX 6-1
Oakland Hydroelectric Project
State of Maine Department of Environmental Protection
Oakland Hydroelectric Project Waste Discharge License



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION AUGUSTA, MAINE 04333-0017

DEPARTMENT ORDER

IN THE MATTER OF

MESSALONSKEE STREAM HYDRO, LLC.)	MAINE POLLUTANT DISCHARGE
OAKLAND, KENNEBEC COUNTY, MAINE)	ELIMINATION SYSTEM PERMIT
COOLING WATER DISCHARGE)	AND
OAKLAND HYDRO PROJECT)	
ME0001163)	WASTE DISCHARGE LICENSE
W000585-5R-G-R APPROVAL)	RENEWAL

In compliance with the applicable provisions of Pollution Control, 38 M.R.S.A. §§ 411 – 424-B, Water Classification Program, 38 M.R.S.A. §§ 464 – 470 and Federal Water Pollution Control Act, Title 33 U.S.C. § 1251, and applicable rules of the Department of Environmental Protection (Department), the Department has considered the application of the MESSALONSKEE STREAM HYDRO, LLC (MSH) with its supportive data, agency review comments, and other related materials on file, and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

On January 21, 2014, the Department accepted as complete for processing an application from MSH for the renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0001163/Maine Waste Discharge License (WDL) #W000585-5R-F-R, which was issued by the Department on March 13, 2009. The 3/13/09 permit authorized the daily maximum discharge of 48,000 gallons per day (gpd) of non-contact cooling water (Outfall #001) and an unspecified quantity of miscellaneous waste waters and storm water runoff from (Outfalls #002 and #003) from the Oakland Hydro Project to the Messalonskee Stream, Class C, in Oakland, Maine.

PERMIT SUMMARY

This permitting action is carrying forward all the terms and conditions of the previous permitting action.

CONCLUSIONS

BASED on the findings in the attached **Fact Sheet** dated June 6, 2014 and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, 38 M.R.S.A. Section 464(4)(F), will be met, in that:
 - (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
 - (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;
 - (c) Where standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
 - (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and
 - (e) Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in 38 M.R.S.A. § 414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the application of MESSALONSKEE STREAM HYDRO, LLC, to discharge a daily maximum of 48,000 gallons per day of non-contact cooling water at a temperature not to exceed 95 degrees Fahrenheit (Outfall #001) and an unspecified quantity of miscellaneous waste waters and storm water runoff (Outfalls #002 and #003) from the Oakland Hydro Project to the Messalonskee Stream, Class C, in Oakland, Maine, as described above, SUBJECT TO ALL APPLICABLE STANDARDS AND REGULATIONS AND THE FOLLOWING CONDITIONS:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.
2. The attached Special Conditions, including effluent limitations and monitoring requirements.
3. This permit becomes effective upon the date of signature below and expires at midnight five (5) years after that date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the terms and conditions of this permit and all subsequent modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. [Maine Administrative Procedure Act, 5 M.R.S.A. §10002 and Rules Concerning the Processing of Applications and Other Administrative Matters, 06-096 CMR 2(21)(A) (amended August 25, 2013)]

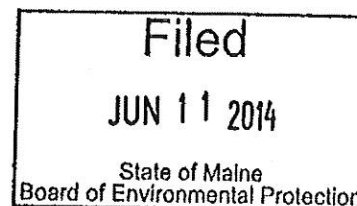
PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

DONE AND DATED AT AUGUSTA, MAINE, THIS 10th DAY OF June 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Michael Kuhns
for PATRICIA W. AHO, Commissioner

Date of initial receipt of application 01/21/14.
Date of application acceptance 01/21/14.



Date filed with Board of Environmental Protection _____

This Order prepared by Rod Robert, Bureau of Land and Water Quality

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The discharge from Outfall #001 is limited to a daily maximum flow of 48,000 gallons per day and a daily maximum temperature of 95°F.
2. The discharge must not contain a visible oil sheen, foam, or floating solids at any time that would impair the designated uses or habitat characteristics of the receiving waters or would otherwise lower the quality of the receiving water below its assigned classification.
3. The discharge must not impart color, taste, turbidity, toxicity, or other properties that would impair the designated uses or habitat characteristics of the receiving waters or would otherwise lower the quality of the receiving water below its assigned classification.
4. The permittee must notify Department immediately of the discharge of any pollutants other than heat from the facility. The permittee must also notify Department of any changes in facility design, operation or generating capacity that may affect the flow or temperature of the cooling water discharge.
5. All miscellaneous facility leakage and lubrication waters that may become contaminated with oil or grease are subject to Best Management Practices (BMPs) designed to prevent the release of contaminants to the waters of the State. **Within 90 days** of permit issuance, the permittee must develop BMPs and must make the BMPs available in writing for Department review and comment upon request. BMPs may consist of, but not be limited to, the following, as appropriate: development and implementation of a spill prevention plan; use of oil absorbent pads or booms and/or physical berms to contain spills or leaks of hydraulic and lubrication oils; and the treatment of water collected in floor drains and sumps through an oil/grease trap or oil-water separator. Where bearing cooling water is used, BMPs must include the maintenance of a written log or record of bearing oil levels and maintenance activities. Where floor drains and sumps are used, BMPs must include (1) written procedures for the cleaning and maintenance of any oil-grease trap, oil skimmer or oil-water separator and (2) maintenance of a written log or record of visual inspections of sumps for oil and grease and of actions taken to prevent the discharge of oil or grease from the facility.

SPECIAL CONDITIONS

B. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on January 21, 2014; 2) the terms and conditions of this permit; and 3) only from Outfalls #001, #002 and #003 identified in this permit. Discharges of wastewater from any other point source are not authorized under this permit, and must be reported in accordance with Standard Condition B(5)(Bypass) of this permit.

C. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of any substantial change in the volume or character of pollutants being discharged.

D. REOPENING OF PERMIT FOR MODIFICATIONS

In accordance with 38 M.R.S.A. § 414-A(5) and based upon site inspections, additional site specific or any other pertinent information or test results obtained during the term of this permit, the Department may, at any time and with notice to the permittee, modify this permit to establish limitations or require additional monitoring, inspections and/or reporting based on the new information.

E. SEVERABILITY

In the event that any provision or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.