STATE OF MAINE

Department of Environmental Protection

Paul R. LePage
GOVERNOR

Patricia W. Aho
COMMISSIONER

October 28, 2014

Mr. James Barrise
President
Merlin One LLC
1922 State Street Road
Castle Hill, ME 04757
e-mail: jabarrise@gwi.net

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0000361
Maine Waste Discharge License (WDL) Application #W000638-5R-E-R
Proposed Draft Permit

Dear Mr. Barrise:

Enclosed is a **proposed draft** MEPDES permit and Maine WDL (permit hereinafter) which the Department proposes to issue as a final document after opportunity for your review and comment. By transmittal of this letter you are provided with an opportunity to comment on the proposed draft permit and its conditions (special conditions specific to this permit are enclosed; standard conditions applicable to all permits are available upon request). If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

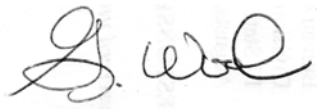
By copy of this letter, the Department is requesting comments on the proposed draft permit from various state and federal agencies, as required by our new regulations, and from any other parties who have notified the Department of their interest in this matter.

All comments must be received in the Department of Environmental Protection office on or before the close of business **Friday, November 28, 2014.** Failure to submit comments in a timely fashion will result in the final document being issued as drafted. Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection
Bureau of Land & Water Quality
Division of Water Quality Management
17 State House Station
Augusta, ME 04333

If you have any questions regarding the matter, please feel free to call me at 287-7693.

Sincerely,



Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality

Enc.

cc: Sean Bernard, DEP/NMRO
Lori Mitchell, DEP/CMRO
Barry Mower, DEP/CMRO
David Webster, USEPA
David Pincumbe, USEPA
Alex Rosenberg, USEPA
Olga Vergara, USEPA
Fred Corey, Aroostook Band of MicMacs
Sharri Venno, Houlton Band of Maliseets
Maine Inland Fisheries and Wildlife

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

DEPARTMENT ORDER

IN THE MATTER OF

MERLIN ONE LLC	)	MAINE POLLUTANT DISCHARGE
CARIBOU, AROOSTOOK COUNTY, MAINE	)	ELIMINATION SYSTEM PERMIT
ELECTRICAL GENERATING STATION	)	AND
ME0000361	)	WASTE DISCHARGE LICENSE
W000638-5R-E-R **APPROVAL**	)	**RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, *et. seq.*, and Maine Law 38 M.R.S.A., Section 414-A *et seq*., and all applicable regulations, the Department of Environmental Protection (Department hereinafter) has considered the application of MERLIN ONE LLC (Merlin/permittee hereinafter) with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

Merlin has submitted a timely and complete application to the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0000361/Maine Waste Discharge License (WDL) #W00638-5R-D-R (permit hereinafter), which was issued by the Department on September 29, 2009, for a five-year term. The permit, issued to the former owner WPS New England Generation Inc., approved the discharge of up to 31 million gallons per day (MGD) of cooling and process waste water from the Caribou Generating Station to the Aroostook River, Class B, in Caribou, Maine. The generating facility has been mothballed due to economic circumstances but Merlin has requested renewal of the permit as future demand for electricity may warrant operating the facility in the next five-year period.

PERMIT SUMMARY

This permitting action is carrying forward all the terms and conditions of the September 29, 2009 permit.

CONCLUSIONS

BASED on the findings in the attached **PROPOSED DRAFT** Fact Sheet dated October 31, 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 MRSA 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 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.

ACTION

THEREFORE, the Department APPROVES the above noted application of MERLIN ONE LLC to discharge up to 31 million gallons per day (MGD) of non-contact cooling and miscellaneous waste waters to the Aroostook River, Class B, subject to the attached conditions and all applicable standards and regulations including:

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 any effluent limitations and monitoring requirements.

3. This permit and the authorization to discharge become effective upon the date of signature below and expire at midnight five (5) years from the effective date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the authorization to discharge and the terms and conditions of this permit and all 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 _____ DAY OF _____ 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
PATRICIA W. AHO, Commissioner

Date of initial receipt of application: October 17, 2014

Date of application acceptance: October 22, 2014

Date filed with Board of Environmental Protection _____

This Order prepared by GREGG WOOD, BUREAU OF LAND AND WATER QUALITY

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge **rotary screen backwash waters** from **Outfalls #002 and #006** to the Aroostook River.

   No numeric permit limitations or monitoring requirements (with the exception of pH) have been established for these outfalls due to the nature of the discharges.

   The pH shall not be less than 6.0 or greater than 9.0 at anytime.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

2. The permittee is authorized to discharge **Unit #1 condenser cooling waters** from **Outfall #003 and Units #2 condenser cooling waters from Outfall #005** to the Aroostook River. Such discharges shall be limited and monitored by the permittee as specified below. Also see Special Condition A(5).

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Average as specified	**Daily Maximum** as specified	**Monthly Average** as specified	**Daily Maximum** as specified	**Measurement Frequency** as specified	**Sample Type** as specified
Flow	---	10.96 MGD	---	---	1/Day	Calculate[(1)]
Temperature	---	94°F	---	---	1/Day	Grab
pH	Not less than 6.0 or greater than 9.0 at anytime					---

Units #2 condenser cooling waters from **Outfall #005**

Monthly

	Monthly Average as specified	**Daily Maximum** as specified	**Monthly Average** as specified	**Daily Maximum** As specified	**Measurement Frequency** as specified	**Sample Type** as specified
Flow	---	18.86 MGD	---	---	1/Day	Calculate[(1)]
Temperature	---	94°F	---	---	1/Day	Grab
pH	Not less than 6.0 or greater than 9.0 at anytime					---

Footnotes:

(1) Calculate via pump run time and pump capacity.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

3. The permittee is authorized to discharge **cooling water from plant air compressors and boiler feed pumps and roof drain waters** from **Outfall #004 and #007** to the Aroostook River. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	**Discharge Limitations**				**Monitoring Requirements**	
	Average as specified	**Daily Maximum** as specified	**Monthly Average** as specified	**Daily Maximum** as specified	**Measurement Frequency** as specified	**Sample Type** as specified
Flow	Report MGD	---	----	---	1/Month(1)	Estimate
Total Suspended Solids	---	---	15 mg/L	100 mg/L	1/Month(1)	Grab
Oil & Grease	---	---	10 mg/L	15 mg/L	1/Month(1)	Grab
Temperature	---	87°F	---	---	1/Month(1)	Grab
Monthly pH	Not less than 6.0 or greater than 9.0 at anytime					---

Footnotes:

(1) The permittee is only required to sample discharges of cooling water, plant air compressors waters and or boiler feed pump waters. The permittee is not required to sample discharges that are solely comprised of roof drain waters as a result of precipitation.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

4. The permittee is authorized to discharge waste waters associated with the **four diesel generators** from **Outfall #008** to the Aroostook River. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	**Discharge Limitations**				**Monitoring Requirements**	
	Average as specified	**Daily Maximum** as specified	**Monthly Average** as specified	**Daily Maximum** as specified	**Measurement Frequency** as specified	**Sample Type** as specified
Flow	---	1.44 MGD	---	---	1/Day	Calculate[(1)]
Temperature	---	120°F	---	---	1/Day	Grab
Oil & Grease	---	---	15 mg/L	20 mg/L	1/Month	Grab
pH	Not less than 6.0 or greater than 9.0 at anytime					---

Monthly

Footnotes:

(1) Calculate via pump run time and pump capacity.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

5. The permittee is authorized to collectively discharge heat associated with waste water from **Outfall #003, Outfall #005, and Outfall #008** to the Aroostook River. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements			
	Average as specified	**Daily Maximum** as specified	**Weekly Average** as specified	**Daily Maximum** as specified	**Measurement Frequency** as specified	**Sample Type** as specified
River Temperature Increase (October 1-May 31)[(1)]	---	---	---	$\Delta T=5°F$	1/Day	Calculate
River Temperature Increase (June 1 - September 30)[(1)]	---	---	$\Delta T=0.5°F$[(2)]	$\Delta T=0.5°F$[(3)]	1/Day	Calculate

See Special Condition C, *River Temperature Increase*, for the procedures to calculate river temperature increase.

Weekly

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes

Monitoring for all outfalls is only required if the facility is operational for more than 16 hours in any given month. However, the terms Qr, Qe, Tr, Te in the equation (Special Condition C of this permit) to calculate river temperature increase shall be recorded on a daily basis (year round) for those days when the facility is discharging.

The permittee must conduct sampling and analysis in accordance with; a) methods approved by 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis must be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services. Samples that are sent to a POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (effective April 1, 2010). If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report.

All analytical test results from monitoring of parameters required by this license shall be reported to the Department including results which are quantified below the respective reporting limits (RLs) specified by the Department or as specified by other approved test methods. A non-detect analytical test result shall be reported as <Y where Y is the minimum level for reporting quantitative data specified by the laboratory in their report for each respective parameter. Reporting a value of <Y that is greater than an established RL is not acceptable and will be rejected by the Department. Lab data that have an estimated value ("J" flagged) below an established RL shall be reported as "< RL". Reporting analytical data and its use in calculations must follow established Department guidelines specified in this permit or in available Department guidance documents.

(1) The river temperature increase limitations in Special Condition A(5) of this permit apply to the combined thermal load from Outfalls #003, #005 and #008. See Special Condition C of this permit for the calculations required to determine the river temperature increase.

(2) The weekly average limit is in effect between June 1 and September 30 of each calendar year and is applicable when the weekly average temperature of the Aroostook River is greater than or equal to 66°F but less than 73°F. For DMR reporting purposes, report the highest seven (7) day (consecutive) temperature increase during a calendar month.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes

(3) The daily maximum thermal load limit is in effect between June 1 and September 30 of each calendar year and is applicable when the daily temperature of the Aroostook River is greater than or equal to 73°F. For DMR reporting purposes, report the highest daily thermal load during a calendar month.

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time that would impair the usages designated for the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated for the classification of the receiving waters.

3. The discharge shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated for the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

C. RIVER TEMPERATURE INCREASE

The Qe, Qr, Te and Tr shall be recorded on a daily basis (year round) for those days when the facility is discharging. The daily recorded values and daily calculations shall be reported in a spreadsheet format to the Department as an attachment to the monthly Discharge Monitoring Report (DMR). The river temperature increase shall be calculated as follows:

$$\Delta T°F = \frac{(Qe_{003})(Te_{003}-Tr)+(Qe_{005})(Te_{005}-Tr)+(Qe_{008})(Te_{008}-Tr)}{Qr}$$

$\Delta T°F$ = River temperature increase in °F.
Qe = Effluent flow for each outfall.
Qr = Flow of the Aroostook River in like units as Qe.
Te = Effluent temperature for each Outfall in °F.
Tr = Ambient temperature of the Aroostook River in °F.

SPECIAL CONDITIONS

C. RIVER TEMPERATURE INCREASE (cont'd)

Qr - The flow in the Aroostook River shall be calculated on a daily basis (year-round) for those days when the facility is discharging from Outfalls #003, #005 or #008 as follows:

a) When the river is less than 840 cfs, the flow shall be calculated via turbine discharge curves.
b) When the river is greater than or equal to 840 cfs, the flow shall be calculated via turbine discharge curves plus weir flow calculations to account for spillage over the dam.

Tr - The ambient temperature of the Aroostook River shall be measured once per day utilizing the Caribou Water Company's temperature gauge for those days when the facility is discharging. The weekly average temperature shall be reported on a year-round basis for those days when the facility is discharging from Outfalls #003, #005 or #008. The daily maximum temperature of the Aroostook River only needs to be reported on the DMR between June 1 - September 30 of each year. Tr and Te measurements shall be taken within 60 minutes of each other.

D. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit. Discharges of waste water from any other point source are not authorized under this permit, but shall be reported in accordance with Standard Condition B(5)(*Bypass*) of this permit.

E. NOTIFICATION REQUIREMENT

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

F. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results in the Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at anytime and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded: (2) require additional effluent and/or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

SPECIAL CONDITIONS

G. MONITORING AND REPORTING

Monitoring results shall be summarized for each calendar quarter and reported on separate Discharge Monitoring Report Forms provide by the Department and postmarked on or before the thirteenth (13^{th}) day of the month or hand-delivered to a Department Regional Office such that the DMR's are received by the Department on or before the fifteenth (15^{th}) day of the month following the completed reporting period. A signed copy of the Discharge Monitoring Report and all other reports required herein shall be submitted to the following address:

Department of Environmental Protection
Northern Maine Regional Office
Bureau of Land and Water Quality
1235 Central Drive, Skyway Park
Presque Isle, Maine 04769

Alternatively, if you are submitting an electronic Discharge Monitoring Report (eDMR), the completed eDMR must be electronically submitted to the Department by a facility authorized DMR Signatory not later than close of business on the 15^{th} day of the month following the completed reporting period. Hard Copy documentation submitted in support of the eDMR must be postmarked on or before the thirteenth (13^{th}) day of the month or hand-delivered to the Department's Regional Office such that it is received by the Department on or before the fifteenth (15^{th}) day of the month following the completed reporting period. Electronic documentation in support of the eDMR must be submitted not later than close of business on the 15^{th} day of the month following the completed reporting period.

H. 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.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: October 28, 2014

PERMIT NUMBER: **ME0000361**
LICENSE NUMBER: **W000638-5R-E-R**

NAME AND ADDRESS OF APPLICANT:

MERLE ONE LLC
Caribou Generating Station
142 Lower Lyndon Street
Caribou, Maine 04736

COUNTY: **Aroostook**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

Caribou Generating Station
142 Lower Lyndon Street
Caribou, Maine 04736

RECEIVING WATER/CLASSIFICATION: **Aroostook River, Class B**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Ms. Leslie Pelletier**
(207) 493-4589 x10
e-mail: jabarresi@gwi.net

1. APPLICATION SUMMARY

a. Application – Merlin One LLC (Merlin/permittee hereinafter) has submitted a timely and complete application to the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0000361/Maine Waste Discharge License (WDL) #W00638-5R-D-R (permit hereinafter), which was issued by the Department on September 29, 2009, for a five-year term. The permit, issued to the former owner WPS New England Generation Inc., approved the discharge of up to 31 million gallons per day (MGD) of cooling and process waste water from the Caribou Generating Station to the Aroostook River, Class B, in Caribou, Maine. The generating facility has been mothballed due to economic circumstances but Merlin has requested renewal of the permit as future demand for electricity may warrant operating the facility in the next five-year period. See **Attachment A** of this Fact Sheet for a location map.

1. APPLICATION SUMMARY (cont'd)

b. Source Description & Waste Water Treatment: The Caribou Generating Station is utilized as a standby emergency peaking facility and has a generating capacity of 30.1 megawatts (MW); 23.0 MW from two steam generation units and 7.1 MW from four diesel generation units. The six generation units are usually operational during the winter months. Operation of the six units may be coincident but often times are operated as steam only or diesel only with units rarely operating for 24 hours per day.

The April 10, 1991 licensing action eliminated Outfall #001 (boiler blowdown) as the waste stream is now connected to the municipal sanitary collection system. The remaining outfalls contain the following waste streams:

Outfall #002 - River water utilized for steam generation Unit #1 rotary screen backwash. Waters are treated by 1/2" mesh screen. No numeric limitations, except pH are established for this outfall.

Outfall #003 - River water utilized for steam generation Unit #1 condenser cooling waters. Cooling waters do not receive treatment as the only pollutant of concern is heat. The daily maximum flow limitation is 10.96 MGD.

Outfall #004 - Consists of a number of floor drains (some modified with raised rims) and roof drains which convey bearing cooling/lubricating waters and storm water respectively.

Outfall #005 - River water utilized for steam generation Unit #2 condenser cooling waters. Cooling waters do not receive treatment as the only pollutant of concern is heat. The daily maximum flow limitation is 18.86 MGD.

Outfall #006 - River water utilized for steam generation Unit #2 rotary screen backwash. Waters are treated by 1/2" mesh screen. No numeric limitations, except pH are established for this outfall.

Outfall #007 - Consists of a number of floor drains (some modified with raised rims) and roof drains which convey bearing cooling/lubricating waters and storm water respectively.

Outfall #008 - River water utilized for diesel engine cooling plus auxiliary equipment bearing cooling water, municipal waters used for auxiliary cooling, and floor and roof drains. The waste stream receiving formal treatment is the diesel engine pit drain waste stream and the #5 compressor cooling water which passes through an oil/water separator prior to combining with the other waste streams that make up the discharge from Outfall #008. The daily maximum flow limit is 1.44 MGD

See **Attachment B** of this permit for a plan depicting the locations of the outfall pipes.

2. PERMIT SUMMARY

a. History: The most recent licensing/permitting actions incude the following:

March 2, 1999 - The Department issued WDL #W000638-5R-A-R to MPSC for a five-year term.

June 3, 1999 – The Department isued an Order transferring all licenses and permits from MPSC to PDI New England Inc. d/b/a WPS Power Generation Inc., a wholly owned subsidiary of WPS Power Development Inc.

September 18, 2002 – WPS New England Inc. submitted an application to modify WDL W000638-5R-A-R to incorporate the terms and conditions of the MEPDES permitting program. The modification was assigned a number of W000638-5R-B-M.

November 12, 2004 – The Department issued combination MEPDES permit #ME0000361/WDL #W000638-5R-C-R for a five year term.

September 29, 2009 - The Department issued combination MEPDES permit #ME0000361/WDL #W000638-5R-D-R for a five year term.

October 17, 2014 – Merlin submitted a timely and complete application to renew the 10/29/09 permit.

b. Terms and conditions - This permitting action is carrying forward all the terms and conditions of the 10/29/09 permit.

3. CONDITIONS OF PERMITS:

Conditions of licenses, 38 M.R.S.A. § 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., § 420 and 06-096 CMR 530 require the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (effective October 9, 2005), and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS:

Maine law, 38 M.R.S.A., Section 467(15)(C)(1)(e) classifies the Aroostook River at the point of discharge as a Class B waterway. Maine law, 38 M.R.S.A., Section 465(3) describes the classification standards for Class B waters as follows;

4. RECEIVING WATER QUALITY STANDARDS (cont'd)

Class B waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired.

The dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the 1-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas. Between May 15th and September 30th, the number of Escherichia coli bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 64 per 100 milliliters or an instantaneous level of 236 per 100 milliliters. In determining human and domestic animal origin, the department shall assess licensed and unlicensed sources using available diagnostic procedures.

Discharges to Class B waters may not cause adverse impact to aquatic life in that the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

5. RECEIVING WATER QUALITY CONDITIONS

The The *2012 Integrated Water Quality Monitoring and Assessment Report*, published by the Department, often referred to as the 305b report indicates that the Aroostook River is meeting the standards of its assigned classification at and below the point of discharge.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

Technology-based treatment requirements representing application of best practicable treatment (38 M.R.S.A. 414-A) are based on EPA-NPDES program criteria and standards, 40 Code of Federal Regulations (CFR) Part 125 Subpart A. Federal regulations, 40 CFR Part 125 specifies methods of imposing technology-based treatment requirements in permits. This Section provides for development of limitations on a case by case basis if EPA promulgated effluent limitation guidelines are applicable.

National Effluent Limitations Guidelines for the Steam Electric Power Generating Point Source Category were adopted on November 19, 1982 at 47 FR 52304. These guidelines are applicable to facilities primarily utilizing fossil (coal, oil or gas) and nuclear fuels. The Department used the EPA Steam Electric Power Generating Point Source Category (40 CFR, Part 423) guidelines to establish technology based limits in this permit and previous licensing actions.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

The waste waters generated and discharged by the facility via numerous outfalls are categorized as low volume waste waters pursuant to 40 CFR, Part 423. The limitations in this permitting action were derived as follows:

Outfall #002 & Outfall #006 - No numeric limitations (with the exception of pH) have been established in this permitting action based on the nature of the discharge. The pH limit is a technolgy based limit based on 40 CFR 423.12(b)(1).

Outfall #003 & Outfall #005- The daily maximum flow limitations of 10.96 MGD (Outfall #003) and 18.86 MGD (Outfall #005) are being carried forward in this permitting action. The daily maximum temperature limits of 94°F (both Outfalls) in the previous licensing action are being carried forward in this permitting action and are considered representative of the discharge.

Outfall #004 & #007 - The monthly average concentration limits for total suspended solids and oil & grease (100 mg/L and 15 mg/L respectively) are being carried forward from the previous licensing and are considered representative of the discharge and equally or more stringent than the BPT limits established in 40 CFR 423.12(b)(3). The daily maximum mass limits of 5.0 lbs/day for total suspended solids and 1.2 lbs/day for oil & grease in the previous licensing action are being eliminated in this permitting action. The federal regulations are intended to establish limitations for the bearing cooling waters not cooling waters and storm water runoff. Flows being discharged during wet weather events will elevate the mass of TSS being discharged and is not necessarily representative of operations at the power plant itself.

The daily maximum temperature limit of 87°F in the previous licensing action is being carried forward in this permitting action and is considered representative of the discharge. The pH limit is a technolgy based limit based on 40 CFR 423.12(b)(1).

Outfall #008 - The daily maximum flow and temperature limits of 1.2 MGD and 120°F respectively, in the previous licensing action are being carried forward and are considered representative of the discharge. The pH limit is a technolgy based limit based on 40 CFR 423.12(b)(1).

Temperature Difference (Outfalls #003, #005 and #008) - Chapter 582, *Regulations Relating To Temperature*, states that no discharge shall cause the ambient temperature of any freshwater body such as a stream or river, as measured outside a mixing zone, to be raised more than 5°F. The regulation also limits a discharger to an in-stream temperature increase (ΔT) of 0.5° F above the ambient receiving water temperature when the weekly average temperature of the receiving water is greater than or equal to 66° F or when the daily maximum temperature is greater than or equal to 73° F. The temperature thresholds are based on EPA water quality criterion for the protection of brook trout and Atlantic salmon (both

species indigenous to the Aroostook River). The weekly average temperature of 66° F was derived to protect for normal growth of the brook trout and the daily maximum threshold

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

temperature of 73° F protects for the survival of juveniles and adult Atlantic salmon during the summer months. As a point of clarification, the Department interprets the term "weekly average temperature" to mean a seven (7) day rolling average. To promote consistency, the Department also interprets the ΔT of 0.5° F as a weekly rolling average criterion when the receiving water temperature is ≥66° F and <73° F. When the receiving water temperature is ≥73°F, compliance with the ΔT of 0.5° F is evaluated on a daily basis.

Maine law, 38 M.R.S.A. §464(4)(D), states that the assimilative capacity of a receiving water shall be calculated utilizing a seven-day low event with a recurrence interval of ten years that is often referred to as the 7Q10. The Department has determined that the 7Q10 flow of the Aroostok River is 174 cfs (114 MGD) based on a recent (2000-2003) river flow information collected by the Department during ambient water quality sampling. To determine the potential impact of the combined thermal discharge to the Aroostook River during 7Q10 low flow conditions and receiving water temperatures at or above the critical temperature thresholds cited above, the following calculation indicates a worst case ΔT is:

Criterion:

1) Aroostook River: 7Q10 =176 cfs ⇒ 114 MGD

2) Temperature: When the 7-day rolling average temperature of the receiving water (RW) is <66°F, a discharge is limited to changing the receiving water temperature by 5°F (ΔT=5°F).

3) When the 7-day rolling average temperature of the receiving water is ≥66°F, a discharge is limited to changing the receiving water temperature by 0.5°F (ΔT=0.5° F).

4) To simplify compliance with this standard, it is assumed that the receiving water will ≥66°F between June 1 and September 30 of each year and below 66°F the remainder of the year. Therefore, the ΔT=0.5°F limitation is in effect between June 1 and September 30 and the ΔT=5°F is in effect between October 1 and May 31 of each year.

Calculations:

1. Calculate thermal load that will result in a ΔT=5°F at 7Q10.

$$(114\ \text{MGD})(8.34)(5°\text{F}) = 4.75 \times 10^{9}\ \text{BTU's/day}$$

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

2. Calculate thermal load that will result in a $\Delta T=0.5°F$ at 7Q10

$7Q10 \Rightarrow (114\ MGD)(8.34)(0.5°F) = 4.75 \times 10^8$ BTU's/day

Permit limitations

Outfall #003: 10.96 MGD, Daily Maximum Temperature = 94°F

Outfall #005: 18.86 MGD, Daily Maximum Temperature = 94°F

Outfall #008: 1.20 MGD, Daily Maximum Temperature = 120°F

Theoretical thermal load from each outfall as presently permitted

Outfall #003: $(10.96\ MGD)(8.34)(94°F-66°F) = 2.56 \times 10^9$ BTU's/day

Outfall #005: $(18.86\ MGD)(8.34)(94°F-66°F) = 4.40 \times 10^9$ BTU's/day

Outfall #008: $(1.20\ MGD)(8.34)(120°F-66°F) = 0.540 \times 10^9$ BTU's/day

$\Sigma = 7.50 \times 10^9$ BTU's/day

In a letter of November 10, 1998 to the Department, Maine Public Service (MPS), former owner/operator calculated the actual thermal load from each outfall based on the thermodynamics associated with each generating unit rather than using "nameplate" data. MPS has indicated that it is not possible for the permitted flows and daily maximum temperature limits to occur simultaneously. MPS calculates the maximum thermal loads as follows:

Outfall #003: 1.55×10^9 BTU's/day

Outfall #005: 2.40×10^9 BTU's/day

Outfall #008: 0.24×10^9 BTU's/day

$\Sigma = 4.19 \times 10^9$ BTU's/day

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Calculate impact to the receiving water based on the river @ a 7Q10 low flow

Outfall #003: 1.55×10^9 BTU's/day $\Rightarrow \Delta T = 1.64°F$

Outfall #005: 2.4×10^9 BTU's/day $\Rightarrow \Delta T = 2.52°F$

Outfall #008: 0.24×10^9 BTU's/day $\Rightarrow \underline{\Delta T = 0.25°F}$

$\Sigma\Delta T = 4.41°F$

The calculations indicate that if the Aroostook River was at 7Q10 low flow conditions and the plant was operating at maximum flow and temperature limits for Outfalls #003, #005 and #008, the combined discharge would not comply with the Department's Chapter 582 during the summer months or winter months. As a result, this permit establishes summer and winter time instream temperature increase ($\Delta T°F$) limits (consistent with Chapter 582) and daily maximum end-of-pipe flow and temperature limits.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the waterbody to meet standards for Class B classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the Aroostook Republican newspaper on or about October 8, 2014. The Department receives public comment on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to chapter 522 of the Department's rules.

9. DEPARTMENT CONTACTS

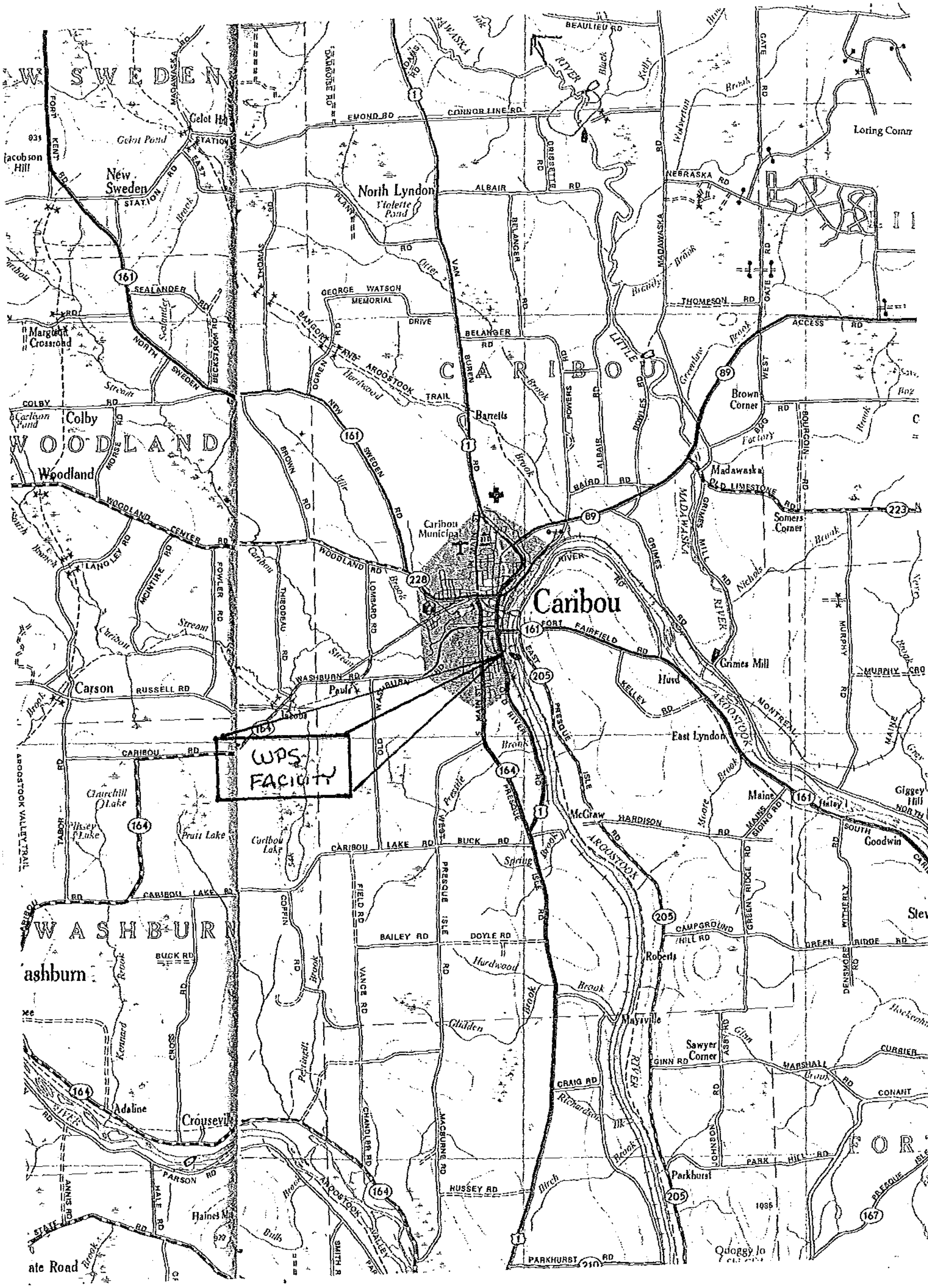
Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone (207) 287-7693
Electronic mail: gregg.wood@maine.gov

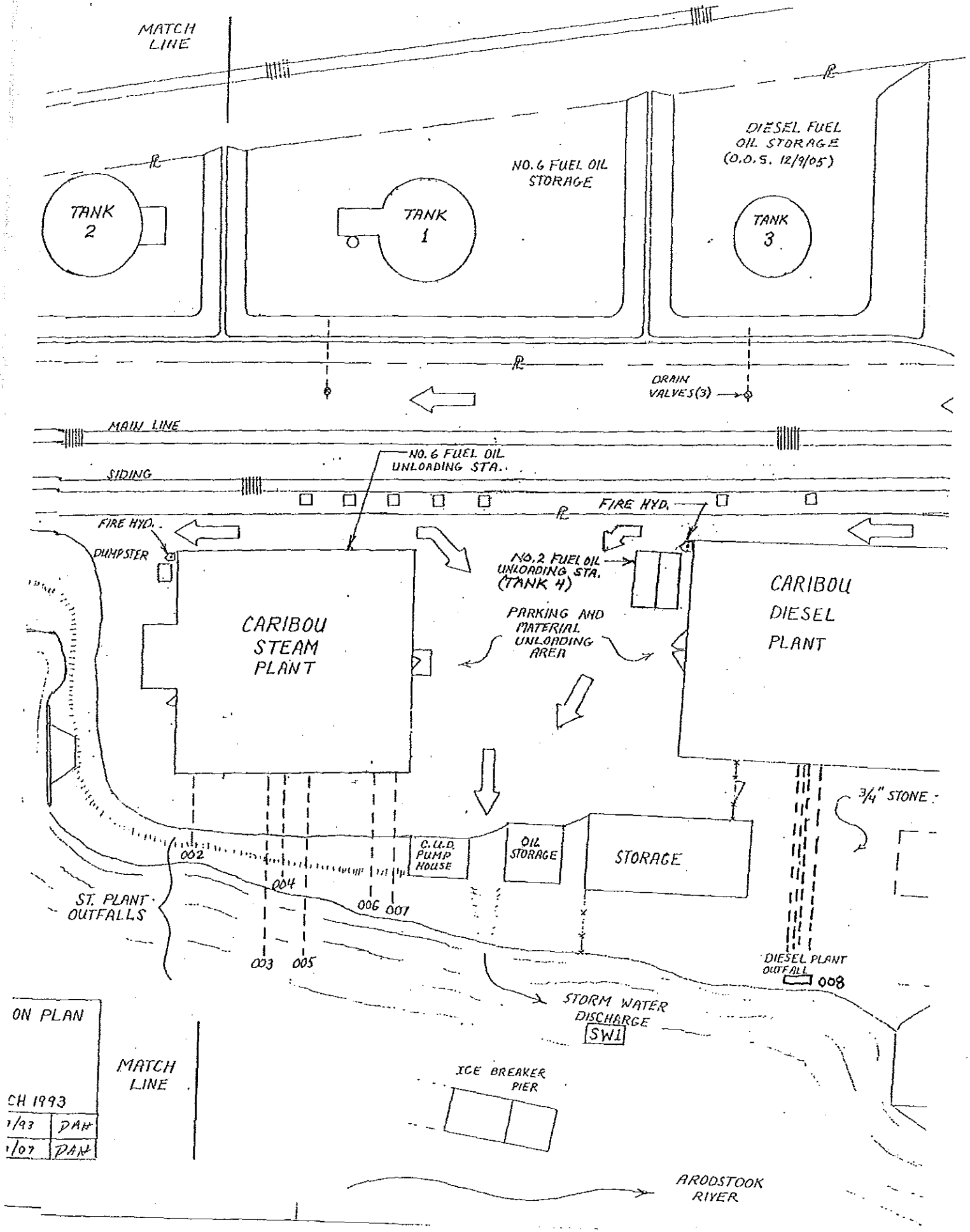
10. RESPONSE TO COMMENTS

Reserved until the close of the formal 30-day public comment period.

ATTACHMENT A


WPS FACILITY
Caribou
CARIBOU
NEW SWEDEN
WOODLAND
WASHBURN
Washburn
New Sweden
North Lyndon
Colby
Woodland
Carson
Caribou Municipal
Barretts
Brown Corner
Madawaska
Somers Corner
Grimes Mill
East Lyndon
Maine
Goodwin
McGraw
Roberts
Mayville
Sawyer Corner
Parkhurst
Adaline
Crouseville
Loring Comm
Jacobson Hill
Margison Crossroad
Caribou Lake
Churchill Lake
Pratt Lake
Violette Pond
AROOSTOOK RIVER
MADAWASKA RIVER
CARIBOU RD
WOODLAND CENTER RD
FORT FAIRFIELD RD
PRESQUE ISLE RD
VAN BUREN RD
WASHBURN RD
CARIBOU LAKE RD
BAILEY RD
DOYLE RD
HUSSEY RD
PARKHURST RD
ACCESS RD
THOMPSON RD
BAIRD RD
ALBAIR RD
CONNOR LINE RD
EMOND RD
NEBRASKA RD
RUSSELL RD
SEALANDER RD
COLBY RD
KELLEY RD
HARDISON RD
CAMPGROUND HILL RD
GREEN RIDGE RD
MARSHALL RD
CONANT RD
CRAIG RD
GINN RD
PARSON RD
BUCK RD
BANGOR AND AROOSTOOK TRAIL
GEORGE WATSON MEMORIAL DRIVE
AROOSTOOK VALLEY TRAIL
1
89
161
164
205
223
228
167

ATTACHMENT B


MATCH LINE
TANK 2
TANK 1
NO. 6 FUEL OIL STORAGE
DIESEL FUEL OIL STORAGE (O.O.S. 12/9/05')
TANK 3
DRAIN VALVES (3)
MAIN LINE
SIDING
NO. 6 FUEL OIL UNLOADING STA.
FIRE HYD.
FIRE HYD.
DUMPSTER
NO. 2 FUEL OIL UNLOADING STA. (TANK 4)
CARIBOU STEAM PLANT
PARKING AND MATERIAL UNLOADING AREA
CARIBOU DIESEL PLANT
3/4" STONE
002
004
006
007
003
005
C.W.D. PUMP HOUSE
OIL STORAGE
STORAGE
ST. PLANT OUTFALLS
DIESEL PLANT OUTFALL
008
STORM WATER DISCHARGE
SW1
ICE BREAKER PIER
MATCH LINE
ON PLAN
CH 1993
/93 DAH
/07 DAH
ARODSTOOK RIVER