STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

April 20, 2006

Mr. Ernest Pooler
Town of Bingham
P.O. Box 652
Bingham, Maine 04920

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit # ME0100056
Maine Waste Discharge License (WDL) Application #W001286-5L-D-R
Final Permit

Dear Mr. Pooler:

Enclosed please find a copy of your **final** MEPDES permit/WDL which was approved by the Department of Environmental Protection. You must follow the conditions in the permit to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State Law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision.*"

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: James Sohns, DEP/EMRO
Sandy Lao, USEPA

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

DEPARTMENT ORDER

IN THE MATTER OF

TOWN OF BINGHAM	) MAINE POLLUTANT DISCHARGE
BINGHAM, SOMERSET COUNTY, MAINE	) ELIMINATION SYSTEM PERMIT
PUBLICLY OWNED TREATMENT WORKS	) AND
ME0100056	) WASTE DISCHARGE LICENSE
W001286-5L-D-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 applicable regulations, the Department of Environmental Protection (Department) has considered the application of the TOWN OF BINGHAM (Bingham), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

Bingham has submitted a timely and complete application to the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100056/ Maine Waste Discharge License (WDL) #W001286-5L-C-R, which was issued by the Department on April 17, 2001 and is due to expire on April 17, 2006. The previous MEPDES permit/WDL approved the discharge of up to a monthly average flow of 0.200 MGD of secondary treated sanitary wastewater from a municipal treatment facility to Jackson Brook, Class B, in Bingham, Maine.

PERMT SUMMARY

This permitting action is carrying forward all the terms and conditions of the previous permitting action with the following exceptions:

1) This permit requires the permittee to maintain an up-to-date Operations & Maintenance (O&M) plan.

2) This permit requires the permittee to maintain an up-to-date Wet Weather Management plan.

3) This permit requires the permittee to conduct a practical alternative discharge analysis to mitigate or eliminate the potential toxicity of the discharge of chlorine based compounds due to seasonal disinfection and the potential effects of dissolved oxygen depletion in the receiving water as a result of the use of compounds to dechlorinate the discharge.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated March 10, 2006, 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) The 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.

ACTION

THEREFORE, the Department APPROVES the above noted application of the TOWN OF BINGHAM to discharge secondary treated waste waters from a publicly owned treatment works to Jackson Brook, Class B, SUBJECT TO THE FOLLOWING 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 expires five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 20TH DAY OF April 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID LITTELL, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 8, 2006.

Date of application acceptance: March 8, 2006.

FILED
APR 24 2006
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE

Date filed with Board of Environmental Protection _____.

This Order prepared by Gregg Wood, BUREAU OF LAND & WATER QUALITY

W12865LD 4/19/06

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge **secondary treated waste waters** to the Jackson Brook. Such treated waste water discharges shall be limited and monitored by the permittee as specified below.

OUTFALL #001

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	0.200 MGD *[03]*	---	Report (MGD) *[03]*	---	---	---	Continuous *[99/99]*	Recorder *[RC]*
Biochemical Oxygen Demand (BOD_5) *[00310]*	50 lbs/Day *[26]*	75 lbs/Day *[26]*	83 lbs/Day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	1/Week *[01/07]*	Composite *[24]*
BOD_5 % Removal (1) *[81010]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Total Suspended Solids (TSS) *[00530]*	50 lbs/Day *[26]*	75 lbs/Day *[26]*	83 lbs/Day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	1/Week *[01/07]*	Composite *[24]*
TSS % Removal (1) *[81011]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Settleable Solids *[00545]*	---	---	---	---	---	0.3 ml/L *[25]*	5/Week *[05/07]*	Grab *[GR]*
E. coli Bacteria (2) *[31633]* *(May 15 – September 30)*	---	---	---	64/100 ml (3) *[13]*	---	427/100 ml *[13]*	1/Week *[01/07]*	Grab *[GR]*
Total Residual Chlorine (4) *[50060]*	---	---	---	---	---	1.0 mg/L *[19]*	1/Day *[01/01]*	Grab *[GR]*
pH (Std. Units) *[00400]*	---	---	---	---	---	6.0-9.0 *[12]*	1/Week *[01/01]*	Grab *[GR]*

The italicized numeric values bracketed in the table above are code numbers that Department personnel utilized to code the monthly Discharge Monitoring Reports.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Sampling Locations:

Influent sampling for BOD_5 and TSS shall be sampled after the bar screen.

Secondary treated effluent sampling (Outfall #001) shall be sampled for all parameters at the end of the chlorine contact chamber on a year-round basis.

Any change in sampling location(s) must be reviewed and approved by the Department in writing.

Sampling – Sampling and analysis must be conducted 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 shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.

1. **Percent removal** - The treatment facility shall maintain a minimum of 85 percent removal of both BOD_5 and TSS. The percent removal shall be based on a monthly average calculation using influent and effluent concentrations. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility shall report "*NODI-9*" on the monthly Discharge Monitoring Report.

2. ***E. coli* bacteria** - Limits are seasonal and apply between May 15 and September 30 of each calendar year. The Department reserves the right to require disinfection on a year-round basis to protect the health and welfare of the public.

3. ***E. coli* bacteria** – The monthly average limitation is a geometric mean limitation and shall be calculated and reported as such.

4. **Total Residual Chlorine** – Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used to disinfect the discharge.

SPECIAL CONDITIONS

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by 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 by 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 by 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. DISINFECTION

If chlorination is used as a means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized, followed by a dechlorination system if the total residual chlorine (TRC) cannot be met by dissipation in the detention tank. The TRC in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied shall be sufficient to leave a TRC concentration that will effectively reduce bacteria to levels below those specified in Special Condition A, *"Effluent Limitations and Monitoring Requirements"*, of this permit.

D. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade II** certificate [or Registered Maine Professional Engineer] pursuant to Title 32 M.R.S.A., Section 4171 et seq. All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

E. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the waste water collection and treatment system by a non-domestic source (user) shall not pass through or interfere with the operation of the treatment system.

SPECIAL CONDITIONS

F. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of the following.

1. Any introduction of pollutants into the waste water collection and treatment system from an indirect discharger in a primary industrial category discharging process waste water; and

2. Any substantial change in the volume or character of pollutants being introduced into the waste water collection and treatment system by a source introducing pollutants into the system at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall include information on:

   (a) the quality and quantity of waste water introduced to the waste water collection and treatment system; and

   (b) any anticipated impact caused by the change in the quantity or quality of the waste water to be discharged from the treatment system.

G. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13th) 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 (15th) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the Department assigned compliance inspector (unless otherwise specified) to the following address:

Department of Environmental Protection
Eastern Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
106 Hogan Road
Bangor, Maine 04011

SPECIAL CONDITIONS

H. WET WEATHER FLOW MANAGEMENT PLAN

The permittee shall maintain an up-to-date Wet Weather Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall. The revised plan shall include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures during the events. The permittee shall review their plan annually and record any necessary changes to keep the plan up to date.

I. OPERATION & MAINTENANCE (O&M) PLAN

Within 90 days of completion of new and or substantial upgrades of the waste water treatment facility, the permittee shall submit an updated O&M Plan to their Department inspector for review and comment. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. **By December 31 of each year or within 90 days of any process changes or minor equipment upgrades,** the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the waste water treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department personnel upon request.

J. CHAPTER 530(2)(D)(4) CERTIFICATION

On or before December 31 of each year ***[PCS code 95799]*** the permittee is required to file a statement with the Department describing the following.

1. Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;

2. Changes in the operation of the treatment works that may increase the toxicity of the discharge; and

3. Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.

Further, the Department may require that annual whole effluent toxicity (WET), priority pollutant and or analytical testing be instituted if it determines that there have been changes in the characteristics of the discharge exceed or have a reasonable potential to exceed ambient water quality criteria or if annual certifications described above are not submitted.

SPECIAL CONDITIONS

K. PRACTICAL ALTERNATIVE DISCHARGE ANALYSIS

On or before July 1, 2006 *[PCS Code 34099],* the permittee shall submit to the Department for review and approval, a scope of work and schedule for a practical alternative discharge analysis to mitigate or eliminate the potential toxicity of the discharge of chlorine based compounds due to seasonal disinfection and the potential effects of dissolved oxygen depletion in the receiving water as a result of the use of compounds to dechlorinate the discharge. (See Attachment C of the Fact Sheet of this permit for guidance on conducting the practical alternative discharge analysis.

On or before December 31, 2006 *[PCS Code 97899]* the permittee shall submit to the Department for review and approval, a practical alternative discharge analysis to mitigate or eliminate the potential toxicity of the discharge of chlorine based compounds due to seasonal disinfection and the potential effects of dissolved oxygen depletion in the receiving water as a result of the use of compounds to dechlorinate the discharge.

L. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in 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 any time, 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 or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

M. 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 March 10, 2006

PERMIT NUMBER: **ME0100056**
LICENSE NUMBER: **W001286-5L-D-R**

NAME AND MAILING ADDRESS OF APPLICANT:

TOWN OF BINGHAM
P.O. Box 652
Bingham, Maine 04920

COUNTY: **Somerset**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Bingham Waste Water Treatment Facility
Route 201
Bingham, Maine

RECEIVING WATER/CLASSIFICATION: **Jackson Brook/Class B**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Ernest Pooler**
(207) 672-4484

1. APPLICATION SUMMARY

a. Application: Bingham has submitted a timely and complete application to the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100056/ Maine Waste Discharge License (WDL) #W001286-5L-C-R, which was issued by the Department on April 17, 2001 and is due to expire on April 17, 2006. The previous MEPDES permit/WDL approved the discharge of up to a monthly average flow of 0.200 MGD of secondary treated sanitary wastewater from a municipal treatment facility to Jackson Brook, Class B, in Bingham, Maine.

1. APPLICATION SUMMARY

b. Source Description: The facility receives commercial and residential sanitary wastewater from customers in the Town of Bingham. See Attachment A of this Fact Sheet for a location map. There are no significant industrial users within the collection system and there are no combined sewer overflows. The facility is not authorized to treat septage at the waste water treatment facility, but has an approved septage land spreading site, which is regulated by the Department's Bureau of Remediation and Waste Management.

c. Waste Water Treatment: Sanitary wastewater received at the Bingham waste water treatment facility receives a secondary level of treatment via an activated sludge package treatment plant designed to treat a monthly average flow of 200,000 gallons per day (0.200 MGD). See Attachment B of this Fact Sheet for a schematic of the facility. In 1998, the plant was upgraded with the addition of a new headworks system with fine screening and grit removal and a second process unit for aeration, sedimentation, and sludge digestion. The upgrade also involved the addition of new aeration blowers, sludge pumps, and an auto dialer alarm system. The design upgrade provided for an increase in effluent flows from 0.146 MGD to the present 0.200 MGD capacity to enable Bingham to provide secondary treatment for a greater volume of its waste water. Prior to the 1998 plant upgrade, the facility only provided primary waste water treatment during some periods of extended high flows.

Waste waters generated in Bingham are conveyed to the treatment facility via a sewer collection system that is a approximately four (4) miles in length with four pump stations. Two of the four pump stations have on-site back-up power and the other two pump stations are served by a pumper truck in the event of a power failure. Waste waters from the collection system are conveyed to the facility headworks building where influent screening is performed either through a mechanical screen or a manual bar rack, followed by grit removal in an aerated grit chamber utilizing diffused air. Waste water then flows to a 68,800-gallon aeration tank. A second 66,800 gallon aeration tank is located adjacent to the first to provide additional treatment capacity during wet weather events. Waste water flow then passes to the 33,800 gallon clarifier for secondary treatment, followed by the chlorine contact tank and then is discharged to Jackson Brook. Between May 15 and September 30 of each year, the effluent is disinfected with sodium hypochlorite. Flow is measured by a continuous recording flow meter.

Sludge is wasted from the clarifier to a 112,200 gallon aerobic digester and can be then pumped to a belt filter press for thickening. Sludge can be stored in either a 20,000-gallon sludge storage tank or the facility's former package process unit. Sludge is disposed of through land spreading at a Department approved site.

The treatment plant is designed to provide for an alternate treatment process in the event that influent flows exceed the capacity of the upgraded treatment system to provide full secondary treatment. In this event, a portion of the flow is diverted to the former process unit for primary treatment following grit removal. The remainder of the flow receives

1. APPLICATION SUMMARY (cont'd)

secondary treatment, as described above. The two flows are then blended prior to discharge. As with normal operational conditions, effluent limitations must still be met during these conditions. In addition to the plant upgrade, Bingham undertook removal of some inflow/infiltration (I/I) within the collection system. Additional I/I removal may be necessary in the future to enable the facility to provide secondary treatment to a greater amount of its waste water during high flow periods.

The Bingham waste water treatment facility discharges to an embayment at the confluence of Jackson Brook, a water body with a drainage area of less than ten square miles. Because of the location of the discharge, the zone of initial dilution extends into the Kennebec River. Therefore, receiving water flows and dilution factors were based on those of the Kennebec River.

2. PERMIT SUMMARY

a. Terms and conditions: This permitting action is carrying forward all the terms and conditions of the previous permitting action with the following exceptions:

1) This permit requires the permittee to maintain an up-to-date Operations & Maintenance (O&M) plan.

2) This permit requires the permittee to maintain an up-to-date Wet Weather Management plan.

3) This permit requires the permittee to conduct a practical alternative discharge analysis to mitigate or eliminate the potential toxicity associated with the discharge of chlorine based compounds associated with seasonal disinfection.

b. History: The most relevant licensing/permitting actions include the following:

April 24, 1986 - The U.S. Environmental Protection Agency (EPA) issued National Pollutant Discharge Elimination System (NPDES) permit #ME0100056 to the Town of Bingham for a five-year term.

March 23, 1988 - The Department issued WDL #W001286-45-A-R to the Town of Bingham for a five-year term. The WDL approved the discharge of up to 0.146 MGD of secondary treated waste water.

February 15, 1995 – The Department issued a letter to Bingham stating that the Town was exempt from the Department's *Surface Water Toxics Control Program* (Chapter 530.5) adopted on October 12, 1994.

2. PERMIT SUMMARY (cont'd)

June 26, 1996 - The Department issued WDL #W001286-59-B-R to the Town of Bingham for a five-year term. The WDL approved the discharge of 0.146 MGD of secondary treated wastewater as well as approved a discharge increase to 0.200 MGD to follow a proposed facility expansion.

June 27, 2000 – The Department administratively modified the 6/26/96 WDL by establishing interim maximum and average concentration limitations for mercury.

January 12, 2001 - The Department received authorization from EPA to administer the NPDES program in Maine. From that point forward, the program has been referred to as the MEPDES permit program.

April 17, 2001 – The Department issued combination MEPDES permit #ME0100056/WDL #W001286-5L-C-R for a five-year term.

March 9, 2006 – The Town of Bingham submitted a timely and complete application to the Department to renew the MEPDES permit/WDL for the discharge from its waste water treatment facility.

3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 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., Section 420 and Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, 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(4)(I) indicates that Jackson Brook at the point of discharge is classified as a Class B waterway. In addition, 38 M.R.S.A., Section 465(3), describes the standards for waters classified as Class B waters. Maine law (38 M.R.S.A., §464.4(A)(1)) only allows the discharge of pollutants to waters having a drainage area of less than ten square miles, such as Jackson Brook, when they were licensed prior to January 1, 1986, and only until such time that practical alternatives exist. The Department finds that the discharge was licensed prior to January 1, 1986, and that no practical alternatives for the

4. RECEIVING WATER QUALITY STANDARDS (cont'd)

relocation of the outfall exist at this time. However, Special Condition K, *Practical Alternatives Discharge Analysis*, of this permit requires the permittee to conduct a practical alternative discharge analysis to mitigate or eliminate the potential toxicity of the discharge of chlorine based compounds due to seasonal disinfection and the potential effects of dissolved oxygen depletion in the receiving water as a result of the use of compounds to dechlorinate the discharge.

5. RECEIVING WATER QUALITY CONDITIONS

A document entitled, 2004 Integrated Water Quality Monitoring And Assessment Report, (referred to as the 305b Report) published by the Department indicates that Jackson Brook is attaining Class B water quality standards in the location of the outfall.

It is noted that all fresh water bodies in Maine carry a fish advisory for mercury due to atmospheric transport and deposition. Maine law 38 M.R.S.A., §420 and Department Rule, Chapter 519, *Interim Effluent Limitations and Controls For the Discharge of Mercury*, establishes controls of mercury to surface waters of the State and United States through interim effluent limitations and implementation of pollution prevention plans. On June 27, 2000, the Department administratively modified the permittee's WDL by establishing an average concentration limit of 17.4 ng/L and a daily maximum concentration limit of 26.2 ng/L with a monitoring frequency of 1/Quarter based on a past demonstrated performance evaluation of four mercury test results submitted between August of 1998 and September of 1999.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: The monthly average flow limitation of 0.200 MGD included in the previous permit is being carried forward in this permitting action. This flow is considered representative of the monthly average design flow for the facility.

b. Dilution Factors: Dilution factors associated with the discharge from the Bingham waste water treatment facility were derived in accordance with freshwater protocols established in Department Regulation Chapter 530, Surface Water Toxics Control Program, November 2005. With a monthly average treatment plant design flow of 0.200 MGD, dilution calculations are as follows:

Acute: 1Q10 = 508.0 cfs $\Rightarrow$ $\dfrac{(508.0\text{ cfs})(0.6464) + 0.200\text{ MGD}}{0.200\text{ MGD}} = 1{,}643:1$

Chronic: 7Q10 = 1,280.0 cfs $\Rightarrow$ $\dfrac{(1{,}280.0\text{ cfs})(0.6464) + 0.200\text{ MGD}}{0.200\text{ MGD}} = 4{,}138:1$

Harmonic Mean = 2,777.0 cfs $\Rightarrow$ $\dfrac{(2{,}777.0\text{ cfs})(0.6464) + 0.200\text{ MGD}}{0.200\text{ MGD}} = 8{,}976:1$

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

c. BOD5 & TSS - The previous permitting established technology based monthly and weekly average BOD5 and TSS best practicable treatment (BPT) concentration limits of 30 mg/L and 45 mg/L respectively, that were based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR 133.102 and Department rule Chapter 525(3)(III). The maximum daily BOD5 and TSS concentration limits of 50 mg/L were based on a Department best professional judgment of BPT. All three concentration limits are being carried forward in this permitting action.

As for mass limitations, the previous permitting action established technology based monthly average, weekly average and daily maximum limitations based on a monthly average limit of 0.200 MGD that are being carried forward in this permitting action. The limitations were calculated as follows:

Monthly average: (0.200MGD)(8.34)(30 mg/L) = 50 lbs/day
Weekly average: (0.200 MGD)(8.34)(45 mg/L) = 75 lbs/day
Daily maximum: (0.200 MGD)(8.34)(50 mg/L) = 83 lbs/day

This permitting action is carrying forward a requirement of 85% removal for BOD and TSS pursuant to Department rule Chapter 525(3)(III)(a&b)(3) except in the circumstances where the influent concentration is less than 200 mg/L.

Monitoring frequencies for BOD and TSS of 1/Week are being carried forward from the previous permitting action and are based on Department policy for facilities with a monthly average flow limitation greater than 0.1 MGD but less than 0.5 MGD.

d. Settleable Solids - The previous permitting action established a technology based daily maximum limit of 0.3 ml/L and a monitoring frequency of 5/Week. Both are being carried forward in this permitting action. The limit was based on a Department best professional judgment of BPT and the monitoring frequency is based on Department policy for facilities with a monthly average flow limitation greater than 0.1 MGD but less than 0.5 MGD.

e. *E. coli* bacteria: Maine's Water Classification Program found at 38 M.R.S.A. Article 4-A states that Escherichia coli bacteria (*E. Coli*) standards apply to freshwaters. Based on Maine law, 38 M.R.S.A., §465(3)(B) which relates to Class B waterways, the previous permitting action established a seasonal water quality based monthly average *E. coli* bacteria limits of 64 colonies per 100 milliliters (ml)(geometric mean) and a daily maximum (instantaneous) level of 427 colonies per 100 ml from May 15 – September 30. These limits and the monitoring frequency of once per week are being carried forward from the previous permitting action.

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

f. Total Residual Chlorine: Limits on total residual chlorine (TRC) are specified to ensure attainment of the in-stream water quality criteria for levels of chlorine and that BPT technology is utilized to abate the discharge of chlorine. Permits issued by this Department impose the more stringent of the calculated water quality based or BPT based limits. The previous permitting action established a daily maximum limit of 1.0 mg/L. With dilution factors as determined above, water quality based thresholds for TRC may be calculated as follows:

Acute (A) Criterion	Chronic (C) Criterion	A & C Dilution Factors	Calculated Acute Limit	Chronic Limit
0.019 mg/L	0.011 mg/L	1,643:1 (A) 4,138:1 (C)	31.2 mg/L	45.5 mg/L

The Department's BPT limitation of 1.0 mg/l is more stringent than the calculated water quality based limit. Therefore, the BPT limitation of 1.0 mg/l is being imposed from May 15 – September 30 to correspond to seasonal disinfection requirements. This permitting action carries forward the TRC monitoring frequency of once per day.

g. pH – The previous permitting action established a technology based pH range limitation of 6.0 – 9.0 standard units based on Department rule Chapter 525(3)(III)(c).The limit range is considered BPT. The monitoring frequency requirement of 1/Week is being carried forward from the previous permitting action.

h. Whole Effluent Toxicity (WET) and priority pollutant testing - Maine law, 38 M.R.S.A., Sections 414-A and 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department Rules, 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, and Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants* set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute and chronic WET tests are performed on invertebrate and vertebrate species. Priority pollutant and analytical chemistry testing is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria as established in Chapter 584.

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

Chapter 530 establishes four categories of testing requirements based predominately on the chronic dilution factor. The categories are as follows:

Level I – chronic dilution factor of <20:1.
Level II – chronic dilution factor of ≥20:1 but <100:1.
Level III – chronic dilution factor ≥100:1 but <500:1 or >500:1 and Q ≥1.0 MGD
Level IV – chronic dilution >500:1 and Q ≤1.0 MGD

Department rule Chapter 530 (2)(D) specifies the criteria to be used in determining the minimum monitoring frequency requirements for WET, priority pollutant and analytical chemistry testing. Based on the Chapter 530 criteria, the permittee's facility falls into the Level IV frequency category as the facility has a chronic dilution factor ≥500:1 and

discharges ≤1.0 MGD. Chapter 530(2)(D)(1) specifies that surveillance and screening level testing requirements are as follows:

Screening level testing

Level	WET Testing	Priority pollutant testing	Analytical chemistry
IV	1 per year*	1 per year*	4 per year*

Surveillance level testing

Level	WET Testing	Priority pollutant testing	Analytical chemistry
IV	1 per year*	None required*	1 per year*

Chapter 530(2)(D)(1) states:

*These routine testing requirements for Level IV are waived, except that the Department shall require an individual discharger to conduct testing under the following conditions.

(a) The discharger's permit application or information available to the Department indicate that toxic compounds may be present in toxic amounts; or

(b) Previous testing conducted by the discharger or similar dischargers indicates that toxic compounds may be present in toxic amounts.

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

Based on the information available to date, the Department has made a best professional judgment determination to waive surveillance and screening level testing for the Town of Bingham. Special Condition J, *Chapter 530(D)(2)(4) Certification*, of this permit requires the permittee to submit an annual certification indicating the discharge from the facility has not change changed substantially since the previous permitting action. However, should there be a substantial change in the characteristics of the discharge in the future, the Department may reopen this permit pursuant to Special Condition L, *Reopening Of Permit For Modifications*, to incorporate the applicable WET, priority pollutant and or analytical testing requirements cited above.

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. Special Condition K, *Practical alternatives Discharge Analysis*, of this permit requires the permittee to conduct a practical alternative discharge analysis to mitigate or eliminate the potential toxicity of the discharge of chlorine based compounds due to seasonal disinfection and the potential effects of dissolved oxygen depletion in the receiving water as a result of the use of compounds to dechlorinate the discharge.

8. PUBLIC COMMENTS

Public notice of this application was made in the Morning Sentinel newspaper on or about March 7, 2006. The Department receives public comments 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
E-mail: gregg.wood@maine.gov

10. RESPONSE TO COMMENTS

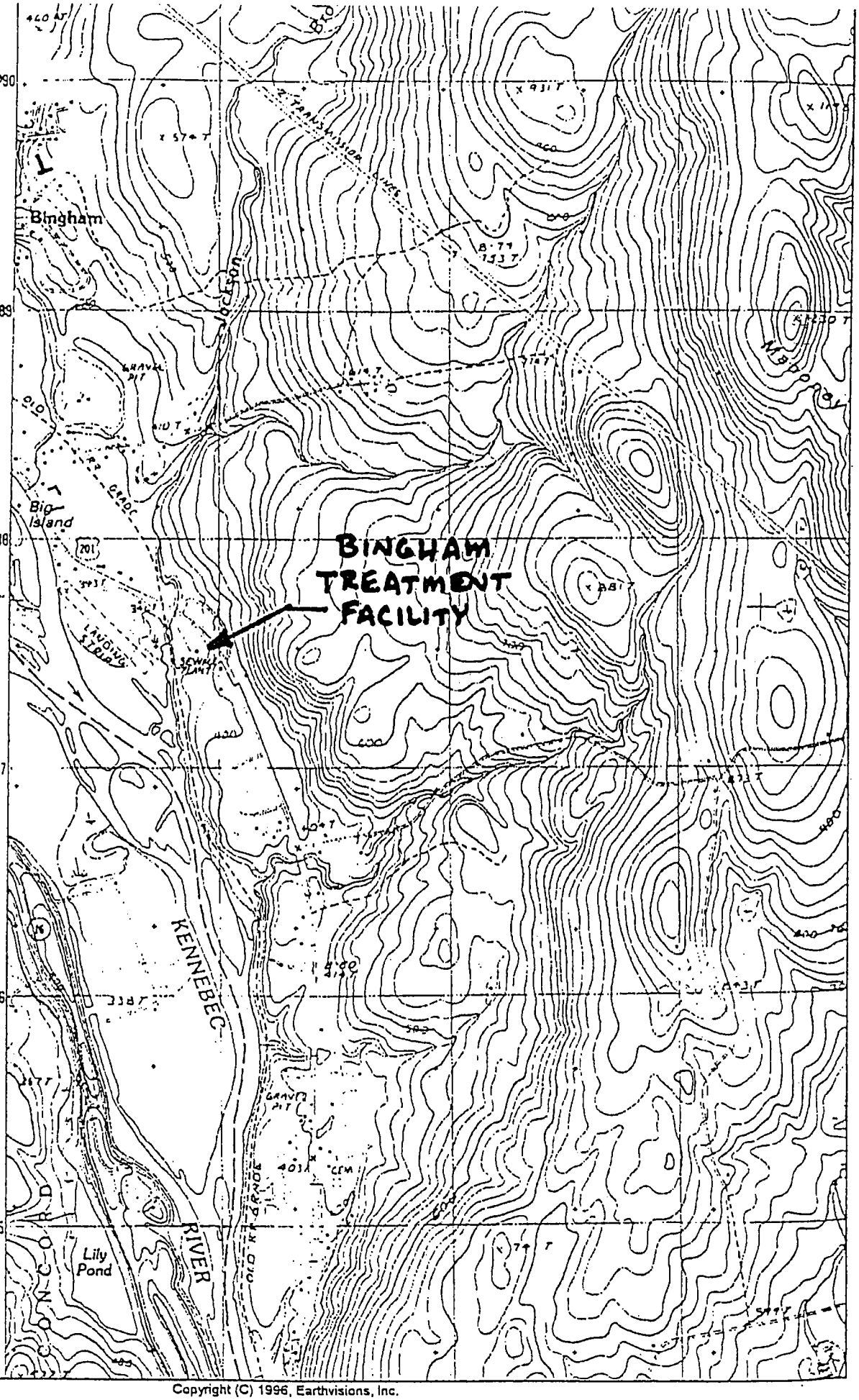
During the period of March 10, 2006 through the date of issuance of this permit, the Department solicited comments on the proposed draft MEPDES permit/WDL for the discharge from the own of Bingham's waste water treatment facility. The Department did not receive any comments from the permittee or state or federal agencies or interested parties. The Department did receive one comment from Department staff. The Department has prepared a response to the comment as it resulted in a change to a permit condition.

Comment #1: The Department's compliance inspector assigned to the Bingham facility and a Department fisheries biologist expressed concern about the potential toxic effects on aquatic life in Jackson Brook from the discharge chlorine based compounds due to seasonally disinfection of the discharge. In addition, concern was expressed on the potential for impacts to dissolved oxygen levels in Jackson Brook due to the potential discharge of compounds used to dechlorinate the discharge.

Response #1: The Department has reviewed the statutory language surrounding practical alternative discharge analyses as it relates to Jackson Brook having a drainage area of less than ten square miles. To date, the practical alternatives analyses conducted to date have focused primarily on relocation of the outfall pipe. Being that the main stem of the Kennebec River at and below the Wyman Dam down to Caratunk Falls is classified as a Class A waterbody, any new discharge to a Class A waterbody must be equal to or better than the existing water quality. The discharge from the Bingham facility is not equal to or better than the existing water quality of the Kennebec River, therefore, the alternative to relocate the outfall has always been disregarded.

As for Jackson Brook, though classified as Class B, it has a drainage area of less than ten square miles. Maine law 38 M.R.S.A, 464(4)(1) states in part that such discharges are only allowed to continue until practical alternatives exist. To address concerns expressed by Department personnel, this permitting action is requiring the permittee to conduct a practical alternative discharge analysis to mitigate or eliminate the potential toxicity of the discharge of chlorine based compounds due to seasonal disinfection and the potential effects of dissolved oxygen depletion in the receiving water as a result of the use of compounds to dechlorinate the discharge. The permit requires a scope of work and schedule to conduct the analysis to be submitted to the Department for review and approval by July 1, 2006 with a final analysis to be submitted to the Department by December 31, 2006.

ATTACHMENT A



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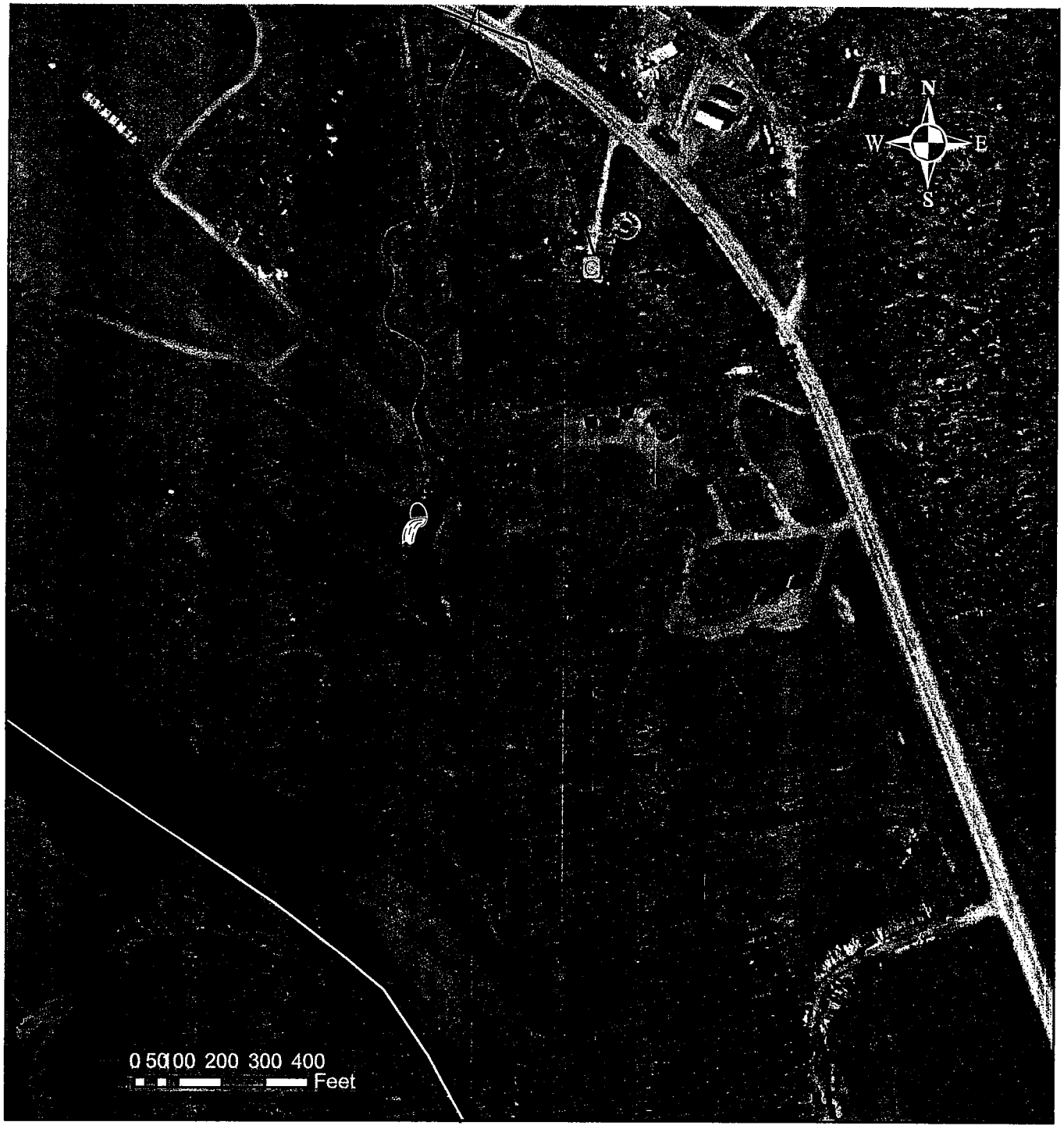
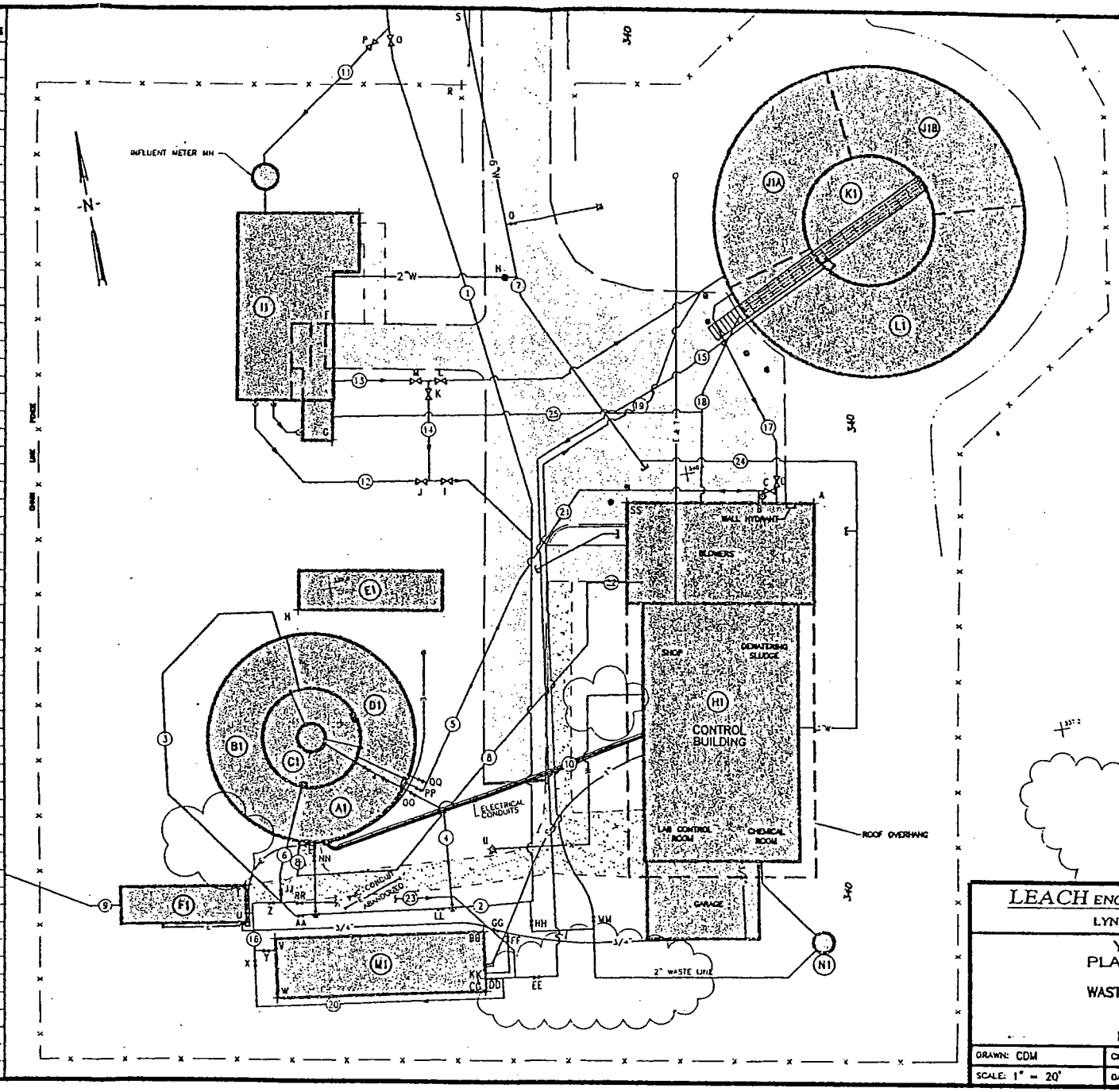

N
W
E
S
0 50 100 200 300 400
Feet

ATTACHMENT B

LOCATION	VALVE I.D. & LOCATION	DIMENSION BETWEEN LOCATIONS
A	C	9'-1"
B	C	1'-1"
A	D	8'-3"
B	D	3'-11"
E	O	29'-7"
G	O	54'-6"
E	N	30'-4"
G	N	45'-9"
G	M	19'-9"
F	M	19'-1"
F	L	23'-2"
G	L	23'-10"
G	K	20'-7"
F	K	22'-7"
G	J	18'-11"
H	J	34'-4"
G	I	23'-3"
H	I	37'-10"
R	P	18'-10"
S	P	19'-11"
R	Q	16'-0"
S	Q	16'-3"
T	AA	12'-2"
V	AA	6'-8"
T	Z	6'-1"
U	Z	6'-3"
T	JJ	7'-0"
U	JJ	9'-0"
V	Y	2'-11"
W	Y	9'-5"
V	X	6'-2"
W	X	8'-0"
BB	CG	2'-4"
BB	FF	4'-11"
CC	FF	10'-11"
KK	DD	1'-7"
CC	KK	2'-4"
CC	EE	10'-1"
BB	EE	13'-6"
BB	HH	9'-4"
II	HH	16'-2"
II	LL	15'-5"
BB	LL	9'-4"
BB	MM	21'-6"
II	MM	23'-8"
T	NN	14'-5"
V	NN	17'-6"
II	OO	18'-5"
BB	OO	29'-10"
II	PP	18'-0"
BB	PP	30'-2"
II	QQ	18'-10"
BB	QQ	31'-8"
T	RR	11'-0"
V	RR	8'-6"
T	II	48'-1"
BB	II	16'-3"
A	B	9'-9"
SS	B	26'-1"



PIPING LEGEND

1 8" INFLUENT FORCE MAIN
2 6" GRAVITY TO PROCESS UNIT #1–MODE A
3 6" GRAVITY TO PROCESS UNIT #1–MODE B
4 6" GRAVITY TO PROCESS UNIT #1–MODE C
5 6" SLUDGE WITHDRAWAL
6 6" PROCESS UNIT #1 EFFLUENT
7 3" POTABLE WATER SUPPLY
8 4" AIR LINE TO PROCESS UNIT #1
9 6" PLANT EFFLUENT
10 ELECTRICAL TO PROCESS UNIT
11 8" FORCE MAIN
12 6" EXCESS FLOW
13 6" INFLUENT TO PROCESS UNIT #2
14 8" PROCESS UNIT #2 BYPASS
15 8" CLARIFIER EFFLUENT
16 10" CHLORINE CONTACT TANK #2 EFFLUENT
17 6" SLUDGE WITHDRAWAL LINE
18 6" AIR LINE TO PROCESS UNIT #2
19 2" WASTE LINE TO PROCESS UNIT #2
20 10" CHLORINE CONTACT TANK #2 BYPASS
21 6" SLUDGE DISCHARGE LINE
22 6" AIR LINE TO PROCESS UNIT #1
23 6" PU #1 TO CCT #2
24 3" POTABLE WATER
25 1" AIR LINE TO GRIT CHAMBER

PROCESS LEGEND

A1 PROCESS UNIT #1–MIXING ZONE
B1 PROCESS UNIT #1–AERATION
C1 PROCESS UNIT #1–CLARIFIER
D1 PROCESS UNIT #1–AEROBIC DIGESTER
E1 SLUDGE STORAGE TANK (CONVERT FOR SEPTAGE)
F1 CHLORINE CONTACT TANK #1
H1 CONTROL BUILDING
I1 HEADWORKS BUILDING
J1 PROCESS UNIT #2–AERATION ZONES
K1 PROCESS UNIT #2–CLARIFIER
L1 PROCESS UNIT #2–AEROBIC DIGESTER
M1 CHLORINE CONTACT TANK #2
N1 PUMP STATION

LEACH ENGINEERING CONSULTANTS, P.A.
LYNDONVILLE, VERMONT

YARD PIPING
PLAN & SCHEDULE

WASTEWATER TREATMENT
FACILITY

BINGHAM, MAINE

DRAWN: CDM	CHK'D BY: K.I.T.	APP'D BY: GAL.
SCALE: 1" = 20'	DATE: 9-10-99	SHEET:

ATTACHMENT C

Practical Alternative Discharge Analysis

Record of Decision

Facility:
Permit #:
Project Mngr.:
Staff involved in decision:

Date:

REASON ALTERNATIVE IS NEEDED:

DESCRIPTION OF ALTERNATIVE PROPOSED:

FINAL DECISION:

Alternative Proposed is Practical: _____ **Alternative Proposed is Not Practical:** _____

CRITERIA FOR DECISION: (record a decision of yes or no for each criterion and a summary of the reason for the decision. Refer to the Practical Alternative Discharge Decision Guidance for information on each criterion)

Environmentally Feasible:

Technically Feasible:

Legal:

Within Power of Permittee to Accomplish:

Economically Feasible:

Other Issues:

Practical Alternative Discharge Analysis

Decision Guidance

CITATIONS:
The following citations apply:

38 MRSA, Sect. 464.4(A)(1) Waters having a drainage area of less than 10 square miles
38 MRSA, Sect. 465.2(C) Class A waters
38 MRSA, Sect. 465-A.1(C) Class GPA waters

These 3 sections state that discharges into these waters licensed prior to January 1, 1986 are allowed to continue only until practical alternatives exist. Because of the concise nature of this statement, the intent of the practical alternative discharge study requirement appears to be:

Investigate the complete elimination of the discharge regardless of its impact or nonimpact on the receiving water. If a practical alternative exists, the discharge must be eliminated even if BPT and receiving water quality standards are met. Alternatives can include closed loop systems with no discharges, land application, changing outfalls to larger nearby receiving waters, POTWs, etc.

If there is no practical alternative, the discharger still must meet the relicensing requirement of having to meet BPT, and if necessary to protect water quality, water quality limits.

DEFINITION:
It should be noted there is little if any legal guidance on how to determine if a proposed alternative is "practical". There is no definition of "practical" in Black's Law Dictionary, and the AG's office found no useful guidance. In order to determine if an alternative is "practical" the following definition of "practical" from Webster's Dictionary can be referenced:

Practical: 4. Capable of being used or put into effect: USEFUL; 5. Designed to serve a useful purpose; 7. Having or displaying good judgement: SENSIBLE.
Practical refers to something that is sensible and worthwhile.

CRITERIA FOR DECISION:
The following criteria should be considered when determining if an alternative is practical:

Environmentally Feasible: Will the alternative produce an environmental impact that will be, or may be, worse than the impact of the current discharge?

Technically Feasible: Is the technology to implement the alternative available to the applicant? Does the technology have a high likelyhood of successs?

Legal: Is the alternative proposed allowable under state and federal law?

Within Power of Permittee to Accomplish: Is the alternative within the power of the applicant to accomplish? I.e., is land required that the applicant does not own? Are local approvals required that can not be obtained?

Economically Feasible: Is the cost reasonable given the applicant's resources? A given cost may be reasonable for a large corporation, state, or federal facility but not reasonable for a small privately held facility. In determining if a cost is reasonable, formulas used by the Department's enforcement section may be useful.

Other Issues: Are there other site specific issues that may make the alternative impractical such as impacts on water levels, water rights issues, etc?