AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Water Act, as amended, (M.G.L. Chap. 21, §§ 26-53)

Dominion Energy Brayton Point, LLC
One Brayton Road
Somerset, MA 02725

is authorized to discharge from the facility located at

Brayton Point Station
One Brayton Point Road
Somerset, MA 02725

into receiving water named

Mount Hope Bay (Mount Hope Bay Basin, MA61-06, 61-07)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This Permit shall become effective on the first day of the calendar month following 60 days after signature. *

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit with an effective date of May 26, 2004.

This permit consists of 20 pages in Part I including effluent limitations, monitoring requirements, and state permit conditions; 1 page in Attachment A - "Chemicals Used"; 21 pages in Attachment B - "Marine Acute Toxicity Test Protocol and Procedures, September 1996" and "Marine Chronic Toxicity Test Protocol and Procedures, September 1996"; 6 pages in Attachment C – "Ambient Monitoring Locations"; and 25 pages in Part II including Standard Conditions and Definitions, January 2007.

Signed this day of

_____	_____
Stephen S. Perkins, Director	David Ferris, Director
Office of Ecosystem Protection	Massachusetts Wastewater Management Program
Environmental Protection Agency	Department of Environmental Protection
	Commonwealth of Massachusetts

* This Permit will become effective on the date of signature if no comments are received during public notice. If comments are received during public notice, this Permit will be made effective no sooner than 60 days after signature.

Part I.

A. Effluent Limitations, Conditions, and Monitoring Requirements

1. During the period beginning on the permit's effective date and lasting through its expiration, the permittee is authorized to discharge process water from **outfall serial number 001: the combined flow from internal outfall serial numbers 003, 004 and 005**.

   a. Such discharge shall be limited, monitored, and reported as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Ave. Monthly	Max. Daily	Measurement Frequency	Sample Type
Flow Rate, MGD Effluent	72	74	Continuous	Recorder[1]
Flow Rate, MGD, Influent[2]	70	70	Continuous	Recorder[1]
Temperature, ^{o}F[3]	Report	95	Continuous	Recorder
Total Residual Oxidant (TRO)[4] , mg/l	0.0375	0.065	Daily[4]	Grab[4]
pH, s.u.	6.5 - 8.5[5]		Weekly	Grab
Spectrus CT1300, ppm[6]	---	0.20	Daily (When in Use)	Grab
Copper, mg/l	0.0162	0.025	Weekly	Grab
Whole Effluent Toxicity[7, 8]				
LC50 (%)	---	Report	Quarterly	24 hour Composite[9]
A-NOEC (%)	---	Report	"	"
Ammonia (mg/l)	---	Report	"	"
Hardness (mg/l)	---	Report	"	"
Total Organic Carbon (mg/l)	---	Report	"	"
Total Aluminum (mg/l)	---	Report	"	"
Total Chromium (mg/l)	---	Report	"	"
Total Cadmium (mg/l)	---	Report	"	"
Total Copper (mg/l)	---	Report	"	"
Total Lead (mg/l)	---	Report	"	"
Total Nickel (mg/l)	---	Report	"	"
Total Zinc (mg/l)	---	Report	"	"

[1]The flow rate may be recorded using flow meters or estimated from pump capacity curves. The discharge flow rate is the total blowdown from cooling tower(s) plus flow from the wastewater treatment facility (including flow from metal cleaning operations).

[2]The influent flow shall be the total flow of cooling water withdrawn from the Taunton River intake structure.

[3]The discharge temperature shall be monitored approximately in the center of the discharge canal at the venturi. The hourly average discharge temperature shall not exceed 95 ^{0}F.

[4]The TRO concentration shall not exceed 0.065 mg/l as an "instantaneous maximum concentration" at the point of discharge into Mount Hope Bay. Samples shall be collected daily when chlorine is in use.

Total Residual Oxidants shall be measured using EPA approved method(s), 40 CFR Part 136, Table 1B.

For this permit, the Minimum Level (ML) for TRO has been defined as 0.02 mg/l and that value may be reduced as more sensitive test methods are approved by the EPA and the State. For any value below the ML of 0.02, the permittee shall use zero in the calculation of the monthly average TRO value.

[5]The pH shall not be less than 6.5 standard units or greater than 8.5 standard units or shall not be more than 0.2 standard units from the naturally occurring range.

[6]See Part I.A.7 of this permit for Spectrus CT1300 use requirements. The grab sample shall be taken after Spectrus CT1300 has been applied in the service water system for at least 4 hours. Only one grab sample per use of Spectrus CT1300 is required. The permittee shall use GE Betz's AP412 Methyl Orange Method to determine the outlet concentration.

[7]The permittee is required to report the results of chronic (and modified acute) WET tests using Inland Silverside (Menidia beryllina), acute WET tests using Mysid Shrimp (Mysidopsis bahia) and chronic Sea Urchin (Arbacia punctulata) WET tests on a quarterly basis. A 24-Hour composite sample is the required "sample type" for WET testing. If after eight consecutive sampling periods (two years of closed cycle operation), no test shows a LC_{50} < 100 % and a C-NOEC < 20%, the permittee may request a reduction in toxicity testing to twice per year. The permittee shall use the procedures and protocols contained in Attachment B to this permit when conducting the WET testing.

[8]At least one test per year shall be conducted during metal cleaning, if possible (i.e., during reduced operations including shutdown). The other three tests shall be conducted during normal operation. The permittee shall document and submit to EPA and MassDEP the operating conditions occurring during each WET test.

[9]Composite samples shall be comprised of at least 24 flow-weighted individual samples taken hourly over one 24 hour period (a full operational day, for example 7:00 am Monday through 7:00 am Tuesday).

2. During the period beginning on the permit's effective date and lasting through its expiration, the permittee is authorized to discharge from **internal outfall serial number 003: Cooling Tower Blowdown**.

a. Internal outfall 003 shall be monitored at a location that is representative of cooling tower blowdown (from one of the two blowdown pipes, except flow which shall be the combined total from the two blowdown pipes) and prior to mixing with any other wastewater stream. Such discharge shall be limited, monitored, and reported as specified below:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Ave. Daily	Max. Daily	Ave. Monthly	Monthly Total	Measurement Frequency	Sample Type
Flow, MGD	---	70	Report	---	Daily	Recorder[1]
Discharge Temperature[2], °F	Report	---	---	---	Continuous	Recorder[2]
Intake Temperature[2], F	Report	---	---	----	Continuous	Recorder[2]
Temperature Difference[3], (ΔT) °F	Report	----	---	----	Daily	Calculation[3]
Heat Load, BTU[4]	Report	---	---	Report	Daily	Calculation[4]
Free Available Chlorine (FAC), mg/l	0.2[5]	0.5[5]	---	---	Daily	Grab
126 priority pollutants	---	0[6]	0[6]	---	Yearly	Grab or Calculation[6]

[1]The flow rate may be recorded using flow meters. Flow will be reported as the combined value from the two blowdown pipes, as measured using in-line flow meters located after the static mixers.

[2] The discharge and intake temperatures will be recorded by instruments or computers. The average daily temperature shall be calculated as the 24-hour average of the hourly average (per calendar day) based upon at least twelve readings per hour (12 times per hour). The average daily temperature value will then be reported in the monthly DMRs.

[3]The Temperature Difference (ΔT) is the difference between the temperature of the discharge water and the temperature of the intake water, as determined by the method in footnote 2, above.

[4]The heat load shall be calculated on a daily basis using the following equation:

$$Q = C_p m(\Delta T)$$

Where Q = Heat Load, BTU/Day
C_p = Heat Capacity (Specific Heat) of pure water
= 1.0 BTU/pound°F
m = mass of water
= blowdown flow rate (MGD) x 8.34 pounds/gal
ΔT = discharge temperature at 003 - intake temperature, °F

The intake and discharge temperature will be recorded by instruments or computers. The average daily intake temperature shall be calculated as the 24-hour average (per calendar day) of the hourly average based upon at least twelve readings per hour.

The monthly heat load shall be calculated by adding each day's average heat load for that month. The facility shall sum the monthly heat loads (January - December DMRs) for the previous year, and shall report this value to EPA and the MassDEP in the following January DMR.

[5]The FAC concentration shall not exceed an instantaneous maximum concentration of 0.5 mg/l and an average daily concentration of 0.2 mg/l. Chlorine may be discharged from the cooling tower blowdown stream for more than two hours per day. Samples shall be taken when chlorine is in use.

For this permit, the Minimum Level (ML) for FAC has been defined as 0.02 mg/l and that value may be reduced as more sensitive test methods are approved by the EPA and the State. For any value below the ML of 0.02, the permittee shall use zero.

FAC shall be measured using the Amperometric Method, See 40 CFR Part 136, Table 1B.

[6]No detectable amounts from chemicals added for cooling tower maintenance (including chromium and zinc). Compliance with this limitation may be determined by engineering calculations (mass balance) which demonstrate that the regulated pollutants are not detectable in the final discharge by analytical methods in 40 CFR Part 136. EPA and/or MassDEP have discretion as to whether to accept this means of compliance in lieu of sampling.

3. During the period beginning on the permit's effective date and lasting through its expiration, the permittee is authorized to discharge from **internal outfall serial number 004: Wastewater Treatment Plant Effluent**.

a. Internal outfall 004 shall be monitored at a location that is representative of wastewater treatment plant effluent and prior to mixing with any other wastewater stream. Such discharge shall be limited, monitored, and reported as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate, MGD	2	4	Continuous	Recorder
Total Suspended Solids (TSS), mg/l	30	50	Weekly	24 hour composite[2]
Oil and Grease, mg/l	15	15	Weekly	Grab
Total Iron[1], mg/l	1.0	1.0	Weekly	24 hour composite[2]
Vanadium, mg/l	------	Report	Weekly	24 hour composite[2]
126 Priority Pollutants	------	Report	Quarterly	24 hour composite[2]
Nitrate as N, mg/l	------	Report	Quarterly	24 hour composite[2]
Aluminum, mg/l	------	Report	Quarterly	24 hour composite[2]
Cobalt, mg/l	------	Report	Quarterly	24 hour composite[2]
Manganese, mg/l	------	Report	Quarterly	24 hour composite[2]
Ammonia as N, mg/l	------	Report	Quarterly	24 hour composite[2]

[1]Iron samples shall be taken after treatment of metal cleaning waste and during normal station operation.

[2]Composite samples shall be comprised of at least 24 flow-weighted individual samples taken hourly over one 24 hour period (a full operational day, for example 7:00 am Monday through 7:00 am Tuesday).

4. During the period beginning on the permit's effective date and lasting through its expiration, the permittee is authorized to discharge from **internal outfall serial number 005: Metal Cleaning Effluent (including Equipment Wash and Rinse Water).**

   a. Internal outfall 005 shall be monitored at a location that is representative of metal cleaning wastewater and prior to mixing with any other wastewater stream. Such discharge shall be limited, monitored, and reported as specified below:

Effluent Characteristic	Discharge Limitations			Monitoring Requirements	
	Average Monthly	Total Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate, MGD	---	Report	2.03	Daily	Estimate
Total Copper, mg/l	1.0[1]	----	1.0	Daily[2]	Grab

[1]Average Monthly limit shall be determined by summing the values of the daily discharge concentrations, and then dividing that value by the number of daily discharges for the month.

[2]Daily samples shall be collected during days on which metal cleaning waste is discharged to the WWTF.

5. During the period beginning on the permit's effective date and lasting through its expiration, the permittee is authorized to discharge from **outfall serial number 017A: Intake Screen Wash**.

   a. Such discharge shall be limited, monitored, and reported as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Ave. Monthly	Max. Hourly	Measurement Frequency	Sample Type
Flow (million gallons per hour)	----	0.073	Daily	Estimate

   b. There shall be no discharge of floating solids, oil sheen or visible foam.

   c. All live fish, shellfish, and other aquatic organisms collected or trapped on the intake screens shall be returned to their natural habitat. All other material shall be removed from the intake screens and disposed of in accordance with all existing Federal, State, and/or Local laws and regulations that apply to waste disposal. Such material shall not be returned to the receiving waters.

6. During the period beginning on the permit's effective date and lasting through its expiration, the permittee is authorized to discharge from **outfall serial number 017B: Auto Strainer Backwash**.

   a. Such discharge shall be limited, monitored, and reported as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Ave. Monthly	Max. Hourly	Measurement Frequency	Sample Type
Flow (million gallons per hour)	---	0.146	Daily	Estimate

   b. There shall be no discharge of floating solids, oil sheen or visible foam.

7. Spectrus CT1300 may be used as a biocide subject to the following conditions:

   a. Spectrus CT1300 shall not be applied more than 6 times per year to any system. Each treatment shall not last longer than 18 hours.

   b. The dose rate of Spectrus CT1300 shall not exceed 8 ppm. The effluent concentration of CT1300 shall not exceed 0.2 ppm (see Part I.A.1 above).

8. The annual heat load to Mount Hope Bay shall not exceed 1.7 Trillion British Thermal Units (BTUs), as determined at outfall 003 (See Part I.A.2, footnote 4).

9. The combined intake of water for cooling shall not exceed 70 Million Gallons per Day (MGD).

10. During operation of Brayton Point Station, the permittee shall conduct biological/environmental studies as included in Part I.A.24 of this permit. Additional studies may be requested by the Regional Administrator of Region I EPA or his or her designee ("The Regional Administrator") and/or the Commissioner of MassDEP or his or her designee ("The Commissioner"). The purpose of any such studies shall be to evaluate the effects of Brayton Point Station's operation(s) on the balanced, indigenous population of shellfish, fish and wildlife in and on Mount Hope Bay.

11. This NPDES permit may be modified to contain additional or different thermal limitations if the above studies and/or other available information indicate such modifications are necessary to assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the receiving waters.

12. Sodium hypochlorite, Halogen hydantoin (chlorine) and/or Spectrus CT1300 may be used as a biocide. No other biocide shall be used without explicit approval from the Regional Administrator and the Commissioner.

13. The chemicals listed in Attachment A are approved, with limits, for discharge. The permittee may conduct pilot studies to test various chemicals (not listed in Attachment A)

and their effectiveness in the closed cycle cooling system (anti-scalants, dispersants, corrosion inhibitors, and foam control). The Permittee shall gain approval from EPA and MassDEP before any such studies take place. A report summarizing the results of any such studies shall be submitted to EPA and MassDEP regarding discharge frequency, concentration, and the impact, if any, on the receiving water. EPA and MassDEP may require, among other things, Whole Effluent Toxicity testing as part of feasibility studies. The Permittee may not discharge any chemicals (other than those listed in Attachment A or otherwise limited by this permit) until it receives written approval from EPA.

14. The discharges shall not jeopardize any Massachusetts Class SA or SB use of Mount Hope Bay and shall not violate applicable water quality standards or degrade the aquatic habitat quality.

15. Any change in the location, design or capacity of the cooling water intake structures shall be approved by the Regional Administrator and the Commissioner.

16. This permit shall be modified, revoked or reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 30l(b)(2)(C) and (D), 304(b) (2), and 207(a) (2) of the Act, if the effluent standard or limitation so issued or approved:

    a. contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or

    b. controls any pollutant not limited by this permit.

    If the permit is modified or reissued, it shall be revised to reflect all requirements of the Act applicable at the time of reissuance.

17. There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid. Compliance with this requirement shall be determined using EPA Method 608, as listed in 40 CFR Part 136. The permittee shall dispose of all known PCB equipment, articles, and wastes in accordance with 40 CFR 761. The permittee shall certify that this disposal has been accomplished.

18. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 CFR §122.42):

    a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

        1. One hundred micrograms per liter (100 µg/l);

        2. Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

3. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g) (7); or

4. Any other notification level established by the Director in accordance with 40 C.F.R. §122.44(f).

b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

1. Five hundred micrograms per liter (500 μg/l);

2. one milligram per liter (1 mg/l) for antimony;

3. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7); or

4. Any other notification level established by the Director in accordance with 40 C.F.R. §122.44(f).

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

19. There shall be no discharge of floating solids, oil sheen, or visible foam.

20. The use of Betz Foam-Trol 301 may be used in at a concentration of 0.08 mg/l during periods of heavy foam conditions. Foamtrol AF3551 may also be used to control foam. Foamtrol AF3551 may be applied at a concentration not to exceed 0.08 mg/l.

21. Untreated Coal Pile Runoff overflow, associated with a 10 year, 24 hour rainfall event, may be discharged from the facility in accordance with 40 CFR Part 423.12(b)(10).

22. Discharge Canal Net Requirements

a. The terminal end of the discharge canal shall be blocked by a net with a stretched mesh size not greater than 2 ½ inches to keep fish out of the canal.

b. The permittee shall count, identify, and estimate the size (total length in inches) of any dead fish collected in the net every week and report this information quarterly to the Regional Administrator and the Commissioner. The report(s) shall also contain an estimate on the number, size and species of fish sighted upstream and downstream of the net. If the report(s) indicate to the Regional Administrator and the Commissioner that the net fish barrier is ineffective, this permit may be modified to require an alternative fish barrier and an implementation schedule for its installation.

c. To ensure maximum survival of the fish entering the discharge canal, the Regional Administrator and the Commissioner may direct the permittee to alter the canal net conditions: (1) by changing the design of net installed; (2) by changing the net mesh size; (3) by modifying the existing net; or (4) by removing the net on either a short term (experimental or seasonal) basis or on a permanent basis.

d. The cod end of the net may be opened during maintenance and cleaning activities and, upon approval from Massachusetts Division of Marine Fisheries (DMF), during periods of high discharge temperatures.

e. The permittee will maintain a second barrier net for immediate replacement of an installed barrier net in the canal should the installed net become badly damaged.

f. The installed net shall be inspected every week from March 1st to December 1st each year and repaired as required.

23. Fish Mortality Provisions

a. Initial Notification and Response

1. If the permittee observes: (a) 50 or more dead fish of a single species from the following list: striped bass or bluefish or winter flounder or tautog or white perch; or (b) 100 of any other single species of fish (not named above) within any 24 hour period, the permittee will provide telephone notification to the Massachusetts Division of Marine Fisheries (DMF) and EPA, Office of Ecosystem Protection, within 4 hours of the observation (during normal business). If dead fish are observed during weekend, holiday or evening periods, the permittee will notify the DMF and EPA on the next business day.

2. On observation of fish mortalities sufficient to require notification, the permittee shall immediately initiate a separate hourly record showing: (a) the Discharge 001 temperature; (b) the dissolved oxygen levels at the Taunton River Intake Structures and at the venturi; and, (c) the number of dead fish observed by species.

3. On observation of fish mortalities sufficient to require notification, the permittee shall suspend all unit chlorination operations.

4. If after a 24 hour period from the suspension of chlorination, the fish mortalities do not exceed the levels set out in Paragraph a.1, the permittee will cease special monitoring and return to normal station operation (including unit chlorination).

b. Notification and Response in the Event of a Fish Kill

1. If the permittee observes, or the cumulative number of dead fish observed within any 24 hour period including a 24 hour period following the initial

observation exceeds: (a) 100 fish of any of the following species: striped bass, bluefish or winter flounder; or (b) 200 of any other single species of fish not named above, the permittee shall provide prompt telephone notification (within 4 hours during normal business hours) to the Massachusetts Division of Marine Fisheries, the Massachusetts Department of Environmental Protection Southeast Regional Office in Lakeville and Division of Watershed Management in Worcester, and the U.S. Environmental Protection Agency, Office of Ecosystem Protection, that a "Fish Kill" has occurred. If dead fish are observed during weekend, holiday or evening periods, the permittee will notify the DMF, MassDEP and EPA on the next business day.

2. On observation of a Fish Kill, the permittee shall immediately initiate a separate hourly record showing: (a) the Discharge 001 temperature; (b) the dissolved oxygen levels at the Taunton River Intake Structures and at the venturi; and (c) the number of dead fish observed by species. This record shall be maintained until advised by the DMF, MassDEP, or EPA to change to another monitoring program or discontinue the special monitoring effort.

3. On observation of a Fish Kill, the permittee shall immediately terminate all unit chlorination operations. Chlorination will be resumed only after approval has been received from the Regional Administrator and the Commissioner.

c. In the event of a Fish Kill in the discharge canal or in the thermal plume requiring telephone notification, the permittee will begin removing all dead fish from the canal, receiving waters, and/or from the affected beaches within four hours after the fish mortalities have been observed. The dead fish shall be enumerated in accordance with paragraph d below.

d. The dead fish shall be sampled and weighed as follows:

1. All dead fish shall be enumerated and recorded by species.

2. All dead fish shall be weighed to the nearest gram and measured to the nearest millimeter total length.

3. Scale samples shall be collected for the DMF for analysis from a representative sample of 25% of each fish species killed up to a maximum of 25 total fish specimens from each species: striped bass, bluefish, winter flounder, tautog, white perch, alewife/blueback herring, and menhaden. The scale samples shall be collected from the acceptable body locations for each individual species (as directed by the DMF). Sampled fish shall be appropriately preserved for future pathological examinations as may be directed by the DMF.

e. The permittee shall make a written report on any reported fish mortalities, within 10 business days to DMF, EPA Office of Ecosystem Protection, and MassDEP

Southeast Regional Office in Lakeville and Division of Watershed Management in Worcester.

24. Biological and Hydrological Monitoring

a. The permittee shall conduct the following programs of sampling and analysis each year:

1. Hydrological Data

i. The permittee shall profile salinity, pH, and dissolved oxygen at the five sampling stations shown in Figure 1 in Attachment C at 5-foot vertical intervals except for Station A where the samples will be taken 2 feet below the surface. The sampling frequency shall be: monthly from October through February, and approximately every 4 days from March through September when Mount Hope Bay ichthyoplankton samples are taken.

ii. The five stations in Figure 1 in Attachment C are identified as follows: "**I**" (intake), "**A**" (at the canal discharge venturi), "**A'**" (200 yards south of the venturi), "**C**" (mouth of the Lees River), and "**F**" (south of Spar Island).

iii. The permittee shall monitor temperature at the surface and bottom at the locations identified in Figure 6 in Attachment C. The temperature shall be monitored continuously.

2. Ichthyoplankton Data

i. The permittee shall sample ichthyoplankton with paired, 60 cm bridleless "bongo" nets fitted with 0.505 mm mesh netting at the 5 stations indicated on Figure 2 in Attachment C, (Nos. 1, 4, 5, 9 and 10).

ii. The permittee shall collect Mount Hope Bay samples once in the month of February and approximately every four days from March through mid-May.

iii. The samples shall be analyzed for species type and abundance.

iv. Ichthyoplankton entrained in intake cooling water will be enumerated separately in triplicate, once in February and every 4 days from March through mid-May using 0.505 mm mesh, 60 centimeter plankton nets.

3. Finfish Data

i. The permittee shall sample the finfish populations once each month

by means of an otter trawl along a series of six transects shown on Figure 3 in Attachment C, (Taunton River, Intake, Lee, Discharge, Cole, and Spar Island). The "Discharge Tow" shall be on the centerline of the plume at the time of the tow, if the bottom so permits.

ii. The permittee shall sample shallow-water finfish populations by beach seine each month at the four locations shown on Figure 4 in Attachment C (Intake, Lee, Cole, and Spar Island) during the period from March through November. On two occasions in June, the permittee shall survey upper Mount Hope Bay for abundance of young-of-the-year winter flounder. Ten random locations within the location shaded on Figure 4 in Attachment C will be sampled in triplicate by beach seine on each occasion.

iii. The permittee shall record the bottom, mid-depth and surface temperatures of the open water trawls (Figure 3 in Attachment C) and the surface temperature during seining operations (Figure 4 in Attachment C).

iv. The permittee shall identify, count, and measure the finfish impinged on the intake screens during three cleaning periods per week. The three cleaning periods shall be representative of one 8-hour cleaning cycle for each of the three work shifts: day shift, afternoon shift, and night shift. The cleaning cycles need not be consecutive during any one 16 or 24 hour period.

v. The permittee shall report all "unusual impingement events" at Brayton Point Station. An "unusual impingement event" is the impingement of a school of fish or a large number of a single species that exceeds historical normal impingement for the screens as developed through the statistical review of the historical data.

The unusual impingement events will be reported to the Massachusetts Division of Marine Fisheries, EPA's Office of Ecosystem Protection, and MassDEP at the Southeast Regional Office in Lakeville and Division of Watershed Management in Worcester, or their respective designees by telephone as soon as the permittee knows or has reason to believe (not to exceed 4 hours during normal business hours) an unusual fish impingement event has occurred. If dead fish are observed during weekend, holiday or evening periods, the permittee will notify the DMF, MassDEP, and EPA on the next business day. The permittee shall make a written report on the fish impingement incident within 5 work days to MA DMF, MassDEP, and EPA.

4. Benthic Invertebrate Data

The permittee shall collect quahogs annually from Stations A', and F on Figure 5 in Attachment C in April, July, and October and shall analyze them for: cadmium, copper, iron, lead, mercury, nickel, vanadium and zinc.

b. Contingency Plan

This Contingency Plan identifies actions that Brayton Point Station may undertake when improvements to the Biological and Hydrological Monitoring Program (BHP) are necessary. The Contingency Plan authorizes the evaluation, annually at a minimum, of the BHP and associated data, and, if necessary, requires recommendations for improvements in the BHP and the development of a Management Plan (See Management Plan, below).

1. BHP Evaluation

At a minimum, the BHP is evaluated through the following:

i. An annual review of the environmental/biological sampling and analysis plan and data.

ii. The identification of change in the aquatic or biological system.

iii. The determination of statistically significant change.

iv. The determination of biological importance.

v. The determination of the likelihood that Brayton Point Station contributed to the change.

vi. A review and analysis of BHP data variability and power analysis update.

vii. The identification of improved sampling and/or analysis technologies, including, but not limited to: statistical methods, sampling equipment, and modeling technologies.

2. BHP Evaluation Schedule

The BHP will undergo an annual review according to the following schedule:

i. **Sept. 1**: Permittee submits the results from the previous year's BHP to the Permitting Authorities.

ii. **Nov. 1**: Permitting Authorities submit comments and questions to the Permittee, if any.

iii. **Dec. 1**: Permittee schedules meeting to present data and review proposed BHP for the following year.

iv. **Feb. 1**: Improvements reviewed and approved by the Permitting Authorities.

v. **Mar. 1**: Permittee continues BHP and implements improvements, if applicable.

3. Management Plan

The BHP requires the Permittee to determine whether any adverse environmental impacts are occurring due to facility operations. If they are, then the Permittee shall, in a timely manner, develop and implement a Management Plan, approved by the Permitting Authorities, to prevent such impacts. A report on these efforts shall be submitted to EPA, MassDEP, and DMF every thirty days until the issue has been resolved.

c. BHP Improvements

This permit authorizes improvements, as approved by the Permitting Authorities, to the BHP when indicated by results and analysis of BHP data (acceptable data from other sources may also be considered). Analysis of data from measured parameters such as temperature, delta T, and rates of impingement, and entrainment indicate the need for monitoring program enhancements or improvements.

The Permitting Authority will require a review, at least annually, of sampling data and protocols and an evaluation of the need for more frequent sampling. Additional sampling locations and any other justified analytical or biological program improvements may be authorized. Prior to authorization, the permittee must seek input from biologists from DMF, MassDEP, CZM, RI DEM, NMFS, and/or EPA. This review will be chaired by the EPA with input from DMF, MassDEP, CZM, RI DEM, NMFS, and other agencies or experts as appropriate.

Within 30 days of authorization of biological program improvements, the permittee shall update and resubmit the Biological and Hydrological Monitoring Program to include any such improvements.

Examples of BHP improvements include, but are not limited to:

1. Additional sampling stations;

2. Increased sampling frequency;

3. Changes demonstrated to reduce data variability or increased analysis sensitivity;

4. Changes demonstrated to increase the power to detect statistical significance;

5. Collection of additional data demonstrated to more definitively determine Brayton Point Station impacts;

6. Additional predictive models such as species-specific population, community, and/or trophic level risk.

d. Results of biological and hydrological monitoring required in this section shall be summarized in a report and submitted on a semi-annual basis with an annual report summarizing the previous year's information and conclusions.

1. The annual report conclusions will indicate the trends of the various parameters analyzed and identify any anomalies that appear in the annual historical data comparison. These differences will be explained, if possible. The permittee will make recommendations for any remediation considered necessary or for any programs to better understand the anomaly.

2. The semi-annual or mid-year report will be a letter report providing the status of the present programs, the expected effort in the ensuing six months, and an alert to EPA and the State of any anomalies that may be evident in the first 6-months of data collection.

e. The permittee shall submit a yearly summary of the condenser cooling water biocide program as an integral part of the annual hydrological and biological report. The summary shall include the status of the biocide program in each unit: the chemicals being used, chemical consumption (daily/seasonal), equipment being used, TRO concentration in unit discharges and in Discharge 001, and environmental impacts noted. Annual program changes can be proposed (as with the biological and hydrological programs) concerning the biocide program: chemicals, equipment, procedures, sampling, analysis, etc.

B. Best Management Practices for Flue Gas Desulfurization Truck Wash Water

The permittee shall implement the following Best Management Practices (BMPs) for flue gas desulfurization waste truck loading and truck wash water:

1. All trucks loaded with desulfurization waste(s) shall be loaded within a closed area.

2. Desulfurization waste material shall be loaded: 1) when dry, waste shall be loaded pneumatically into enclosed trucks; or 2) when moist (40 -50 % moisture), waste shall be loaded into 18 wheel dump trucks. If loaded into dump truck(s), the material must be discharged through a long nozzle hose which extends into the truck or truck bed.

3. All trucks shall enter a truck wash area for cleaning before leaving the property. During cold weather conditions where freezing could be an issue, the trucks shall be visually inspected for cleanliness before leaving the property. All scrubber wash water shall be

collected and recycled back into the process in a closed system.

C. Monitoring and Reporting

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

   a. Submittal of Reports Using NetDMR

      NetDMR is accessed from: http://www.epa.gov/netdmr. **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt out request").

      DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports) to MassDEP until further notice from MassDEP.

   b. Submittal of NetDMR Opt Out Requests

      Opt out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt out request and such request is approved by EPA. All opt out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. MassDEP Monthly Operation and Maintenance Reports shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following addresses:

Massachusetts Department of Environmental Protection
Southern Regional Office - Bureau of Waste Prevention
20 Riverside Drive
Lakeville, Massachusetts 02347

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

Any verbal reports, if required in **Parts I** and/or **II** of this permit, shall be made to both EPA and to MassDEP.

D. State Permit Conditions

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the

Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 C.M.R. 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

E. Reopener Clause

1. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (d), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

   a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   b. Controls any pollutants not limited in the permit.

NPDES Permit No. MA0003654 – Attachment A

CHEMICAL NAME	AMOUNT, LBS/YEAR	PURPOSE
Ammonia Biflouride	9,800	Chemical Clean
Hydroxyacetic Acid	68,000	Chemical Clean
Formic Acid	29,000	Chemical Clean
Hydrochloric Acid	47,000	Chemical Clean
Hydrofloric Acid	500	Chemical Clean
Ammonium Bicarbonate	3,200	Chemical Clean
Ammonium Carbonate	1,000	Chemical Clean
Ammonium Hydroxide, 28%	20,000	Chemical Clean
EDTA	150,000	Chemical Clean
Sodium Hydroxide, 50%	400,000	Demineralizer Regeneration
Sodium Hydroxide, 50%	53,000	Chemical Clean
Sodium Hydroxide, 25%	50,000	Bottom Ash pH control
Sodium Hydroxide, 100%	200	Steam Cycle
Sodium Hypochlorite	100,000	Condenser Biofouling Control
Sodium Hypochlorite (12-15%)	3,000,000	Cooling Tower Biofouling Control
Sodium Hypochlorite	10,000	Closed Cycle Biofouling Control (spot)
Sodium Bisulfite	744,000	Dechlorination
Sodium Bisulfite	50,000	Cooling Tower Biofouling Control Treatment
Disodium Phosphate	1,000	Steam Cycle
Trisodium Phosphate	1,000	Steam Cycle
Sulfuric Acid, 98%	300,000	Demineralizer Regeneration
Hydrazine, 28%	2,000	Steam Cycle
Hydrazine, 28%	4,900	Chemical Clean
Spectrus CT1300	50,000	Biocide
Spectrus DT1400 and 1401		Detoxify Spectrus CT1300
Sodium Nitrite	1,000	Bearing Water Treatment
Sulfuric Acid	170,000	WWTS Treatment
Sulfuric Acid	300,000	Closed Cycle Anti-Scalant
Foamtrol AF3551	0.08 mg/l per minute	Foam Control
Depositrol 6501	80,000	Dispersant//Corrosion Inhibitor

Figure 1. Hydrographic Sampling Stations in Mount Hope Bay.

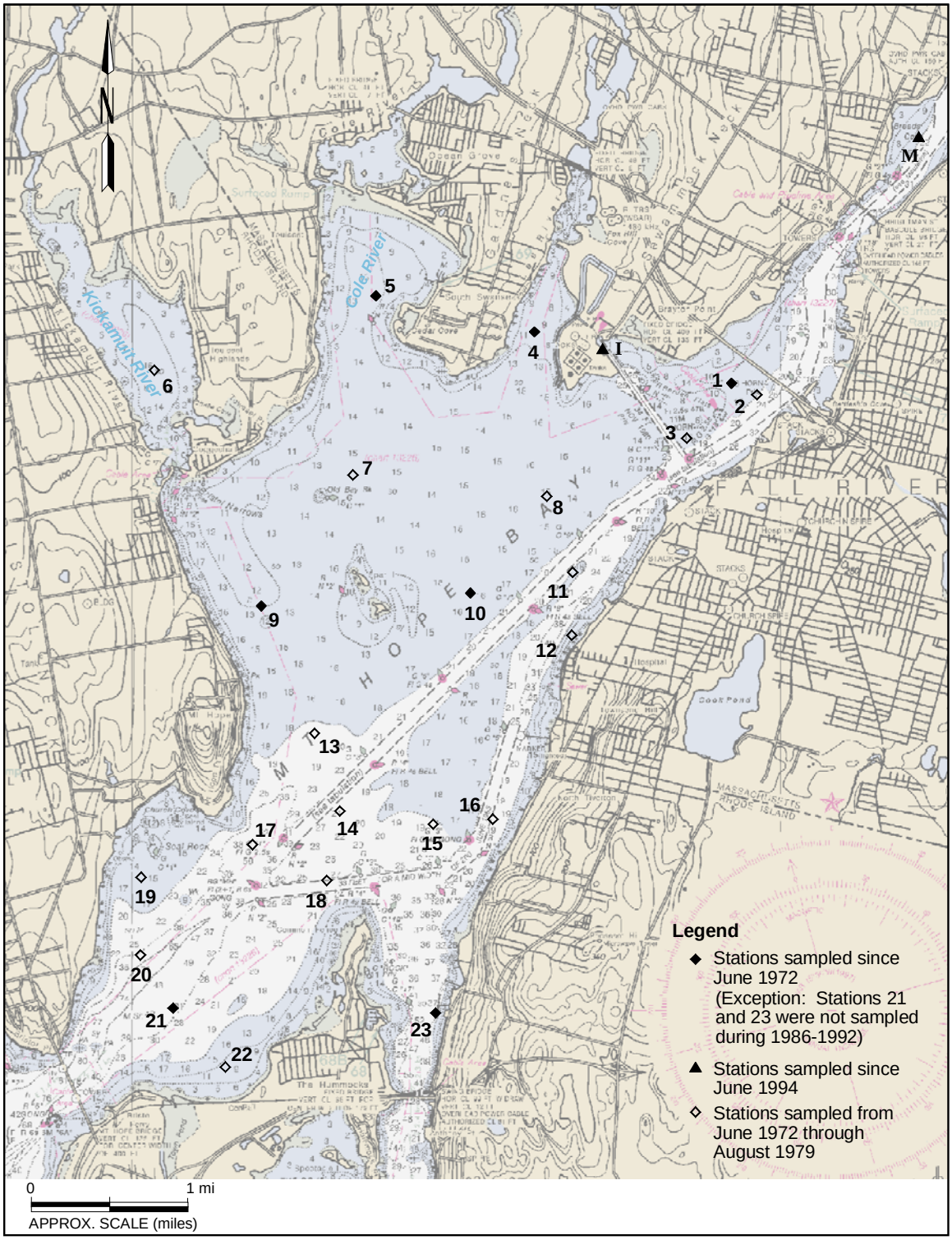

Figure 2. Mount Hope Bay ichthyoplankton sampling locations.

Figure 3. Fixed transects sampled in the Standard Otter Trawl Program (All transects were 1,143 m [1,250 yd] long).

Figure 4. Four fixed stations in Mount Hope Bay sampled by 60- and 300-ft beach seines (core beach seine program).

Figure 5. Benthic Locations

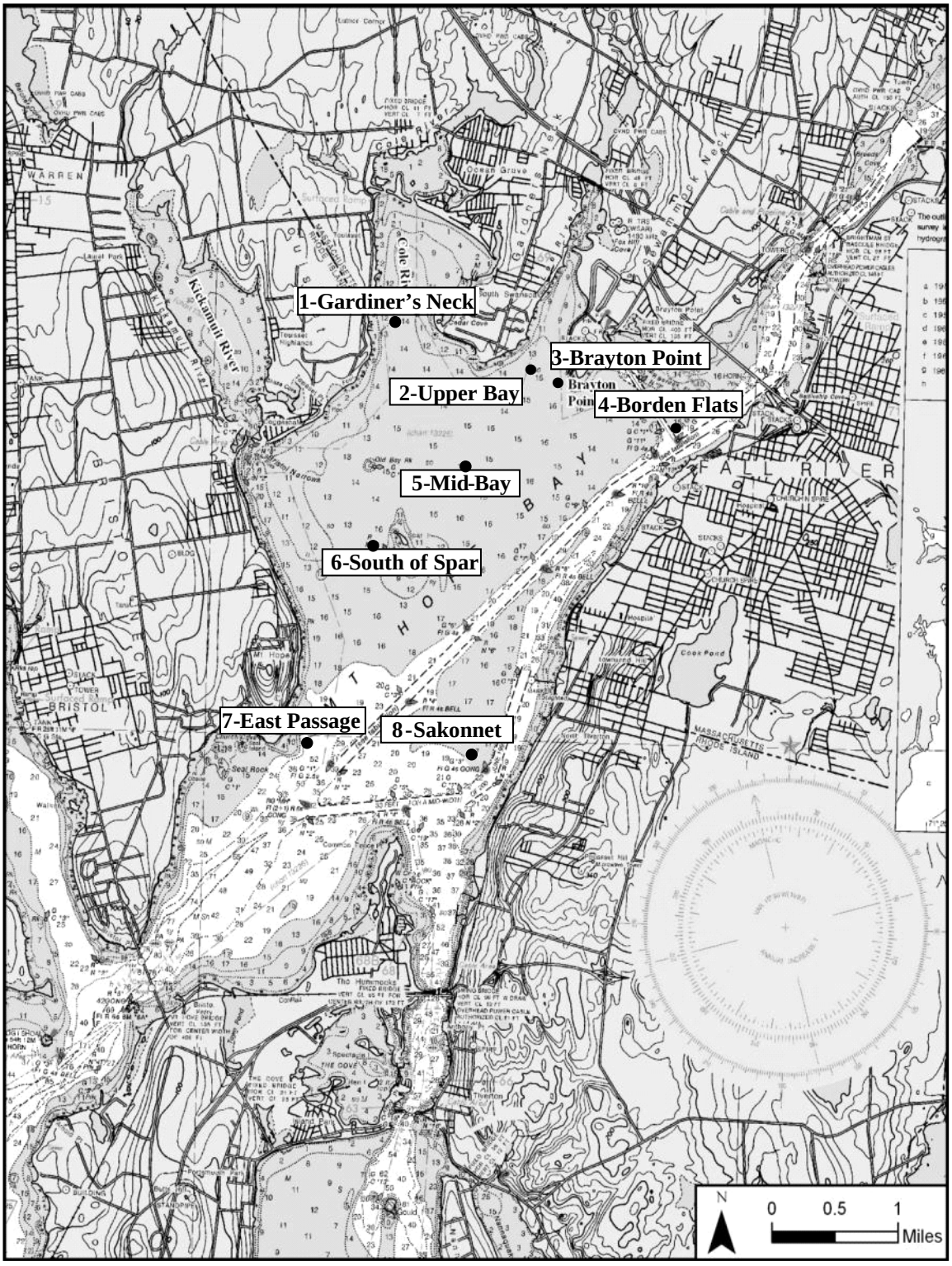

Figure 6. Thermistor Sampling Stations in Mount Hope Bay