

Gardner Water & Wastewater Departments
99 Heywood Street, Gardner, MA 01440
Tel: 978.630.8791 • Fax: 978.630.8792
www.unitedwater.com



December 2, 2009

US EPA, Region 1
PWTF GP Processing
Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
P.O. Box 8127
Boston, MA 02114-2023

DEC - 8 2009

Re: NOI - Request for General Permit Authorization to Discharge Wastewater
Crystal Lake Water Treatment Facility – MAG640041
City of Gardner Massachusetts

Dear USEPA Region 1,

As required and enclosed for submission, please find the Notice of Intent (NOI) to be covered by the General Permit for Potable Water Treatment Facility Discharges, along with all required supporting documentation. The Crystal Lake Water Treatment Facility is currently discharging under Permit No. MAG640041. These requirements were completed and submitted by United Water Operating Services for the City of Gardner.

If you have any questions or require more information, please contact me at (978) 630-8791.

Sincerely,
United Water Services

A handwritten signature in black ink, appearing to read "Paul F Donahue", written over a horizontal line.

Paul F Donahue
Project Manager
Gardner Water Department

Enclosures: NOI Application and Supporting Documentation

cc: MA DEP, Division of Watershed Management
Dane Arnold, Gardner, DPW Director
File, Gardner Water Department

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
ONE CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

Request for General Permit Authorization to Discharge Wastewater
(Notice of Intent to be covered by the General Permit (NOI))

Potable Water Treatment Facility (PWTF)
NPDES General Permit No. MAG640000 and NHG640000

A. Facility Information

DEC - 8 2009

1. Facility Owner:

Name CITY OF GARDNER e-mail damold@gardner-ma.gov
Street/PO Box CITY HALL, 95 PLEASANT STREET City GARDNER
State MA Zip Code 01440
Contact Person DANE ARNOLD Telephone Number 978-632-7661

2. Facility Operator (if different from above):

Name UNITED WATER NACO e-mail (optional) paul.donahue@unitedwater.com
Street/PO Box 99 HEYWOOD STREET City GARDNER
State MA Zip Code 01440
Contact Person PAUL DONAHUE Telephone Number 978-630-8791

3. Facility Data (attach topographic map or other map showing facility and discharge location(s)):

Name CRYSTAL LAKE WATER TREATMENT FACILITY e-mail (optional) paul.donahue@unitedwater.com
Street/PO Box 99 HEYWOOD STREET City GARDNER
State MA Zip Code 01440
Contact Person PAUL DONAHUE Telephone Number 978-630-8791
Facility Latitude 42 34 57 Facility Longitude -71 59 23

4. Standard Industrial Classification (SIC Codes) and Descriptions of Processes:

SIC Code(s) 4941
Description(s) WATER SUPPLY FACILITY

5. Current Permitting Status (please check yes or no):

1. Has a prior NPDES permit been granted for the discharge? Yes ☒ (Permit Number: MAG640041)
No ☐
2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes ☐ No ☒
3. Is the facility covered by an individual NPDES permit? Yes ☐ (Permit Number) No ☒
4. Is there a pending application on file with EPA for this discharge? Yes ☒ (Date of submittal: 09/12/08) No ☐

B. Discharge Information

1. Name of Receiving Waterbody CRYSTAL LAKE
2. Type of Receiving Waterbody (e.g. stream, lake, reservoir, estuary etc) LAKE
3. State Water Quality Classification: A Freshwater: MILLERS BASIN Marine Water:
4. Describe the discharge activities for which the owner/applicant is seeking coverage, including process discharges not specifically authorized in the PWTF GP which need to be authorized for discharge (and which attain the

effluent limits and other conditions of the general permit). This description should include all treatment methods used on the wastewater prior to discharge including lagoons, baffles, filter presses etc. If lagoons are used at the facility, please include the number and size of lagoons; the size and elevation of the entry pipe; the time of travel from the entry point of the discharge into the lagoon to the entry point to the receiving water; and the length of backwash cycle for any combination of number of filters. (attach extra sheets if necessary):

CRYSTAL LAKE WATER TREATMENT FACILITY UTILIZES A MICRO-FILTRATION PROCESS WITH DIRECT COAGULATION. FILTER RECYCLE & BACKWASH WASTE IS COLLECTED & RETURNED BACK TO THE SOURCE. PRIOR TO DISCHARGE BACK TO CRYSTAL LAKE, THE WASTEWATER IS TREATED FOR PH & CHLORINE RESIDUAL IN A NEUTRALIZATION PROCESS. CURRENT TREATMENT PROCESS USES A COAGULANT CALLED POLY ALUMINUM CHLORIDE. THIS IS THE ONLY TREATMENT PRIOR TO THE FILTER WASTE STREAM. THE COAGULANT DOES NOT INTERFERE WITH NORMAL DAY TO DAY PH LEVELS, ELIMINATING THE NEUTRALIZATION PROCESS, ALLOWING THE FACILITY TO DIRECTLY DISCHARGE WASTE BACK TO THE SOURCE. IF NEUTRALIZATION IS REQUIRED DUE TO CHEMICAL WASHES ON THE MICRO-FILTRATION MEMBRANES THE PLC/SCADA SYSTEM WILL ADD CHEMICAL NEEDED TO MAINTAIN PH LEVEL WITHIN REQUIRED RANGE. THIS IS DONE BY USING EITHER SODIUM HYDROXIDE, SODA ASH, OR CITRIC ACID. CHLORINE RESIDUAL WILL BE ELIMINATED USING SODIUM BISULFITE. THE 15,000 GAL NEUTRALIZATION TANK IS LOCATED WITHIN THE TREATMENT FACILITY. NEUTRALIZED WATER IS PUMPED BACK TO THE SOURCE AT 500 GPM. IF THE PROCESS FAILS, WATER WILL BE PUMPED TO THE MUNICIPAL SEWER SYSTEM

5. Please provide a diagram depicting the treatment methods, outfalls, and receiving water.

6. Number of outfalls: 1 Latitude and Longitude for each outfall (attach additional pages if necessary)
 OUTFALL # Latitude 42 34 59 Longitude -71 59 21
 OUTFALL # Latitude Longitude

For each outfall:

7. What is the proposed sampling location(s) and proposed consistent times of the month for collecting samples:

SAMPLES TAKEN AT TREATMENT PLANT OUTFALL, AFTER FLOW MEASUREMENT, PRIOR TO ENTERING THE SOURCE. MONITORING OCCURS MONDAYS DURING THE HOURS OF 7:00-3:00, SAMPLES ARE TAKEN DURING PLANT OPERATION AT 7:00am, 9:00am, 11:00am & 1:00pm

C. Effluent Characteristics

1. List here and attach information on any water additives used at the facility (Including chemicals for pH adjustment, dechlorination, control of biological growth, and control of corrosion and scale in water pipes): POLY ALUMINUM CHLORIDE SODIUM HYPOCHLORITE, SODA ASH, AMMONIUM SULFATE, SODIUM FLUORIDE, CITRIC ACID, SODIUM HYDROXIDE, SODIUM BISULFITE

2. Please report here any known remediation activities or water-quality issues in the vicinity of the discharge.

3. Are aluminum-containing coagulants used at this facility? Yes ☒ No ☐

4. Does the discharge contain residual chlorine? Yes ☐ No ☒

5. Does the facility provide treatment to remove arsenic from the raw water source? Yes ☐ No ☒

6. Are phosphorus-containing chemicals added to the treated water at this facility? Yes ☐ No ☒

7. All applicants must attach a separate sheet listing all laboratory results (minimum of five) for total recoverable aluminum (in micrograms per liter) taken within the last six months. Do not include dilution when recording your results. See Section 4.4.5 of General Permit for more information.

8. Please include the following effluent data for each outfall:

Characteristic (report if measured)	Average Monthly	Maximum Daily
Discharge Flow (gpd)	185,000	587,000
TSS (mg/l)	16.1	32.0
pH (s.u.)	(min) 6.78	(max) 7.61
Total Recoverable Aluminum (ug/l)	1260	2650
Total Residual Chlorine (ug/l)	70	390

(continued on next page)

8. Continued

Characteristic (report if measured)

Whole Effluent Toxicity (%) LC50 _____ and/or C-NOEC _____

9. If the discharge contains aluminum and/or residual chlorine, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water, the dilution factor, and attach any calculations used to support stream flow and dilution calculations (See Appendix VII for dilution calculations and additional information):

7Q10 N/A cfs Dilution Factor 10:1 cfs

D. Endangered Species Act Eligibility

1. Using the instructions in Appendix I of the PWTF GP, under which criterion listed in Part II are you eligible for coverage under this general permit?

A ☒ B ☐ C ☐ D ☐ E ☐ F ☐

2. If you selected criteria D or F, has consultation with the federal services been completed? Yes ☐ No ☐

3. If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Yes ☐ No ☐

4. Attach documentation of ESA eligibility as described below and required at Part 3.4.1 and Appendix I, Part III, Step 4, of the General Permit.

Criterion A - No federally-listed threatened or endangered species or federally-designated critical habitat are present: A copy of the most current county species list pages for the county(ies) where your site or facility and discharges are located. You must also include a statement on how you determined that no listed species or critical habitat are in proximity to your site or facility or discharge locations.

Criterion B - Section 7 consultation completed with the Service(s) on a prior project: A copy of the USFWS's and/or NMFS's, as appropriate, biological opinion or concurrence on a finding of "unlikely to adversely effect" regarding the ESA Section 7 consultation.

Criterion C - Activities are covered by a Section 10 Permit: A copy of the USFWS's and/or the NMFS's, as appropriate, letter transmitting the ESA Section 10 authorization.

Criterion D - Concurrence from the Service(s) that the discharge is "not likely to adversely affect" federally-listed species or federally-designated critical habitat (not including the four species of concern identified in Section I of Appendix I): A copy of the USFWS's and/or the NMFS's, as appropriate, letter or memorandum concluding that the discharge is consistent with the general permit's "not likely to adversely affect" determination.

Criterion E - Activities are covered by certification of eligibility: A copy of the documents originally used by the other operator of your site or facility (or area including your site) to satisfy the documentation requirement of Criteria A, B, C or D.

Criterion F - Concurrence from the Service(s) that the discharge is "not likely to adversely affect" species of concern, as identified in Section I of Appendix I: A copy of the USFWS and/or the NMFS, as appropriate, concurrence with the applicant's determination that the discharge is "not likely to adversely affect" listed species.

E. National Historic Properties Act Eligibility

1. Using the instructions in Appendix III of the PWTf GP, under which criterion listed in Part III are you eligible for coverage under this general permit?

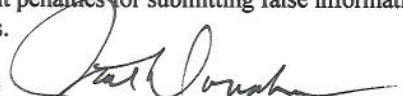
1 ☒ 2 ☐ 3 ☐

2. Have any State or Tribal historic preservation officers been consulted in this determination? Yes ☐ No ☒
If yes, attach the results of the consultation(s).

F. Certification

I certify that the discharge for which I am seeking coverage under the general permit consists solely of a surface water discharge from a potable water treatment facility. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature



Date

12/3/09

Printed Name and Title

Paul F Donahue, Project Manager

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

Note: Permits No. MAG640000 and NHG640000 may be found at www.epa.gov/region1/npdes/pwtfgp.html

APPENDIX II
ENDANGERED SPECIES ACT: COUNTY SPECIES LIST

The following is the US Fish and Wildlife Service (FWS) listing of federally endangered and threatened species for counties in Massachusetts and New Hampshire. The New Hampshire and Massachusetts lists were updated on 7/31/2008; however, please note that species are listed and de-listed periodically. To get the most current list at the time you are conducting your endangered species assessment, see the FWS Endangered Species Home Page at http://www.fws.gov/northeast/newenglandfieldoffice/EndangeredSpec-Consultation_Project_Review.htm

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
Berkshire	Bog Turtle	Threatened	Wetlands	Agreemont and Sheffield
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Raynham and Taunton
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague
	Dwarf wedgemussel	Endangered	Mill River	Whately
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Parula tiger beetle	Threatened	Sandy benches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hadley, Hatfield, Amherst and Northampton
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, and Wareham
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
Suffolk	Piping Plover	Threatened	Coastal Beaches	Winthrop
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster

- Eastern cougar and gray wolf are considered extirpated in Massachusetts.
- Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
- Critical habitat for the Northern Red-bellied cooter is present in Plymouth County.

7/31/2008

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN NEW HAMPSHIRE**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Belknap	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Meredith, Alton and Laconia
Carroll	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Albany, Eaton, Madison Wolfeboro, Brookfield and Wakefield
Coos	Canada Lynx	Threatened	Regenerating softwood forest, usually with a high density of snowshoe hare.	All Towns
	Dwarf wedgemussel	Endangered	Connecticut River main channel and Johns River	Northumberland, Lancaster and Dalton
Cheshire	Dwarf wedgemussel	Endangered	S. Branch Ashuelot River and Ashuelot River	Swanzy, Keene and Surry
Grafton	Dwarf wedgemussel	Endangered	Connecticut River main channel	Haverhill, Piermont, Orford and Lyme
	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Holderness
Hillsborough	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Weare
Merrimack	Karner Blue Butterfly	Endangered	Pine Barrens with wild blue lupine	Concord and Pembroke
	Small whorled Pogonia	Threatened	Forests	Danbury, Epsom, Warner and Allenstown
Rockingham	Piping Plover	Threatened	Coastal Beaches	Hampton and Seabrook
	Roseate Tern	Endangered	Atlantic Ocean and nesting at the Isle of Shoals	
	Small whorled Pogonia	Threatened	Forests	Northwood, Nottingham, and Epping
Strafford	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Middleton, New Durham, Milton, Farmington, Strafford, Barrington, and Madbury
Sullivan	Northeastern bulrush	Endangered	Wetlands	Acworth, Charlestown, Langdon and Walpole
	Dwarf wedgemussel	Endangered	Connecticut River main channel	Plainfield, Cornish, Claremont and Charlestown
	Jesup's milk-vetch	Endangered	Banks of the Connecticut River	Plainfield and Claremont

-Eastern cougar, gray wolf and Puritan tiger beetle are considered extirpated in New Hampshire.

-Endangered gray wolves are not known to be present in New Hampshire, but dispersing individuals from source populations in Canada may occur statewide.

-There is no federally-designated Critical Habitat in New Hampshire.

7/31/2008