



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Central Regional Office, 627 Main Street, Worcester, MA 01608

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

LAURIE BURT
Commissioner

Doug Halley, Health Director
Town of Acton
472 Main Street
Acton, MA 01720

RE: ACTON - BRPWP12 - #X230352
314 CMR 5.00, Groundwater Discharge
Town of Acton GW#656-2
Draft Permit & Public Notice

Dear Mr. Halley:

The Department has completed its review of your application for renewal of the Town's groundwater discharge permit (GW 656) for the discharge of treated wastewater to the ground at the municipal wastewater treatment plant on Adams Street. As part of our review process the Department conducted an inspection of the facility on November 18, 2009. A summary of that inspection is provided in the attached memo. The facility was found to be operating well and meeting its permit limits.

Enclosed for your review is a draft discharge permit (656-2) containing specific conditions developed for this discharge. The enclosed document should be considered a draft only, because of provisions in the law requiring public notice of the proposed issuance of the permit and providing opportunity for public comments and/or public hearing. If you find the draft permit to be acceptable, please publish the enclosed public notice in a newspaper of general circulation in the municipality where the facility is located. Following receipt of comments on the public notice, and if necessary the public hearing, the Department will issue a final determination to issue or deny the Discharge Permit #656-2

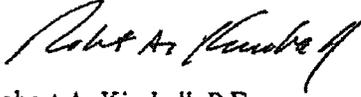
Enclosed herewith is a public notice to be published at the applicant's or permittee's expense in accordance with the requirements of 314 CMR 2.06. It is the applicant's responsibility to forward proof of publication to the Department at the above noted address. If you have any comments, please get back to the Department as soon as possible.

The mandatory thirty (30) day public comment period will commence with the date of publication of the public notice. It is in the permittee's best interest to publish this notice upon receipt and forward the proof of publication to the Department as soon as possible to avoid delays in proceeding with your permit renewal.

ACTON - GW#656-2
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If you have any questions or would like to discuss the draft permit, please contact David Boyer at (508) 767-2823.

Very truly yours,



Robert A. Kimball, P.E.
Environmental Engineer V
Bureau of Resource Protection

Dec 14, 2009
Date

Db/hs: gw 656-2 cvr-002

Enclosure

cc: Wastewater Management, DEP-Boston

Dana Samuelson, DEP

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF RESOURCE PROTECTION
627 MAIN STREET
WORCESTER, MASSACHUSETTS 01608
TELEPHONE (508) 792-7650

PUBLIC NOTICE
GROUNDWATER PERMIT APPLICATION

Notice is hereby given that the following application for a ground water discharge permit is being processed and that the following actions being proposed thereon pursuant to Section 43 of Chapter 21 of the General Laws, and 314 CMR 5.00 and 2.06:

APPLICANT: TOWN OF ACTON
PERMIT NO. 656-2
FACILITY LOCATION: ADAMS STREET, ACTON, MASSACHUSETTS
TYPE OF DISCHARGE: TREATED SANITARY DISCHARGE TO GROUND
QUANTITY OF DISCHARGE: 299,000 Gallons per Day
PROPOSED ACTION: Tentative Determination to Issue Permit

A copy of the application, draft permit, and statement of basis or fact sheet relative to the draft permit may be obtained from the Department's Permit Section at the above address and telephone number. Comments on the proposed action or requests for a public hearing thereon pursuant to 314 CMR 2.07 must be filed with the Department at the above address within thirty (30) days of this notice.

Robert A. Kimball, P.E.

MEMORANDUM FOR THE RECORD

BY: Margo Webber
SUBJECT: Acton – GW 656, November 18, 2009 Inspection

On November 18, 2009, the writer conducted an unannounced inspection of Acton's Municipal Wastewater Treatment Facility on Adams Street. Mike Gavin, operator, was present during the inspection. Rich Hunt of Woodward and Curran was also on site repairing some sludge pumps and installing some in line desiccants to the compressed air blowers. During past winters the blower's air line tubing clogged due to frozen water condensate in the air line.

The Acton WWT still experiences variations in flow during wet weather events, although the Town conducted I/I work in the spring and did remove some sources. Additional I/I work is planned.

Influent enters into an equalization tank (FET). Once a year this tank is emptied and cleaned of rag buildup. From the FET wastewater is pumped to the headworks room where it passes through a screen and a grit chamber. Operators power wash the screen and grit units weekly and lubricate them. Bags of Soda Ash are kept on hand. When the pH in the SBR is 6.8 or below, or when alkalinity drops below 100 mg/l, operators add a bag of soda ash manually to the end of the grit chamber during the SBR's fill cycle. Each SBR is monitored separately. The operator noted that the Town is considering installing a flow-proportioned chemical feed system (consisting of a drum and mixer) to automatically add soda ash or sodium bicarbonate based on flow rather than adding a whole bag at a time.

The two SBR's are monitored separately. Each SBR cycle is adjusted according to the individual readings in each process. During the summer when the schools are out, the wasting is reduced. At the beginning of each school year the influent ammonia level increases, requiring additional air to the treatment biological system. This in turn affects the nitrate and phosphorus concentrations, and increases the MLSS. As the biological treatment process stabilizes, the air rate is turned down. Alum addition for phosphorus is manually adjusted according to the instrument readings. At the time of the inspection the SBR's were operating with the following:

Mix Fill – 135 minutes
React- fill – 80 minutes
React – 139 minutes
Settle – 61 minutes
Decant – 15 minutes
Waste – SBR#1 – 12 minutes, SBR#2 – 13 minutes

During the react cycle the air is cycled on and off six times to achieve nitrification and denitrification. Phosphorus is removed by the BNR process and by adding some Alum during the last 15 minutes of each React cycle for approximately 4 minutes.

The in-line DO analyzer, and pH/ORP probes are located near the bottom of the SBR tanks. The probes tend to clog with solids and are not working. When this happens operators rely on daily



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 Commissioner

GROUNDWATER DISCHARGE PERMIT

Name and Address of Applicant: Town of Acton
Town Hall, 472 Main Street, Acton, MA 01720

Date of Application: October 14, 2009

Application/Permit No. 656-2

Date of Issuance: DRAFT

Date of Expiration: DRAFT

Effective Date: DRAFT

AUTHORITY FOR ISSUANCE

Pursuant to authority granted by Chapter 21, Sections 26-53 of the Massachusetts General Laws, as amended, 314 CMR 2.00, and 314 CMR 5.00, the Massachusetts Department of Environmental Protection (the Department or MassDEP) hereby issues the following permit to: **The Town of Acton** (hereinafter called "the permittee") authorizing discharges to the ground from the on site wastewater treatment facility located at 20 Adams Street in Acton, such authorization being expressly conditional on compliance by the permittee with all terms and conditions of the permit hereinafter set forth.

Bureau of Resource Protection

Date

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD Service - 1-800-298-2207.

MassDEP on the World Wide Web: <http://www.mass.gov/dep>

Printed on Recycled Paper

I. SPECIAL CONDITIONS

A. **Effluent Limits**

The permittee is authorized to discharge into the ground from the wastewater treatment facilities for which this permit is issued a treated effluent whose characteristics shall not exceed the following values:

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>
Flow	299,000 gpd
Biochemical Oxygen Demand (BOD ₅)	20 mg/l
Total Suspended Solids (TSS)	20 mg/l
Nitrate Nitrogen	10 mg/l
Total Nitrogen (NO ₂ + NO ₃ + TKN)	10 mg/l
Total Phosphorus	0.5/0.2 mg/l*
Oil & Grease	15 mg/l
Fecal Coliform	200/100ml

* The Total Phosphorus shall be a maximum daily limit of 0.5 mg/l and a monthly average limit of 0.2 mg/l.

- a) The pH of the effluent shall not be less than 6.5 nor greater than 8.5 at any time or not more than 0.2 standard units outside the naturally occurring range.
- b) The discharge of the effluent shall not result in any demonstrable adverse effect on the groundwater or violate any water quality standards that have been promulgated.
- c) The monthly average concentration of BOD and TSS in the discharge shall not exceed 15 percent of the monthly average concentrations of BOD and TSS in the influent into the permittee's wastewater treatment facility.
- d) When the average annual flow exceeds 80 percent of the permitted flow limitations, the permittee shall submit a report to the Department describing what steps the permittee will take in order to remain in compliance with the permit limitations and conditions, inclusive of the flow limitations established in this permit.

B. Monitoring and Reporting

- 1) The permittee shall monitor and record the quality of the influent and the quality and quantity of the effluent prior to discharge to the leaching facilities according to the following schedule and other provisions:

INFLUENT:

<u>Parameter</u>	<u>Minimum Frequency of Analysis</u>	<u>Sample Type</u>
BOD ₅	2 x Monthly	24-Hr. Composite
TSS	2 x Monthly	24-Hr. Composite
pH	Daily	Grab
Ammonia Nitrogen	Monthly	24-Hr. Composite
Total Phosphorus	1 x Monthly	Grab

EFFLUENT:

<u>Parameter</u>	<u>Minimum Frequency of Analysis</u>	<u>Sample Type</u>
Flow	Daily	Reading
pH	Daily	Grab
UV Intensity	Daily	Reading
BOD ₅	2 x Monthly	24-Hr. Composite
TSS	2 x Monthly	24-Hr. Composite
Nitrate Nitrogen	2 x Monthly	24-Hr. Composite
Total Nitrogen (NO ₂ + NO ₃ + TKN)	2 x Monthly	24-Hr. Composite
Oil & Grease	Quarterly	Grab
Fecal Coliform	2 x Monthly	Grab
Total Phosphorus	2 x Monthly	Grab
Orthophosphate	2 x Monthly	Grab
Volatile Organic Compounds (US EPA Method #624)	2 x Annually	Grab

- 2) The permittee shall sample the upgradient monitoring well, MW-1 and the downgradient monitoring wells MW-2, MW-3, MW-4, MW-5 and MW-6. Labels identifying each monitoring well's identification in accordance with the above-referenced approved plan shall be affixed to the steel protective casing of each monitoring well.

The permittee shall monitor, record and report the quality of water in the monitoring wells according to the following schedule and other provisions:

<u>Parameter</u>	<u>Minimum Frequency of Analysis</u>
pH	Monthly
Static Water Level*	Monthly
Specific Conductance	Monthly
Nitrate Nitrogen	Quarterly
Total Nitrogen (NO ₂ + NO ₃ + TKN)	Quarterly
Total Phosphorus (as P)	Quarterly
Orthophosphate (as P)	Quarterly
Volatile Organic Compound (US EPA Method #624)	2 x Annually

* Static Water Level shall be expressed as an elevation and be referenced to the surveyed datum established for the site. It shall be calculated by subtracting the depth to the water table from the surveyed elevation of the top of the monitoring well's PVC well casing/riser.

- 3) Any grab sample or composite sample required to be taken less frequently than daily shall be taken during the period of Monday through Friday inclusive. All composite samples shall be taken over the operating day.
- 4) The permittee shall monitor and record the quality of the surface water from two locations in the adjacent stream (Up-Stream near the road and Downstream near the Assabet River) and from the Assabet River according to the following schedule and other provisions:

<u>Total and Dissolved Phosphorus</u>	<u>1 x Quarterly</u>
<u>Nitrate-Nitrogen</u>	<u>1 x Quarterly</u>

The permittee shall submit all monitoring reports within 30 days of the last day of the reporting month. Reports shall be on an acceptable form, properly filled and signed and shall be sent to: the Deputy Regional Director, Bureau of Resource Protection, Department of Environmental Protection, Central Regional Office, 627 Main Street, Worcester, MA 01608, and to the Program Director, Wastewater Management, Bureau of Resource Protection, Department of Environmental Protection, One Winter Street/5th Floor, Boston, MA 02108, and to the Acton Board of Health, Town Hall, 472 Main Street, Acton, MA 01720.

Submission of monitoring reports in electronic format is available through eDEP and serves as data submission to both the Regional and Boston offices. To register for electronic submission go to:
<http://www.mass.gov/dep/service/compliance/edeponlf.htm>

C. Supplemental Conditions

- 1) The permittee is responsible for the operation and maintenance of all Municipally owned sewer lines, pump stations, and treatment units for the permitted facility, which shall be operated and maintained under the direction of a properly certified wastewater operator. Town/Sewer Ordinance should be required to address privately owned sewers and pump stations.
- 2) A staffing plan for the facility shall be submitted to the Department once every two years and whenever there are staffing changes. The staffing plan shall include the following components:
 - a) The operator(s)'s name(s), operator grade(s) and operator license number(s);
 - b) The number of operational days per week;
 - c) The number of operational shifts per week;
 - d) The number of shifts per day;
 - e) The required personnel per shift;
 - f) Saturday, Sunday and holiday staff coverage;
 - g) Emergency operating personnel
- 3) The permittee shall maintain a set of local regulations and bylaws that will prohibit the dumping of toxic chemicals to the sewer line.
- 4) The WWTF is approved to accept sanitary "tight tank" waste. Subject to submission to and approval by MADEP of a final plan, the WWTF may be authorized to accept limited amounts of septage under special conditions, but not grease.
- 5) Operation and maintenance of the proposed facility must be in accordance with 314 CMR 12.00, "Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Discharges", and, 257 CMR 2.00, "Rules and Regulations for Certification of Operators of Wastewater Treatment Facilities.

- a) The facility has been rated (in accordance with 257 CMR 2.00), to be a Grade 5 facility. Therefore, the permittee shall provide for oversight by a Massachusetts Certified Wastewater Treatment plant operator (Chief Operator) Grade 5 or higher. The permittee will also provide for a backup operator who shall possess at least a valid Grade 5 license.
- 6) If the operation and maintenance of the facility is to be contracted to a private concern, the permittee shall submit a copy of the contract, consistent with what is required by the approved Operation & Maintenance manual and signed only by the contractor, to the appropriate MassDEP Regional Office for review and approval ninety (90) days **prior** to a change in contractor. Along with the contract, a detailed listing of all contract operation obligations of the proposed contractor at other facilities shall also be submitted.
- 7) All tests or analytical determinations to determine compliance with permit standards and requirements shall be done using tests and procedures found in the most recent version of *Standard Methods for the Examination of Water and Wastewater* and shall be performed by a Massachusetts Certified laboratory.
- 8) The permittee shall notify the appropriate MassDEP Regional Office, in writing, within thirty (30) days of the following events:
 - a) Any interruption of the treatment system operation, other than routine maintenance.
 - b) Final shutdown of the treatment system.
- 9) The permittee shall contract to have any and all solids and sludges generated by the treatment system for which this permit is issued removed off site by a properly licensed waste hauler for disposal at an EPA/MassDEP approved facility. The name and license number of the hauler along with the quantity of wastes removed and the date(s) of removal shall be reported by the permittee in writing to the appropriate MassDEP Regional Office.
- 10) On an annual basis the permittee shall conduct a baseline wetlands determination of the site. A report shall be submitted to the Department for review and approval and any appropriate measures shall be undertaken according to the Department approval.

- 11) On an annual basis the permittee shall conduct an evaluation of the slope stability and erosion at the site. A report shall be submitted to the Department for review and approval and any appropriate erosion control/stability measures shall be undertaken according to the Department approval.
- 12) Simultaneously with the permit renewal application at year fifteen (2016) following the initiation of plant operations, the permittee shall submit an engineering report to the Department for its review and approval:
 - a. An engineering report, prepared by a registered professional engineer, that outlines in sufficient detail what modifications (if any) to the facility or other changes are required to insure that the facility can remain in compliance with its GWDP and other applicable requirements through the next 5 year permit term (year 20) and beyond.

D. Appeal Rights

This Permit is an action of the Department. Any person aggrieved by this action, may request an Adjudicatory Hearing. A request for a hearing must be made in writing and postmarked within thirty (30) days of the Permit issuance date. Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought.

The Hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a

waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

**COMMITMENT & INTEGRITY
DRIVE RESULTS**

980 Washington Street, Suite 325 T 800.446.5518
Dedham, Massachusetts 02026 T 781.251.0200
www.woodardcurran.com F 781.251.0847



January 22, 2010

Doug Halley, Director of Health
Town of Acton
472 Main Street
Acton, Massachusetts 01720

Re: Review of 2010 Draft Groundwater Discharge Permit #656-2

Dear Doug:

Woodard & Curran has reviewed the 2010 Draft Groundwater Discharge Permit for the Wastewater Treatment Facility. This letter is a compilation of comments recommended to be submitted by the Town to MassDEP to ensure a more appropriate permit for the upcoming year.

A. Effluent Limits:

- The total phosphorus limit does not seem appropriate for groundwater discharge relative to all other phosphorus based factors. This limit should be more moderate.
- The fecal coliform limit is recommended to be replaced with e. coli which is a newly adopted DEP surface water standard.

B. Monitoring and Reporting:

- The past eight years of reporting of well sampling and analysis is consistent enough to suggest reduction in frequency of well sampling and analysis from quarterly to semi-annually. If quarterly sampling is not acceptable, recommend reduction of sampling for pH, static water level, and specific conductance from monthly to quarterly. Based on historical results the need for testing of volatile organic compounds in the wells should be reconsidered.
- Surface water monitoring of the Assabet River should be revised to testing in April – October rather than year round for winter safety issues as well as more valuable reporting in the growing season. The site locations should be better defined in the permit, and testing of dissolved oxygen would be more valuable than testing for dissolved phosphorus and nitrate-nitrogen samples of the river have no value since it is not nitrogen limited.

C. Supplemental Conditions:

- A new testing methodology is recommended for total nitrogen that is more environmentally friendly and cost effective. The new immersion style is recommended for nitrate and/or orthophosphate and ORP. The luminescent style of testing is recommended to be used for dissolved oxygen.
- The frequency of slope stability and erosion and baseline wetlands determination reporting should be reduced from annually to once every two years.

Please contact our office to discuss these recommended comments.



Sincerely,

Woodard & Curran Inc.

A handwritten signature in black ink, appearing to read "Joseph D. Shea".

Joseph D. Shea, P.E.
Vice President

JCT/eh
207707

Enclosure(s)

cc: John Parkhurst, Plant Manger, W&C
Bill Luksha, Area Manager, W&C