

**STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION**



OFFICE OF ADJUDICATIONS

IN THE MATTER OF : ***APPLICATION NO.***
200702614

GREENS FARMS ACADEMY : ***FEBRUARY 26, 2009***

PROPOSED FINAL DECISION

I

SUMMARY

Greens Farms Academy (the applicant) filed an application with the Department of Environmental Protection (DEP or the department) in connection with its planned subsurface sewage disposal system. General Statutes § 22a-430. The applicant currently operates such a system that supports the facilities of the private day school under an existing permit. The requested permit would allow an expansion of the system to address future changes in enrollment and to address an ongoing issue with nitrogen levels from the currently authorized discharge.

The Commissioner issued a Notice of Tentative Determination that the proposed treatment system would protect the waters of the state from pollution. More than twenty five members of the public signed a petition requesting a hearing on the application and the proposed permit. General Statutes § 22a-430(b). The hearing request was timely and a hearing was held over three days. Evidence was presented by the applicant and DEP staff. The lead petitioner, Mr. Donald Sherman, was the sole member of the public to provide comment on the application.

On February 6, 2009, the applicant and DEP staff jointly filed the attached Agreed Draft Decision for my review and consideration. (Attachment A.) Regs., Conn. State Agencies §22a-3a-6(l)(3)(A). Staff has also prepared a revised draft permit authorizing the applicant's proposed project. (Attachment B.)

I have reviewed the evidentiary record, the Agreed Draft Decision, public comment, and the relevant law in this matter. The Agreed Draft Decision, as supplemented herein, sets forth findings that support the conclusion that the proposed treatment system, if constructed, operated, and monitored in accordance with the conditions of the proposed draft permit, would protect the waters of the state from pollution and would be consistent with all applicable goals and policies of the Coastal Management Act. I recommend that the Commissioner authorize the applicant to submit plans and specifications of the proposed water treatment system for approval and that upon approval and construction of the facility according to the approved plans and specifications, the proposed water discharge permit be issued.

II
DECISION

A
FINDINGS OF FACT

I adopt the findings set forth in the Agreed Draft Decision and make the following additional findings of fact.

1
The Applicant

1. The applicant is a private day school located at 35 Beachside Avenue in Westport. The school is situated on approximately forty two acres and is bordered by residential properties on Maple Lane and Increase Lane to the north and on Beachside Avenue to the south and east. The western portion of the property is bordered by New Creek Road and New Creek along with tidal wetlands adjacent to the school. (Ex. APP-1.)

Current Wastewater Discharge System

2. The school is currently served overall by a subsurface sewage disposal system that consists of two separate leaching systems. This system is subject to a permit issued by the DEP in 2005 and a subsequent modification issued in 2007. The primary leaching system is located to the north of the school's main parking area and the secondary system is located in the south lawn on the Beachside Avenue side of the school building. The overall system handles the school's current enrollment of 625 students. The existing permit is based on wastewater generation of 6.1 gallons per day (gpd) per student with a safety factor of 50 percent for a maximum generation of 9.2 gpd per student. The flow is first directed to the secondary system, which is permitted to handle a maximum flow of 900 gpd. After 900 gpd is pumped to the secondary system, the remaining flow is diverted to the primary system. The maximum total discharge is 6120 gpd. This includes the 600 gpd authorized for the small, residential leaching system that serves the headmaster's house and is located adjacent to the primary system. (Exs. APP-1, Tab 5, DEP-1.)

3. The monitoring results from monitoring wells downgradient from the primary leaching system demonstrate non-compliance for levels of nitrogen. The applicant attempted to address this issue by terminating its use of nitrogen containing cleaning materials and diverting stormwater to a point upgradient of the primary system for additional dilution. The secondary system was installed to reduce flow to the primary system. The monitoring wells downgradient of the secondary system indicate nitrogen levels in compliance with permit limits. The monitoring wells downgradient of the primary system continue to show nitrogen levels above the permit limits. (Ex. APP-1; test. 8/2/08, A. Daha.)

Proposed Wastewater Discharge System

4. The proposed system seeks to expand the maximum daily flow from 6120 gpd to 10338 gpd. This increase in flow is designed to allow an increase in enrollment at the school from 625 students to 715 students. The proposed system would add tertiary and

quaternary leaching systems under the athletic fields. The maximum flow to the primary system would be reduced from 5520 gpd to 2000 gpd. The maximum flow to the secondary system would remain 900 gpd and the maximum flows to the proposed tertiary and quaternary systems would be 4838 and 2000 gpd respectively. The maximum flow from the headmaster's system would remain 600 gpd. The maximum daily flow represents the average daily flow with an added 50 percent safety factor. The average daily flow to these fields would be less with the exception of the secondary system which will consistently receive 900 gpd as the first system dosed from the pump chamber. The average daily flows for the other systems would be 1333 gpd for the primary system, 3225 gpd for the tertiary, and 1333 gpd for the quaternary. The reduction in flow to the primary system will allow it to achieve the required downgradient nitrogen concentrations of ten milligrams per liter (mg/L) at the point of concern. (Exs. APP-1, Tabs 2 and 5, DEP-6.)

5. The tertiary and quaternary system will use precast concrete gallery leaching units four feet wide, eighteen inches high and eight feet long. For the tertiary system, these units will be arranged into two rows and each row will be comprised of four sections, fifty six feet long each and two sections, sixty four feet long each. The units for the quaternary system will be arranged into two rows with four sections seventy two feet long each and one section sixty four feet long. (Ex. APP-1, Tab 5.)

6. Sewage will pass from the school buildings through a grease trap and into a septic tank before entering the pump station wet well. The septic tank will provide for gravity separation of settleable and floatable material from the wastewater, some digestion of organic material, and storage of the solids removed from raw wastewater. The wastewater will then enter the pumping station where it will be sent via force main to the leaching systems. The leaching systems will be dosed in the following order: 900 gallons to the secondary system, 2150 gallons to the tertiary system, 980 gallons to the quaternary system and 375 gallons to the primary system. On a daily basis, the system will begin where it left off the previous day to avoid overdosing one leaching system. Up to 600 gallons from the headmaster's house will flow on its own to the primary system. (Ex APP-1, Tab 5.)

DEP Requirements

7. The proposed system has a flow over 5,000 gallons per day and must receive a DEP permit to operate. In order for a permit to issue, an applicant must demonstrate that the proposed activity is compliant with the CT water quality standards and DEP guidelines for subsurface sewage disposal systems. An applicant complies with these requirements by meeting these criteria: (1) at least two feet of unsaturated soil between the bottom of the leaching facilities and the saturated soils carrying the groundwater and wastewater flow; (2) the hydraulic characteristics shall be sufficient to contain wastewater flow below the ground surface to allow complete renovation of the effluent flow; (3) nitrogen levels shall not exceed ten mg/L at the point of discharge; (4) waste flows shall have a minimum of twenty-one days of travel time before reaching a point of concern, including any property line, wetland, watercourse, or subsurface drain; (5) sufficient soil shall be available to provide six months storage of phosphorus; and (6) the site shall have a fifty percent hydraulic reserve capacity. (Exs. APP-1, DEP-14; test. 12/2/08, A. Greene, A. Daha.)

Groundwater and Soil Analysis

8. The applicant studied the sites for the tertiary and quaternary systems, including extensive groundwater and soils analysis to understand their ability to support the proposed systems. For the tertiary system, monitoring wells MMI-1, MMI-2, MMI-4, and OW-1 were evaluated for water quality and groundwater levels. OW-1 is located upgradient of the proposed tertiary system. MMI-4 is downgradient and MMI-1 and 2 are further downgradient. Water quality samples indicated background levels of nitrogen and phosphorous attributable to fertilizer use on the school's athletic fields and from private septic systems abutting the property. The applicant assumed a background level of 1 mg/L of nitrogen in its calculation for nitrogen dilution based on proper application of fertilizer detailed in the integrated turfgrass pest management and best management practice plan prepared by Dr. William M. Dest. Groundwater level elevations in the wells indicated that groundwater flows toward the northwest and New

Creek. This boundary is the point of concern used to determine travel times for effluent from the tertiary system. Test holes 201-203 were observed by DEP staff and the applicant's consultant for soil characteristics and samples were taken for permeability analysis. The test holes were not used for groundwater analysis. (Exs. APP-1, Appendix C, APP-7; test. 12/2/08 and 12/10/08, A. Greene.)

9. For the quaternary system, the applicant tested for water quality and groundwater levels using monitoring wells OW-5, OW-6, OW-7, OW-8, and OW-9. These wells indicated background nitrogen and phosphorous levels attributable to the use of fertilizers on the athletic fields and upgradient residential septic systems. A background level of 1 mg/L based on the implementation of Dr. Dest's plan is assumed. The groundwater level elevations were consistent throughout the sampling period and demonstrated that groundwater flows from the highest elevation at OW-9 to the south and then to the west towards the property boundary west of OW-6. This boundary is the point of concern used to determine travel times for effluent from the quaternary system. Test holes 101-108 were observed by DEP staff and the applicant's consultant for soil characteristics and samples were taken for permeability analysis. The test holes were not used for groundwater analysis. (Exs. APP-1, Appendix C, APP-7; test. 12/2/08 and 12/10/08, A. Greene.)

B

PUBLIC COMMENT

As discussed above, Mr. Sherman, the lead petitioner, was the sole member of the public to offer comment on the application and he offered it through his attorney, Joel Z. Green of Bridgeport, and a consultant, Mr. Alan Shepard, P.E. of Shelton. Mr. Shepard offered testimony under oath and was subject to cross examination by the parties. The applicant offered a response to Mr. Shepard's concerns through its experts, Andie Greene, P.E. and David Murphy, P.E. Attorney Green and Mr. Shepard expressed the opinion that the groundwater, especially in the area of the quaternary system, was not adequately characterized and could flow northeasterly toward the property boundaries with homes on Increase Lane. This would significantly reduce the travel time for at least

a portion of the effluent. They asked that the department delay a final determination to conduct further groundwater analysis in the vicinity of the northeastern property boundary to ensure that the travel time of the effluent to the point of concern has been calculated appropriately.

Attorney Green raised the concern that there was no groundwater monitoring well placed at the northern end of the proposed quaternary system galleries. Without this, he questioned the conclusions reached on the direction of groundwater flow. Attorney Green's concern was based on the topography of the site and the lower surface elevation of the neighboring property and more specifically the property of Russell Slayback on Increase Lane. To further support these comments, Mr. Shepard testified that he reviewed the monitoring well and test pit data collected by the applicant's consultant. Mr. Shepard focused on the groundwater levels reported in the test pits as a cause for concern. The applicant's expert responded that test pits are not an accurate indicator of groundwater levels and should not be used as a basis for the design of subsurface sewage disposal system over 5000 gallons.

For the proposed system, actual groundwater monitoring wells were used to collect data on groundwater levels and plot the direction of the groundwater flow. Those wells demonstrated that the flow was south and to the west and not northeast toward the Slayback property. The petitioner presented no data to support its concern. Its use of the applicant's test pit data is not persuasive because the applicant had not used this data to determine groundwater flow in support of the design. The applicant also responded to the concern about the lower surface elevation of the neighboring property by pointing out that the topography of that site was significantly altered at the time Increase Lane was built and home sites were constructed. This further supports the applicant's assertion that surface topography is not necessarily determinative of groundwater flow and demonstrates why the applicant chose to rely on actual groundwater data as evidence for determining the direction of flow and the point of concern. The evidence demonstrated that the applicant's characterization of the site and groundwater flow was adequate to show the proposed system would meet the water quality standards and provide the appropriate travel time to the point of concern.

C

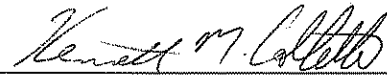
CONCLUSIONS OF LAW

I adopt the conclusions of law set forth in the Agreed Draft Decision.

D

RECOMMENDATION

The applicant has met its burden and demonstrated that the on-site wastewater renovation system will protect the waters of the state from pollution by ensuring any discharge is compliant with applicable state water quality standards and that the proposed activity is consistent with the policies outlined in the Coastal Management Act, General Statutes § 22a-92. Therefore, I recommend that the applicant be authorized to submit plans and specifications for its proposed treatment system. Upon approval of those plans and specifications, I recommend issuance of the proposed draft permit (Attachment B).



Kenneth M. Collette, Hearing Officer

PARTY LIST

In the matter of Greens Farms Academy
Application No. 200702614

PARTY

REPRESENTED BY

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Greens Farms Academy

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Attachment A

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ADJUDICATIONS

In the Matter of

Application No. 200702614

Greens Farms Academy, Inc.

February 5, 2009

AGREED DRAFT DECISION

FINDINGS OF FACT

Taking into consideration and giving due regard to all of the substantial evidence in the record, I make the following findings of fact:

A. Procedural History

1. On November 23, 2007 the Connecticut Department of Environmental Protection ("CTDEP") received an application (the "Application") from Greens Farms Academy, Inc. (the "Applicant") dated November 16, 2007 for a permit modification of the wastewater renovation systems to serve the property of the applicant located at 35 Beachside Avenue in Westport, CT. (APP-1)
2. A permit to discharge was issued on February 25, 2005 for 6,120 gallons per day of domestic sewage, from the operations of the school and headmaster's house, to the groundwater of the Southwest Shoreline Watershed. (Testimony of Andie Greene, P.E. and testimony of Antoanela Daha)
3. The applicant is proposing to increase the discharge to 10,338 gallons per day within the same watershed. A State Discharge Permit issued by the Commissioner of Environmental Protection is required under the provisions of Section 22a-430 of the Connecticut General Statutes. Since the site is located within a coastal area such permit must be consistent with the goals and policies of the Connecticut Coastal Management Act. (C.G.S. Section 22a-92) (DEP-10)

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ADJUDICATIONS

4. Following a technical review of the application and all supplemental materials the CTDEP staff made a tentative determination to approve the application and issue a permit to discharge. On July 25, 2008 the Commissioner published such notice of tentative determination in the Connecticut Post. (DEP-1 and DEP -2).
5. On August 8, 2008 the CTDEP received a petition signed by more than 25 persons requesting a hearing (DEP-3). The CTDEP staff submitted a request for a hearing officer to be assigned to the CTDEP Office of Adjudications. On August 25, 2008 the CTDEP Office of Adjudications appointed hearing officer Kenneth Collette and scheduled a status conference to be held on September 18, 2008.
6. On September 18, 2008 a status conference was held to discuss the public hearing process. A prehearing conference was scheduled for November 24, 2008. The public hearing was scheduled for December 2, 2008 at 10:00 a.m. to take evidence from the parties. A site visit was scheduled for December 3, 2008 at 3:30 p.m. prior to the second date for the continued public hearing which was scheduled for December 3, 2008 at 6:30p.m.
7. An additional continued hearing date was held for December 10, 2008.
8. On November 24, 2008 a prehearing conference was held at which the parties submitted respective legal issues, lists of witnesses and proposed exhibits. There being no objection, all of the parties' proposed exhibits were admitted into the record in this matter.
9. The dates and time of the site visit and hearing were confirmed as referenced above. The public hearing began on December 2, 2008 at 10:00 a.m., as publicly noticed, at the DEP Headquarters with all parties' and petitioners' representatives present.
10. Hearing Officer Collette conducted the scheduled site visit. All parties were represented at the site visit. Attorney Joel Green attended the site visit on behalf of the petitioners. The continued public hearing was held at the Westport Town Hall at 6:30 p.m. on December 3, 2008. The parties and petitioners were present and no members of the general public appeared to offer any oral or written testimony. The hearing was continued on December 10, 2008 to allow for the additional testimony of Alan Shepherd, P.E. on behalf of the petitioners.

11. Andie Greene of Milone & MacBroom offered testimony on behalf of the applicant at the hearing on December 2, 2008 and offered additional testimony at the hearing on December 10, 2008 in response to Mr. Shepherd's testimony.
12. Antoanela Daha offered testimony, on behalf of CTDEP staff, with respect to the application at both the hearings on December 2, 2008 and December 10, 2008.
13. The CTDEP staff has received written comments from the Westport Conservation Commission. A response to these comments was offered at the hearing. (Testimony of Antoanela Daha)
14. At the conclusion of the testimony at the continued hearing on December 10, 2008, the hearing Officer Collette closed the hearing and no further testimony or exhibits were submitted.

B. PROJECT BACKGROUND

15. A permit to discharge was issued on February 25, 2005 for 6,120 gallons per day of domestic sewage, from operations of the school and the headmaster's house, to the groundwaters of the state.
16. Initially there were two on-site wastewater renovation systems on the school property permitted for a maximum discharge of 6,120 gallons per day. One serving the school (DSN 301-2) designed to treat 5,520 gallons per day and the other serving the headmaster's house (DSN 305-2) designed to treat 600 gallons per day. (APP-1, DEP-8)
17. One of the down gradient monitoring wells of the primary leaching system for DSN 301-2 and DSN 305-2 has a history of exceeding the drinking water quality standard of 10mg/1 for total nitrogen. Further site evaluation was performed by the applicant to refine the previous analysis and to better understand the ground water contributing to nitrogen dilution. (APP- 1, DEP-8)
18. It was further established that the site has relatively high background levels of nitrogen in the monitoring wells upgradient of the primary leaching system for DSN 301-2 and DSN 305-2. (APP-1)

19. Based upon a review of additional information regarding ground water flow on the property, in 2007 an approval to construct an additional secondary leaching field was issued to redirect a portion of the flow from the primary discharge area to partially alleviate the nitrogen loading in the primary leaching area. (APP-1, DEP-8)

C. SUBJECT SITE

20. The subject site is comprised of 42.5 acres and located at 35 Beachside Avenue in Westport, Connecticut. The site is developed and has been the historic location of the Greens Farms Academy, a private day school that has been in operation for many years. There is no sewer system available for the area where the site is located. The site is located in the Southwest Shoreline drainage basin within the Southwest Coast Major Basin. Coastal and marine surface waters in the project area have been designated Class SA and Greens Farms Brook/New Creek is designated as Class SB/SA surface water. The ground water classification for the site is Class GB closest to New Creek and Class GA further to the east. The designated uses for ground water classified as GA are existing private and potential public or private supplies of water suitable for drinking without treatment and base flow for hydraulically connected surface water bodies. The designated uses for ground water classified as GB are industrial process water and cooling waters, base flow for hydraulically-connected surface water bodies, and presumed not suitable for human consumption without treatment. (APP-1, DEP-8, DEP-9)
21. The Water Quality Standards set objectives for existing and future water quality and establish a program based on a system of groundwater classifications to implement these objectives. (DEP-9) The proposed modification to the onsite waste water renovation system (“OWRS”) must be designed so that effluent from the OWRS will meet water quality standards prior to reaching a point of concern (“POC”) which may be a body of water, well, property line or other feature determined by the CTDEP to require protection from pollution. (DEP-8, DEP-10)
22. The POCs are different for each discharge. The POC for the primary system and the head master house is New Creek. The POC for the secondary system is the south property line. The POC for the tertiary system is the north-west property line and for the quaternary system the westerly property line. (APP-1)

D. SEPTIC SYSTEM DESIGN

23. The applicant proposes to increase the discharge to the existing wastewater renovation system to 10,338 gallons per day. (APP-1)
24. The CTDEP evaluates both the hydraulic capacity and the pollutant renovation capacity of a proposed site and OWRS. An applicant must be able to demonstrate that a selected site will be large enough to install an appropriately sized OWRS and that the system's location and extent adequately address both capacity thresholds. (DEP-13, DEP-14)
25. The site must have hydraulic capacity to move effluent below the ground for a sufficient distance to also meet the treatment criteria, which are based on the Water Quality Standards and applicable CTDEP regulations. The CTDEP also requires a pollution renovation analysis that addresses bacteria and viral removal, nitrogen reduction and the removal of phosphorus that is not naturally occurring. The soils must be able to move the effluent underground in the soil for at least 21 days, the travel time necessary to allow the system to successfully renovate bacteria from the waste stream. The CTDEP requires that a minimum of two feet of vertical separating distance (recommended 3 feet) be provided between the bottom of subsurface soil absorption system and the mounded seasonal high ground water elevation to renovate bacteria and viruses. Soils at the site must be able to accept the design flow discharge without premature breakout, and must be able to absorb at least six months phosphate discharged in the effluent from the system. Total nitrogen concentrations must be treated or diluted to 10mg/l or less at the point of concern and prior to it leaving the site. (APP-1, Testimony of Andie Greene, P.E., DEP-13, DEP-14)

E. HYDRAULIC CAPACITY

26. An evaluation completed by the Applicant indicates that a combined maximum wastewater flow of 10,338 gallons per day ("gpd") will be generated by the activities of the school and the headmaster's house.

27. Two new leaching fields are proposed to accommodate the increase in flow from 6,120 gallons per day to 10,338 gallons per day and to also redirect more flow from the primary system to further alleviate the nitrogen loading in the area. The proposed flow to the primary system area is significantly reduced by this proposal and the nitrogen levels in the down gradient monitoring well are expected to decrease to acceptable limits (APP-1 , DEP-8)
28. The proposed systems were conservatively designed using a background nitrogen level of 1 mg/l and the zone of influence of its discharge is separate from the zone of influence of the discharge from the primary system. (APP-1, DEP-8)

F. SYSTEM DESIGN

29. As part of the application evaluation CTDEP staff required the applicant to demonstrate that the soils beneath and down gradient of the leaching field have adequate hydraulic capacity to transmit the effluent and renovate the pollutants. (APP-1, Testimony of Andie Greene, P.E., Testimony of Antoanela Daha)
30. The systems were designed to hydraulically handle the following flows:
- a. Primary system: 5,520 gallons per day
 - b. secondary system: 900 gallons per day
 - c. Tertiary system: 4,838 gallons per day
 - d. Quaternary system: 2,000 gallons per day
 - e. Headmaster's system: 600 gallons per day
31. The applicant has performed site investigations to establish soil hydraulic conductivity, depth to groundwater, groundwater flow direction and gradient and site constraints. The investigations included test pits, hydraulic conductivity sampling, borings, and ground water monitoring. The applicant's analyses have demonstrated that the soils and the site have enough hydraulic capacity and adequate distance to transmit the effluent without a surface breakout. A conservative two-dimensional flow analysis shows that the site is capable of transmitting more than 1.5 times the design flow, meeting the Department's requirements. (APP-1, Testimony of Andie Greene, P.E., Testimony of Antoanela Daha)

32. The leaching field is sized based on the Long Term Acceptance Rate (LTAR) at the soil interface. The maximum LTAR of 0.8 gallons per day per square foot was used based on the soil hydraulic conductivity. This acceptance rate is based on a minimum hydraulic conductivity of 28 ft/day. The hydraulic conductivities encountered throughout the site are well in excess of 28 ft/day. Although the soil hydraulic conductivity would justify the use of the maximum LTAR of 0.8 gallons per day per square foot, the two new proposed systems were designed based on an adjusted value to account for the total nitrogen in the wastewater (115mg/l). The LTAR utilized for design was 0.7 gallons per day per square foot. (APP-1, Testimony of Antoanela Daha)
33. The applicant's analyses have demonstrated the systems have the capabilities to treat and renovate the effluent for the pollutants most likely to occur in the domestic sewage: bacteria and viruses, phosphorus and nitrogen.
34. For bacteria removal, the applicant had to demonstrate that the effluent will travel underground for at least 21 days prior to encountering the point of the environmental concern down gradient of the systems in the direction of groundwater flow.
- i. For the primary system and for the headmaster's house these calculations were performed during the initial permitting process and the DEP design criteria was met. The primary system is located 160ft from the New Creek.
 - ii. For the secondary system these calculations were performed during the 2007 approval process and the DEP design criteria was met. The secondary system is located 100 ft from the property line towards the Long Island Sound.
 - iii. For the tertiary system the point of environmental concern is the property line in the north-west direction towards New Creek. The closest distance from the system to the property line in the groundwater flow direction is 285 ft. The applicant has demonstrated that, given an estimated hydraulic conductivity of 105 ft/day, the effluent will travel underground for at least 21 days.
 - iv. For the quaternary system the point of environmental concern is the property line in the westerly direction towards New Creek. The closest distance from the system to the property line in the groundwater flow direction is 250 ft. The applicant has demonstrated that, given an estimated hydraulic conductivity of 105 ft/day, the effluent will travel underground for at least 21 days.

35. For viruses removal, the applicant had to demonstrate that at least two (2) feet of separating distance is maintained between the bottom of the leaching structure and the mounded seasonal high ground water elevation. The applicant has demonstrated that in excess of the recommended three (3) feet is provided for all the systems.
- i. For the primary system at least 5 ft is provided.
 - ii. For the secondary system at least 9 ft is provided.
 - iii. For the tertiary system 8-9 ft is provided.
 - iv. For the quaternary system 5-6 ft is provided.
 - v. There were no mounding calculations performed for the headmaster house. However, this house is located in the general area of the primary system. The expected mounding from this system is insignificant; therefore, it is safe to assume that the recommended 3 ft of unsaturated flow is maintained.
36. For phosphorus removal, the applicant had to demonstrate that six months of phosphorus production can be absorbed by the soil available at the site. The applicant has demonstrated that the unsaturated soils beneath the systems have the capacity to absorb in excess of the six months phosphorus production.
- i. For the primary system and for the headmaster's house these calculations were performed during the initial permitting process and the DEP design criteria was met. The original calculations were performed based on 5,520 gallons per day from the school and 600 gallons per day from the headmaster's house. Since the flow proposed to be discharged to this area is significantly reduced the phosphorus loading would be significantly lower. The six months of phosphorus production would be absorbed within 3.74 ft. There are at least 5 ft of unsaturated soils under the system for the phosphorus absorption.
 - ii. For secondary system the six months phosphorus production would be absorbed within 0.8 ft. There are at least 9 ft of unsaturated soils under the system for phosphorus absorption.
 - iii. For the tertiary system the six months phosphorus production would be absorbed within 2.9 ft. There are at least 8 ft of unsaturated soils under the system for phosphorus absorption.
 - iv. For the quaternary system the six months phosphorus production would be absorbed within 1.86 ft. There are at least 5 ft of unsaturated soils under the system for phosphorus absorption.

37. For nitrogen removal, the applicant had to demonstrate that drinking water standard of 10 mg/l can be met prior to reaching the different points of environmental concern down gradient of the systems. It is assumed that 20 percent of the nitrogen is removed in the septic tank and another 20 percent of nitrogen is removed in the leaching field. The remaining nitrogen, assuming that ammonia nitrifies, needs to be diluted by precipitation infiltration. The applicant needs to demonstrate through calculations that ground water will have a concentration of less than 10 mg/l of total nitrogen at the point of environmental concern.

- i. The primary system and the headmaster's system share the zone of influence available for dilution, therefore they were evaluated together. Monitoring well MW3 located down gradient of these systems has a history of exceeding the drinking water standards of 10 mg/l for total nitrogen. In 2007, 900 gallons per day were diverted to the secondary system in order to alleviate the excessive loading in this area. However, the nitrogen levels in this monitoring well remained high. The new proposal is to discharge only 325 gallons per day from the school activities and the 600 gallons per day from the headmaster house. This proposal results in a nitrogen calculation at the property line of 6.1 mg/l which is under the drinking water standard of 10 mg/l. To add to the conservatism of these calculations, it was assumed that no nitrogen is removed in the leaching field (the calculations were performed using the nitrogen levels measured from the pump chamber effluent).
- ii. The secondary system was designed for a 900 gallons per day discharge and the calculations show that the drinking water standard of 10mg/l can be met at the property line down gradient of the system in the direction of groundwater flow.
- iii. The tertiary system was designed assuming a background nitrogen level in groundwater of 1 mg/l. The calculations show that the drinking water standard of 10mg/l can be met at the property line down gradient of the system in the direction of groundwater flow.
- iv. The quaternary system was designed assuming a background nitrogen level of 1 mg/l in groundwater. The calculations show that the drinking water standard of 10mg/l can be met at the property line down gradient of the system in the direction of groundwater flow.

38. Alan Shepard of Nowakowski, O’Bymachow, Kane and Associates (NOK) submitted a letter to Joel Green, Esq., regarding the application of Greens Farms Academy. The comments expressed in the NOK letter were related to the hydraulic gradient of the groundwater and are based upon a simplistic approach to groundwater analysis. The NOK analysis assumes that groundwater flows omni-directionally from the middle of the quaternary system. Milone & MacBroom Inc. submitted a letter to Kenneth M. Collette, Esq., dated November 24, 2008 in response to the NOK letter. Over the last four years Milone & MacBroom, Inc. has done extensive soil testing throughout the property and has installed and recorded water levels in monitoring wells to determine the direction of groundwater flow. The results of this investigation show that groundwater flows either towards Long Island Sound or the majority of the groundwater on the property flow flows towards New Creek. (Testimony of Andie Greene, P.E., Testimony of Antoanela Daha)

G. COASTAL AREA MANAGEMENT

39. Since the site is located within the coastal area, such permit must be consistent with the goals and policies of the Connecticut Coastal Management Act (CGS sections 22a-92). The proposed activities were found consistent with the Connecticut Coastal Management Act. (DEP-17, APP-10)

H. PROPOSED CONCLUSIONS OF LAW

Before any person may discharge any substance into the waters of the state they must obtain a permit from the Commissioner pursuant to the provisions of Section 22a-430 of the Connecticut General Statutes (“CGS”).

No such permit can be issued unless the Commissioner determines that the proposed system to treat such discharge will protect the waters of the state from pollution. (CGS Section 22a-430(b)). The Commissioner may establish appropriate procedures, criteria and standards for determining if a discharge would cause pollution to the waters of the state and if a proposed treatment system is adequate to protect the waters of the state from pollution. (CGS Section 22a-430(b)). See, Regulations of Connecticut State Agencies (“RCSA”), Sections 22a-430-1 through 22a-430-8.

The Commissioner must also consider whether the proposed discharge would be consistent with the Water Quality Standards (WQS). Section 22a-430-4(I)(4)(E). The WQS specifically allow certain discharges into Class A and B groundwater as long as such discharges pose no pollution threat. (Finding of Fact (“FOF”) 20, 21)

The WQS set standards for the quality of the discharge. In this case, the wastewater generated by the proposed facilities must be treated to meet drinking water standards at the nearest POC (i.e., water body or property line). (FOF 20, 21, 22)

The applicant proposes to treat and discharge 10,338 gallons per day of domestic sewage to the ground water within the Southwest Shoreline Watershed.

The applicant has demonstrated that the site will accommodate the proposed OWRS and will transport the treated effluent for sufficient distance below ground without surfacing or breakout so the bacteria will be removed before the effluent reaches a POC. The design of the subsurface soil absorption system will eliminate viruses from the effluent before it reaches a POC. The existing soils of the site will absorb at least six months of phosphorus production and nitrogen will be diluted to acceptable concentration levels prior to reaching a POC.

The proposed treatment and renovation system will protect the waters of the state from pollution. The discharge from the systems will be consistent with the WQS. The design of the system is such that effluent from the subsurface soil absorption system will meet drinking water quality standards prior to encountering any POC. The permit will require ongoing monitoring and regular maintenance to ensure that this treatment and renovation system operates within the limits of the permit. The evidence presented by the applicant and reviewed by CTDEP staff demonstrates that any discharge will not cause pollution to the waters of the State of Connecticut.

The applicant has demonstrated that the application is consistent with all applicable goals and policies set forth in Section 22a-92 in that such activity incorporates all reasonable measures for mitigating any adverse impacts of said actions on coastal resources.

This application for a water discharge permit meets all relevant statutory and regulatory criteria and water quality standards. The proposed sewage treatment and

renovation system will treat the discharge and protect the waters of the state from pollution.

I. AGREEMENT

Based on the foregoing, the undersigned hereby agree that the Commissioner authorize staff to require the applicant to submit plans and specifications of the proposed system and such additional information as may be required to ensure protection of the waters of the state from pollution, and to review and approve the proposed system to treat the discharge. Once such system has been installed in full compliance with the approval, the Commissioner shall authorize staff to prepare the discharge permit for her signature.

THE APPLICANT,
GREENS FARMS ACADEMY, LLC

BY: 

JOHN F. FALLON, ESQ.
53 SHERMAN STREET
FAIRFIELD, CT 06824

THE CONNECTICUT DEP

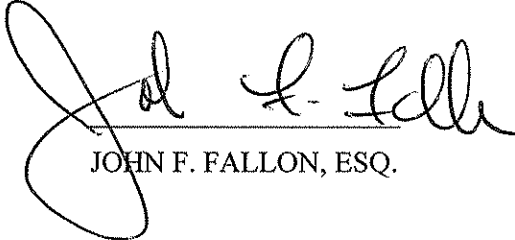
BY:  2/6/2009

OSWALD INGLESE, JR.
DIRECTOR
BUREAU OF MATERIALS
MANAGEMENT & COMPLIANCE
ASSURANCE
WATER PERMITTING
& ENFORCEMENT DIVISION

CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing has been mailed first class, postage prepaid this Feb. 5, 2009 to the following:

(Via Hand delivery)
Antoanela Daha
Bureau of Water Management
Permitting and Enforcement Division
79 Elm Street
Hartford, CT 06106-5127



JOHN F. FALLON, ESQ.

Attachment B

UIC PERMIT MODIFICATION

issued to

Greens Farms Academy, Inc.
35 Beachside Avenue
Westport, CT 06880

Location Address:
35 Beachside Avenue
Westport, CT 06880

Facility ID: 158-102

Permit ID: UI0000372

Permit Expires:

Watershed: Southwest Shoreline

Basin Code: 7000

SECTION 1: GENERAL PROVISIONS

- (A) This permit modification is issued in accordance with section 1421 of the Federal Safe Drinking Water Act 42 USC 300h et. seq. and section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended.
- (B) Greens Farms Academy, Inc. ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of section 22a-430-3.

Section 22a-430-3 General Conditions

- (a) Definitions
- (b) General
- (c) Inspection and Entry
- (d) Effect of a Permit
- (e) Duty
- (f) Proper Operation and Maintenance
- (g) Sludge Disposal
- (h) Duty to Mitigate
- (i) Facility Modifications; Notification
- (j) Monitoring, Records and Reporting Requirements
- (k) Bypass
- (l) Conditions Applicable to POTWs
- (m) Effluent Limitation Violations (Upsets)
- (n) Enforcement
- (o) Resource Conservation
- (p) Spill Prevention and Control
- (q) Instrumentation, Alarms, Flow Recorders
- (r) Equalization

Section 22a-430-4 Procedures and Criteria

- (a) Duty to Apply
 - (b) Duty to Reapply
 - (c) Application Requirements
 - (d) Preliminary Review
 - (e) Tentative Determination
 - (f) Draft Permits, Fact Sheets
 - (g) Public Notice, Notice of Hearing
 - (h) Public Comments
 - (i) Final Determination
 - (j) Public Hearings
 - (k) Submission of Plans and Specifications. Approval.
 - (l) Establishing Effluent Limitations and Conditions
 - (m) Case by Case Determinations
 - (n) Permit issuance or renewal
 - (o) Permit Transfer
 - (p) Permit revocation, denial or modification
 - (q) Variances
 - (r) Secondary Treatment Requirements
 - (s) Treatment Requirements for Metals and Cyanide
 - (t) Discharges to POTWs - Prohibitions
- (C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action, including but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.
- (D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157 of the CGS.
- (E) No provision of this permit and no action or inaction by the Commissioner of Environmental Protection (“Commissioner”) shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.
- (F) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner. To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner’s approval prior to commencing such discharges may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.
- (G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- (H) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the RCSA.
- (I) This permitted discharge is consistent with the applicable goals and policies of the Connecticut Coastal Management Act (section 22a-92 of the CGS).

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and section 22a-430-3(a) and 22a-430-6 of the RCSA.

(B) In addition to the above the following definitions shall apply to this permit:

"Annual" in the context of a sampling frequency, shall mean the sample must be taken in the month of February.

"Quarterly", in the context of a sampling frequency, shall mean sampling is required in the months of February, May, August, and November.

"3 times per year", in the context of maintenance frequency, shall mean the maintenance must be performed at least 3 times during the period of May to November.

SECTION 3: COMMISSIONER'S DECISION

(A) The Commissioner has made a final determination and found that the modification of the existing systems and the installation of the new systems will protect the waters of the state from pollution. The Commissioner's decision is based on **Application No. 200702614** for permit modification received on November 23, 2007 and the administrative record established in the processing of that application.

(B) The Commissioner hereby authorizes the Permittee to discharge 10,338 gallons per day of domestic sewage in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with, this permit.

(C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Safe Drinking Water Act or the Connecticut General Statutes or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Safe Drinking Water Act or Connecticut General Statutes or regulations adopted thereunder which are then applicable.

SECTION 4: EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The use of sewage system additives, as defined in section 22a-460(g) of the CGS, are prohibited unless such additive is registered with the Commissioner in accordance with section 22a-462-3 of the RCSA. The Commissioner in no way certifies the safety or effectiveness of any registered additive.

(B) Oils, greases, industrial or commercial wastes, toxic chemicals, wastes from water treatment systems, or other substances, that will adversely affect the operation of the subsurface sewage treatment and disposal system, or, which may pollute ground or surface water, shall not be discharged to the subsurface sewage treatment and disposal system.

(C) The Permittee shall assure that groundwater affected by the subject discharge shall conform to the Connecticut Water Quality Standards.

(D) Any limits imposed on the discharges listed in this permit take effect on the issuance date of this permit, hence any sample taken after this date which, upon analysis, shows an exceedance of permit limits will be considered non-compliance.

The monitoring requirements of this permit begin on the date of issuance of this permit if the issuance date is on or before the 12th day of a month. For permits issued on or after the 13th day of a month, monitoring requirements begin the 1st

day of the following month.

- (E) The Permittee shall operate and maintain all processes as installed in accordance with the approved plans and specifications.
- (F) The discharges shall not exceed and shall otherwise conform to specific terms and conditions listed in this permit. The discharges are restricted by, and shall be monitored in accordance with, the Table A through E which are incorporated into this permit as Attachment 1.
- (G) The Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report on the discharge monitoring report the total flow and the average daily flow for each sampling month.
- (H) All samples shall be comprised of only those wastewaters described in this schedule; therefore, samples shall be taken prior to combination with wastewaters of any other type and after all approved treatment units, if applicable. All samples taken shall be representative of the discharge during standard operating conditions.
- (I) In cases where limits and sample type are specified but sampling is not required, the limits specified shall apply, to all samples which may be collected and analyzed by, the Department of Environmental Protection personnel, the Permittee, or other parties.
- (J) The Permittee shall monitor inspect and maintain the treatment facilities in accordance with Table (F), which is incorporated into this permit as Attachment 2.
- (K) The Permittee shall perform ground water monitoring in accordance with Table (G), which is incorporated into this permit as Attachment 3.
- (L) The Permittee shall monitor the performance of the treatment process in accordance with, the Onsite Wastewater Renovation System Quarterly Monitoring Report and the Groundwater Monitoring Report incorporated into this permit as Attachment 4, Tables H through N.

SECTION 5: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES AND REPORTING REQUIREMENTS

- (A) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall employ methods approved by the Environmental Protection Agency pursuant to 40 CFR 136 unless an alternative method has been approved in writing in accordance with 40 CFR 136.4.
- (B) The results of chemical analysis and treatment facilities monitoring required by Section 4 shall be entered on the Discharge Monitoring Report (DMR), provided by this office, and reported to the Bureau of Materials Management and Compliance Assurance, at the following address, by the end of the month following the month in which the samples are taken. The report shall also include a detailed explanation of any violations of the limitations specified and corrective actions performed, and a schedule for the completion of any corrective actions remaining.

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

- (C) If any sample analysis indicates that an effluent limitation specified in Section 4 of this permit has been exceeded, a second sample of the effluent shall be collected and analyzed for the parameter(s) in question and the results reported to the Commissioner within 30 days of the exceedance. Resampling for permit violations is in addition to routine required

sampling.

- (D) Copies of all DMRs shall be submitted concurrently to the Westport/Weston Health District.

SECTION 6: COMPLIANCE SCHEDULE

- (A) On or before seven (7) days after issuance of this permit, the Permittee shall record on the land records of the Town of Westport a document indicating the location of the zone of influence created by the subject discharge, as reflected in the application and approved plans and specifications for this permit. On or before one (1) month after issuance of this permit, the Permittee shall submit written verification to the Commissioner that the approved document indicating the location of the zone of influence created by the subject discharge as reflected in the application for this permit has been recorded on the land records in the Town of Westport.
- (B) On or before seven (7) days after issuance of this permit, the Permittee shall record a copy thereof on the land records in the Town of Westport. On or before one (1) month after issuance of this permit, the Permittee shall submit written verification to the Commissioner that this permit has been recorded in the land records in the Town of Westport.

This permit modification is hereby issued on

Gina McCarthy
Commissioner

cc: Westport/Weston Health District
DMR

ATTACHMENT 1

DRAFT

TABLE A	
Discharge Serial No. 301-2	Monitoring Location: 8
Wastewater Description: Domestic Sewage	
Average Daily Flow: 1,333 gallons per day	Maximum Daily Flow: 2,000 gallons per day

TABLE B	
Discharge Serial No. 302-2	Monitoring Location: 8
Wastewater Description: Domestic Sewage	
N/A	Maximum Daily Flow: 900 gallons per day

TABLE C	
Discharge Serial No. 303-2	Monitoring Location: 8
Wastewater Description: Domestic Sewage	
Average Daily Flow: 3,225 gallons per day	Maximum Daily Flow: 4,838 gallons per day

TABLE D	
Discharge Serial No. 304-2	Monitoring Location: 8
Wastewater Description: Domestic Sewage	
Average Daily Flow: 1,333 gallons per day	Maximum Daily Flow: 2,000 gallons per day

TABLE E	
Discharge Serial No. 301-2, 302-2, 303-2, 304-2, 305-2	Monitoring Location: 8
Wastewater Description: Domestic Sewage	
Average Daily Flow: 400 gallons per day	Maximum Daily Flow: 600 gallons per day

ATTACHMENT 2

DRAFT

TABLE F
INSPECTION, MONITORING OR MAINTENANCE REQUIREMENTS

<u>INSPECTION, MONITORING, or MAINTENANCE</u>	<u>DISCHARGE SERIAL NO.</u>	<u>MINIMUM FREQUENCY</u>
Depth of sludge in septic tanks	301-2, 302-2, 303-2, 304-2, 305-2	During pump-out
Pump out septic tanks	301-2, 302-2, 303-2, 304-2, 305-2	Annually
Pump out grease trap	301-2, 303-2, 304-2	Quarterly
Mechanical inspection of septic tank and grease trap baffles	301-2, 302-2, 303-2, 304-2, 305-2	During pump-out
Mechanical inspection of septic tank effluent filters	301-2, 302-2, 303-2, 304-2, 305-2	During pump-out
Clean septic tank effluent filters	301-2, 302-2, 303-2, 304-2, 305-2	During pump-out
Mechanical inspection of pump stations	301-2, 302-2, 303-2, 304-2, 305-2	Monthly
Pump out pump chambers	301-2, 302-2, 303-2, 304-2, 305-2	Annually
Test run of emergency generator	301-2, 302-2, 303-2, 304-2, 305-2	Quarterly
Water meter readings of water usage	301-2, 302-2, 303-2, 304-2, 305-2	Weekly
Mechanical inspection of alarm conditions	301-2, 302-2, 303-2, 304-2, 305-2	Monthly
Mechanical inspection of valve chambers	301-2, 302-2, 303-2, 304-2, 305-2	Monthly
Visual inspection of distribution chambers	301-2, 302-2, 303-2, 304-2, 305-2	Quarterly
Visual inspection of surface condition of leaching fields	301-2, 302-2, 303-2, 304-2, 305-2	Quarterly
Measurement of ground water level	301-2, 302-2, 303-2, 304-2, 305-2	Quarterly
Depth of ponding in leaching fields	301-2, 302-2, 303-2, 304-2, 305-2	Quarterly
Mow grass over leaching fields	301-2, 302-2, 303-2, 304-2, 305-2	3 times per year
NOTE: The Westport Sanitarian shall be notified at least one week prior to pumping of septic tanks and grease traps. Verification of all pump outs shall be attached to the monitoring report and a copy of the report shall be sent to the Westport/Weston Health District Director of Health.		

ATTACHMENT 3

DRAFT

**TABLE G
GROUNDWATER MONITORING**

DISCHARGE SERIAL NO. 301-2, 302-2, 303-2, 304-2, 305-2		MONITORING LOCATION: <i>W-downgradient; V-upgradient;</i>	
GROUND WATER MONITORING WELL NO: MW.3, MW.4, MW.5, MW.7, MW.x, MW.y		DESCRIPTION: <i>Downgradient and upgradient monitoring wells}</i>	
PARAMETER	UNITS	MINIMUM FREQUENCY OF SAMPLING	SAMPLE TYPE
Coliform, Fecal	col/100ml	Quarterly	Grab
Groundwater Depth	Ft, in	Quarterly	Instantaneous
Nitrogen, Ammonia	mg/l	Quarterly	Grab
Nitrogen, Nitrate	mg/l	Quarterly	Grab
Nitrogen, Nitrite	mg/l	Quarterly	Grab
Nitrogen, Total Kjeldahl	mg/l	Quarterly	Grab
Nitrogen, Total	mg/l	Quarterly	Grab
pH	S.U.	Quarterly	Instantaneous
Phosphorus, Total Dissolved	mg/l	Quarterly	Grab

ATTACHMENT 4

DRAFT

Table H

Subsurface Treatment and Disposal System											Year: _____		
Quarterly Monitoring Report													
Facility: Greens Farms Academy		Contact: Russell K. Friedson				Facility ID: 158-102			Discharge Serial No.: 301-2, 302-2, 303-2, 304-2, 305-2				
Town: Westport		Phone # :				Permit # : UI0000372			Monitoring Location: 8				
Inspection, monitoring or maintenance required	Monitoring frequency	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Parameters													
Depth of sludge in septic tanks	During pump-out												
Pump out septic tanks	Annually												
Pump out grease trap	Quarterly												
Mechanical inspection of septic tank and grease	During pump-out												
Mechanical inspection of septic tank effluent filters	During pump-out												
Clean septic tank effluent filters	During pump-out												
Mechanical inspection of pump stations	Monthly												
Pump out pump chambers	Annually												
Test run of emergency generator	Quarterly												
Water meter readings of water usage	Weekly												
Mechanical inspection of alarm conditions	Monthly												
Mechanical inspection of valve chambers	Monthly												
Visual inspection of distribution chambers	Quarterly												
Visual inspection of surface condition of leaching	Quarterly												
Measurement of ground water level	Quarterly												
Depth of ponding in leaching fields	Quarterly												
Mow grass over leaching fields	3 times per year												
<p>Note: Indicate completion of required activity with an "X" in the appropriate space or write in the value of the reading (e.g. - water meter readings of water usage: _____ gallons per day (gpd)).</p> <p>Note: The Westport/Weston Sanitarian shall be notified at least one week prior to pumping of septic tanks and grease traps. Verification of all pump outs shall be attached to the monitoring report and a copy of the report shall be sent to the Westport/Weston Director of Health.</p>													

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 my 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.

Authorized Official: _____ Signature: _____ Title: _____ Date: _____

Table I

GROUNDWATER MONITORING									
									Year:
Facility: Greens Farms Academy			Contact: Russell K. Friedson			Facility ID:158-102			
Town: Westport			Phone # :			Permit # : UI0000372			
Discharge Serial No. : 301-2, 305 -2 Monitoring Location : W - downgradient Groundwater Monitoring Well No.: MW.3									
Parameter	Units		Feb		May		Aug		Nov
Coliform, Fecal	col/100 ml								
Groundwater Depth	Ft, in								
Nitrogen, Ammonia	mg/l								
Nitrogen, Nitrate	mg/l								
Nitrogen, Nitrite	mg/l								
Nitrogen, Total Kjeldahl	mg/l								
Nitrogen, Total	mg/l								
pH	S.U.								
Dissolved Phosphorus, Total	mg/l								

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 my 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.

Authorized Official: _____ Signature: _____ Title: _____ Date: _____

Table J

GROUNDWATER MONITORING									
Year: _____									
Facility: Greens Farms Academy			Contact: Russell K. Friedson			Facility ID:158-102			
Town: Westport			Phone # :			Permit # : UI0000372			
Discharge Serial No. : 302-1, 305-2 Monitoring Location : W - downgradient Groundwater Monitoring Well No.: MW.4									
Parameter	Units		Feb		May		Aug		Nov
Coliform, Fecal	col/100 ml								
Groundwater Depth	Ft, in								
Nitrogen, Ammonia	mg/l								
Nitrogen, Nitrate	mg/l								
Nitrogen, Nitrite	mg/l								
Nitrogen, Total Kjeldahl	mg/l								
Nitrogen, Total	mg/l								
pH	S.U.								
Dissolved Phosphorus, Total	mg/l								

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 my 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.

Authorized Official: _____ Signature: _____ Title: _____ Date: _____

Table K

GROUNDWATER MONITORING									
									Year:
Facility: Greens Farms Academy			Contact: Russell K. Friedson			Facility ID:158-102			
Town: Westport			Phone # :			Permit # : UI0000372			
Discharge Serial No. : 302-2 Monitoring Location : W - downgradient Groundwater Monitoring Well No.: MW.5									
Parameter	Units		Feb		May		Aug		Nov
Coliform, Fecal	col/100 ml								
Groundwater Depth	Ft, in								
Nitrogen, Ammonia	mg/l								
Nitrogen, Nitrate	mg/l								
Nitrogen, Nitrite	mg/l								
Nitrogen, Total Kjeldahl	mg/l								
Nitrogen, Total	mg/l								
pH	S.U.								
Dissolved Phosphorus, Total	mg/l								

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 my 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.

Authorized Official: _____ Signature: _____ Title: _____ Date: _____

Table L

GROUNDWATER MONITORING									
								Year:	
Facility: Greens Farms Academy			Contact: Russell K. Friedson			Facility ID:158-102			
Town: Westport			Phone # :			Permit # : UI0000372			
Discharge Serial No. : 302-2 Monitoring Location : V - upgradient Groundwater Monitoring Well No.: MW.7									
Parameter	Units		Feb		May		Aug		Nov
Coliform, Fecal	col/100 ml								
Groundwater Depth	Ft, in								
Nitrogen, Ammonia	mg/l								
Nitrogen, Nitrate	mg/l								
Nitrogen, Nitrite	mg/l								
Nitrogen, Total Kjeldahl	mg/l								
Nitrogen, Total	mg/l								
pH	S.U.								
Dissolved Phosphorus, Total	mg/l								

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 my 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.

Authorized Official: _____ Signature: _____ Title: _____ Date: _____

Table M

GROUNDWATER MONITORING									
									Year:
Facility: Greens Farms Academy			Contact: Russell K. Friedson			Facility ID:158-102			
Town: Westport			Phone # :			Permit # : UI0000372			
Discharge Serial No. : 303-2 Monitoring Location : W - downgradient Groundwater Monitoring Well No.: MW.y									
Parameter	Units		Feb		May		Aug		Nov
Coliform, Fecal	col/100 ml								
Groundwater Depth	Ft, in								
Nitrogen, Ammonia	mg/l								
Nitrogen, Nitrate	mg/l								
Nitrogen, Nitrite	mg/l								
Nitrogen, Total Kjeldahl	mg/l								
Nitrogen, Total	mg/l								
pH	S.U.								
Dissolved Phosphorus, Total	mg/l								

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 my 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.

Authorized Official: _____ Signature: _____ Title: _____ Date: _____

Table N

GROUNDWATER MONITORING									
									Year:
Facility: Greens Farms Academy			Contact: Russell K. Friedson			Facility ID:158-102			
Town: Westport			Phone # :			Permit # : UI0000372			
Discharge Serial No. : 304-2 Monitoring Location : W - downgradient Groundwater Monitoring Well No.: MW.x									
Parameter	Units		Feb		May		Aug		Nov
Coliform, Fecal	col/100 ml								
Groundwater Depth	Ft, in								
Nitrogen, Ammonia	mg/l								
Nitrogen, Nitrate	mg/l								
Nitrogen, Nitrite	mg/l								
Nitrogen, Total Kjeldahl	mg/l								
Nitrogen, Total	mg/l								
pH	S.U.								
Dissolved Phosphorus, Total	mg/l								

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 my 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.

Authorized Official: _____ Signature: _____ Title: _____ Date: _____

DATA TRACKING AND TECHNICAL FACT SHEET

PERMIT #: UI0000372 **APPLICATION #:** 200702614 **DEP/WPC#:** 158-102

DISCHARGER NAME AND ADDRESS DATA

Permittee: Greens Farms Academy, Inc.

Mailing Address:

Location Address:

Street: 35 Beachside Avenue

Street: 35 Beachside Avenue

City: Westport ST: CT Zip: 06436 City: Westport St. CT Zip: 06436

Contact Name: **Russell K. Friedson**

PERMIT DURATION

5 YEAR () 10 YEAR () 30 YEAR ()

DISCHARGE CATEGORIZATION

POINT() NON-POINT() GIS # _____

NPDES() PRETREAT() GROUND WATER(UIC)() GROUND WATER (OTHER)()

MAJOR() SIGNIFICANT MINOR() MINOR()

COMPLIANCE SCHEDULE YES NO

POLLUTION PREVENTION() TREATMENT REQUIREMENT() WATER CONSERVATION()

PERMIT STEPS () WATER QUALITY REQUIREMENT() REMEDIATION() AUDIT LANGUAGE()

OTHER()

OWNERSHIP CODE

Private() Federal() State() Municipal(town only)() Other public()

UIC PERMIT INFORMATION

Total Wells 5

Well Type 5W11

PERMIT FEES

DISCHARGE CODE 312000a REPRESENTING DSN 301-2 ANNUAL FEE \$ **885**

DISCHARGE CODE 312000a REPRESENTING DSN 302-2 ANNUAL FEE

DISCHARGE CODE 312000a REPRESENTING DSN 303-2 ANNUAL FEE

DISCHARGE CODE 312000a REPRESENTING DSN 304-2 ANNUAL FEE

DISCHARGE CODE 312000a REPRESENTING DSN 305-2 ANNUAL FEE

DEP STAFF ENGINEER/ANALYST

Antoanela Daha

PERMIT TYPE

New()

Reissuance()

Modification(X)

Subsection-e()

NATURE OF BUSINESS GENERATING DISCHARGE

Greens Farms Academy, Inc. is a private school.

PROCESS AND TREATMENT DESCRIPTION (by DSN)

DSN 301-2 represents the primary discharge system installed in the main lawn area and it is serving the school. The design flow for this system is 2,000 gallons per day. This is a conventional on-site subsurface sewage treatment and disposal system consisting of grease trap, septic tank and a pump chamber followed by a leaching field.

DSN 302-2 represents the secondary discharge system installed in the south lawn area and it is serving the school. The design flow for this system is 900 gallons per day. This is a conventional on-site subsurface sewage treatment and disposal system consisting of septic tank, a pump chamber, a valve chamber containing a flow meter followed by a leaching field.

DSN 303-2 represents the tertiary discharge system installed east on Marijane Beltz softball field and it is serving the school. The design flow for this system is 4,838 gallons per day. This is a conventional on-site subsurface sewage treatment and disposal system consisting of septic tank, a pump chamber, a

valve chamber containing a flow meter followed by a leaching field.

DSN 304-2 represents the quaternary discharge system installed in the northeast ball fields area and it is serving the school. The design flow for this system is 2,000 gallons per day. This is a conventional on-site subsurface sewage treatment and disposal system consisting of septic tank, a pump chamber, a valve chamber containing a flow meter followed by a leaching field.

DSN 305-2 represents the headmaster's house system installed in the main lawn area. The design flow for this system is 600 gallons per day. This is a conventional on-site subsurface sewage treatment and disposal system consisting of septic tank, a pump chamber followed by a leaching field.

RESOURCES USED TO DRAFT PERMIT

- Federal Effluent Limitation Guideline 40CFR
name of category
- Performance Standards
- Federal Development Document
name of category
- Treatability Manual
- Department File Information
- Connecticut Water Quality Standards
- Anti-degradation Policy
- Coastal Management Consistency Review Form
- Other - Explain

BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS

- Case by Case Determination (See Other Comments)

OTHER COMMENTS

Greens Farms Academy, Inc. was issued a permit to discharge on February 25, 2005 for a maximum discharge flow of 6,120 gallons per day. Initially there were two on-site wastewater renovation systems on the school property; one serving the school (DSN 301-2) and the other serving the headmaster house (DSN 305-2). The downgradient monitoring well in the primary system area for the discharges DSN 301-2 and DSN 305-2 has a history of exceeding the drinking water levels of 10 mg/l for nitrogen. There are also relatively high background levels of nitrogen in the up gradient monitoring wells. In 2007 an approval to construct an additional leaching field was issued to re-direct some of the flow from the primary discharge area and alleviate the nitrogen loading in that area. Although the levels of nitrogen in the downgradient

monitoring well for the discharges DSN 301-2 and DSN 305-2 still remain high, the newly constructed system functions properly and the nitrogen levels in the downgradient monitoring well for the discharge DSN 302-2 are under drinking water standard of 10 mg/l.

The new proposal to increase the number of student population has as a result an increase in flow. Two new leaching fields (DSN 303-2 and DSN 304-2) are proposed to accommodate the flow and to re-direct more flow from the primary system to further alleviate the nitrogen loading to that area. The proposed flow to the primary system area is significantly reduced by this proposal and the nitrogen levels in the downgradient monitoring well are expected to decrease to acceptable limits. The new proposed systems were conservatively designed using a background nitrogen level of 1 mg/l. The school is also working in developing a protocol of fertilizer application to avoid further nitrogen loading increase.

The school and the areas adjacent to it are served by a public water supply.

PROJECT HISTORY

Application received on November 23, 2007

Tentative Determination signed *****, published *****.

Final Determination signed *****.

Approval(s) to construct issued on *****.

DRAFT