



Jacobson

January 21, 2009

Ms. Antoanela Daha, Sanitary Engineer
Connecticut Department of Environmental Protection
Bureau of Materials Management and Compliance Assurance
Permitting and Enforcement Division
79 Elm Street
Hartford, Connecticut 06106-5127

Re: The Red Barn Restaurant
292 Wilton Road
Westport, Connecticut
Preliminary Engineering Evaluation
Wastewater Collection, Treatment and Disposal Facilities
NLJA PN 1000-0001

Dear Ms. Daha:

I write as a follow up to your letter to Frank Nistico dated December 30, 2008 and our subsequent discussions regarding wastewater disposal alternatives for the Red Barn Restaurant in Westport, Connecticut. In summary, your letter concluded that an on-site wastewater treatment and renovation system did not seem like a feasible alternative for this site and in order to avoid further groundwater pollution and correct the malfunctioning system, Department staff concurs that connection to the municipal sewer is a desirable alternative for this facility.

The Department requested that information on the following items be provided for both the sewer connection and the on-site system alternatives, in order for the Department to conclude that the municipal sewer connection is the most appropriate action.

- Financial impacts
- Technical feasibility
- Administrative steps for implementation

As you are aware, construction contract documents for the alternative wastewater disposal solutions have not been prepared at this stage of the project, however, preliminary cost information is provided below based on our experience with numerous similar projects for purposes of comparing the relative order of magnitude cost of each alternative.



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A. Financial Impacts

1. Sewer Connection

- a. A preliminary opinion of probable construction cost for connection to the municipal sewer is based on the following:
- Modify the existing grease trap and septic tanks for use as grease interceptor units for pre-treatment of the restaurant kitchen wastewater.
 - Duplex wastewater pump station.
 - Force main extending 1,100 ft. south on Wilton Road (Conn. Route 33); provide cleanout manhole.
 - Sanitary manhole at the Wilton Road/Partrick Road intersection.
 - 8" diameter gravity sewer extending 680 ft west from the sanitary manhole to the existing Partrick Road wastewater pump station including 4 additional manholes.
 - Connection to the existing Partrick Road wastewater pump station.
 - Erosion and sediment control measures for all phases of work.
 - Traffic control
 - One lane pavement overlay on Route 33 and Partrick Road.
 - \$60,152 abatement fee payment to Westport WPCA pursuant to the Inflow and Infiltration Abatement Policy.
 - \$6,864 Sanitary Sewer Benefit Assessment payment to the Westport WPCA.
 - Survey and engineering design and permitting.
 - Inspection and related engineering services during construction.
 - Legal fees.

On a preliminary basis we estimate that an order of magnitude opinion of probable construction cost for the elements identified above would be on the order of \$660,000.



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2. On-Site Wastewater Treatment Plant and Subsurface Wastewater Absorption system

(Note: Based on discussion in the September 2008 Preliminary Engineering Report on Wastewater Disposal Facilities, prepared by Nathan L. Jacobson & Associates, Inc., and conclusions drawn in the above referenced Connecticut Department of Environmental Protection (CTDEP) letter to Frank Nistico, dated December 30, 2008, an on-site wastewater system is not recommended for this site because of violation of the CTDEP design criteria of 21 days time of travel through soil for pathogen renovation. Order of magnitude cost information is presented below as requested by the Department for purposes of allowing the CTDEP to draw final conclusions on a recommended alternative.)

- a. A preliminary order of magnitude opinion of probable construction cost for an on-site wastewater treatment system and subsurface wastewater absorption system is based on the following:
- Additional grease trap capacity.
 - Flow equalization tank/duplex pump chamber.
 - Advanced wastewater treatment plant designed for removal of biochemical oxygen demand, suspended solids and nitrogen, with ultraviolet disinfection.
 - Duplex effluent dosing pump chamber.
 - Force main from effluent dosing pump chamber to a subsurface wastewater absorption system located at east end of site.
 - Import select leaching fill material for construction of mounded subsurface wastewater absorption system.
 - Installation of a subsurface wastewater absorption system.
 - Site work associated with erosion controls, surface preparation, fill placement,

Based on the design and construction of numerous similar facilities, we estimate that an order of magnitude construction cost would be in the range of \$1,200,000.



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B. Technical Feasibility

1. Sewer Connection

- a. Connecting the Red Barn Restaurant to the municipal sewer system would involve conventional sewerage system elements including grease trap pre-treatment, sewage pump station, force main, gravity sewer, manholes and related appurtenances. If connection is made to the Partrick Road pump station, analysis of the design capacity of that pump station would be required to ensure that any new discharge would be compatible and within the flow capacity of the pump station.

2. On-Site Wastewater Treatment Plant and Subsurface Wastewater Absorption system

- a. As discussed above, an on-site wastewater system is not recommended for this site because the discharge would violate the CTDEP design criteria for 21 days time of travel through soil for pathogen renovation. For the sake of discussion, if an on-site system were used for this property it would involve wastewater pretreatment for solids and oil/grease removal, an advanced wastewater treatment plant for removal of organic matter, suspended solids and nitrogen, and a mounded subsurface wastewater absorption system area with pressure distribution of the treated effluent. Permit approval by the local inland wetlands agency would be required due to the close proximity of the subsurface wastewater absorption system area to Poplar Plains Brook.
- b. A technical issue related to the advanced wastewater treatment plant is the requirement that the treatment system be operated by a State licensed wastewater treatment system operator. In this case it would probably warrant a Class 3 operator due to the nitrogen removal requirements of the system, with operator site visits 3 times per week. Aside from the operator manpower costs, other costs would include electricity, chemicals, periodic septage and sludge removal, mechanical upkeep and eventual capital repairs/replacement for treatment system components.



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C. Administrative Steps for Implementation

1. Sewer Connection

a. Administrative steps for connecting the Red Barn Restaurant to the municipal sewer system are outlined in a November 21, 2008 letter sent to Westport Water Pollution Control Authority Chairman Gordon F. Joseloff from Westport Department of Public Works WPCA Coordinator Bryan H. Thompson (copy enclosed), summarized as follows:

- Approval of the change in the sewer service area map by the Water Pollution Control Authority (WPCA) following public hearing
- Submittal of the proposed change in the sewer service area map to the Planning and Zoning Commission for comment regarding the private sanitary sewer main extension, pursuant to Section 8-24 (Municipal Improvements) of the Connecticut General Statutes.
- Submittal of the change in the sewer service area map to the CTDEP for approval as a revision to the Municipal Water Pollution Control Plan.
- WPCA enter into a permit agreement with the facility Owner for the private sewer extension.
- Restaurant Owner enter into agreement with the Owner of the Partrick Road wastewater pump station.
- Engineering design of the sewer connection, prepare construction contract documents, final opinion of probable construction cost and obtain necessary local, State and Federal permits as may be required.
- Design approval of contract documents by the Westport Department of Public Works and issuance of a Sanitary Sewer Connection Permit.
- Post required performance bonds and pay local permit fees, including the Inflow and Infiltration Abatement fee and benefit assessment
- Contractor obtain encroachment permit from the Connecticut DOT.
- Establish escrow maintenance account for the private sewer line, subject to approval by the Westport Department of Public Works and Town Engineer.
- Construction with inspection, testing, preparation of record documents and system start up.



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2. On-Site Wastewater Treatment Plant and Subsurface Wastewater Absorption system

a. Administrative steps for constructing an on-site wastewater treatment plant and subsurface wastewater absorption system at the Red Barn Restaurant are summarized as follows:

- Application to CTDEP for a State Discharge Permit accompanied by concept design report; submit copy of application to Health District.
- Public notice of State Discharge Permit application and comment period; potential CTDEP public hearing on application.
- Engineering design of the wastewater collection system, advanced wastewater treatment plant and subsurface wastewater absorption system; prepare construction contract documents, final opinion of probable construction cost and obtain necessary local, State and Federal permits as may be required.
- Design approval of contract documents by the CTDEP and authorization to proceed with construction.
- Construction with inspection, testing, preparation of record documents and system start up.

Should you have any questions or require any additional information regarding this matter, please feel free to call.

Sincerely,

Nathan L. Jacobson & Associates, Inc.

Brian C. Curtis, P.E.

cc Gordon Joseloff
Bryan Thompson
Frank Nistico
Leo Nevas