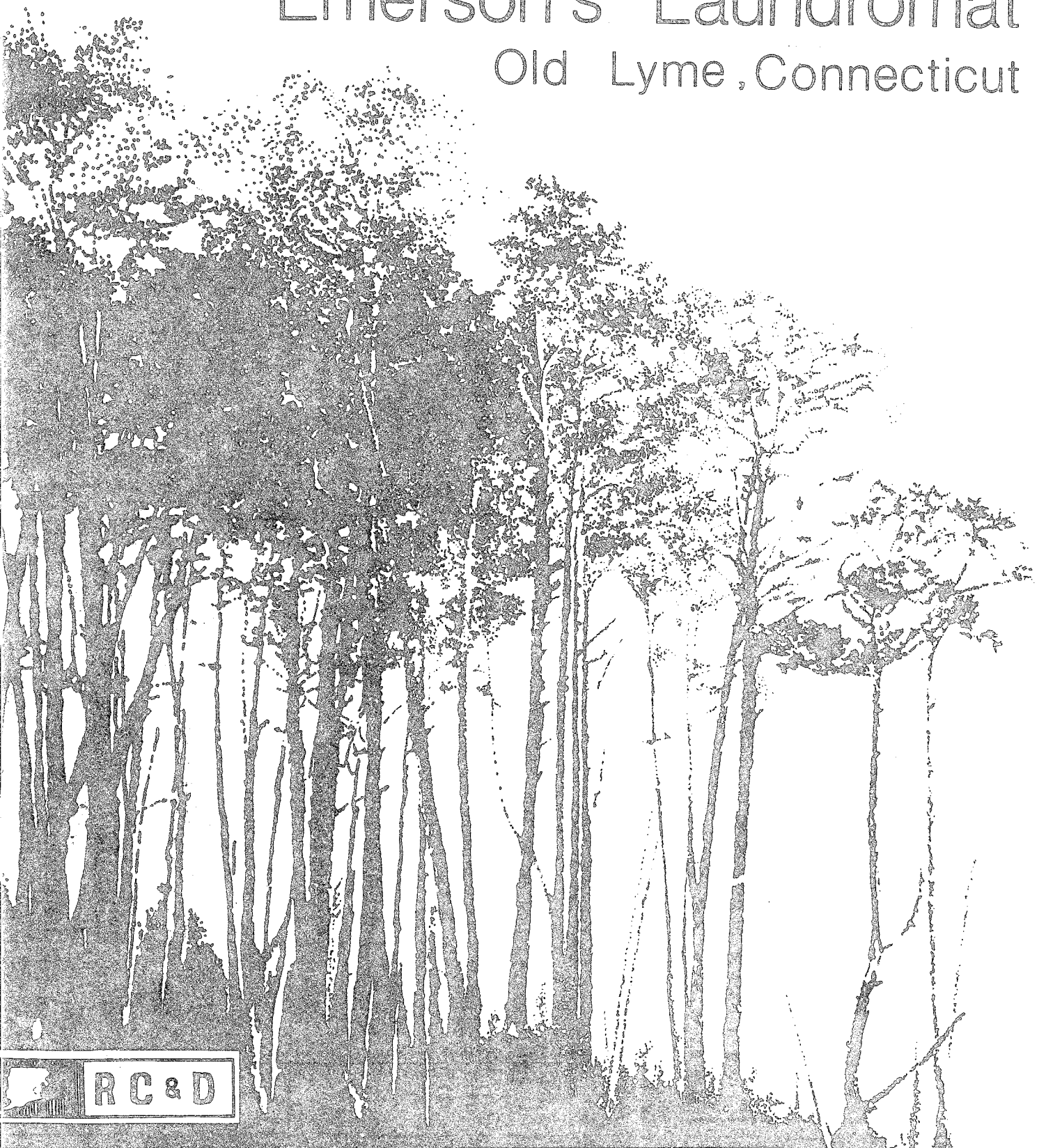
Environmental Review Team Report

Emerson's Laundromat

Old Lyme, Connecticut



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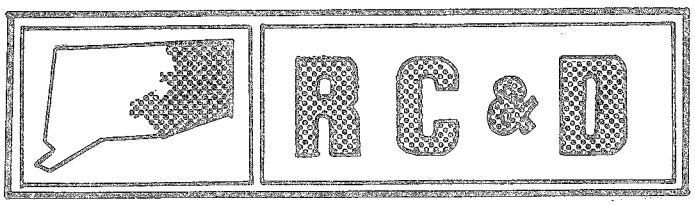
EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team Report on

Emerson's Laundromat

Old Lyme, Connecticut

November 1981

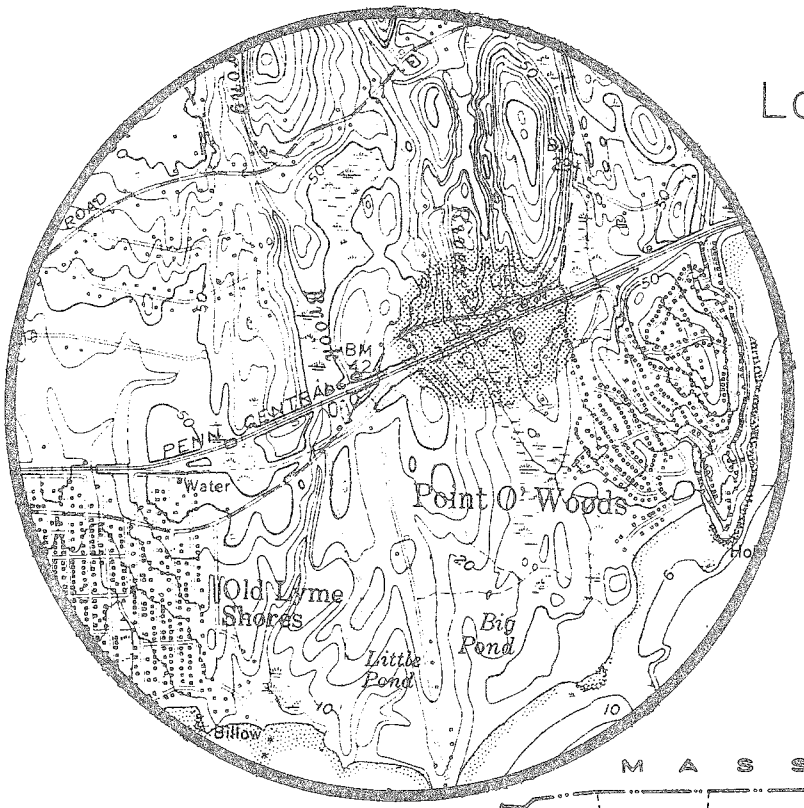


eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

EMERSON'S LAUNDROMAT
OLD LYME, CONNECTICUT



EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
EMERSON'S LAUNDROMAT
OLD LYME, CONNECTICUT

This report is an outgrowth of a request from the Old Lyme Inland Wetlands Commission to the New London County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval as a project measure. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist of the United States Department of Agriculture (USDA), Soil Conservation Service (SCS). Reproductions of the soil survey map as well as a topographic map of the site were distributed to all ERT participants prior to their field review of the site.

The ERT that field checked the site consisted of the following personnel: Gary Domian, District Conservationist, Soil Conservation Service (SCS); Mike Zizka, Geologist, Department of Environmental Protection (DEP); Ron Rozsa, Ecologist, (DEP - Coastal Area Management); Brian Curtis, Sanitary Engineer, (DEP); Don Capellaro, Sanitarian, State Department of Health; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Tuesday, September 29, 1981. Reports from each Team member were sent to the ERT Coordinator for review and summarization for the final report.

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the developer and the Town of Old Lyme. The results of this Team action are oriented toward the development of a better evnironmental quality and the long-term economics of the land use.

The Eastern Connecticut RC&D Project Committee hopes you will find this report of value and assistance in making your decisions on this particular site.

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.

Topography

0 660'
scale

N

INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for a proposed septic system for Emerson's Laundromat. The site is located in the town of Old Lyme, south of Route 156 and north of the Penn Central Railroad line. Three Mile River flows to the west of the site. The actual location of the proposed septic system is in a small inland wetland area, south of Route 156. The property is presently in the private ownership of Norman Emerson. Preliminary engineering plans for the proposal have been prepared by Angus McDonald and Associates.

The plans, which have been approved by the Town Sanitarian, call for excavation of a small pond adjacent to the laundromat, refilling the excavated area with sand or a suitable soil material to create a septic field, and installing galleries in this area. This system will have an approximate discharge of 4,000 gallons of laundry water per day. This proposed activity does not come under the jurisdiction of the Coastal Zone Management Act.

This report provides information relating to those concerns expressed by the Town's representatives at the pre-review meeting. The Inland Wetlands Commission, which ultimately must decide about the elimination of this wetland/pond area if the proposed project is to proceed, was concerned with the actual location of this septic system in the wetlands, the system's proximity to the Three Mile River and any detrimental effects that this system may have on neighboring wells. Most of these issues are discussed in the Hydrology section of this report along with documented information about the phosphorus attenuation properties of soils. Wastewater discharges are regulated by the Water Compliance Unit of the State Department of Environmental Protection and are discussed in the Wastewater Management section of this report.

The Team wishes to note that although most of the information presented in this report relates primarily to the proper functioning of the proposed septic system, the final decision confronting the Inland Wetlands Commission is one of complete removal of a marsh and any flood storage which it may have provided.

ENVIRONMENTAL ASSESSMENT

GEOLOGY

The site proposed for the new septic system is presently a small pond-wetland. The wetland is sandwiched between the artificial dikes of the Amtrak railroad and Connecticut Route 156. To the east is a bedrock knob thinly covered with glacial till. To the west, an artificial channel drains the wetland into Three Mile River at the point at which it passes under the railroad. The pond-wetland is located in an area of glacial outwash, a sediment that consists largely of sand. The upper two to three feet of the sediments in the wetland is primarily muck, mixed with minor amounts of clay, silt, and sand. The proposal calls for removing the muck deposit and replacing it with a substantially greater thickness of silty sand (approximately ten to thirteen feet). The leaching trenches would be placed in the fill.

HYDROLOGY

Since the effluent would be principally or entirely laundry wastewater, the major potential contaminant would probably be phosphates. Testing of the present laundry wastewater by Eastern Analytical Laboratory in Old Saybrook showed the level of nitrates and chlorides to be well within the acceptable limits for drinking water. Moreover, the effluent would be subject to dilution from both surface water and groundwater. A report submitted by Angus L. McDonald and Associates, Inc., indicated that disinfection of the effluent after the septic tank may be necessary to prevent bacterial problems.

Much research has been done on the subject of the effectiveness of soils in removing phosphates from sewage effluent. In general, the distance of the trenches from bedrock or groundwater and the texture of the soil are the most critical factors with respect to the effectiveness of the system. "It has been observed that when subsurface disposal systems are built on proper soil containing sufficient quantities of fine grain particles like clay and silt, and when the systems are located at proper distances from the receiving water body, the removal of the phosphorus from the septic tank effluent is almost complete. However, when the distances between the disposal system (and) the lake (or other water) are limited or in cases where only coarse sand or even bare bedrock are the media separating the disposal system from the water, the phosphorus from the system moves directly into the groundwater or into the lake or river."[1]

The following excerpt describes the movement of phosphorus through a typical septic system, as determined from an investigation of a system over a period of two years:

"The results of this investigation show that soon after a septic system is put into use, ponding of effluent in the trench begins. The level of effluent continues to rise because of decreased infiltration vertically and horizontally, caused by the development of a slime layer on soil surfaces. A reduced steady-state infiltration rate then ensues. The flow of wastewater effluent through the soil surrounding the drainfield is primarily unsaturated.

Movement of phosphorus from the trench occurs in both the downward and in horizontal directions. It appears that in soil solution at equal distances below and beside the trench phosphorus reached similar concentrations after the system had been in use for an extended period of time. After a layer of soil surrounding the trench becomes saturated, the concentration of phosphorus in soil solution in that zone reaches the concentration of wastewater in the trench. Concentrations of only 0.5 mg/l at 60-cm depth in the six-year old system under investigation show that a soil with a deep water table below the drainfield should effectively renovate wastewater effluent for a number of years and should permit only minimum additions of phosphorus to the groundwater. However, concentrations as large as 2.5 mg/l observed in soil solution at 30-cm depth suggest that shallow soils with high or perched water tables would likely permit undesirably large phosphorus additions to the groundwater."[2]

The investigation mentioned above, as well as other experiments, have indicated that phosphorus (P) sorption sites in the soil can be partially regenerated if the system is "rested" (i.e., the trenches are not used) for a period of several months. "Although the mechanisms of regeneration of P sorption are not clear, it appears that following P addition and reduction in P sorption capacity, drying and wetting of the soil at a certain pH brings Al, Fe,

or Ca and fresh mineral surfaces in equilibrium with the soil solution, creating new sites for P sorption. In addition to sorption, P may be retained in soils by precipitation as complex P compounds."[3]

Nevertheless, the soil has a finite capacity to absorb phosphorus. "Although P in wastewater can be effectively removed by soil in a septic tank drainfield, it must be emphasized that once soil has sorbed P equal to its sorption capacity determined in laboratory experiements, increasingly larger amounts of P will appear in the effluent leaving the drainfield and may enter groundwater."[4] For this reason, if the septic system is installed as planned, it may be necessary to replace the fill and reconstruct the trenches after a certain period of time in order to prevent phosphate pollution of Three Mile River. Also, as noted above, the texture of the fill should be closely examined to assure its suitability for its intended purpose.

Three Mile River has a drainage area of about 1,120 acres, or about 1.75 square miles, at the railroad underpass. Only about 50 acres of this area contains stratified drift deposits; the remainder is composed primarily of bedrock and till. During times of scarce rainfall, groundwater replenishment of surface streams may be substantial in stratified drift areas, but it will generally be insignificant in till-covered areas. Hence, streams in till-covered areas are more likely to dry up periodically than streams in stratified drift areas. Since less than five percent of the Three Mile River watershed contains stratified drift, it may be presumed that flows in the river occasionally become very small. Statistical data in Connecticut Water Resources Bulletin No. 15 allows one to estimate flow characteristics for the river at the railroad underpass. A table of estimates is given below in units of both million gallons per day (mgd) and cubic feet per second (cfs).

Table 1. Estimated flow-duration characteristics of Three Mile River at the Amtrak railroad underpass.

Percent of time flow equalled or exceeded	1	5	10	30	50	70	90	95	99
Flow (mgd)	14.56	7.10	5.10	2.55	1.15	0.40	0.09	0.05	0.02
Flow (cfs)	23.66	10.92	7.46	3.64	1.82	0.67	0.15	0.07	0.03

As the table above shows, the flow rate of Three Mile River may be expected to become very low on occasion. A wastewater discharge of 4,800 gallons per day would equal 24 percent of the streamflow that is exceeded or equalled 99 percent of the time, and about 5 percent of the streamflow that is exceeded or equalled 90 percent of the time. It is, therefore, possible for the laundromat effluent to exert a noticeable influence on the river's quality during low flow periods. This reinforces the need for great care in the design and, more importantly, the installation of the septic system if it should be approved.

If the laundry wastewater adversely influences the stream quality (this is not to suggest that an adverse affect will occur; it is only a consideration of the possible outcomes if such an effect does take place), it may also cause some deterioration in the quality of water withdrawn from wells that are near the river south of the railroad. The potential for such an effect would increase with

proximity of a well to the river, and it would be greater for a shallow well than for a deep well (i.e., a well tapping bedrock). In either case, however, the actual risk would be small since there would be both dilution of contaminants by the river and filtration by the soil between the river bed and the well.

There is a greater probability that the well that presently serves the laundromat would be affected by pollutants from the proposed septic system. Since the well withdraws a fairly large amount of groundwater, it may be presumed that the cone of depression (the local area from which the well draws groundwater) extends many feet from the well. It may, therefore, be partially within the zone through which effluent from the proposed system would move. If effluent from the system were to affect this well, there would be no direct threat to health unless the wellwater were utilized for drinking purposes in addition to laundering. However, the effluent received in the new trenches would become increasingly concentrated with pollutants as the water was recycled through the ground.

A different hydrological concern relates to surface runoff and drainage patterns. At the railroad underpass, Three Mile River flows through a rectangular culvert. The filling of the small wetland for the new septic system would eliminate an area of surface water storage and would, therefore, add to peak flows at the underpass. However, the area drained by the small wetland is insignificant in relation to the total watershed of Three Mile River. Peak storm flows should not be significantly increased. On the other hand, the culvert may restrict heavy streamflows and may cause backups of surface water near the inlet. If possible, the landowner's engineer should provide some indication of the areal extent of backwater flooding during heavy flow periods (as, for instance, during a 25-year or 50-year storm) and should indicate if and to what extent such flooding would affect the operation of the septic system.

* References used in this section of the report are listed in the bibliography.

SOILS

A detailed soils map of this site and detailed soils descriptions are included in the Appendix to this report, accompanied by a chart which indicates soil limitations for various urban uses. As the soil map is an enlargement from the original 1,320'/inch scale to 660'/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types on the site. The soil limitations chart indicates the probable limitations of each of the soils for on-site sewage disposal, buildings with basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development, many soils and sites with difficult problems can be used. The soils map, with the publication, New London County Interim Soil Survey Report, can aid in the identification and interpretation of soils and their uses on this site. "Know Your Land: Natural Soil Groups for Connecticut" can also give insight to the development potentials of the soils and their relationship to the surficial geology of the site.

The low lying, nearly level areas along drainageways in the uplands are occupied by Ridgebury, Leicester and Whitman extremely stony fine sandy loams. The soils are designated by the mapping unit symbol 43M. The letter "M" denotes extremely stony. The Ridgebury and Whitman soils formed in compact glacial till; the Leicester soils formed in friable glacial till. The Ridgebury and Whitman soils have moderate to moderately rapid permeability in the surface layer and subsoil and slow or very slow permeability in the substratum (fragipan). The Leicester soils have moderately rapid permeability throughout. The seasonal high water table for Ridgebury and Leicester soils is at or near the surface 7 to 9 months of the year. The Whitman soils have high runoff potential. Runoff is slow to medium in Ridgebury soils and slow in Leicester soils. This soil is designated as a wetland soil and is regulated under Public Act 155.

The proposed septic system is located within Ridgebury, Leicester and Whitman extremely stony fine sandy loams.

Soils adjacent to the proposed septic system site include the Haven series, the Hinckley series, and the Charlton-Hollis series. These soils are described as follows:

The gently sloping stream terraces and outwash plains are occupied by Haven silt loam. The soils are designated by soil mapping unit symbol 63B. The symbol "B" denotes a 3-8 percent slope. Haven soils formed in water sorted loamy material over stratified outwash. The soils are well drained and have moderate permeability in the surface layer and subsoil, and very rapid permeability in the substratum. Surface runoff is medium. This soil qualifies as a Prime Farmland soil in Connecticut.

The moderately steep to steep terraces or outwash plains are occupied by Hinckley gravelly sandy loam. The soil mapping symbol is 60D. The letter "D" denotes a slope range of 15 to 35 percent. Hinckley soils formed in water sorted outwash. The soils are excessively drained and have rapid permeability in the surface layer and subsoil and very rapid permeability in the substratum. Runoff is slow.

The gently sloping to sloping land forms adjacent to the highest elevations in the landscape are occupied by Charlton-Hollis fine sandy loams, very rocky. The soil mapping unit symbol is 17LC. The letter "L" denotes very rocky, and "C" denotes a slope range of 3 to 15 percent. Both these soils are well drained. Charlton soils formed in deep, friable glacial till and the Hollis soils formed in shallow glacial till less than 20 inches deep over bedrock. Charlton soils have moderate to moderately rapid permeability and Hollis soils have moderate permeability. Surface runoff is medium to very rapid for Hollis soils and medium to rapid for Charlton soils.

The proposed leaching fields are located in Ridgebury, Leicester and Whitman extremely stony fine sandy loams. This is designated as a regulated wetland in the State of Connecticut. A permit from the Old Lyme Inland Wetlands Commission is necessary before any mucking out or filling of the wetlands begins.

The top layer of muck is planned for removal. Ten to thirteen feet of fill material will be added over the original soil substratum. The Ridgebury and Whitman soils have slow or very slow permeability in the substratum. Leicester soils have moderately rapid permeability in the substratum. Ridgebury, Leicester, and Whitman extremely stony fine sandy loams are rated as severe for septic systems because of wetness and large surface stones. These limitations are planned to be overcome by the addition of fill material.

WETLAND VEGETATION

No rare plants or unusual plant communities were observed in or adjacent to the pond. The following vegetation was observed during the site inspection:

RED MAPLE SWAMP: To the east of the pond occurs a small, wetland forest or Red Maple Swamp containing the species listed below.

Trees:
- Red Maple (Acer rubrum)

Shrubs:
- Sweet Pepperbush (Clethra alnifolia)
- Northern Arrowwood (Viburnum recognitum)
- Winterberry (Ilex verticillata)

Herbs:
- Royal Fern (Osmunda regalis)
- Sensitive Fern (Onoclea sensibilis)
- Bog Hemp (Boehmeria cylindrica)
- Virginia Creeper (Parthenocissus quinquefolia)
- Touch-me-not (Impatiens capensis)

POND BORDER: This vegetation attains its greatest coverage on the eastern shore in a zone that is flooded in the spring but dry in mid-to-late summer. The following plants grow in this zone:

Shrubs:
- Buttonbush (cephalanthus occidentialis)

Herbs:
- Rose Mallow (Hibiscus palustris)
- Spike Rush (Eleocharis acicularis)

Mosses:
- Sphagnum moss

POND

- Water Lily (Nymphaea odorata)
- Spike Rush (Eleocharis acicularis) - shallow water

WASTEWATER MANAGEMENT

Section 25-54i - 1.0 through 25-54i - 5.2 of the Regulations of Connecticut State Agencies specifically state that any person wishing to dispose of commercial

laundry wastewater by means of a subsurface sewage disposal system must obtain a 25-54i State Discharge Permit from the Department of Environmental Protection.

In order for the Department to grant approval to any system of this type, the following basic design criteria must be met:

1. An adequately sized leachfield must be provided to allow for the long term acceptance of the laundry wastewater through a restrictive biological growth layer that develops at the systems' stone-soil interface.

2. The soils surrounding the leachfield must have a sufficient hydraulic capacity to transmit flows away from the system at a rate greater than they are applied.

3. The leachfield effluent must be properly renovated by the soil-groundwater system and not lead to any pollution problems.

The system design as proposed calls for the removal of organic soils from an existing wetland-pond complex, constructing a sand fill in its place, and installing a leachfield system in the fill material. The existing small watercourse which presently flows through the pond would be redirected to pass around the perimeter of the sand fill and into the Three Mile River shortly thereafter. A shallow water supply well serving the laundromat is located approximately 75 feet from the proposed leachfield area. This new system is intended to replace an existing failing septic system on another portion of the property.

In order to fully evaluate the design and operation of the proposed leachfield system and its impact upon surface and groundwater quality, samples of the laundromat wastewater were collected for chemical analysis. The primary pollutants of concern with laundry wastewater are biochemical oxygen demand, suspended solids, lint and phosphates. BOD and suspended solids in wastewater are effectively removed by the combined action of a septic tank followed by a properly operating leachfield system. Lint must be removed from the waste prior to entering the septic tank by special filters, to avoid clogging of the system. A certain portion of phosphate is removed by the septic tank and the biological growth layer of the leachfield. The remainder of phosphate must be removed by soil surrounding the leachfield, through which the effluent will pass.

Soil is fairly effective at removing phosphates through the processes of adsorption, mineralization and insolubilization, plant uptake and biological immobilization. Soils phosphate adsorption capability varies depending upon soil types, but may typically be in the range of 35-40 mg P/100g soil for till soils and the range of 5-15 mg/100g soil for sandier soil.

An initial sample of laundromat wastewater contained a high phosphate concentration of 164 mg/l. This value was much higher than the expected range of 5-10 mg/l, based upon the amount of water used on a per wash basis and the phosphate content of detergent. This discrepancy was due to a treatment-recirculation unit presently in use at the laundromat which probably had caused phosphates to build up to this elevated level over time. A resample of the wastewater with the recirculation unit shutdown contained a phosphate concentration of 5.3 mg/l, con-

firming this assumption. (Household domestic sewage contains 15-20 mg/l phosphate.)

At a wastewater flow of 4,000 gallons per day and 5 mg P/L, the proposed soil fill will have an approximate adsorption capacity of 15-20 years. In addition to this removal, mineralization of adsorbed phosphates will occur accounting for an additional phosphate adsorption capacity of the soil. Literature reports this additional capacity to be on the order of two to six times the initial adsorption capacity.

In the opinion of DEP Water Compliance Department staff, the proposed leach-field system constructed in 11-13 feet of sand fill should not lead to any pollution problems in Three Mile River due to phosphates or the other pollutants parameters previously mentioned.

It is anticipated that any approval granted by this Department will include requirements for groundwater and surface water monitoring.

The entire issue of elimination of an inland wetland area for construction of the system falls under the jurisdiction and judgment of the Old Lyme Conservation-Inland Wetland Commission and should be ruled on by that body.

WATER SUPPLY/WASTE DISPOSAL

Emerson's laundromat is located on the north side of Route 156 near the entrance to the seasonal colony of Point O' Woods. The site is in the coastal zone being bounded by the Penn. Central Railroad Lines (Amtrak) at the south and Three Mile River and associated wetlands at the west side. As was observed and is indicated by soil mapping data and topographic maps, the laundromat is situated at the high, mid-point with the terrain sloping towards the east and west sides with the predominant falloff being towards the west. The higher terrain consists of shallow underlying bedrock which severely restricts the use of such land for sewage disposal purposes. The eastern end although having well drained soil and less limitations due to rock, is apparently restricted by the physical amount of available land area. Engineered plans prepared by Angus McDonald & Associates, indicate the proposed new leaching system towards the west side of the property in a pond-wetlands area. This area is to be suitably prepared by removing any unsuitable overburden and replacing with specified fill to a given elevation.

The waste disposal system is planned to be located in a wetlands area. Normally such an area would not be considered appropriate for the installation of such a relatively large system. However, due to site limitations and the failing condition of the existing system, this is apparently the best available area at the site. Extensive engineering analyses and design plans seem to indicate that a satisfactory system could be installed which should not have a detrimental effect on the surrounding land or more important, on the adjoining drainage channel and water quality of the river and marsh area. Of course, the report, plans and specifications for such a system (type of waste) would be subject to the review and possible approval of the Water Compliance Unit of the Department of Environmental Protection.

In general, the State Department of Health would have more concern with the possible contamination, or adverse chemical effect on the underlying aquifer which supports the laundromat's shallow well (reported to be about 20 feet deep). This well would continue to be utilized although it would be located only 75 feet east

of the nearest rows of leaching galleries. A separating distance of 75 feet is considered to be the minimum distance for low yield wells (less than 10 gpm). Generally, this would be the type of well serving a single family residence or business having a low water usage. In addition, the volume of sewage and/or type and volume of waste water being discharged in the vicinity of a well would also be a factor that should be taken into account. In this case the expected flow from the laundromat is approximately 5,000 gallons per day. However, based on the number of washing machines (fifteen, a few of which are triple loaders), hours of operation, and consideration of the peak influx of summer residences, it is conceivable the daily flow would increase during this period of the year. At the same time, there would be an increased demand put upon the well. While it would appear the discharge area(s) for the aquifer and leaching system is towards the drainage channel and the lower western (river) side of the property, natural seasonal drop in the water table, coupled with pumping more water from the well's recharge area, could cause changes in the elevation and slope of the water table.

Although the well in question would only be utilized for washing purposes (non-potable), there is the possibility it could introduce contaminants to the aquifer which would not be satisfactorily attenuated by filtration, biological or chemical means and dilution. For these reasons, a new well, which would be more remotely located from the leaching area, should be given serious consideration. In turn, the existing well should be abandoned in accordance with accepted pratices. This would not only provide for greater protection of the water supply aquifer, but would probably allow for some flexibility in the placement of the leaching system components. In turn, increasing the separating distance between the galleries and drainage channel would provide further treatment and improvement of the waste effluent.

Due to the nature of the terrain and extensive site work, it would be important to have good erosion and sedimentation control measures. There should also be close supervision and inspection of the project, particularly of the type and placement of fill material.

Appendix

Soils

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scale

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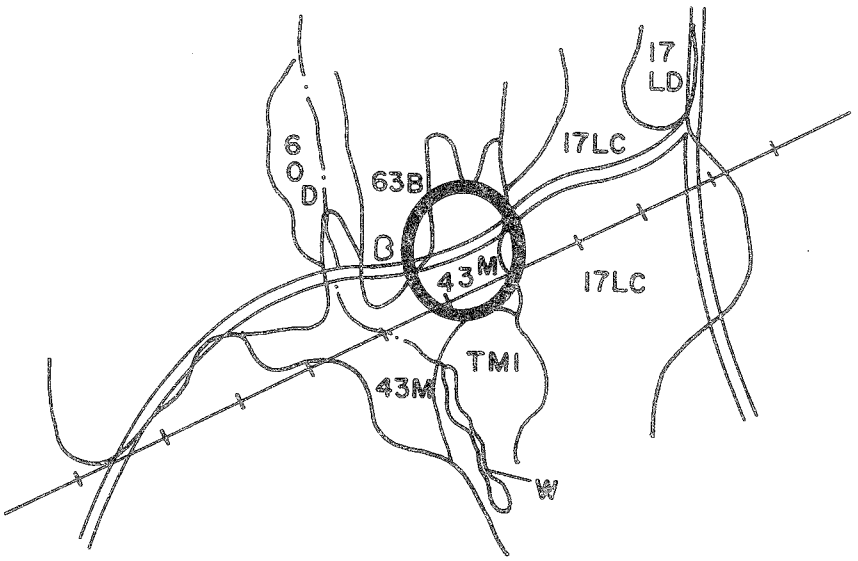

EMERSON'S LAUNDROMAT
OLD LYME, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Principal Limiting Factor	Urban Use Limitations*			
			On-Site Sewage	Buildings with Basements	Streets & Parking	Land-Scaping
**Ridgebury, Leicester and Whitman	43M	Wetness	3	3	3	3

LIMITATIONS: 1=Slight; 2=Moderate; 3=Severe

**Inland Wetland soil regulated under P.A. 155.

SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of community and recreational development uses consist of three degrees of "limitations:" slight or no limitations; moderate limitations; and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On-site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of land for development. If economics permit greater expenditures for land development and the intended land use is consistent with the objectives of local or regional development, many soils and sites with difficult problems can be used.

Slight Limitations

Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that a minimum of time or cost would be needed to overcome relatively minor soil limitations.

Moderate Limitations

In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations.

Severe Limitations

Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.

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2. Sawhney, B.L., and Starr, J.L., "Movement of phosphorus from a septic tank drainfield," Journal Water Pollution Control Federation, Vol. 49, Nov. 1977, pp. 2238-2242, at p. 2241.

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About the Team

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety of federal, state, and regional agencies. Specialists on the Team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, archeologists, recreation specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area.

The Team is available as a public service at no cost to Connecticut towns.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, sanitary landfills, commercial and industrial developments, sand and gravel operations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected officials of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the Chairman of your local Soil and Water Conservation District. This request letter should include a summary of the proposed project, a location map of the project site, written permission from the landowner allowing the Team to enter the property for purposes of review, and a statement identifying the specific areas of concern the Team should address. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information regarding the Environmental Review Team, please contact Jeanne Shelburn (889-2324), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360.