Potential Community Subsurface Wastewater Absorption System Site Evaluation, Design, Construction

Consulting engineer shall demonstrate experience in site evaluation, design, construction, CTDEEP permitting and operation of large scale subsurface wastewater absorption systems in Connecticut, including but not limited to the following:

- Site screening analysis based on published information available from the US Geological Survey, CT DEEP, USDA Natural Resources Conservation Service, local Assessor data, local Health Department soil test data and field reconnaissance.
- Subsurface investigations including deep test pits, soil borings, soil core sampling, gradation analysis, core testing and in-situ testing for soil hydraulic conductivity determination, hydraulic load testing, groundwater flow travel time tracer analysis, groundwater monitoring and analysis of site hydraulic response to precipitation events.
- Groundwater modeling analysis for determination of long term groundwater mounding and groundwater travel time caused by hydraulic loading.
- Soil renovation analysis for wastewater parameters including nitrogen, phosphorus and pathogens.
- Design of large scale subsurface wastewater absorption systems including pressurized distribution, pump stations, system sizing by long term acceptance rate as a function of organic and nitrogen loading, subsurface wastewater system configuration and large scale system constructability analysis, groundwater quality monitoring and operation and maintenance features.
- Design of advance wastewater treatment plants for removal of nitrogen, organic matter, suspended solids, pathogens and related pollutants.
- Design of wastewater collection systems, including wastewater pump stations.
- Quality control program during construction including testing of natural soils, testing of emplaced fill materials, collection/distribution/treatment system testing and system start-up.
- Operator training and technical support at system start-up and operational phase services.

Individual Lot On-Site Subsurface Wastewater Absorption System Evaluation

Consulting engineer shall demonstrate experience in site evaluation, design and construction of household scale subsurface wastewater absorption systems in Connecticut, including but not limited to the following:

- Subsurface investigations and groundwater monitoring.
- Approach for individual house lot evaluation to determine suitability for conventional on-site subsurface sewage disposal system, alternative on-site subsurface disposal system or requirement for off-site wastewater disposal.
- On-site system design in conformance with the Connecticut Public Health Code. Determination of minimum lot size to accommodate conventional subsurface sewage disposal system as a function of soil and groundwater conditions.
- Design of alternative on-site treatment system technology/advanced on-site treatment units for removal of nitrogen, organic matter, suspended solids, pathogens and related pollutants. Determination of minimum lot size to accommodate alternative subsurface sewage disposal system as a function of soil and groundwater conditions.
- Management program for conventional and alternative on-site treatment systems for long term viability.