

New Onsite Technology Review Guidelines (Rev: 7-9-15)

The review of new onsite technologies for possible approval for use in the State of Utah will require completion of the following review and approval process. The intent of this process is to determine if new technologies are effective, provide consistent treatment, utility, and value to augment the choice of technologies available. This determination would consider the operation, maintenance, and regulatory burdens for successful use of such systems. A documented operating history would have to show success in achieving consistent effluent quality that is fully protective of human health and the environment. Some technologies may not be deemed to provide sufficient value to the citizens of Utah to offset the burden needed for successful regulation and long-term operation of the system.

I. Requirements for All Technologies

As a preliminary consideration, all proposed, new onsite technologies and applications must conform to the following requirements:

- 1) All onsite technologies will be required to only discharge to an approved subsurface disposal system. No discharge to surface waters or to the land surface will be permitted.
- 2) If a proposed new technology has not been successfully operated under conditions that are similar to those found in Utah for a minimum of two years under full flow, or loading conditions; or for five years at partially loaded conditions, it must be evaluated as an experimental system in accordance with R317-4-9. A determination of successful operation will be based upon a review of operating data in comparison to claimed performance and other relevant data.
- 3) Each Local Health Department has the option to determine that use of any given technology would not be appropriate in its individual jurisdiction in accordance with R317-4-1.4.D & 1.5.A.
- 4) Treatment systems will be categorized by type of technology in the state rules. No references to specific manufacturer brand names or models will be added to the state rules. (Technology brand names and models may be added to a separate "Acceptable Technology List" which would be kept separate from rule and would function as a reference information source only.)
- 5) It is preferable that a technology be reviewed as part of an actual construction project, or as a technology considered for use by a local health department or the Division of Water Quality (DWQ), to better manage the regulatory resource load. The basis of technology review decisions will be recorded.
- 6) A technology will not be considered acceptable for use if any malfunction of, or loss of power to any system component will allow an untreated or partially treated effluent discharge to continue.

II. New Technology Review Process

The process for considering and evaluating new technologies will be conducted in the following steps:

A. Initial Screening of Technology

As this review and approval process will involve a significant effort by regulatory authorities and a significant investment of time and resources by a proponent, a preliminary determination will be made by the CLEHA Onsite Wastewater Partnership (COWP) group, as to whether the technology is regarded as a candidate for use in the state. Such determination will be made based upon the known successful operating history of the technology, burden to operate and regulate it, and if the technology conforms to the preliminary requirements above.

If deemed a candidate for consideration, the proponent must then present a general overview and other introductory information about the proposed technology in a presentation to the (COWP) group for initial screening. This introduction must include the following information, submitted as written responses to each of the following specific questions, in addition to other pertinent information requested and conveyed in the presentation:

1. System Description

- Describe the purpose of the technology and its proposed operating conditions.
- Describe types and strengths of feed wastewaters that the system is intended to treat.
- Describe category of treatment technology system/process. (ie packed bed, textile, etc)

2. System Design and Operation

- Describe the system treatment and disposal process and the major system components, and any treatment or operational advantages this system is intended to provide.
- Describe which components would involve active and passive operation.
- Describe how long of a start-up period the technology requires to achieve the intended, steady-state performance?
- Detail what conditions would cause an upset to normal operation of the system, and the probability of the occurrence of such conditions resulting in an upset.
- How would the system be returned to normal operating conditions (ie "re-started") and how long would it take for the system to recover to normal operation?

4. Operating History

- Describe all of the successes and challenges in the previous operating history of the proposed technology.
- Describe how many such systems are installed and operating, for how long, and under what loading and flow capacity conditions. Provide documentation of a minimum of the two years' operation under full load conditions, or five years' successful operating experience under partial load in similar conditions as found in Utah.
- Provide sufficient and relevant regulator and operator reference contact information for verification of all documentation.

5. National Performance Certification

- Has this system undergone any nationally recognized evaluation, testing or certification program?
- If yes, completely describe the testing protocol, conditions and any resulting test data and certifications received.
- Indicate how the test conditions would compare to those under the long-term care of an individual homeowner.

- Provide summaries of all data generated by the evaluation process, and the official final report from the testing organization.

During this initial step, the COWP group will review all information provided and will determine if the technology merits further consideration towards approval for use in the state. If the determination is made that continued consideration is warranted, the proponent will be asked to proceed to the next step.

B. Detailed Information Submittal

After completing Step A, above, and if the COWP group determines the technology merits further consideration, then the proponent must submit written responses to the following additional requests for information to COWP, as appropriate to the technology, for detailed review and evaluation:

1. Design Criteria

- Completely describe how the system will be sized and sited.
- Do you intend to utilize any design criteria reductions or relaxations which are presently in the state rules, or to request any new ones for designing or siting of this system? If so, please completely detail the justification, with test data, for consideration of such proposed relaxations.

2. Operations and Maintenance Requirements

- Describe any recommended operations, maintenance and quality control requirements and manufacturer recommendations for long-term operation of the system.
- Will the operator/maintainer require any specialized training beyond state required certification training?
- What actions can the manufacturer/company take with installers or owners who may not properly install or maintain their systems?
- What errors in operation of the system could cause problems with the performance of the system, or adversely impact the performance warranty for the system?
- What ancillary waste streams will be generated as a result of system operation and how should they be managed and properly disposed?

3. Performance/Monitoring

- What is the anticipated quality of the discharge from the long-term, everyday use of the system? Parameters may include any of: BOD, COD, TSS, Turbidity, total nitrogen, NO₃, NO₂, total inorganic nitrogen, total phosphorus, and pathogen indicators (eColi or fecal coliform).
- Describe how much of the treatment will take place within the system, and how much in the surrounding native soils.
- Can the system effluent be effectively isolated to allow accurate determination of effluent quality? If so, how would that be achieved?
- What actions will the company/manufacturer take if effluent quality falls outside the expected range?
- What are the possible adverse impacts to the environment if the system is upset or not maintained? Please include any possible adverse impacts from the discharge of residual contaminants.

4. Future Design Considerations

Should issues with the presently designed effluent quality or design capacity develop in the future causing a need to improve treatment or increase design capacity, can the system be installed to more easily accommodate such a future process modification? Examples of such modifications may include the addition of a nitrate reduction treatment process, or an increase of treatment or drainfield capacity. If so, completely describe how the accommodation could be added to the initial installation, how the process would be modified and operated in the future, and what changes in effluent quality or capacity could be expected.

5. Construction and Installation

- Please list any special construction requirements which may be necessary for proper system installation.
- Please summarize the equipment and performance warranty conditions.
- What errors in construction or installation could cause problems in operation or performance of the system, or adversely impact the performance warranty for the system?
- Will the installer be required to undertake any specialized training to affect a proper installation?
- How will quality and consistency of construction be assured?
- Specify any assistance services the manufacturer or equipment supplier may provide for the construction, start-up and long-term operational phases of the system's use.
- What actions can the company/manufacturer take to correct current or future installation situation(s) when installers do not follow installation instructions?

After consideration of all information, the COWP group will submit a recommendation to the DWQ of whether or not to approve use of the new technology, and under what conditions/restrictions.

C. DWQ Approval for Use Decision

The DWQ will review the COWP recommendation and make a final determination as to whether or not the technology will be approved for use in Utah, and under what conditions. The technology may be added as a new category of technology in the rule, or listed as a reference to an approved manufacturer and model under an existing technology category outside of the rule. The DWQ will issue a formal documentation of the decision.

D. DWQ Rulemaking

If the DWQ decides that the new technology should be adopted into state rule, then it will draft proposed rule language, seek the approval of the rule text by the COWP group, and initiate the rulemaking process.

The rulemaking process involves a 30 day period of comment by the public, wherein any concerns or objections to the rulemaking may be submitted and considered. The process also includes required approvals by the Utah Water Quality Board, so that it is typically a three to four month process. If the rulemaking is successful, then the technology is approved for use upon final approval by the Water Quality Board.