State of Idaho
Department Of Environmental Quality
Technical Guidance Committee

# Technical Guidance Committee Meeting

# Minutes

Thursday, May 21, 2015

**Idaho Correctional Industries – Conference Room**
**1301 N. Orchard, Suite 110**
**Boise, Idaho**

## TGC ATTENDEES:

Tyler Fortunati, REHS, On-Site Wastewater Coordinator, DEQ
Joe Canning, PE, B&A Engineers
Bob Erickson, REHS, Senior Environmental Health Specialist, SCPHD
Dale Peck, PE, Environmental & Health Protection Division Administrator, PHD
Michael Reno, REHS, Environmental Health Supervisor, CDHD
Jason Holm, J.T. Holm Construction, LLC

## GUESTS:

Chas Ariss, P.E., Wastewater Engineering Manager, DEQ
Tammarra Golightly, Administrative Assistant, DEQ
Larry Waters, P.E., Lead Wastewater Engineer, DEQ
Ryan Spiers, Alternative Wastewater Systems, LLC
PaRee Godsill, Everlasting Extended Treatment, LLC
Sheryl Ervin, Bio-Microbics, Inc. (via telephone)
Jim Bell, Bio-Microbics, Inc. (via telephone)
Allen Worst, R.C. Worst & Company, Inc.
Jim Worst, R.C. Worst & Company, Inc.
Kirsten Ruebush, Effluent Technologies, Inc.
Shane Ruebush, Effluent Technologies, Inc.
Matt Gibbs, Infiltrator Systems, Inc.

## CALL TO ORDER/ROLL CALL:

Meeting called to order at 8:32 a.m.
Committee members and guests introduced themselves.

## OPEN PUBLIC COMMENT PERIOD:

This section of the meeting is open to the public to present information to the TGC that is not on the agenda. The TGC is not taking action on the information presented.

Kirsten Ruebush, Effluent Technologies, Inc.

Kirsten Ruebush of Effluent Technologies, Inc. introduced herself as the chairwoman of the O&M entity provider. Mrs. Ruebush explained that their O&M entity had been managed by the entity's service provider for four of the last six years. Mrs. Ruebush explained that she is in favor of abandoning the O&M entity led extended treatment package system (ETPS) maintenance and testing program but she is not in favor of transferring the responsibility from the ETPS O&M entity to a service provider. Mrs. Ruebush is in favor of transferring the responsibility for system operation and maintenance to the property owner. Mrs. Ruebush feels that the enforcement activities should fall solely onto DEQ and the health districts and that the manufacturer or O&M entity shouldn't have to be involved in mailing certified letters to their membership that are not in compliance.

Mrs. Ruebush would also like to see a requirement that new property owners are provided the historical operation, maintenance, and testing records for their system upon purchase of a property. The responsibility for provision of historical records for the property should be with the seller at the time of sale. Mrs. Ruebush also feels that the buyer of a property should have the ability to rely on the law to redress non-disclosure of the ETPS system and the historical operation, maintenance, and monitoring records by the seller. Mrs. Ruebush also believes that it should be the responsibility of a property buyer to contact the health district at the time of sale of any property with an ETPS installed on it. Mrs. Ruebush would like there to be an agreement between each property owner and the health district for each ETPS unit owned by an individual. Upon sale or transfer of property Mrs. Ruebush believes that it should be the buyer's responsibility to sign a new agreement with the health district for the ETPS. Mrs. Ruebush reiterated that the ultimate responsibility should be placed on the property owner.

Mrs. Ruebush would also like to see a more comprehensive education program for these system types. Mrs. Ruebush would like DEQ to maintain a clean and accurate website related to the ETPS program. There should also be information on system sizing issues related to ETPS.

Mrs. Ruebush would also like to have access to an independent service provider for ETPS operation, maintenance, and monitoring. The property owners should have the capability to sue service providers for redress if necessary without impacting themselves or their neighbors. Mrs. Ruebush stated that more service providers are necessary. Mrs. Ruebush stated that a single provider leads to the feeling of service provider entitlement. There should be open competition for service providers. Mrs. Ruebush also stated that if the state is going to require manufacturer certified service providers then the state needs to take the responsibility to ensure that certification is available to all those who desire to seek it.

Mrs. Ruebush also stated that the current easement for service providers through the O&M entity has been abused. Mrs. Ruebush stated that there is no knowledge of the provider coming and going, no record of service provided, etc. With a new system Mrs. Ruebush believes that there is no reason for an easement to be in place.

Mrs. Ruebush also would like the property owner to have the ability to submit their annual report or allow the service provider to submit the report for them. Mrs. Ruebush also believes that any cost of enforcement should be borne by the non-compliant property owner and not other property

owners in the ETPS program. Compensation should be provided to the enforcement authority through fining property owners for non-reporting.

Mrs. Ruebush also believes that all ETPS units with NSF testing should be allowed to be sold and used within the state. Mrs. Ruebush stated that she has had issues with the manufacturer of her unit supporting grab sampling. The manufacturer of her unit will not support grab sampling. Mrs. Ruebush believes that it is a waste of property owner's money to have to go through multiple grab samples. Mrs. Ruebush is also concerned that providers are skewing results that are tied to their livelihoods. Mrs. Ruebush stated that through her inquiries she found that other states are only requiring maintenance of ETPS and not additional testing of $CBOD_5$ or TSS. Mrs. Ruebush concluded that she is in favor of requiring maintenance but does not support ETPS testing.

Allen Worst, R.C. Worst & Company, Inc.

Mr. Worst stated that it appears the state is headed towards a service provider model for ETPS operation, maintenance, and monitoring. Mr. Worst stated that under the current proposal it appears the installers would be providing the operation, maintenance, and monitoring. Mr. Worst feels that under the current requirements that installers are lacking in training requirements. Mr. Worst would like to see wastewater operators licenses required to an individual to provide service to ETPS.

Mr. Worst also stated that he disagrees with the previous commenter's statement that grab samples are not effective. Mr. Worst also disagrees that the state should rely solely on NSF testing data for system approval and installation allowances.

## MEETING MINUTES:

### March 20, 2015 Draft TGC Meeting Minutes: Review, Amend, or Approve

No public comment was received on the draft minutes. The minutes were reviewed by the committee and no suggestions for amendments were made.

**Motion:** Dale Peck moved to approve the minutes.

**Second:** Mike Reno.

**Voice Vote:** Motion carried unanimously.

Minutes will post as final. See DEQ website and **Appendix A**

## OLD BUSINESS/ FINAL REVIEW:

### Table 4-17 and Table 4-19 Secondary Biological Treatment System Hydraulic Application Rates

This TGM Section was posted for public comment. There were no public comments received on this section.

**Motion:** Bob Erickson moved that the TGC recommend final approval to DEQ for Table 4-17 and Table 4-19 Secondary Biological Treatment System Hydraulic Application Rates as presented.

**Second:** Dale Peck.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix B.**

### 3.2.8.1.4 Pit Run

This TGM Section was posted for public comment. There were no public comments received on this section.

**Motion:** Mike Reno moved that the TGC recommend final approval to DEQ for Section 3.2.8.1.4 Pit Run as presented.

**Second:** Bob Erickson.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix C.**

### 4.10 Floating Vault Toilets and Boat or Vessel Sewage Disposal

This TGM Section was posted for public comment. There were no public comments received on this section.

**Motion:** Dale Peck moved that the TGC recommend final approval to DEQ for Section 4.10 Floating Vault Toilets and Boat or Vessel Sewage Disposal as presented.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix D.**

### 4.1.3 Combination of Multiple Alternative Systems in One System Design

This TGM Section was posted for public comment. There were no public comments received on this section.

**Motion:** Bob Erickson moved that the TGC recommend final approval to DEQ for Section 4.1.3 Combination of Multiple Alternative Systems in One System Design as presented.

**Second:** Mike Reno.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix E.**

## NEW BUSINESS/DRAFT REVIEW

### 4.1 General Requirements

Bob Erickson requested that a change be made to require that the designer of alternative private systems be either a PE or an environmental health specialist.

**Motion:** Bob Erickson moved that the TGC recommend preliminary approval to DEQ for Section 4.1 General Requirements as amended.

**Second:** Dale Peck.

**Voice Vote:** Motion carried unanimously.

See **Appendix F** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov**.**

### 4.21 In-Trench Sand Filter

Dale Peck requested that a change be made to the enveloped in-trench sand filter designs for the application rate related to clay loam being less than the application rate for the clay loam instead of more than the application rate.

The committee held a discussion on the system equivalencies in relation to the system design. Tyler Fortunati stated that the standard in-trench sand filter depicted in figure 4-31 was consistent with the method of 72 and related standard system designs, the enveloped in-trench sand filter depicted in figure 4-32 was consistent with the method of 72 and related standard system designs, the enveloped in-trench sand filter depicted in figure 4-33 was consistent with separation distances for alternative pretreatment designs like the recirculating gravel filter, intermittent sand filter, etc. due to the requirement of pre-treatment preceding this drainfield design, and that the enveloped and pressurized in-trench sand filter shown in figure 4-34 was consistent with other pressurized filter designs like the intermittent sand filter and sand mound.

**Motion:** Dale Peck moved that the TGC recommend preliminary approval to DEQ for Section 4.21 In-Trench Sand Filter as amended.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.

See **Appendix G** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov**.**

### 2.2.5 Method of 72 to Determine Effective Soil Depth to Permeable Layers and Ground Water

Bob Erickson requested that the statement in example 2 related to medium sand installation depth be moved up into the main guidance body in section 2.2.5.2.

**Motion:** Mike Reno moved that the TGC recommend preliminary approval to DEQ for Section 2.2.5 Method of 72 to Determine Effective Soil Depth to Permeable Layers and Ground Water as amended.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.

See **Appendix H** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov**.**

### 4.3 Capping Fill System

The committee recommended a couple changes to the guidance body to align the terminology of the two capping fill system types.

Mike Reno requested that a change be made to the construction requirements for the above-grade capping fill system that the soil cap must be constructed prior to system excavation when constructing with pipe and aggregate.

**Motion:** Bob Erickson moved that the TGC recommend preliminary approval to DEQ for Section 4.3 Capping Fill System as amended.

**Second:** Mike Reno.

**Voice Vote:** Motion carried unanimously.

See **Appendix I** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov**.**

9:45 a.m. Break

10:00 a.m. Meeting Resumed

### Introduction of Committee and Wastewater Staff Members

Upon resuming the meeting after the break Tyler Fortunati introduced Larry Waters, P.E. and Jason Holm. Larry Waters was hired to replace A.J. Maupin as the Lead Wastewater Engineer for DEQ's Wastewater Program working in the state office. Larry provided a brief introduction to the committee. Jason Holm of J.T. Holm Construction was selected

to fill the vacant complex installer seat on the Technical Guidance Committee. Jason provided a brief introduction to the committee.

### 4.2 At-Grade Soil Absorption System

Tyler Fortunati explained to the committee that this system design was requested to be drafted as an alternative system type by a prior committee member and the guidance was finally ready for review. Tyler Fortunati also explained that it is likely a limited design that might only be used in select situations to allow the installation of an alternative without pretreatment.

The committee had questions related to linear loading rates. Tyler Fortunati stated that as long as the design engineer is within the allowable range for the most restrictive soil type in the effective soil depth below the system that the loading rate should be acceptable to the health districts in design review. Tyler Fortunati stated that due to the complexity of assigning linear loading rates that he felt it was best to leave up to the design engineer for the selection of the specific rate used in their system design, again as long as it falls within an acceptable range that was developed from the linear loading rate literature.

The committee made a few changes to the example calculations to be consistent with the safety factor for the system design.

There was discussion regarding the orifice spacing requirements. Tyler Fortunati stated that in flat site designs it is up to the engineer to determine the spacing that equates to a disposal area of 6 $ft^2$ per orifice and that this should maximize the infiltrative surface of the system utilized and help protect the system from failure due to point loading of the cap. Tyler Fortunati stated for sloped sites that there is only one pressurized lateral installed on the upper side of the aggregate cell and that using a square footage wasn't possible. The goal of 12 inch spacing is again to maximize distribution and infiltrative surface of the system to protect the system from point loading failure.

**Motion:** Joe Canning moved that the TGC recommend preliminary approval to DEQ for Section 4.2 At-Grade Soil Absorption System as amended.

**Second:** Bob Erickson.

**Voice Vote:** Motion carried unanimously.

See **Appendix J** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

### Gravelless System Product Approvals

Tyler Fortunati discussed the answers provided by DEQ's Water Quality Division Administrator related to gravelless system product approvals. The committee had posed several questions to DEQ related to their approval of gravelless system products. The

questions posed by the committee and answers provided by DEQ's Water Quality Division Administrator are included below:

- Does the reduced side wall height (3.3-3.77 inches compared to the standard 6 inches) and reduced storage capacity (in comparison to standard chambers) warrant a sizing reduction change from the standard 25% reduction afforded to these products?
    - The WQ Division Administrator states that a reduced sidewall height does warrant a sizing reduction change from the standard 25%, but existing product approvals will not be altered. The sidewall is not part of the sizing equation for a drainfield but is built in as a factor of safety. There is no formula for the factor of safety and sizing allowances. The WQ program engineer that oversaw many of the gravelless system approvals believes that the allowed reduction should be altered to maintain an equivalent factor of safety to the standard trench.
- What is DEQ's lowest limit on the inlet invert height in gravelless chamber products?
    - The WQ Division Administrator states that there is no lower limit on the inlet invert height. All comparisons should be made to a standard drainfield. Again, the WQ program engineer states that if the invert height is reduced then the trench length should be increased accordingly to recoup the safety factor of lost elevation.
- Does DEQ only consider the bottom area of a trench and discount the sidewall area?
    - The WQ Division Administrator states that DEQ does only consider the bottom area of a trench for disposal area but the sidewall is the margin of safety and not credited in permitting (except for extra-drainrock trenches).
- The WQ Division Administrator is of the opinion that it should be considered to require Infiltrator to put the products through the NSF 240 testing protocol.

### 1.4.2.3 Gravelless System Product Approvals

Tyler Fortunati introduced a new product approval policy related to gravelless system components that incorporates recommendations from DEQ's Water Quality Division Administrator.

**Action Item:** Provide the committee with a summary of the information in NSF Standard 240.

**Motion:** Dale Peck moved that the TGC recommend preliminary approval of Section 1.4.2.3 Gravelless System Product Approvals as presented.

**Second:** Mike Reno.

**Voice Vote:** Motion carried unanimously.

See **Appendix K** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

## Extended Treatment Package Systems – Service Provider Model

At the March 20, 2015 TGC meeting the committee heard public testimony regarding the ETPS program, received a proposal for alteration of operation, maintenance, and monitoring requirements for the Orenco AdvanTex ETPS units, and developed a recommendation on the direction of the ETSP operation, maintenance, and monitoring program. There were several program questions that the committee requested answers to from DEQ's Water Quality Division Administrator.

The first issue heard by DEQ's Water Quality Division Administrator revolved around potential conflicts of interest for individuals permitted as pumpers and performing service provider services for ETPS units as well. This also extended to individuals who may also be permitted as an installer. The Water Quality Division Administrator stated that DEQ will not restrict individuals from having associated businesses (e.g., installer, pumper, service provider). Additionally, DEQ cannot dictate the language used by ETPS service providers when they are recommending pumpouts of septic tanks and ETPS units. The committee had no further inquiries or comments related to this issue.

The second issue heard by DEQ's Water Quality Division Administrator was related to the proposal made by Allen Worst of R.C. Worst & Company, Inc. and the Orenco AdcanTex ETPS units. Mr. Worst requested that the committee consider the following three options for the Orenco AdvanTex ETPS units:

- Move the Orenco AdvanTex products into the RGF category and require the same maintenance requirements.
- Move the ISF and RGF into the ETPS program and require the same ongoing maintenance.
- Classify the Orenco AdvanTex, RGF, and ISF technologies as packed bed filters and alter the maintenance requirement for these technologies under the ETPS program to yearly O&M for first two years and then once every 2-3 years thereafter if track record of reliability is demonstrated.

Tyler Fortunati presented that DEQ's Water Quality Division Administrator is ok with shifting the Orenco AdvanTex products into the recirculating gravel filter category and not requiring additional operation and maintenance pending the committee's recommendations.

The committee held a discussion regarding the total nitrogen reduction approvals of the different system types. Tyler Fortunati stated that the recirculating gravel filter is currently approved with a reduction level down to 27 mg/L total nitrogen and is under a property owner maintenance model (no O&M entity or service provider required). The Orenco AdvanTex currently has an approved reduction level down to 16 mg/L total nitrogen and is under the O&M entity maintenance model. Mike Reno expressed concerns regarding the Orenco systems that may have been installed due to the results of a nutrient-pathogen evaluation and are required to achieve specific nitrogen reduction levels. Mr. Reno stated that this wastewater constituent is the one that they have had the most trouble with in the testing program historically and is not as easy for the units to achieve. Mr. Reno stated that he isn't opposed to moving the Orenco AdvanTex units into a property owner maintenance model but

would not support doing so for the units that are required to achieve a specific nitrogen reduction limit as part of their septic permit.
The committee continued to discuss operation, maintenance, and monitoring of extended treatment package systems in general. Dale Peck stated that he would like to continue to discuss the transition of the ETPS program as a whole prior to making a recommendation on Mr. Worst's proposal.

Tyler Fortunati continued to address the items that the committee had requested feedback from DEQ's Water Quality Division Administrator on. The final item that the committee had passed on to the Administrator was the recommendation that DEQ pursue a service provider based model to carry out the required operation, maintenance, and monitoring of ETPSs. DEQ's Water Quality Division Administrator is ok with pursuing the service provider approach to required operation, maintenance, and monitoring for ETPSs. Tyler Fortunati clarified that DEQ would not accept requiring service provider based operation, maintenance, and monitoring for all alternative systems with pumps or moving sand mounds, intermittent sand filters, or recirculating gravel filters into a service provider based operation, maintenance, and monitoring system at this time. Tyler Fortunati stated that there may be consideration on DEQ's part of requiring service provider based operation, maintenance, and monitoring of enhanced variations of the recirculating gravel filter that achieves higher nitrogen reduction levels but that discussion would have to be had when there was approved guidance for the construction of these types of systems.

Tyler Fortunati also presented additional information on considerations of Existing ETPS permits that the committee needs to take into account with a transition to a service provider model. Tyler Fortunati explained that the existing installed ETPS units are under permits that were issued with the requirement that the maintenance be performed by an O&M entity. This is documented through the recorded member agreements that were submitted to the permitting health district as part of the permit application. Tyler Fortunati stated that the Attorney General's office has provided input that the only way an existing septic permit can be amended is if the property owner agrees to do so. If a property owner agrees to amend their septic permit then a new permit could be issued with the service provider model requirements. If a property owner does not agree to amend their permit then the committee would have to weigh a couple options for a recommendation. The committee should consider that DEQ and the health districts could stop enforcing the operation, maintenance, and monitoring requirements for the existing systems until a new repair, replacement, or expansion permit is issued for them. At that time they would be issued the new permit with the service provider requirements. Dale Peck stated that they could also have the new service provider O&M model and the old O&M entity model in place at the same time but that this certainly wouldn't be preferred. Tyler Fortunati stated that they must also take into consideration how the existing recorded member agreements can be removed from the permitted properties with existing ETPS units.

Dale Peck inquired as to what DEQ's vision was for the program. Tyler Fortunati stated that the current vision is in the service provider model and the proposed draft rule that the committee would review shortly. Tyler Fortunati stated that he would like to have the basic program structure (who provides service, how they are authorized to provide it, and the associated responsibilities) in place prior to making other amendments to ETPS guidance etc. After the initial program structure direction and draft content is determined then the

committee could move forward with amending guidance and determine exactly what they will do with the existing systems. The committee held some discussion on this direction. Tyler Fortunati stated it would be best to break and come back to complete the discussion on the draft rules and which direction the program would head including Mr. Worst's proposal.

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The meeting was adjourned for Lunch.
Lunch 12:10 p.m. – 1:20 p.m.

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**Extended Treatment Package Systems – Service Provider Model (continued)**

Upon returning from the lunch break Dale Peck stated that he saw several areas that need to be addressed for the program moving forward. Mr. Peck also felt they should be addressed in a specific order. The items he felt that needed to be addressed are:

1. Product disapproval for all of the currently approved systems that have not shown that they function through installation and testing data (suspended systems not working towards compliance and those listed in section 5.4 of the TGM that are not installed in the state).
2. Review/revision of the TGC's product approval policy.
3. Rule change to support the service provider system.
4. TGM guidance changes for the ETPS program to align the guidance with the service provider model.
5. Leave the roughly 900 existing ETPS systems that are suspended in their current state until a new permit is issued for them and require the remaining roughly 1,000 existing ETPS system to comply with the service provider program.

Jim Bell requested to address the committee and provided the recommendation that DEQ have all of the manufacturers with existing approvals to voluntarily seek renewal of their existing approvals. The committee liked this recommendation. Discussion was held by the committee on having the ETPS manufacturers with existing installations and data that are under a suspended status to submit renewals with testing data to support their approved reductions. Other manufacturers would have to submit the necessary data consistent with the existing product approval policy to receive specific nitrogen reductions.

Tyler Fortunati stated that any product disapprovals or renewals would have to be approved by DEQ's Water Quality Division Administrator and be done in conformance with IDAPA 58.01.03 and associated Idaho Code. Tyler Fortunati stated that there is a process that must be followed to achieve this but that providing notice and moving forward over the next year on this process would likely be a suitable timeframe. Dale Peck clarified that the disapprovals/renewal process should begin soon and move forward while the other items on the list he provided are worked on. Tyler Fortunati stated that he would bring this information to DEQ's Water Quality Division Administrator for consideration as part of the program revision process. The committee accepted this approach and expressed concern that upon transition to a service provider based model that the O&M entity suspensions would no longer be in place for ETPS products that may not be capable of achieving their specific reductions allowing them to be installed again with no recourse.

Tyler Fortunati also stated that there wasn't support at DEQ to provide a selective enforcement strategy to the existing permitted ETPS installations. The thought is that there is either a requirement to have all of the systems follow the new system protocol upon implementation or allow them all to voluntarily follow the protocol and those that don't would be left to provide their own maintenance until a repair, replacement, or expansion septic permit was issued for the system. Tyler Fortunati reiterated that DEQ is still seeking final input from the Attorney General's office on what legal authority they have over changing existing septic permits before deciding how to proceed on this process. Tyler Fortunati stated that either way DEQ would be informing the property owners with existing ETPS units on what their options would be moving forward once DEQ had legal clarification and specific program direction.

**Recommendation from the TGC to DEQ for the process of pursuing the service provider model for the extended treatment package system program:**

1. Notify manufacturers and initiate a voluntary product approval renewal process for all currently approved ETPS units (initiate immediately and allow deadline that is consistent with the projected service provider rule implementation date).
    a. All units operating under a currently functional O&M entity could reapprove and maintain their existing nitrogen reduction approvals.
    b. All units operating under a currently suspended O&M entity may renew but must submit the necessary testing data consistent with the current ETPS product approval policy to obtain nitrogen reduction approval.
    c. All units approved and listed in section 5.4 of the TGM may renew approvals but must submit the necessary testing data consistent with the current ETPS product approval policy to obtain nitrogen reduction approval.
2. The TGC will review, and revise if necessary, the existing ETPS product approval policy (review at the July 22, 2015 TGC meeting)
3. DEQ pursues the proposed rule revision to IDAPA 58.01.03.006 to develop and support the service provider based O&M model (initiate immediately and prepare the rule revision by the DEQ deadline for the calendar year 2016 legislative session).
4. The TGC will develop TGM guidance changes related to the ETPS operation, maintenance, and monitoring program that are consistent with the draft service provider rule (begin revision review upon the final negotiated rule revision to IDAPA 58.01.03.006 that will be presented to the calendar year 2016 legislature).
5. Implement new operation, maintenance, and monitoring requirements for existing ETPS permit holders within legal DEQ's legal authority or release existing ETPS permit holders from the operation, maintenance, and monitoring requirements until they are issued a repair, replacement, or expansion permit (provide notification to property owners upon final authority interpretation with a deadline that is consistent with the projected service provider rule and guidance implementation date).

**Motion:** Dale Peck moved that the TGC recommend the above outlined process for pursuing the service provider model for the extended treatment package system program.

**Second:** Bob Erickson.

**Voice Vote:** Recommendation carried unanimously.

Tyler Fortunati stated that DEQ would consider the committee's recommendation.

Upon passing the recommendation on the process that DEQ should follow for pursuing the service provider based model for the ETPS program the committee reviewed the proposed draft revision to IDAPA 58.01.03.006 to create a service provider endorsement. The committee expressed concern about altering the required bond amounts for the installer's registration permit. Tyler Fortunati stated the proposed change was to ensure the bonds covered the costs of today's system installations for basic and complex systems. Tyler Fortunati asked the three parties present that hold installer's registration permits if this would be an issue to them. All of the present registered installers stated that they had no issue with raising the bond to the amounts proposed and that they felt it would be an adequate amount for most circumstances. The committee made a few minor changes to the draft rule related to formatting and grammar. No content changes were made to the proposed rule revision.

**Motion:** Jason Holm moved that the TGC recommend the DEQ administration pursue negotiated rulemaking on the amended draft of IDAPA 58.01.03.006 for legislative review during the calendar year 2016 legislative session.

**Second:** Mike Reno.

**Voice Vote:** Recommendation carried unanimously.

See **Appendix L** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

The committee revisited the proposal that Allen Worst made in regards to the Orenco AdvanTex products. Tyler Fortunati inquired as to whether Orenco was aware of the proposed product classification changes that Mr. Worst was making for their AdvanTex products. Mr. Worst stated that they were generally aware of what product classification he was seeking for the AdvanTex products. Tyler Fortunati stated that he would get in contact with Orenco's regulatory director regarding the proposal.

**Action Item:** Tyler Fortunati will contact Orenco and seek documentation that they support the proposed product classification changes proposed by Allen Worst.

The committee again voiced concern regarding nitrogen reduction approvals and no requirements of operation, maintenance, and monitoring for those systems. Tyler Fortunati presented Table 8-1 from the TGM and stated that any classification changes would have to happen on this table. The committee discussed creating a packed bed filter category to the table and moving the intermittent sand filter, recirculating gravel filter,

and Orenco AdvanTex to this portion of the table. Under this revision the AdvanTex products under the property owner maintenance model would not be granted total nitrogen reduction less than 27 mg/L. The AdvanTex unit would also be left under the Recirculating ETPS product listing but be required to follow the O&M entity or service provider maintenance model to obtain total nitrogen reduction levels between 16 mg/L-27 mg/L.

**Action Items:**

1. Perform literature review and report to the committee to verify how the recirculating gravel filter was provided a total nitrogen reduction level of 27 mg/L.
2. Develop a packed bed filter section for Table 8-1 of the TGM and move the intermittent sand filter, recirculating gravel filter, and Orenco AdvanTex system to this classification.
3. Develop a packed bed filter approval process for the TGM.

**Motion:** Mike Reno moved that the TGC table Allen Worst's proposal for the Orenco AdvanTex products until the action items related to this product are completed.

**Second:** Joe Canning.

**Voice Vote:** Recommendation carried unanimously.

Allen Worst's proposal for the Orenco AdvanTex product listings will be taken back up at the next meeting in conjunction with the information obtained through completion of the action items related to the product and product proposal.

## NEXT MEETING:

The next committee meeting is scheduled to be on July 22, 2015 at the Idaho Department of Environmental Quality's state office.

**Motion:** Bob Erickson moved to adjourn the meeting.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.

The meeting adjourned at 3:00 p.m.

**TGC Parking Lot**.
This is a running list of issues requested to be prepared and presented at a future TGC meeting.

**List of Appendices from the March 20, 2015 Meeting**

**Appendix A:**
March 20, 2015 TGC Minutes
Status: Final

**Appendix B:**
Table 4-17 and Table 4-19 Secondary Biological Treatment System Hydraulic Application Rates
Status: Final

**Appendix C:**
3.2.8.1.4 Pit Run
Status: Final

**Appendix D:**
4.10 Floating Vault Toilets and Boat or Vessel Sewage Disposal
Status: Final

**Appendix E:**
4.1.3 Combination of Multiple Alternative Systems in One System Design
Status: Final

**Appendix F:**
4.1 General Requirements
Status: Preliminary Approval – Posted for Public Comment

**Appendix G:**
4.21 In-Trench Sand Filter
Status: Preliminary Approval – Posted for Public Comment

**Appendix H:**
2.2.5 Method of 72 to Determine Effective Soil Depth to Permeable Layers and Ground Water
Status: Preliminary Approval – Posted for Public Comment

**Appendix I:**
4.3 Capping Fill System
Status: Preliminary Approval – Posted for Public Comment

**Appendix J:**
4.2 At-Grade Soil Absorption System
Status: Preliminary Approval – Posted for Public Comment

**Appendix K:**
1.4.2.3 Gravelless System Product Approvals
Status: Preliminary Approval – Posted for Public Comment

**Appendix L:**
Proposed Draft Rule Revision to IDAPA 58.01.03.006
Status: Recommended that DEQ Pursue Revision to IDAPA 58.01.03.006 during the calendar year 2016 legislative session – Posted for Public Comment

**Appendix A**

# Technical Guidance Committee Meeting

# Minutes

Friday, March 20, 2015

**Department of Environmental Quality**
**1410 North Hilton**
**Boise, Idaho**

## TGC ATTENDEES:

Tyler Fortunati, REHS, On-Site Wastewater Coordinator, DEQ
Joe Canning, PE, B&A Engineers
Bob Erickson, REHS, Senior Environmental Health Specialist, SCPHD
Dale Peck, PE, Environmental & Health Protection Division Administrator, PHD
Michael Reno, REHS, Environmental Health Supervisor, CDHD
Jason Holm, J.T. Holm Construction, LLC (via telephone)

## GUESTS:

Tammarra Golightly, Administrative Assistant, DEQ
Ryan Spiers, Alternative Wastewater Systems, LLC
PaRee Godsill, Everlasting Extended Treatment, LLC
Dave Gibson
Matthew Chandler
Sheryl Ervin, Bio-Microbics, Inc.
Steve Youngblood, ABC Septic Service
Nathan Taylor, Eastern Idaho Public Health (via telephone)
Allen Worst, R.C. Worst & Company, Inc.
Kellye Eager, Eastern Idaho Public Health (via telephone)
Kathleen Price, Eastern Idaho Public Health (via telephone)
Mike Black, Black Water, LLC
Kirsten Ruebush, Effluent Technologies, Inc.
Matt Gibbs, Infiltrator Systems, Inc.
Dick Bachelder, Infiltrator Systems, Inc. (via telephone)

## CALL TO ORDER/ROLL CALL:

Meeting called to order at 8:30 a.m.
Committee members and guests introduced themselves. Tyler Fortunati introduced Jason Holm of JT Holm Construction, LLC as the individual filling the complex installer seat in the committee.

**OPEN PUBLIC COMMENT PERIOD:**

This section of the meeting is open to the public to present information to the TGC that is not on the agenda. The TGC is not taking action on the information presented.

Steve Youngblood of ABC Septic Service requested to address the committee. Mr. Youngblood wanted to make the committee aware that he was having issues with customers when attempting to pump the Bio-Microbics extended treatment package systems (ETPS). Mr. Youngblood complained that the service provider contracted to oversee these systems had been telling the property owners that he and other permitted pumpers were not servicing the ETPS units correctly. Mr. Youngblood also complained that the service provider was telling the property owners he should be the only one allowed to pump their ETPS units. Mr. Youngblood inquired as to whether the service provider was even permitted as a pumper. Tyler Fortunati informed Mr. Youngblood the service provider had obtained a pumper permit through Southwest District Health within the last week or so.

Mr. Youngblood wanted to know how an ETPS unit is correctly pumped. Tyler Fortunati stated that there were some recommendations for pumping ETPS units including verification with the service provider or operation and maintenance entity prior to pumping to ensure the unit should be drawn down and to help ensure ETPS unit components are not damaged. Tyler Fortunati also stated that a property owner may choose whomever they wish to pump their septic tank and ETPS unit if necessary.

Mr. Youngblood provided his perspective that the property owners he deals with are upset that they only have the choice of one service provider. Mr. Youngblood expressed his concern that the service provider is telling customers he is pumping their ETPS units incorrectly and that the property owners want other options. Mr. Youngblood inquired about the ETPS testing, testing limits, and resampling protocols. Tyler Fortunati and Mike Reno explained the current testing protocols contained in the Technical Guidance Manual. Mr. Youngblood expressed his concerns that there is a conflict of interest when the service provider is also a permitted pumper. Tyler Fortunati stated that he would run this concern through the DEQ Water Quality Division Administrator, but cautioned that he was not aware of any regulatory authority that would prevent someone from being a service provider and a pumper at the same time.

**MEETING MINUTES:**

**December, 10 2014 Draft TGC Meeting Minutes: Review, Amend, or Approve**

No public comment was received on the draft minutes. The minutes were reviewed by the committee and no suggestions for amendments were made.

**Motion:** Dale Peck moved to approve the minutes.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.

Minutes will post as final. See DEQ website and **Appendix A**

## OLD BUSINESS/ FINAL REVIEW:

### 4.18 Pit Privy

This TGM Section was posted for public comment. There were no public comments received on this section.

Dale Peck requested that approval condition number 4 be amended to allow pit privies on all sites as long as structures served by water under pressure install a subsurface sewage disposal system. The approval condition was amended accordingly.

Bob Erickson requested clarification on the vent stack and ensuring that the requirements are consistent with the vault privy amendments. Tyler Fortunati explained the vent stack is within the building so orientation to the south is not necessary to recommend in this circumstance.

**Motion:** Mike Reno moved that the TGC recommend final approval to DEQ for Section 4.18 Pit Privy as amended.

**Second:** Bob Erickson.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix B.**

### 4.19 Portable Sanitation Units

This TGM Section was posted for public comment. There were no public comments received on this section.

**Motion:** Bob Erickson moved that the TGC recommend final approval to DEQ for Section 4.19 Portable Sanitation Units.

**Second:** Mike Reno.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix C.**

### 4.29 Vault Privy

This TGM Section was posted for public comment. There were no public comments received on this section.

Dale Peck requested that approval condition number 4 be amended to allow vault privies on all sites as long as structures served by water under pressure install a subsurface sewage disposal system. The approval condition was amended accordingly.

Bob Erickson requested that the vent stack orientation recommendation have the term "where practical" added to the end of approval condition number 7. Bob Erickson requested that approval condition number 9 be amended to state that the vent stack must be installed on the outside of the building.

**Motion:** Mike Reno moved that the TGC recommend final approval to DEQ for Section 4.29 Vault Privy as amended.

**Second:** Dale Peck.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix D.**

### 2.1.3 Soil Design Subgroup Corrections

This TGM Section was posted for public comment. There were no public comments received on this section.

Dale Peck described issues the Panhandle Health District has over the Rathdrum Prairie Aquifer with rocks, drainfield sizing, and the fact that downgrading soils in a course native soil profile would not provide a public health or environmental benefit as the effluent would likely not utilize a standard sized trench from front to back for many years. Mr. Peck asserted that a larger drainfield in these conditions would not improve treatment.

Mike Reno proposed to change the soil corrections from will to may. This allows a health district to choose when and where to apply the subgroup corrections instead of requiring it in all circumstances when rock is present in the soil profile.

**Motion:** Joe Canning moved that the TGC recommend final approval to DEQ for Section 2.1.3 Soil Design Subgroup Corrections as amended.

**Second:** Dale Peck.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix E.**

### 4.1.3 Combination of Multiple Alternative Systems in One System Design

This TGM Section was posted for public comment. There were no public comments received on this section.

Bob Erickson brought to the committee's attention that the top half of table 4-1 must be added back in to ensure that all of the combinations allowed to be combined are reflected.

**Motion:** Mike Reno moved that this section be tabled until table 4-1 can be adjusted and reviewed by the committee.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.

Section will be revised and brought back to the committee for final approval. See **Appendix F.**

9:38 a.m. Break

9:59 a.m. Meeting Resumed

### 4.3 Existing and Approved System Rights, Abandoned and Undocumented Systems, and Nonconforming Uses

This TGM Section was posted for public comment. There were no public comments received on this section.

The committee had no comment or recommendations on this section. Tyler Fortunati reminded the committee that upon final approval this will move to section 1.7 of the TGM and sections 4.2 and 4.4 will move to sections 1.6 and 1.8 of the TGM respectively in their current format with no content changes.

**Motion:** Dale Peck moved that the TGC recommend final approval to DEQ for Section 4.3 Existing and Approved System Rights, Abandoned and Undocumented Systems, and Nonconforming Uses as presented.

**Second:** Mike Reno.

**Voice Vote:** Motion carried unanimously.

Section will post to TGM as final. See DEQ website and **Appendix G.**

## NEW BUSINESS/DRAFT REVIEW

### 4.10 Floating Vault Toilets and Boat or Vessel Sewage Disposal

Dale Peck requested that the floating vault toilet requirements include language that ensures the pumper capable of maintaining the unit is identified in the permit application and can demonstrate that they have adequate equipment to service the floating units. Mr. Peck also requested that amendments be made to the operation and maintenance of the floating vaults that ensures the frequency of servicing is identified.

**Motion:** Dale Peck moved that the TGC recommend preliminary approval to DEQ for Section 4.10 Floating Vault Toilets and Boat or Vessel Sewage Disposal as amended.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.

See **Appendix H** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov**.**

## Figure 2-2 Soil Texture Determination Flowchart

Tyler Fortunati explained to the committee that this flowchart was being presented to poll the committee as to whether they would like to amend the chart to require that all material that does not pass the #50 sieve, instead of the #10 sieve, must be removed prior to performing soil texturing. This table and process was being brought to the committee at the request of a health district.

Mike Reno opposed the change do to the fact that this flowchart is for use in the field and not necessarily in a lab setting. Under field conditions the soil will more often than not be too wet to sieve out effectively. Material that does not pass the #10 sieve can be seen by the naked eye and removed if necessary. This wouldn't be the case with the #50 sieve. Mr. Reno expressed that this chart has worked effectively for field analysis and there does not seem to be a need to change it.

Tyler Fortunati polled the committee on their interest in amending the flowchart. The committee came to the consensus that there was no need or interest in amending figure 2-2 soil texture determination flowchart. Tyler Fortunati stated that there was no need to vote on a motion since this was just being brought to the committee to gauge interest and desire to change the field textural analysis. The flowchart will remain as is.

## 4.1 General Requirements

Tyler Fortunati explained to the committee that the proposed amendments to this section were to ensure that the designation of a public system and the requirement for a professional engineer's involvement was consistent with Idaho Code §54-1218. Tyler Fortunati edited the document to break the exemption language out into a bullet list so it was clear as to what all the requirements are for exemption.

Joe Canning stated that this particular section of Idaho Code was currently under review by the legislature. Mr. Canning stated the legislative proposal and review would likely result in changes to the code. The committee felt it would be best to wait on the final outcome of the current legislative review prior to moving forward on amendments to this section.

**Motion:** Dale Peck moved that the TGC table Section 4.1 General Requirements pending the final legislative bill language.

**Second:** Bob Erickson.

**Voice Vote:** Motion carried unanimously.

Section is tabled pending final legislative bill language. See **Appendix I.**

### 3.2.8.1.4 Pit Run

Tyler Fortunati explained to the committee the issue that some of the health districts have run into with the existing pit run specifications. Mr. Fortunati explained that the proposed specification amendments will bring the material specifications into line with existing road construction standards which will allow pits already producing this material to continue to do so and that with more than 5% passing the #50 sieve ensures the material is still considered suitable soils.

**Motion:** Mike Reno moved that the TGC recommend preliminary approval to DEQ for Section 3.2.8.1.4 Pit Run as proposed.

**Second:** Dale Peck.

**Voice Vote:** Motion carried unanimously.

See **Appendix J** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

### Table 4-16 and 4-18 Secondary Biological Treatment System Hydraulic Application Rates

Tyler Fortunati explained that the proposed revisions to these tables are to include application rates for all of the A-2 soil subgroups for consistency with other system sizing requirements.

**Motion:** Joe Canning moved that the TGC recommend preliminary approval to DEQ for Table 4-16 and 4-18 Secondary Biological Treatment System Hydraulic Application Rates as proposed.

**Second:** Bob Erickson.

**Voice Vote:** Motion carried unanimously.

See **Appendix K** and provide public comment to Tyler Fortunati at 208-373-0140 or by email at tyler.fortunati@deq.idaho.gov.

### 4.24.2 In-Trench Sand Filter Approval Conditions

Tyler Fortunati explained to the committee that the proposed changes to this section are to satisfy an agreement between DEQ and the Panhandle Health District related to subsurface sewage disposal system permitting over the Rathdrum Prairie Aquifer.

Dale Peck described the soil conditions they encounter over the aquifer and how the changes will allow them to address permitting challenges.

Mike Reno expressed concern that this would allow permitting in mine tailing areas. Tyler Fortunati clarified that the sizing of gravel would need to be consistent with the soil textural classifications included in the TGM. This would limit the gravel to a maximum of 3 inches in diameter.

Dale Peck requested that an older method of enveloped in-trench sand filters be allowed back into the system design criteria that did not require pre-treated effluent. Tyler Fortunati stated this could be done but would require much more sand than is currently included in the enveloped sand filter design to meet treatment requirements. The committee made the inclusion of the old design an action item.

**Action Item:** Add old enveloped sand filter design back into the in-trench sand filter guidance.

**Motion:** Dale Peck moved that the TGC table Section 4.24.2 In-Trench Sand Filter Approval Conditions until the action item is addressed.

**Second:** Joe Canning.

**Voice Vote:** Motion carried unanimously.

Section will be revised and brought back to the committee for preliminary approval. See **Appendix L.**

### Proposed Additions to Approved Products List

Tyler Fortunati explained that there was a request from a health district to develop a list of approved distribution and drop boxes. Several committee members expressed concern regarding what the criteria would be for these products and where it would come from. Mike Reno also expressed the concern that if the committee started approving these types of components then they would also need to approve alternating valves and several other components that are not already included on the approved products list.

Tyler Fortunati polled the committee's interest in developing an approved products list for distribution and drop boxes. All members of the committee were opposed to the creation of an approved products list for these types of products. Tyler Fortunati stated there was no need for the committee to make a motion as this was just an inquiry into the interest in providing approval of these types of products.

**Gravelless Chamber Product Discussion on Holding Capacity Based on Inlet Invert Height and Pressurization Design for Chambers with Support Posts**

Tyler Fortunati provided the committee an overview of what was to be discussed during this agenda item. The discussion was divided into two parts, holding capacity and pressurization design.

Holding Capacity

Tyler Fortunati provided the committee information available on the internet for each approved gravelless product that includes some minimum chamber dimensions and total holding capacity. Tyler Fortunati also described the holding capacity of a gravel drainfield with a dimension of 3 feet wide by 1 foot long with 6 inches of drainrock under the distribution pipe. Based on a standard gravel porosity of 0.25-0.4 a gravel trench of that dimension would hold anywhere from 2.8-4.48 gallons of wastewater per lineal foot before the trench had ponded above the distribution pipe invert. Tyler Fortunati also provided information that was provided to DEQ by Dick Bachelder with Infiltrator Systems, Inc.

The information provided by Mr. Bachelder shows that their chamber products hold anywhere from 4.6-10 gallons per lineal foot before the trench had ponded above the uppermost end cap inlet invert location. Mr. Bachelder provided a description of Infiltrator's design and their issue with requiring the inlet to be located at the periscope location on top of the chambers. Infiltrator Systems, Inc. is concerned that requiring the effluent pipe to enter at the periscope location on top of the chamber for low profile chambers will eliminate the application of their low profile products in Idaho. Mr. Bachelder explained that the low profile chambers are designed for use where there are limiting layers in the soil profile and the drainfield needs to be installed at a higher elevation. Requiring the inlet to enter at the periscope location will lower the bottom installation depth of the chamber to achieve fall from the septic tank and eliminate the use of this product or require the use of pressure transportation with this product. Mr. Bachelder emphasized that their low profile products provide comparable storage capacity to a standard gravel system.

Mike Reno expressed concerns that while the storage capacity may be similar the low profile chambers eliminate effective sidewall absorption area due to the invert of the inlet pipe only being 3.3-3.77 inches off the bottom of the trench. Standard gravel systems have at least 6 inches of trench sidewall below the distribution pipe invert. Mr. Bachelder stated that the sizing of drainfields in Idaho is not based upon sidewall area and is strictly related to the soil application rate, gallons per day discharged to the system, and the required disposal area only relates to the bottom of the trench. The committee had questions as to whether the lower inlet invert should warrant the same sizing reductions as standard chambers. Tyler Fortunati informed the committee that changes to an existing product approval would have to come from DEQ and go through the DEQ Water Quality Division Administrator. Mr. Fortunati stated that there would have to be good data and reason for a product approval sizing change with low profile chambers.

The committee had several questions they would like Tyler Fortunati to take to DEQ's Water Quality Division Administrator and bring the answers back to the committee at the next meeting. The questions include:

- Does the reduced side wall height (3.3-3.77 inches compared to the standard 6 inches) and reduced storage capacity (in comparison to standard chambers) warrant a sizing reduction change from the standard 25% reduction afforded to these products?
- What is DEQ's lowest limit on the inlet invert height in gravelless chamber products?
- Does DEQ only consider the bottom area of a trench and discount the sidewall area?

Pressurization Design for Chambers with Posts

Tyler Fortunati read a letter provided by Dick Bachelder of Infiltrator Systems, Inc. that was written by Dr. Dick Otis. Mr. Fortunati reminded the committee that Dr. Otis' research is cited as a source for the pressure distribution system requirements contained in the Technical Guidance Manual. Dr. Otis' letter stated that the uniform application of pressure distributed effluent in a drainfield that contains chambers with posts is not likely to be a problem. Dr. Otis recognized that the entire surface area of the trench bottom may not appear wet due to the post locations but directly below the surface would be due to the movement of wastewater through the underlying soils both vertically and horizontally. Dr. Otis asserted that he found it doubtful that the posts would create significant barriers to the wetting of infiltrative surfaces.

Mr. Bachelder also stated to the committee that Infiltrator's recommendations for pressurized piping in their chambers is to strap the piping to the roof of the chambers with the orifices oriented upwards. In Mr. Bachelder's discussions with Dr. Otis, Dr. Otis asked how there is any assurance that an orifice would not be located directly against a corrugated valley thus limiting the effluent distributed from the orifice and its wetting pattern. Mr. Bachelder explained this could be a possibility in any pressurized design but there hasn't proven to be an issue with a drainfield due to this design issue.

The committee determined based on the information presented that they were not concerned with the wetting pattern or effluent movement in a chambered trench that contains support posts.

The discussion on chamber products ended with the action item questions the committee has for DEQ on chamber holding capacity and inlet invert height. See **Appendix M** for the documents reviewed by the committee on this discussion.

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The meeting was adjourned for Lunch.
Lunch 11:45 a.m. – 1:00 p.m.

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**Discussion on Extended Treatment Package System Program**

During this portion of the meeting the committee heard public comment from several participants. The comments provided by each participant and the subsequent discussion are grouped by the comment provider.

Allen Worst, R.C. Worst & Company, Inc.

Allen Worst submitted a document to the committee that outlined the requirements for intermittent sand filters, recirculating gravel filters, and Orenco Systems, Inc. AdvanTex

packaged treatment systems. The document provided a description of each technology, design requirements, construction requirements, operation and maintenance requirements, long term performance, and upfront and long term cost. Mr. Worst's document argues that the Orenco systems function nearly identically to the intermittent sand filter and recirculating gravel filter systems but have a higher level of accountability for design, construction, installation, and operation. Mr. Worst would like the long term maintenance program for these three systems to be similar due to their functional design similarities. The document proposed three solutions for the committee's consideration:

1. On the grounds that the Orenco AdvanTex is functionally identical to the RGF and similar in function to the ISF, move it out of the ETPS program and classify this technology with the ISF and RGF filters in the TGM where the same maintenance requirements, or lack thereof, would apply.
2. Move the ISF and RGF into the ETPS program whereby establishing the ongoing operation and maintenance program needed for these complex technologies.
3. Classify AX, RGF and ISF treatment technologies as packed bed filters in the TGM. Because of the filtration barrier present in these systems, and proven reliability, alter the maintenance requirement for these technologies under the ETPS program to include yearly inspections and sampling for the first two years, and then once every 2-3 years thereafter as long as a track record of reliability has been demonstrated.

Bob Erickson inquired as to why Mr. Worst did not include sand mounds in his proposal as well. Allen Worst stated that he would also like those systems included in this proposal as well.

Joe Canning questioned why there was no other extended treatment package systems included in this proposal as well. Allen Worst stated it was due to the design differences of the other units. The Orenco units will not discharge effluent unless the unit is functioning correctly. The other advanced mechanical treatment units will. Joe Canning stated that he is interested in the failure process of the systems. The Orenco, intermittent sand filter, recirculating gravel filter, and sand mound fail with backup or effluent surfacing. The other mechanical treatment units will continue to discharge to the drainfield regardless of whether they are functioning properly or not. Mr. Canning stated that he was opposed to including non-discharging failures under the existing operation and maintenance entity requirements.

Mike Reno stated that he also believed it wasn't a level playing field when you look at the different system types. Mr. Reno stated that he would support required operation, maintenance, and testing of intermittent sand filters and recirculating gravel filters. Mr. Reno stated that he would be supportive of not testing for total suspended solids and biological oxygen demand but would need to see required operation and maintenance along with testing for total nitrogen where required.

Dale Peck stated he would be willing to consider an alternate operation, maintenance, and testing protocol with good data but not under the existing operation and maintenance

entity system. Mr. Peck asked that the committee hear other proposals prior to making any recommendations on the existing operation and maintenance entity system.

Matthew Chandler, Property Owner with ETPS Unit

Matthew Chandler introduced himself to the committee as a homeowner that has a Bio-Microbics system installed on his property. Mr. Chandler built his current home over 10 years ago. He informed the committee that the member agreement for his property was signed by the builder without his knowledge and that the agreement does not contain his signature as the property owner. Mr. Chandler described a recent event in which he arrived at his home to find the employee of the service provider contracted with his operation and maintenance entity inside his home attempting to steal personal property. This resulted in the individual's arrest. Mr. Chandler emphasized that he does not like that he has no choice or ability to sever ties with his operation and maintenance entity or service provider after this event.

Mr. Chandler described the situation where his operation and maintenance entity has a board of directors that is made up of manufacturer representatives who are located in Kansas. The registered Idaho agent for the entity is his service provider. Mr. Chandler believes this setup makes it hard for him or any other property owner to make a change in their entity related to directors or service providers. Mr. Chandler stressed that the existing operation and maintenance entity system is not easy for property owners to navigate. He believes this system limits the property owner's function and gives them little room for individual change. Mr. Chandler believes the existing operation and maintenance entity system protects the assets of the manufacturers and service providers. Mr. Chandler described that as a non-profit made up of members if he wishes to pursue legal action against those who wronged him he would ultimately be impacting himself and his neighbors, not the manufacturer or service provider.

Mr. Chandler believes that the current system lacks true oversight from the property owners and the state regulators. Specifically he believes there is little oversight of any system maintenance or effluent testing. Mr. Chandler believes the current operation and maintenance entity model is primed for corruption. He raised issues including:

- What stops the service provider from obtaining multiple samples from one property and submitting the results for several residences/
- What oversight does the state have on the sampling techniques that are being used in the field?
- Outside of a paper report received by the regulators from the service provider there is no actual monitoring of whether or not a system is truly functioning.

Mr. Chandler recommended that the committee and DEQ transition the existing program to a service provider model to provide the homeowners/property owners more power in how their systems are managed. Mr. Chandler believes that this would help to hold the service provider and manufacturer accountable. He also believes that this will make the homeowners/property owners more accountable as well. Mr. Chandler also proposed that annual testing requirements be removed. Instead Mr. Chandler proposed that annual

maintenance be required instead. He also asked that if testing was to remain in place that DEQ perform a study to determine how many non-compliant samples are related to mechanical issues and how many are related to homeowner abuse.

Dale Peck questioned if the service provider would report the maintenance or testing results to the health district under Matt's proposal. Mr. Chandler stated that the service provider would be the one reporting. To make them accountable Mr. Chandler stated this should be done through a contract that does not contain an easement.

Dale Peck stated that he could see DEQ or the health districts producing a list of service providers that the property owners could select from. Mr. Peck also asked if Mr. Chandler was recommending that there be mandatory background checks for service providers. Mr. Chandler believes this would be a good idea.

Mike Reno asked Mr. Chandler if he believes that manufacturers should be required to certify more than one service provider for their products. Mr. Chandler stated this should be required.

Allen Worst stated to the committee that if there are several service providers then a property owner is going to choose the cheapest option. Mr. Worst believes this could reflect poorly on the manufacturer and their products. Mr. Chandler concurred with this point but emphasized that homeowners/property owners need a choice.

Sheryl Ervin from Bio-Microbics, Inc. addressed the committee to inform them and Mr. Chandler that Bio-Microbics is interviewing additional people to serve as service providers for their operation and maintenance entity. Joe Canning asked Mrs. Ervin why costs for operation, maintenance, and monitoring continue to increase. Mrs. Ervin stated that the member fees are related to paying the service provider for their time and travels, compiling annual reports, effluent testing, and administrative costs of running the entity. Mrs. Ervin believes the cost increases are related to increases in costs for these activities.

<u>Dave Gibson, Property Owner with ETPS Unit</u>

Dave Gibson informed the committee that he is not happy with his current operation and maintenance entity and their contracted service provider. Mr. Gibson is suspicious as to whether the service provider is actually coming to his property every year and testing the effluent from his system. Mr. Chandler provided a report from Central District Health Department on the dates that his system was tested and the associated results. There were a couple conflicting dates and results. Mike Reno explained that was a clerical error on the report he was provided and was due to the year when annual report submittals changed from January 1$^{st}$ to July 31$^{st}$. Mr. Gibson explained that he works from home as does his son's family that lives across the street. Very seldom is there a case when someone is not home at one of the two houses. He does not believe the service provider has been to his house every year based on this situation and the fact that the service provider could not show him where the hidden access ports to his system were when he asked.

Mr. Gibson provided the committee with several suggestions including:

- Allowing the property owners to test their own system and perform their own maintenance. The emphasis should be placed on the property owners and they will figure out how to handle their requirements.
- An accountability system needs to be in place for the service provider and any testing that is performed by a service provider.
- If a service provider is required then provide the property owners with multiple choices. Mr. Gibson recommended a sealed sample process using tamper stickers and that the laboratories performing sampling should be submitting the samples directly back to the health district and not through the service providers.

PaRee Godsill, Everlasting Extended Treatment, Inc. and Northern Services, Inc.

PaRee Godsill is both a service provider and an operation and maintenance entity director. Mrs. Godsill stated that the recent extended treatment package system guidance changes had produced good results from the property owners within her operation and maintenance entity. Mrs. Godsill outlined that her system requires two annual maintenance visits in comparison to the state mandated annual maintenance.

Mrs. Godsill described how her and her husband moved to eastern Idaho to takeover and begin working with a second operation and maintenance entity that also oversees the Norweco systems. Mrs. Godsill described how the members of the eastern Idaho entity took over the board of directors and severed ties with her service provider business. The entity is now contracted with a non-certified service provider and has stated that they do not plan on testing until this upcoming fall. Mrs. Godsill described that for her to be able to sell the Norweco products again she needs to obtain 90% compliance with operation, maintenance, and testing requirements statewide. Mrs. Godsill emphasized this is hard to do when there is no control over the other entity and the timelines in which they want to bring their entity into compliance. Mrs. Godsill believes that the other entity's contract with a service provider that is not certified by the manufacturer is hurting their compliance efforts and is concerned that this individual does not have the proper equipment to service a Norweco system.

Mrs. Godsill provided the committee with several recommendations including:

- She would like to see the manufacturer certification of service providers followed by DEQ.
- She believes that the homeowners/property owners are unaware of the issues they face but that they ultimately need a choice of who they would like to use as a service provider and not be dictated who their provider will be by the operation and maintenance entity.
- She supports the idea of DEQ or the health districts maintaining an approved vendors list for the service providers a property owner could choose from.

Kimir Mu, Property Owner with ETPS Unit

Kimir Mu submitted written public comment to Tyler Fortunati with the request that the comments be read to the committee during the meeting. Tyler Fortunati read the comments to the committee during the meeting. The public comment submitted covered the following:

Kimir Mu expressed frustration with the failing extended treatment package systems in eastern Idaho. Kimir does not believe that the mandated operation, maintenance, and testing paired with a lack of septic permit enforcement from DEQ is working. Kimir expressed that this has created an uproar in their eastern Idaho county. Kimir also takes exception to DEQ making exceptions to their guidance and allowing an operation and maintenance entity to contract with a service provider that is not certified by the manufacturer of the technology they oversee. Kimir believes this has created a situation where service providers are fighting against one another and leaves property owners in a situation where they do not know who to trust. Kimir believes the lack of extended treatment package system compliance is impacting the ground water within their county. Kimir provided solutions to fix these problems including:

- Allowing the property owner to contract directly with a service provider of their choice.
- Allowing the property owner to report directly to the health department.

Tyler Fortunati provided clarification to the committee regarding the operation and maintenance entity that was allowed to contract with a service provider that is not certified by the technology's manufacturer. Tyler Fortunati stated that DEQ was informed by Norweco that they would not train any other service providers other than the one provider that had already been trained in Idaho. This forced DEQ to allow the operation and maintenance entity to contract with a service provider of their choice as an agreement between the certified service provider and the entity could not be reached. This was an exception forced by the manufacturer and not one that was arbitrarily allowed by DEQ.

Sheryl Ervin, Bio-Microbics, Inc.

Sheryl Ervin represents Bio-Microbics, Inc. Sheryl addressed the committee and described that customer notification of the required extended treatment package system program was difficult. Mrs. Ervin believes this is an issue with the member agreements that are recorded on the deed that are not disclosed to the property owners when they purchase their property.

Tyler Fortunati discussed that time of sale inspections are not required in Idaho. This leaves the notification up to the title company at the time of sale. Mr. Fortunati stated that he had met with the Government Affairs Committee of the title companies and that they had recommended some changes to the member agreement titles to include the words access easement so the documents are flagged for closer disclosure upon sale of a property. Mr. Fortunati also stated these changes would only impact new

member agreements from a new entity as they could not go back and require all of the old agreements to be changed.

Joe Canning asked why the operation and maintenance entity doesn't send out letters from the service provider to the property owners informing them of the required operation, maintenance, and testing annually. Mr. Canning felt like this would help with property owner notification. Sheryl Ervin stated that letters should be going out annually.

Dave Gibson asked why the property owner could not replace parts themselves. Mrs. Irvin described that in order for the manufacturer to keep their NSF certification that all replacement parts must be OEM parts from the manufacturer. If replacement parts are not OEM then the manufacturer could lose their certification if the system is audited by NSF. Tyler Fortunati explained that in DEQ's view it does not matter what parts are used for replacement components as long as the treatment unit is still capable of meeting the annual effluent limits for the unit. Additionally, Mr. Fortunati explained that regardless of what parts are used for replacement the treatment unit is still considered to be from the manufacturer that the system was installed under.

Mike Black, Black Water, LLC

Mike Black addressed the committee and stated that he was concerned that the enforcement actions are the same for a property owner whether they are out of compliance with effluent limits for total nitrogen, biological oxygen demand, or total suspended solids. He believes that there should be a difference for those limits that are not as stringent as the others. Mr. Black believes that a system that is not capable of meeting biological oxygen demand or total suspended solids shouldn't be allowed to be installed in Idaho. Mr. Black also does not believe it is reasonable to enforce against permit holder if their effluent results come back at 17 mg/L total nitrogen when the permit requires them to meet 16 mg/L. Mr. Black would like to see a tiered enforcement program based on how out of compliance the unit is. He provided an example for one response to 16-20 mg/L and another for 20-25 mg/L and so on. Mr. Black asserted that larger systems are allowed a number of out of compliance events before enforcement occurs. Mr. Black believes there should be a more relaxed timeline for compliance since the extended treatment package systems do not react that quickly to maintenance so a property owner has a reasonable chance to get into compliance.

Mike Reno asked if Mr. Black would have an issue with not sampling at 45 days if he feels the system wasn't ready to be tested but the lack of a sample counts as a failed test result. Mr. Black said he would be ok with this because it saves the property owner money on unnecessary testing.

TGC Discussion

The committee discussed the public comments they heard and provided DEQ a recommendation for how to proceed with the extended treatment package system program.

Mike Reno began the discussion by stating that he would like to look at the feasibility of pursuing a service provider model.

Dale Peck stated that he did not believe it was advisable to continue down the current operation and maintenance entity program path. Mr. Peck stated that he would like to see an operation permit in the subsurface sewage disposal program but understood that this is not likely a feasible option. Mr. Peck stated that if a service provider model is pursued he would like to see some form of training and education required for an individual to become permitted as a service provider. This training would be in addition to whatever is provided by a manufacturer for their specific certifications. Mr. Peck also feels that background checks are a must in the program. Mr. Peck would also not be opposed to having relaxed requirements for proven installations with a successful testing history. Mr. Peck would also be open to requiring operation and maintenance for other system types to ensure that the requirements for systems with similar allowances are equitable. Mr. Peck believes that homeowners/property owners do need a choice in who services their system but is not supportive of having homeowners/property owners perform the operation, maintenance, and monitoring on their own.

Joe Canning stated that he too agreed that the property owners need a choice in service providers. Mr. Canning does have concerns on the number of systems that are actually available to be divided up amongst service providers and how much of a market there is for service providers. Joe Canning did caution the committee that he does feel there is a problem that has been created by the current operation and maintenance entity model but is not fully convinced that a service provider model is the way to fix the problems.

Bob Erickson stated that he supports providing the homeowners/property owners a choice in who services their system. Mr. Erickson could see a program that is analogous to the current installer permitting program working to address this issue. Mr. Erickson believes there could be a hurdle with manufacturers and obtaining certifications of service providers from them. Mr. Erickson also stated that he would support required operation and maintenance on any system that has a pump component to it. He also believes that flow-through extended treatment package systems should be required to be maintained twice per year. Mr. Erickson is also supportive of removing the effluent sampling requirements.

Jason Holm stated that he supported the thoughts of everyone else on the committee. Mr. Holm could see complex installers being a possible solution to the maintenance issues and service provider permitting. Mr. Holm would like to see some form of

third party quality control on testing such as an engineering firm or something similar to ensure that testing is being done properly and results can be verified.

Dale Peck stated that he could see an alternative to testing every extended treatment package system every year would be to randomize the testing to cover the different products that are out there. In this scenario several random properties would be tested on an annual basis but not all of the properties with extended treatment package system program.

Tyler Fortunati stated to the committee that the details could be worked out on how a program shift would occur and what it would require at a later time. Mr. Fortunati then asked that the committee supply DEQ with a recommendation on how to proceed in the extended treatment package system program. Based on the testimony from the public, program stakeholders, and the committee discussion Mr. Fortunati stated that it sounded as if the committee was recommending that DEQ pursue a service provider based model for the required operation, maintenance, and monitoring of extended treatment package systems. Mr. Fortunati then asked the committee to vote on their desired direction.

**Recommendation from the TGC to DEQ for the direction of extended treatment package system program:** Pursue a service provider based model to carry out the required operation, maintenance, and monitoring of extended treatment package systems.

**Voice Vote:** Recommendation carried unanimously.

Tyler Fortunati stated that DEQ would consider the committee's recommendation and provide an overview of how they intend to proceed in the ETPS program at the next meeting. Mr. Fortunati also cautioned that pursuing a service provider model may require a rulemaking effort which would take time and that the earliest a service provider program could potentially be initiated would likely be over a year from this meeting date. See **Appendix N** for Allen Worst's written proposal to the committee.

## NEXT MEETING:

The next committee meeting is scheduled to be on May 21, 2015 at the Idaho Correctional Industries building.

**Motion:** Mike Reno moved to adjourn the meeting.

**Second:** Bob Erickson.

**Voice Vote:** Motion carried unanimously.

The meeting adjourned at 3:28 p.m.

# Appendix B

**Table 4-17. Secondary biological treatment system hydraulic application rates.**

| Soil Design Subgroup | Application Rate (gallons/square foot/day) |
|---|---|
| A-1 | 1.7 |
| A-2a | 1.2 |
| A-2b | 1.0 |
| B-1 | 0.8 |
| B-2 | 0.6 |
| C-1 | 0.4 |
| C-2 | 0.3 |

**Table 4-19. Secondary biological treatment system hydraulic application rates.**

| Soil Design Subgroup | Application Rate (gallons/square foot/day) |
|---|---|
| A-1 | 1.7 |
| A-2a | 1.2 |
| A-2b | 1.0 |
| B-1 | 0.8 |
| B-2 | 0.6 |
| C-1 | 0.4 |
| C-2 | 0.3 |

## Appendix C

### 3.2.8.1.4 Pit Run

Pit run construction media is composed of clean cobble, gravel, and sand. To determine if a construction media is suitable pit run, it shall be passed through a sieve to ensure that it conforms to the gradation requirements: 100% passes through a ~~10~~6-inch sieve; ~~66~~15%–~~100~~60% passes through a #~~50~~4 sieve; ≥ 5% passes through a #50 sieve; and ~~2~~0%–~~10~~12% passes through a #~~100~~200 sieve for size~~. Additionally, <2% shall pass a #200 sieve for cleanliness~~ (Table 3-6).

**Table3-6. Pit run allowable particle size percent composition.**

| Sieve Size | Passing (%) |
|---|---|
| ~~10~~6 inch | 100 |
| ~~50~~4 | ~~66~~15–~~100~~60 |
| ~~100~~50 | ~~2–10~~≥5 |
| 200 | ~~<~~0-12 |

**Appendix D**

# 4.10 Floating Vault Toilets and Boat or Vessel Sewage Disposal

Revision: March 20, 2014

## 4.10.1 Description

### *4.10.1.1 Floating Vault Toilet Description*

Vault toilets and boat/vessel dump stations are necessary wastewater disposal facilities at recreational sites around water bodies. Many boats and vessels do not contain onboard toilet facilities making it necessary that independent toilet facilities be provided at recreation sites around water bodies such as boat ramps, docks, and campgrounds. These independent toilet facilities are most often provided in the form of a vault toilet. Due to the remoteness of some recreation sites the installation of a standard vault privy (section 4.29) may not be possible. Additionally, some recreational water bodies may be large enough that convenient use of a standard vault privy on shore is not feasible. To preserve the quality and beneficial uses of the Waters of the State of Idaho it is preferable to have toilet facilities available at recreational areas that attract a large number of users. To accomplish this at recreational water sites it may be necessary to employ the use of floating toilet facilities that are used for the temporary storage of sewage.

### *4.10.1.2 Boat or Vessel Sewage Disposal Description*

Some boats and vessels do contain onboard toilet facilities that are classified as Type I, II, and III marine sanitation devices (MSD) or portable toilets. Type I and II MSD may have the ability to treat and discharge wastewater from the boat or vessel into the surrounding waters while a Type III MSD is certified to a no-discharge standard. Portable toilets are sewage collection devices that are self-contained and removable from a boat or vessel. Regardless of a boat or vessel's MSD type or use of portable toilets, discharge of wastewater or sewage (treated or untreated) from a boat or vessel into Waters of the State of Idaho (IDAPA 58.01.03.003.37) is illegal. This necessitates that any wastewater or sewage generated and stored on a boat or vessel be disposed of at an approved facility (e.g., RV dump station, septic system, public system).

## 4.10.2 Approval Conditions

1. Wastewater generated on a boat or vessel and held in an MSD may be removed while the boat remains in the water by:
    a. Dockside sewage connection to an approved municipal treatment system or an approved subsurface sewage disposal system sized for this use. Dockside sewage collection systems shall be reviewed and approved by DEQ.
    b. Mobile boat pumpout service. Pumpout services constructed on a boat, vessel, or vehicle that is used to transport sewage or wastewater for disposal must be permitted by a health district (IDAPA 58.01.15.003). Small mobile pump stations that are non-motorized and only used to pump boat holding tanks at a dock or marina and used to

transport the contents to an approved disposal facility located near the dock or marina do not need to be permitted by a health district.

c. Pumpout station that transfers wastewater from a boat or vessel to an approved municipal treatment system or an approved subsurface sewage disposal system sized for this use. Permanent pumpout stations constructed with a transport line from the pumpout location to the approved disposal site shall be reviewed and approved by DEQ as part of a sewage collection system.

2. Wastewater generated on a boat or vessel and held in an MSD that is not removed while the boat is in the water shall be disposed of in one of the following locations:

   a. An approved municipal treatment system or an approved subsurface sewage disposal system.

   b. An approved RV dump station.

3. Wastewater generated on a boat or vessel and held in a portable toilet may not be discharged overboard, on the ground or into surface waters, and shall be disposed of in one of the following locations:

   a. An approved municipal treatment system or an approved subsurface sewage disposal system.

   b. An approved RV dump station.

4. Floating vault toilet facilities located over Waters of the State of Idaho shall be permitted by a health district and must meet the requirements of section 4.10.3.

### 4.10.3 Floating Vault Toilet Requirements

1. The floating vault toilet is limited to use on lakes, reservoirs, and ponds, where municipal services and subsurface sewage services are not available.
2. The floating vault toilet shall not be located within 300 feet of a surface water intake used for a drinking water supply.
3. The floating vault toilet must be pumped by an Idaho-permitted septic tank pumper. The pumper must be identified in the permit application and demonstrate they have the equipment necessary to access and pump the vault.
4. Floating vault toilets shall not be used as dump stations or holding tanks for wastewater generated in a boat or vessel's MSD or portable toilet.
5. The floating vault tank, deck, and house shall meet the design requirements of section 4.10.4.
6. The floating vault toilet shall be designed by a professional engineer to ensure the structure is capable of withstanding adverse weather and wave action without tipping over, sinking, or sustaining severe damage, or may be obtained from a manufacturer with a design/model that has been preapproved by DEQ.

## 4.10.4 Floating Vault Toilet Design

Floating vault toilets shall meet the design criteria described in the following subsections.

### *4.10.4.1 Hull or Dock*

1. A floating vault toilet may be placed on an individual hull or dock that is either connected to shore or in the middle of the water body.
2. Hulls and docks shall be independently constructed from the vault tank and:
   a. Capable of supporting the vault toilet when full.
   b. Capable of withstanding adverse weather and wave action without tipping over, sinking, or sustaining severe damage.
   c. Be securely anchored at their proposed location.
3. Hulls or floating docks must be able to withstand towing or pushing to and from shore for storage and maintenance needs.

### *4.10.4.2 Tank*

1. The vault tank shall be constructed to be watertight, constructed of durable materials that are not subject to excessive corrosion, decay, or cracking.
2. The vault tank shall be contained within an external shell (double-hulled) that is designed to protect the tank from impact and grounding, and provides secondary containment in the event that the vault tank develops a leak.
3. The vault tank shall be fitted with at least one cleanout hatch meeting the following minimum design requirements:
   a. Closes to be watertight.
   b. Locks so that the vault tank is not accessible to users.
4. The vault tank shall have a minimum capacity of 375 gallons for each toilet, except that no tank may be less than 500 gallons.
5. The vault tank shall be adequately vented and the vent shall be screened with a maximum screen size of 16-mesh.

### *4.10.4.3 Floating Vault Building*

1. The building shall be firmly anchored to the hull or dock and rigidly constructed of materials that are capable of withstanding constant exposure to water.
2. All openings, spaces, and cracks that would permit flies to access the vault tank must be no wider than one-sixteenth of an inch.
   a. This includes doors and seats when closed.
   b. All gaps larger than one-sixteenth of an inch shall be screened with a maximum screen size of 16-mesh.

3. Doors shall be self-closing.
4. The building shall be adequately ventilated.
5. The seat opening shall be at least 12 inches from the side walls in all privies and spaced so that there is at least 24 inches between seats in multiple-seat installations.
6. The seat top shall not be less than 12 inches nor more than 20 inches above the floor.
7. The seat shall be constructed of nonabsorbent material.
8. The building shall contain an adequate number of grab bars inside and outside of the building.

### 4.10.5 Floating Vault Toilet Operation and Maintenance

The floating vault toilet permit application shall be accompanied with an operation and maintenance manual provided by the design engineer or manufacturer that includes the following information:

1. Operation, maintenance, and replacement instructions for any mechanical or electrical components.
2. Pumping and servicing/cleaning instructions including pumping frequency.
3. Seasonal maintenance needs.
4. Annual or bi-annual maintenance needs.
5. Launching, trailering, and anchoring instructions.
6. On-water transportation instructions.
7. Winterization needs.

# Appendix E

## 4.1.3 Combination of Multiple Alternative Systems in One System Design

An alternative system is any system that DEQ has issued design guidelines for (IDAPA 58.01.03.003.02), which are contained within Section 4 of this manual. Alternatively, a standard system is any system that DEQ's Board of Environmental Quality has recognized through the adoption of design and construction regulations in IDAPA 58.01.03. Standard systems include a septic tank and aggregate filled drainfield or absorption bed. ~~All~~Any modification~~s~~ of a standard system ~~other system~~ design~~s~~ as described in IDAPA 58.01.03.008 ~~are~~is considered an alternative system~~s~~. Alternative systems may either be classified as a basic alternative system or a complex alternative system. All complex alternative systems are listed in Section 1.5. Any system not considered a standard system or listed as a complex alternative system in Section 1.5 is considered a basic alternative system.

Alternative systems are allowed to be used to address difficult sites that are not capable of supporting a standard system. Alternative systems have helped to provide property owners more options to meet their subsurface sewage disposal needs. Even though alternative systems have helped to create subsurface sewage disposal solutions for difficult sites they do not always provide a solution for all sites. Some sites are not suitable for subsurface sewage disposal due to limiting site conditions (e.g., shallow soils, high ground water, surface water, steep slopes) or size. To help reduce the number of sites that are not considered suitable for subsurface sewage disposal the Technical Guidance Committee and DEQ encourage the use of multiple alternative system designs in a single system's design. The following restrictions are in place for the combination of multiple alternative systems into one system design~~s~~:

1. The bottom of a drainfield may not be installed deeper than 48 inches below native grade.
2. Systems requiring the use of pressurization for any component may not substitute gravity flow for the pressurization of that component.
3. The most restrictive site slope requirements for any one alternative used in a system's design shall be adhered to.
4. The design guidance for all alternative systems used in a system's design shall be followed.
5. Only one allowance for the reduction of trench length, total disposal area, or an alternative hydraulic application rate shall be used in a system's design regardless of the number of alternative designs combined into one system that provide these types of reduction allowances.
6. Only one allowance for the reduction of separation distance to limiting layers or features of interest shall be used in a system's design regardless of the number of alternative designs combined into one system that provide these types of reduction allowances.

~~Systems that are considered united alternative systems may always be permitted in conjunction with a standard or basic/complex alternative system. A united alternative system is an alternative that must be permitted in conjunction with some other form of standard or basic/complex alternative system. The only united alternative system is the grey water sump.~~

~~Systems that are considered a stand-alone alternative system may be permitted independently of any other system. Some stand-alone alternative systems may also be permitted in conjunction with another standard or basic/complex alternative system. Stand-alone systems that may be permitted in conjunction with another alternative system are identified with an astrix (*). Stand-alone alternative systems include:~~

- ~~Composting Toilet*~~
- ~~Evapotranspiration and Evapotranspiration/Infiltrative System~~
- ~~Grey Water System*~~
- ~~Emergency Holding Tank~~
- ~~Incinerator Toilet*~~
- ~~Individual Lagoon~~
- ~~Pit Privy*~~
- ~~Recreational Vehicle Dump Station*~~
- ~~Two-Cell Infiltrative System~~
- ~~Vault Privy*~~

Table 4-1 provides a matrix of compatible alternative systems that may be used in combination for a single system's design ~~but does not include united or stand-alone alternative systems~~. Any number of alternative system designs may be used in a single system's design as long as all of the alternatives are compatible with one another.

| Alternative System | Capping Fill System (4.2) | Drip Distribution System (4.4) | Experimental System (4.6) | Extended Treatment Package System (4.7) | Extra Drainrock Trench (4.8) | Gravelless Trench System (4.9) | Pressure Distribution System (4.17) | Recirculating Gravel Filter (4.19) | Intermittent Sand Filter (4.20) | In-Trench Sand Filter (4.21) | Sand Mound (4.22) | Seepage Pit/Bed (4.23) | Steep Slope System (4.24) | Drainfield Remediation Component(4.27) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capping Fill System (4.2) | S | A | A | A | A | A | A | A | A | A | N | N | N | A |
| Drip Distribution System (4.4) | A | S | A | A | A* | A* | A | A** | A** | A* | A* | N | A* | A |
| Experimental System (4.6) | A | A | S | A | A | A | A | A | A | A | A | A | A | A |
| Extended Treatment Package System (4.7) | A | A | A | S | A | A | A | A | A | A | A | A | A | A |
| Extra Drainrock Trench (4.8) | A | A* | A | A | S | N | A | A | A | N | N | N | A | A |
| Gravelless Trench System (4.9) | A | A* | A | A | N | S | A | A* | A* | A | A | N | A | A |
| Pressure Distribution System (4.17) | A | A | A | A | A | A | S | A | A | A | A | N | A | A |
| Recirculating Gravel Filter (4.19) | A | A** | A | A | A | A* | A | S | A | A | A | A | A | A |
| Intermittent Sand Filter (4.20) | A | A** | A | A | A | A* | A | A | S | A | A | A | A | A |
| In-Trench Sand Filter (4.21) | A | A* | A | A | N | A | A | A | A | S | N | N | A | A |
| Sand Mound (4.22) | N | A* | A | A | N | A | A | A | A | N | S | N | N | A |
| Seepage Pit/Bed (4.23) | N | N | A | A | N | N | N | A | A | N | N | S | N | A |
| Steep Slope System (4.24) | N | A* | A | A | A | A | A | A | A | A | N | N | S | A |
| Drainfield Remediation Component(4.27) | A | A | A | A | A | A | A | A | A | A | A | A | A | S |

~~X~~A- ~~Allowed to be used in conjunction with this~~Compatible alternative system types; N- Not compatible alternative system types S- Same alternative system type; (*)- May be used as the distribution method within drainfield ~~aggregate~~; (**)- May be used as distribution method within the filter as well as the drainfield.

**Table 4-1. Matrix of compatible alternative systems that may be used in combination for a single system's design.**

**Appendix F**

## 4.1 General Requirements

Revision: ~~September 18, 2014~~May 21, 2015

All rules pertaining to standard subsurface sewage disposal systems shall be applicable, except as modified in this section for each alternative.

All alternative systems shall be approved for specific site use by the health districts in a manner consistent with the guidance provided within this manual for each alternative system.

Requirements for each site-specific alternative shall be contained in the permit.

The designer of all ~~alternative~~ *public* systems, both standard and complex, must be a PE licensed in Idaho (Idaho Code §54-1218). Additionally, the public system's construction must also be reviewed by a PE licensed in Idaho (Idaho Code §54-1218). The PE designing and overseeing the construction of any public system should be ~~and~~ experienced in the ~~alternative~~ system's design. Public systems include any system owned by the state, a county, city, school district, irrigation district, drainage district, highway district, or other subdivision of the state having power to levy taxes or assessments against property situated therein (Idaho Code §54-1218). The requirement for a PE to design and oversee construction of a public system shall not apply to public systems if (Idaho Code §54-1218):

- The construction, reconstruction, maintenance and repair work is insignificant (less than $10,000 in total cost), and
- Performed by employees of the public agency in accordance with standards for such work (including, but not limited to, the Idaho standards for public works construction and any supplements thereto) that have been certified by a PE and duly adopted by the public agency's governing body, and
- A PE determines that such public construction, reconstruction, maintenance and repair work does not represent a material risk to public health or safety.

The designer of alternative *private* systems, other than those listed below, ~~may be~~ is required to be either a PE or an environmental health specialist. The PE must be licensed in Idaho and the environmental health specialist must be registered with the National Environmental Health Association, and both should be experienced in the alternative system's design. The designer of the following complex alternative *private* systems must be a PE licensed in Idaho unless otherwise allowed within the specific system's guidance:

- Drip Distribution System
- Evapotranspiration and Evapotranspiration/Infiltrative System
- Experimental System
- Grey Water System (if pressurized)
- Individual Lagoon
- Pressure Distribution System
- Recirculating Gravel Filter
- Intermittent Sand Filter
- Sand Mound

**Appendix G**

# 4.21 In-Trench Sand Filter

Revision: ~~December 10, 2014~~May 21, 2015

## 4.21.1 Description

An in-trench sand filter is a standard trench or bed system receiving effluent by either gravity or low-pressure flow, under which is placed a filter of medium sand meeting the definitions provided in section 3.2.8.1.2. There are two classifications of an in-trench sand filter:

- Standard in-trench sand filter
- Enveloped in-trench sand filter

The standard design is typically used to excavate through impermeable or unsuitable soil layers down to suitable permeable soils. The standard design may also have clean pit run sand and gravel placed between the medium sand and the suitable permeable soils or ground water as long as minimum medium sand depths are used.

A modified design to the standard in-trench sand filter is known as the enveloped in-trench sand filter. Enveloped in-trench sand filters consist of a disposal trench with medium sand placed below and to the sides of the drainfield and are used for sites with native soils consisting of coarse ~~or~~to very coarse sand or gravel. The enveloped in-trench sand filter has three subcategories based on effluent distribution and treatment.

The term drainfield only applies to the aggregate as defined in IDAPA 58.01.03.008.08 or the gravelless trench components approved in section 5.7 of this manual. Medium sand and pit run may be installed deeper than 48 inches below grade as long as the drainfield maintains a maximum installation depth of 48 inches below grade in compliance with IDAPA 58.01.03.008.04. Minimum installation depths must meet the capping fill trench requirements as outlined in section 4.2.

## 4.21.2 Approval Conditions

1. Except as specified herein, the system must meet the dimensional and construction requirements of a standard trench, bed, or pressure distribution system.
2. ~~The~~Any subclassification of an in-trench sand filter ~~or any of its modifications~~ may be used over very porous strata, coarse sand and gravel, or ground water.
3. A basic permitted installer may install standard or standard enveloped gravity flow in-trench sand filters that are not preceeded by any complex alternative system components.
4. A permitted complex installer is required to install a pre-treated enveloped in-trench sand filter, pressurized enveloped in-trench sand filter or any other in-trench sand filters that are preceded by, or contain, a complex system component.
5. Medium sand used in filter construction must conform to the gradation requirements as described in section 3.2.8.1.2.
6. Pit run backfill material, if used, must conform to the gradation requirements as described in section 3.2.8.1.4.

## 4.21.3 Design and Construction

Each classification of the in-trench sand filter has its own unique minimum design and construction criteria that must be followed. The following subsections describe the minimum design and construction requirements for each classification of the in-trench sand filter.

### *4.21.3.1 Standard In-Trench Sand Filter Design and Construction*

1. Minimum medium sand depths are dependent upon site-specific soil profiles.
2. There is no minimum medium sand depth if seasonal ground water or a porous limiting layer is not present (see example 2 in section 2.2.5.2).
3. If seasonal ground water or a porous limiting layer is present the minimum medium sand and pit run depths are dependent upon meeting the method of 72 as outlined in section 2.2.5.2 (Figure 4-31).
4. Pit run material may only be installed at depths of 8 feet below grade or more; medium sand must be used from the bottom of the drainfield to a depth of 8 feet below grade regardless of the drainfield installation depth.
5. The standard in-trench sand filter system shall be sized based on the most restrictive native receiving soil~~s at~~ below the medium sand, or pit run, and native soil interface to a depth capable of meeting the method of 72 as described in section 2.2.5.2.
6. Standard in-trench sand filters must maintain a 12 inch minimum depth of suitable native soil below the filter above a porous or nonporous limiting layer (Figure 4-31).
7. Standard in-trench sand filters must maintain a minimum separation distance of 12 inches from the bottom of the drainfield to the seasonal high ground water level.
8. Standard in-trench sand filters must maintain a separation distance from the bottom of the drainfield and any limiting layer~~the normal high ground water level~~ that is capable of meeting the method of 72 as described in section 2.2.5.2.
    a. ~~Approval~~Design and construction condition 8~~6~~ may be waived if the standard in-trench sand filter is preceded by an alternative pretreatment system (e.g., ETPS, intermittent sand filter, or recirculating gravel filter) as long as the bottom of the drainfield still meets the minimum separation distances of the applicable alternative pretreatment system ~~(Figure 4-32)~~.

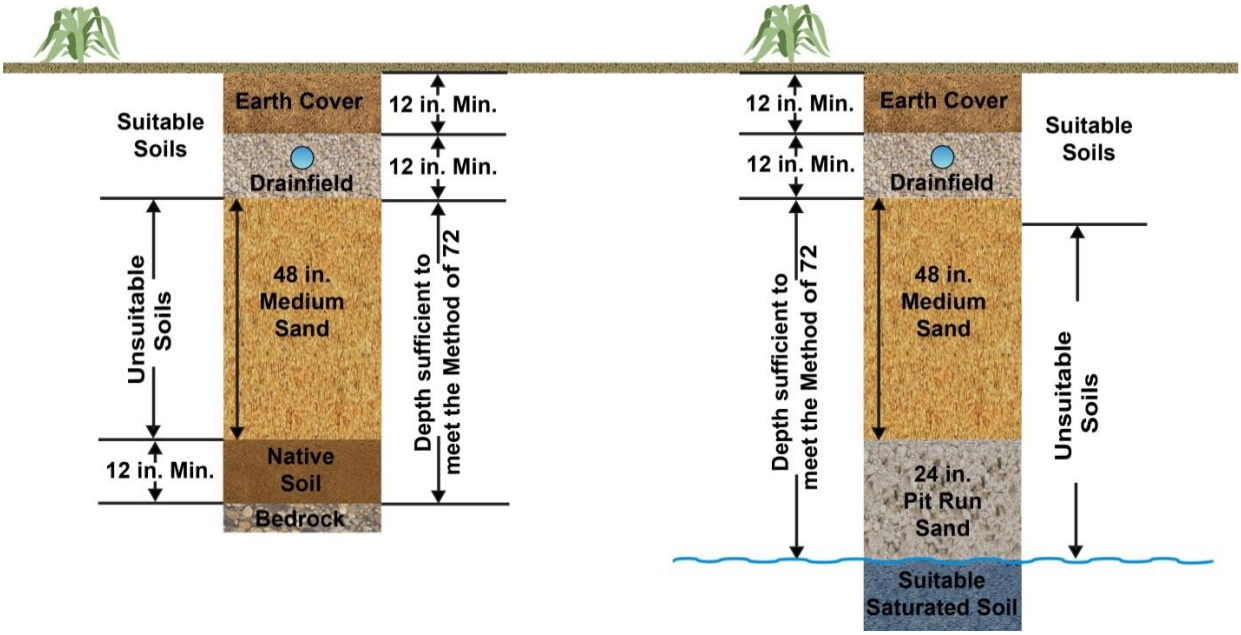


**Figure 4-31. In-trench sand filter accessing suitable soils through an unsuitable soil layer.**

### *4.21.3.2 Enveloped In-Trench Sand Filter Design and Construction*

There are three subcategories of the enveloped in-trench sand filter. The subcategories include in-trench sand filters that receive:

- Standard domestic strength effluent
- Pre-treated effluent
- Pressure distributed effluent

All the subcategories of enveloped in-trench sand filters have the following same design and construction requirements:

1) The filter sand shall envelop the drainfield so that at least 12 inches of medium sand is between the sides and ends of the drainfield and the native soils.
2) Effective disposal area for the installation of an enveloped in-trench sand filter shall only be credited for the width and length of the drainfield installed. Medium sand width enveloping the drainfield is not credited as disposal area.
3) Enveloped in-trench sand filters may not be used in large soil absorption system designs.

Additionally, each subcategory also has design and construction criteria that are independent of the other subcategories. The following subsections describe the minimum independent design and construction requirements for each subcategory of the enveloped in-trench sand filter.

#### 4.21.3.2.1 Standard Enveloped In-Trench Sand Filter Design and Construction

1) The native site soils consist of unsuitable coarse to very coarse sand or gravel meeting the equivalent diameters described in Table 2-1.

2) Unsuitable soils that have application rates less than clay loam as described in Table 2-9 are not suitable for installation of an enveloped in-trench sand filter.

3) The minimum depth of filter sand below the drainfield shall be 6 feet Figure 4-32.

4) The enveloped in-trench sand filter must maintain a minimum of 12 inches above any limiting layer from the bottom of the filter sand.

5) The drainfield shall be sized at 1.2 GPD/ft$^2$.

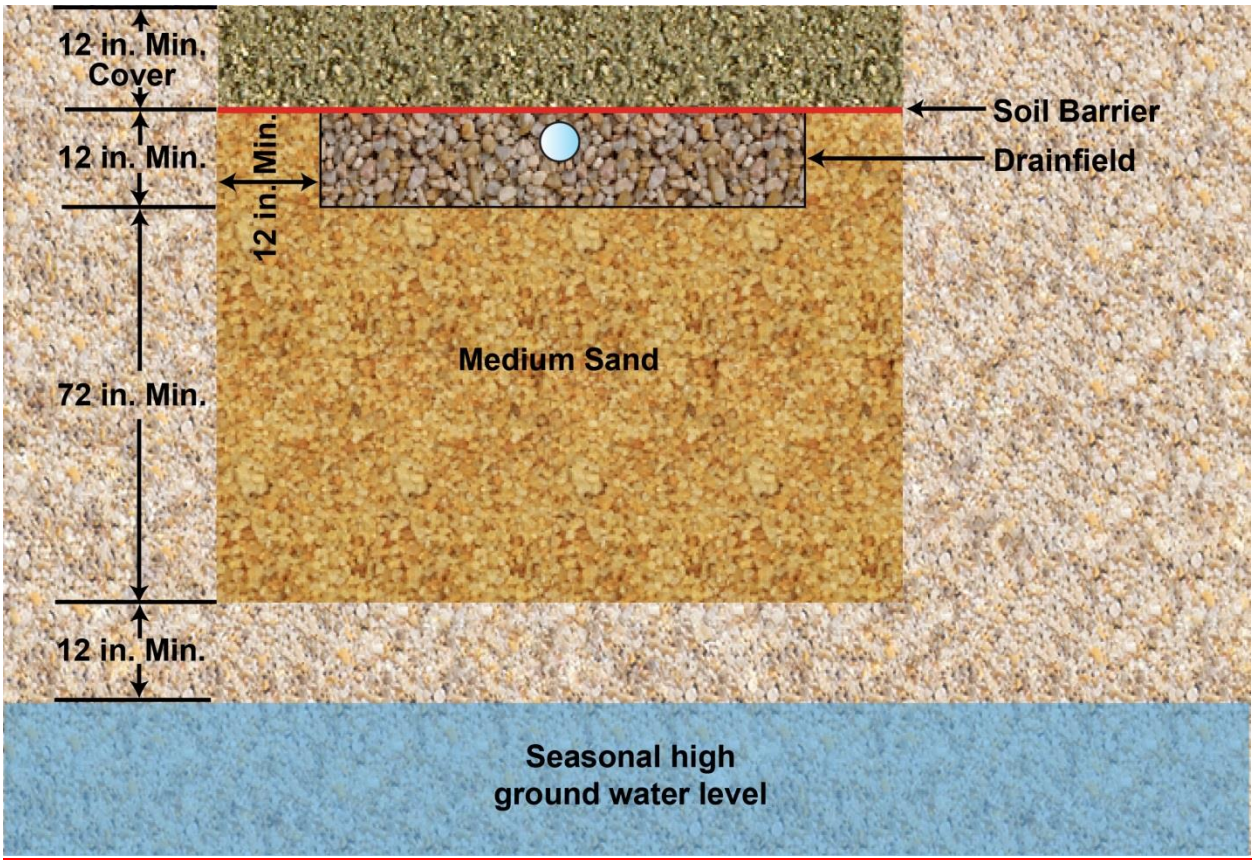


**Figure 4-32. Standard enveloped in-trench sand filter for installation in coarse native soils (i.e., coarse or very coarse sand or gravel).**

### 4.21.3.2.2 Pre-Treated Enveloped In-Trench Sand Filter Design and Construction

1) The effluent shall be pretreated with an extended treatment package system (section 4.7), recirculating gravel filter (section 4.19), or an intermittent sand filter (section 4.20).

2) The native site soils shall consist of unsuitable coarse to very coarse sand or gravel meeting the equivalent diameters described in Table 2-1.

3) Unsuitable soils that have application rates less than clay loam as described in Table 2-9 are not suitable for installation of an enveloped in-trench sand filter.

4) The minimum depth of filter sand below the drainfield shall be 12 inches Figure 4-33.

5) The enveloped in-trench sand filter must maintain a minimum of 12 inches above seasonal or normal ground water levels and any other porous limiting layer from the bottom of the filter sand.

6) The enveloped in-trench sand filter must maintain a minimum of 12 inches above any non-porous limiting layer from the bottom of the filter sand.

7) The drainfield shall be sized at 1.7 GPD/ft$^2$.

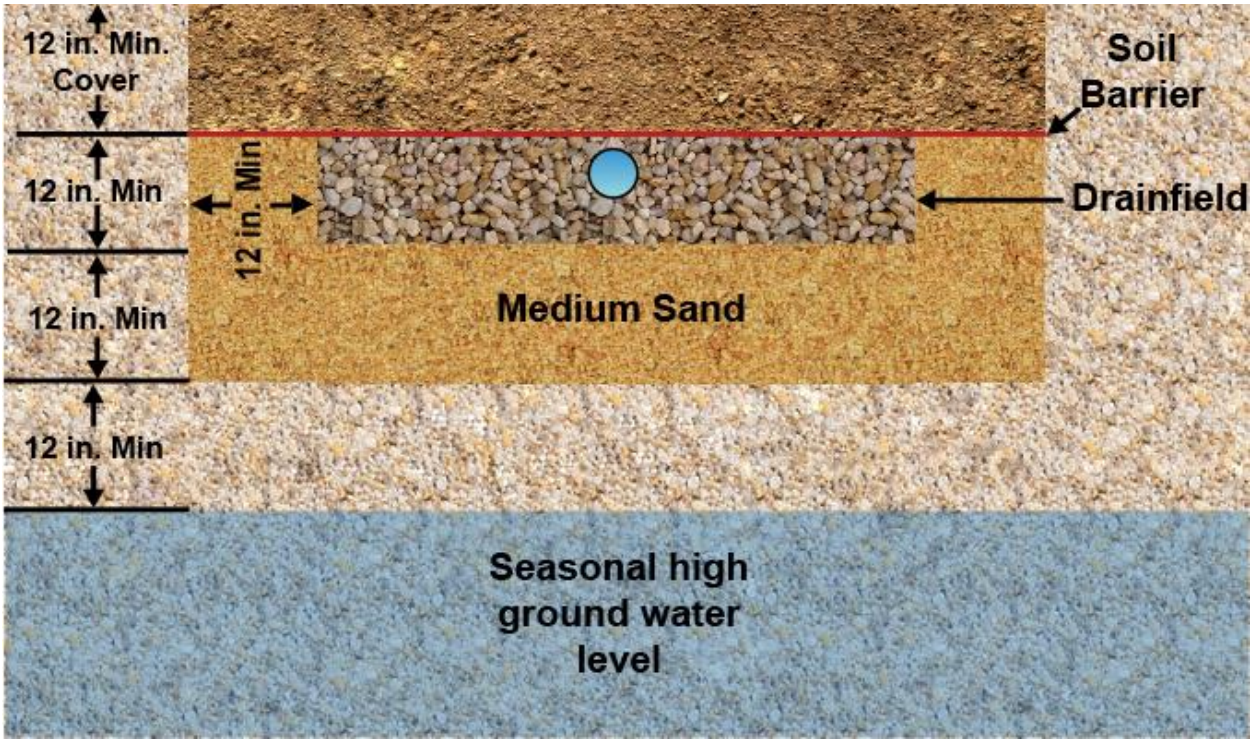


**Figure 4-~~32~~33. Enveloped in-trench sand filter with alternative pretreatment for installation in coarse native soils (i.e., coarse or very coarse sand or gravel).**

## 4.21.3.2.3 Pressurized Enveloped In-Trench Sand Filter Design and Construction

1) The native site soils shall consist of suitable soils no coarser than medium sand or finer than clay loam as described in Table 2-9.

2) The drainfield shall be pressurized and designed in accordance with section 4.17 by a professional engineer licensed in the State of Idaho.

3) The filter sand shall maintain a minimum depth of (Figure 4-34):

   a) 2 feet below the drainfield in design group C soils.

   b) 3 feet below the drainfield in design ground A and B soils.

4) A minimum of 12 inches of suitable soils must be maintained between the sand filter and the normal high ground water level or a porous limiting layer.

5) The pressurized enveloped in-trench sand filter system shall be sized based on the most restrictive native receiving soil between the bottom of the medium sand filter and the normal high ground water level or a porous limiting layer.

6) Reduced separation distances to nonporous limiting layers may not be approved through use of this design.

7) Pressurized enveloped in-trench sand filters installed in suitable soils to obtain a reduced separation distance to ground water or a porous limiting layer must maintain a minimum of 12 inches above the seasonal and normal high ground water levels from the bottom of the filter sand.

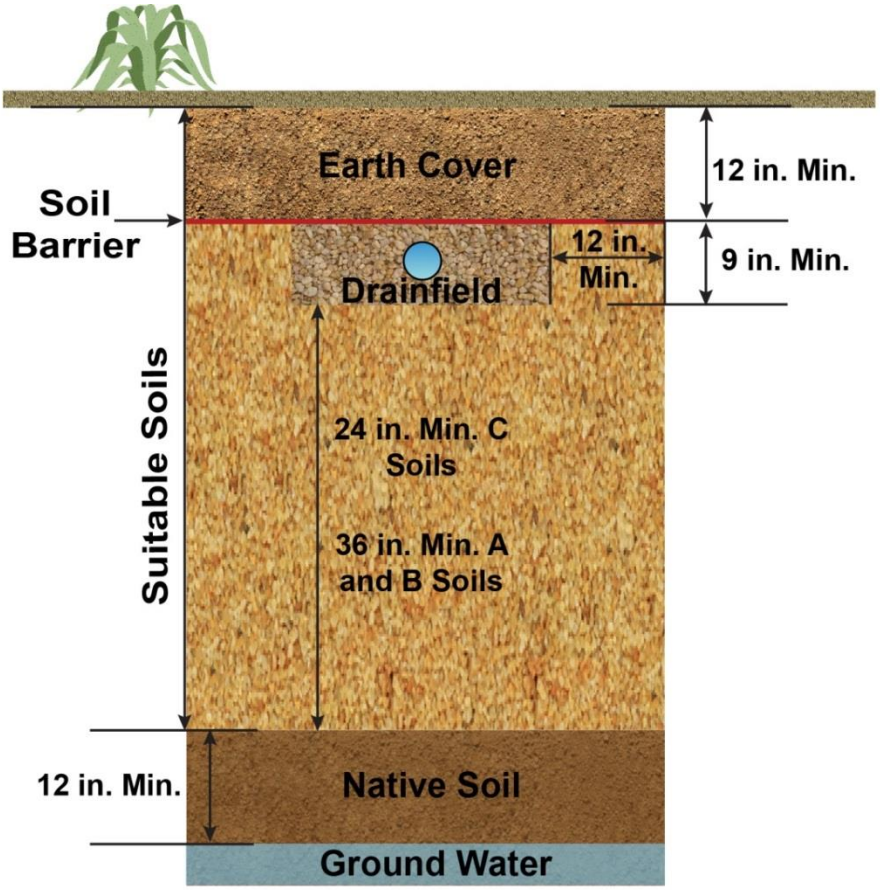


**Figure 4-~~33~~34. Enveloped pressurized in-trench sand filter for installation in suitable soils for a reduction in separation distance to ground water or a porous limiting layer.**

## Appendix H

### 2.2.5 Method of 72 to Determine Effective Soil Depths ~~to Porous Layers and Ground Water~~

Often, effective soil depths, as required by IDAPA 58.01.03.008.02.c, are not achievable due to various site conditions. In response to this issue, section 2.2.2 provides guidance for reducing separation distances to limiting layers based upon soil design subgroups. In some situations, this guidance does not go far enough to address these site limitations, nor does it provide guidance on how to approach separation distances to limiting layers when the soil profile is variable and does not meet the minimum effective soil depths as described in IDAPA 58.01.03.008.02 or Table 2-5, or when the in-trench sand filter system design is used. To address these situations, use the method of 72.

The method of 72 assigns treatment units to soil design subgroups. Treatment units assigned to soil design subgroups are extrapolated from the effective soil depths required by IDAPA 58.01.03.008.02.c. Based on this rule, it can be determined that 72 treatment units are necessary from the drainfield-soil interface to the porous layer/ground water to ensure adequate treatment of effluent by the soil. Table 2-8 provides the treatment units assigned to each soil design subgroup.

**Table 2-8. Treatment units assigned to each soil design subgroup per foot and per inch.**

| Soil Design Subgroup | A-1/ Medium Sand | A-2 | B-1 | B-2 | C-1 | C-2 |
|---|---|---|---|---|---|---|
| Treatment units per 12 inches of soil | 12 | 14.4 | 18 | 24 | 24 | 28.8 |
| Treatment units per inch of soil | 1 | 1.2 | 1.5 | 2 | 2 | 2.4 |

#### *2.2.5.1 Native Soil Profiles and the Method of 72*

When the soil profile contains multiple suitable layers, but no layer is thick enough to meet the separation guidance provided in IDAPA 58.01.03.008.02.c or Table 2-5, use the method of 72 to determine the suitable separation distance for the proposed drainfield site. The following example is based on the soil profile identified in Figure 2-3.

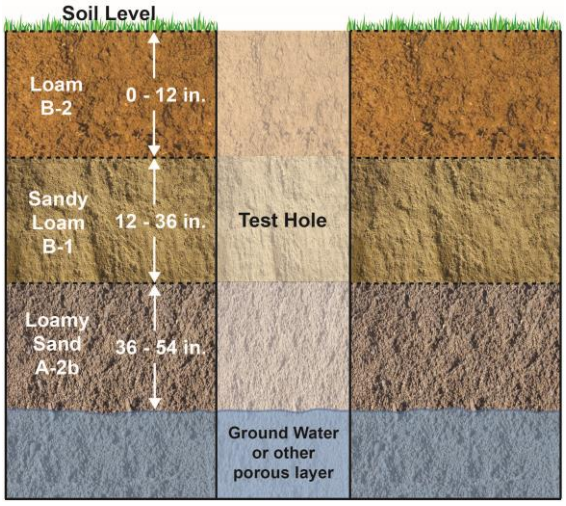


**Figure 2-3. Test hole profile used in example 1.**

**Example 1**:

Based upon the soil profile in Figure 2-3 and treatment units from Table 2-8, the following treatment unit equivalent would be ascribed:

Treatment units = 24 + 36 + 21.6 = 81.6

Since this is the treatment unit equivalent from grade to the porous layer or normal high ground water level, the installation depth must still be determined. In this example, the soil profile has 9.6 treatment units more than the minimum necessary to be considered suitable for a standard alternative drainfield. To determine installation depth, use the upper layer of the soil profile where the system will be installed and determine the treatment units per inch of soil. Once the treatment units per inch are known, the depth of allowable installation can be determined.

- 24 treatment units /12 inches of B-2 soil = 2 treatment units per inch
- Installation depth = 9.6 excess treatment units /2 treatment units per inch
- Installation depth = 4.8 inches

In this example, a standard basic alternative system can be permitted. The system design would be a capping fill trench with a maximum installation depth of 4.5 inches below grade.

### *2.2.5.2 In-Trench Sand Filters and the Method of 72*

The method of 72 may also be used in determining the necessary depth of medium sand required for installation between a drainfield and the native soils overlying a ~~porous limiting layer or normal high ground water~~limiting layer. Installation of medium sand may be necessary to access suitable soils below an unsuitable layer. Medium sand may be installed to any depth necessary to reach suitable soils as long as the excavation and installation of the medium sand meet the requirements in section 4.21. For porous limiting layers or normal high ground water the drainfield installation depth must meet a depth sufficient to meet the method of 72. For impermeable limiting layers (e.g., bedrock) the drainfield installation depth must meet a depth sufficient to meet the minimum separation distance to impermeable layers required by IDAPA

58.01.03.008.02.c, or Table 2-6 if the approval conditions can be met. Separation distances to impermeable layers cannot be reduced to less than the requirements above through the method of 72. The following example is based on the soil profile identified in Figure 2-4.

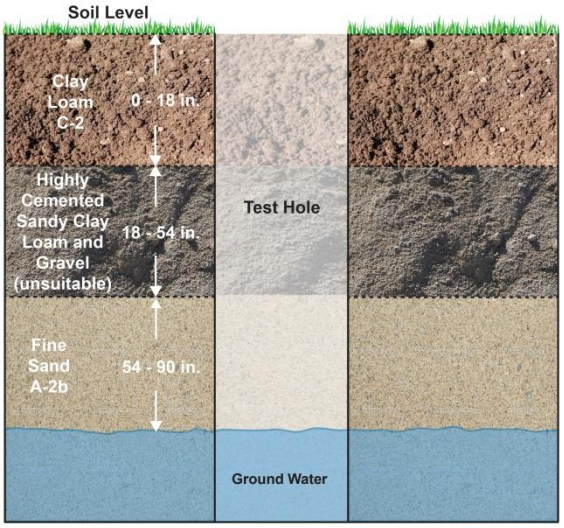


**Figure 2-4. Test hole profile used in example 2.**

**Example 2***:*

In this example, the site soils must be excavated down to 54 inches to access suitable soils. This leaves 36 inches of A-2b soils, providing 43.2 treatment units. The amount of medium sand required to be backfilled prior to system installation would be determined as follows:

- Remaining treatment units = 72 – 43.2 = 28.8
- Depth of medium sand required = 28.8 treatment units remaining/1 treatment unit per inch
- Depth of medium sand required = 29 inches

Thus the medium sand would be backfilled to a depth of 25 inches below grade. The drainfield would then be installed on top of the leveled medium sand.

*Note:* Regardless of the soil profile and treatment units needed, drainfields must be installed no deeper than 48 inches below grade per IDAPA 58.01.03.008.04. Drainfield depth restrictions only apply to the aggregate as defined in IDAPA 58.01.03.008.08 or the gravelless trench components approved in section 5.7.

**Appendix I**

# 4.~~2~~3 Capping Fill System

Revision: ~~June 5, 2014~~May 21, 2015

## 4.~~2~~3.1 Description

A capping fill trench is a drainfield constructed so that its bottom is at least 3 inches into the natural soil but less than 2 feet deep in the natural soil. A selected fill material caps the trench to provide cover. The two subcategories of a capping fill system are (1) ~~standard~~below-grade capping fill system and (2) ~~extreme~~above-grade capping fill system. Capping fill systems may be installed by any installer with a basic installer's permit unless a complex component is used in conjunction with the capping fill system design.

## 4.~~2~~3.2 ~~Standard~~Below-Grade Capping Fill System

A ~~standard~~below-grade capping fill system is constructed so the bottom of the drainfield is less than 24 inches deep in the natural soil but deep enough in the natural soil to keep the ~~invert of the drainfield pipe~~entire drainfield below the natural soil. The installation depth is between 12-24 inches below the natural soil~~deeper than 6 inches for a standard drainrock and perforated pipe drainfield~~. The bottom depth of the drainfield necessary to keep the ~~invert of the~~ drainfield ~~pipe~~ below the natural soil may be deeper for gravelless system products or combination extra drainrock and standard capping fill systems. See Figure 4-1.

### ~~*Standard*~~*Below-Grade Capping Fill System Approval Conditions*

1. Effective soil depths below the drainfield bottom must be met as required by IDAPA 58.01.03 or as allowed in section 2.2 of this manual following the separation distance hierarchy.

~~2. Site may not exceed 12% slope if the drainfield extends above natural soil.~~

~~3~~2. ~~If the drainfield is at or below natural soil, the s~~Site may not exceed 20% slope.

~~4~~3. The soil cap may be constructed prior to system excavation but after natural soil scarification if the ~~drainfield extends above the natural soil~~cap must extend above the natural soil to achieve the minimum cover requirement of 12 inches.

4. The fill material (section 4.3.4), construction (section 4.3.5), and inspection (section 4.3.6) requirements must be met.

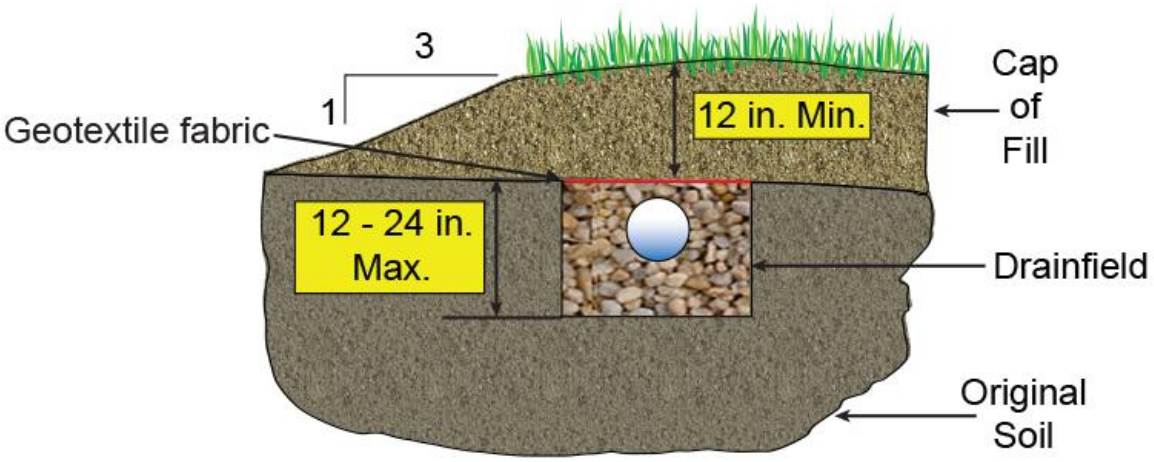


**Figure 4-1. Cross-sectional view of a below-grade capping fill trench.**

### 4.~~2~~3.3 ~~Extreme~~Above-Grade Capping Fill System

An ~~extreme~~above-grade capping fill system is constructed so that the ~~invert of the~~ upper portion of the drainfield ~~pipe~~ is above the natural soil. The~~is~~ drainfield installation depth is typically ~~6~~less than 12 inches deep ~~or less~~ for a standard drainrock and perforated pipe drainfield. The bottom depth of the drainfield that results in the ~~invert of the~~ upper portion of the drainfield ~~pipe~~ being above the natural soil may be deeper for gravelless system products or combination extra drainrock and capping fill systems. See Figure 4-2.

#### ~~*Extreme*~~*Above-Grade Capping Fill System Approval Conditions*

1. Effective soil depth below the drainfield bottom must be met as required by IDAPA 58.01.03 or as allowed in section 2.2 of this manual following the separation distance hierarchy.
2. Site may not exceed 12% slope.
3. The soil cap ~~may~~must be constructed prior to system excavation but after natural soil scarification when constructing with pipe and aggregate.
4. The soil cap shall ~~be compacted to 90% of the existing soils, which shall be verified by a soil compaction test after cap construction~~extend at least 10 feet beyond the nearest trench sidewall in all directions.
5. The invert of the perforated distribution pipe in a combination extra drainrock and ~~extreme~~above-grade capping fill system shall not extend more than 3 inches above the natural soil.
6. The bottom of the drainfield shall be installed no shallower than 3 inches below the natural soil.
7. The minimum cover over the drainfield shall be 18 inches.
8. The fill material (section 4.3.4), construction (section 4.3.5), and inspection (section 4.3.6) requirements must be met.

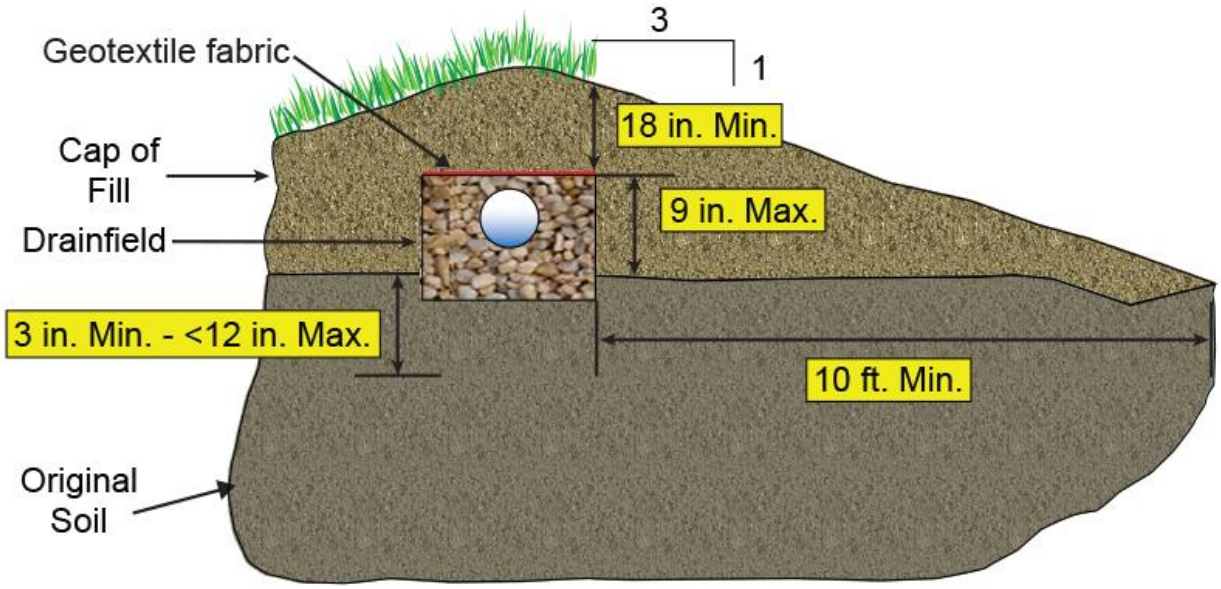


**Figure 4-2. Cross-sectional view of an above-grade capping fill trench.**

### 4.~~2~~3.4 Fill Material

The capping fill drainfield must meet the minimum ~~(12 inches)~~cover requirements described in section 4.3.2 and 4.3.3 and the maximum (36 inches) cover requirements of IDAPA 58.01.03.008.04. Fill material must be imported or removed from a location greater than 6 feet away from the edge of the drainfield cap to meet the texture requirements of the cap. The material requirements for the cap are as follows:

1. The upper layer of the natural site soil must be one of the approved effective soil design subgroups as described in Table 2-4.
2. The texture of the fill material used for the soil cap shall be the same as or one soil design subgroup finer than that of the upper layer of the natural site soil, except that no fill material finer than clay loam may be used.
3. Fill material shall be free of debris, stones, frozen clods, or ice.

### 4.~~2~~3.5 Construction

1. When the fill cap must extend above the natural ground ~~T~~the entire cap area is scarified to a depth of 6–8 inches using a chisel plow or backhoe teeth to disrupt the vegetative mat. Smearing of the soil during scarification shall be avoided.
2. Site soil should not be removed during the scarification process unless heavy vegetation (e.g., bushes) or heavy vegetative mat is present. Any site soil that is removed should be replaced with medium sand prior to system construction.
3. Construction-related requirements in sections 4.~~2~~3.2 and 4.~~2~~3.3 shall be followed.
4. Systems shall be installed to a depth below the natural soil surface according to the specifications outlined on the permit.

~~5. Edges of the finished cap fill should be at least 10 feet beyond the nearest trench sidewall.~~

~~6~~5. Finished side slopes of the fill are to be evenly graded from the outer edges of the trenches to the natural soil surface with a maximum slope of 3:1 or less (three horizontal to one vertical).

~~7~~6. Compaction of the scarified area must be prevented. Use of equipment with pneumatic tires is prohibited on the scarified area and fill or cover.

~~8~~7. At least 12 inches of fill must be applied to cover the trenches in a below-grade capping fill system and 18 inches of fill must be applied to cover the trenches in an above-grade capping fill system.

### 4.~~2~~3.6 Inspections

1. Site soil texture, fill soil texture, and the scarification or vegetative mat disruption process will be inspected by the Director.
2. Installed trenches will be inspected by the Director prior to cover.
3. Final inspection after covering may be conducted by the Director to ensure proper cap placement and slope.

~~Figure 4-1 shows a cross section of a capping fill trench.~~

**Appendix J**

*Section 4.2 will be added to the systems requiring design by a PE in section 4.1 upon final approval.

## 4.2 At-Grade Soil Absorption System

Revision: May 21, 2015

### 4.2.1 Description

An at-grade soil absorption system is a system installed with the distribution aggregate placed at the original soil surface. Wastewater is distributed through the aggregate through a pressurized small-diameter pipe distribution system to ensure equal distribution across the infiltrative surface. Aggregate is covered with geotextile fabric and capped with at least 12 inches of soil cover. Figure 4-1 provides a diagram of an at-grade soil absorption system.

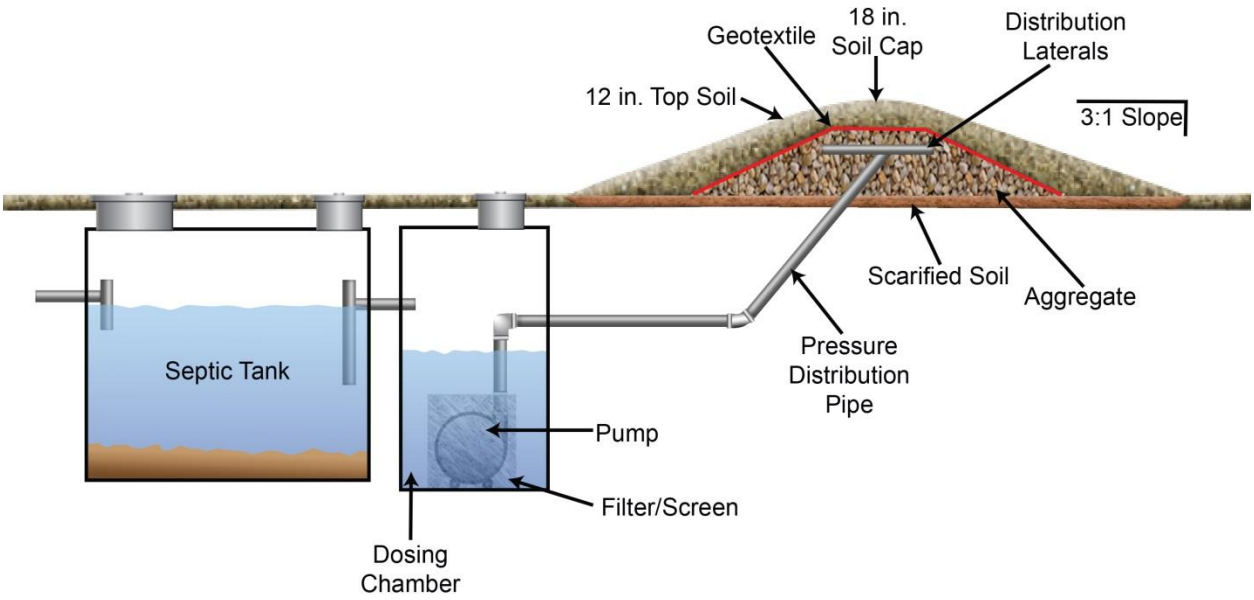


**Figure 4-1. Cross-sectional view of an at-grade soil absorption system.**

### 4.2.2 Approval Conditions

1. The system must be designed by a PE licensed in Idaho.
2. Effective soil depth to limiting layers shall meet the requirements of IDAPA 58.01.03.008.02.c. If a secondary treatment system is incorporated into the system design prior to discharge to the at-grade soil absorption system the effective soil depth to any limiting layer shall not be reduced to less than 36 inches.
3. The soil application rate used in the at-grade soil absorption system design is based on the most restrictive soil layer within the soil profile's effective soil depth as determined by approval condition 2 except that the application rate shall not be increased for the incorporation of secondary effluent treatment prior to discharge to the at-grade soil absorption system.

4. Table 4-1 shows the maximum slope of natural ground, listed by soil design group.
5. Drainfield media shall consist of aggregate meeting the specifications of section 3.2.8.1.1.
   a. Gravelless trench components shall not be substituted for drainfield aggregate in the system design.
   b. No reduction is granted for installation of extra drainrock below the distribution pipe.
6. At-grade soil absorption system must not be installed in flood ways, areas with large trees and boulders, in concave slopes, at slope bases, or in depressions.
7. Design flow must be 1.5 times the wastewater flow.
8. The maximum daily wastewater flow to any at-grade soil absorption system must be equal to or less than 500 GPD, not including the required safety factor adjustment.
9. Nondomestic wastewater must be pretreated to residential strength before discharge to the at-grade soil absorption system.
10. Pressure distribution system and associated component design shall conform to section 4.17 of this manual unless otherwise provided within this section.

**Table 4-1. Maximum slope of natural ground.**

| Design Group | A | B | C-1 | C-2 |
|---|---|---|---|---|
| Slope (%) | 20 | 20 | 12 | 6 |

### 4.2.3 Design

Minimum design requirements for the at-grade soil absorption system are provided below.

#### *4.2.3.1 Effective Absorption Area Design*

The effective absorption area dimensions are determined through the daily design flow plus safety factor, assigned soil application rate, and the contour loading rate of the site. Effective absorption areas should be designed as long and narrow as possible to reduce the contour loading rate, increase the effective absorption area, and protect the at-grade soil absorption system from failure.

1. Determine the daily design flow and multiply it by the safety factor of 1.5.

   *Example: Three bedroom home (250 gpd). Design flow (250 gpd x 1.5) = 375 gpd.*

2. Determine the minimum necessary soil absorption area based on the daily design flow with the safety factor and the effective soil profile's most restrictive soil application rate.

   *Example: Three bedroom home (375 gpd) on a site with B-2 soils(0.45 gpd/$ft^2$). Soil absorption area: (375 gpd/0.45 gpd/$ft^2$) = 834 $ft^2$.*

3. Assign a contour loading rate. Contour loading rates are the responsibility of the system's design engineer to assign and should take into account soil texture, soil structure, and limiting layers existing in the soil profile.

a. Contour loading rates shall not be less than two-gallons per foot or more than 12 gallons per foot for a site and should fall between the values provided in Table 4-2 for each at-grade soil absorption cell.

b. If more than one at-grade soil absorption cell is required for a single system each cell shall have the same contour loading rate based on the most restrictive rate for the site.

c. Contour loading rates are additive along a site's slope for each at-grade soil absorption cell as shown in Figure 4-2.

d. See the following resources for more information on designation of contour loading rates:

i. *Linear Loading Rates for On-Site Systems* by James C. Converse (1998)

ii. *Designing with Soil: Development and Use of a Wastewater Hydraulic Linear and Infiltration Loading Rate Table* by E. Jerry Tyler and Laura Kramer Kuns (Date unknown)

iii. *Hydraulic Wastewater Loading Rates to Soil* by E. Jerry Tyler (Date unknown)

**Table 4-2. Linear loading rate ranges based on soil design subgroups.**

| Design Subgroup | A-1 | A-2a | A-2b | B-1 | B-2 | C-1 | C-2 |
|---|---|---|---|---|---|---|---|
| Contour Loading Rate Range (gpd/ft) | 2-8 | 2-8 | 2-7 | 2-6 | 2-5 | 2-4 | 2-3 |

4. The effective absorption cell width is calculated by dividing the contour loading rate selected for the site by the soil application rate. Effective absorption cell width shall not exceed 15 feet.

   *Example: Site with B-2 soils (0.45 gal/ft$^2$) and a selected contour loading rate of 4 gpd/ft. Absorption cell width: (4 gpd/ft/0.45 gal/ft$^2$) = 8.9 feet, use 9 feet. Round up to nearest half-foot for design purposes.*

5. The absorption cell length is calculated by dividing the daily design flow by the contour loading rate.

   *Example: Three bedroom home (375 gpd) and a selected contour loading rate of 4gpd/ft. Absorption cell length (375 gpd/4 gpd/ft) = 93.75 feet round to 94 feet for design purposes.*

6. Ensure the at-grade absorption cell dimensions length and absorption area width meet or exceed the minimum soil absorption area calculated in step 2. If the absorption cell dimensions do not exceed the minimum absorption area required decrease the selected contour loading rate selected in step 3 to achieve the minimum required absorption area.

   *Example 4 : Required absorption area = 696 ft$^2$. Design area: (79 feet x 9 feet) = 711 ft$^2$.*

7. Effective absorption area within an aggregate cell shall be credited based on the following requirements:

   a. Flat sites: the absorption area is credited for the full width of the aggregate cell.

b. Sloped sites: the absorption area is credited from the downhill side of the pressurized distribution lateral to the downhill edge of the aggregate cell.

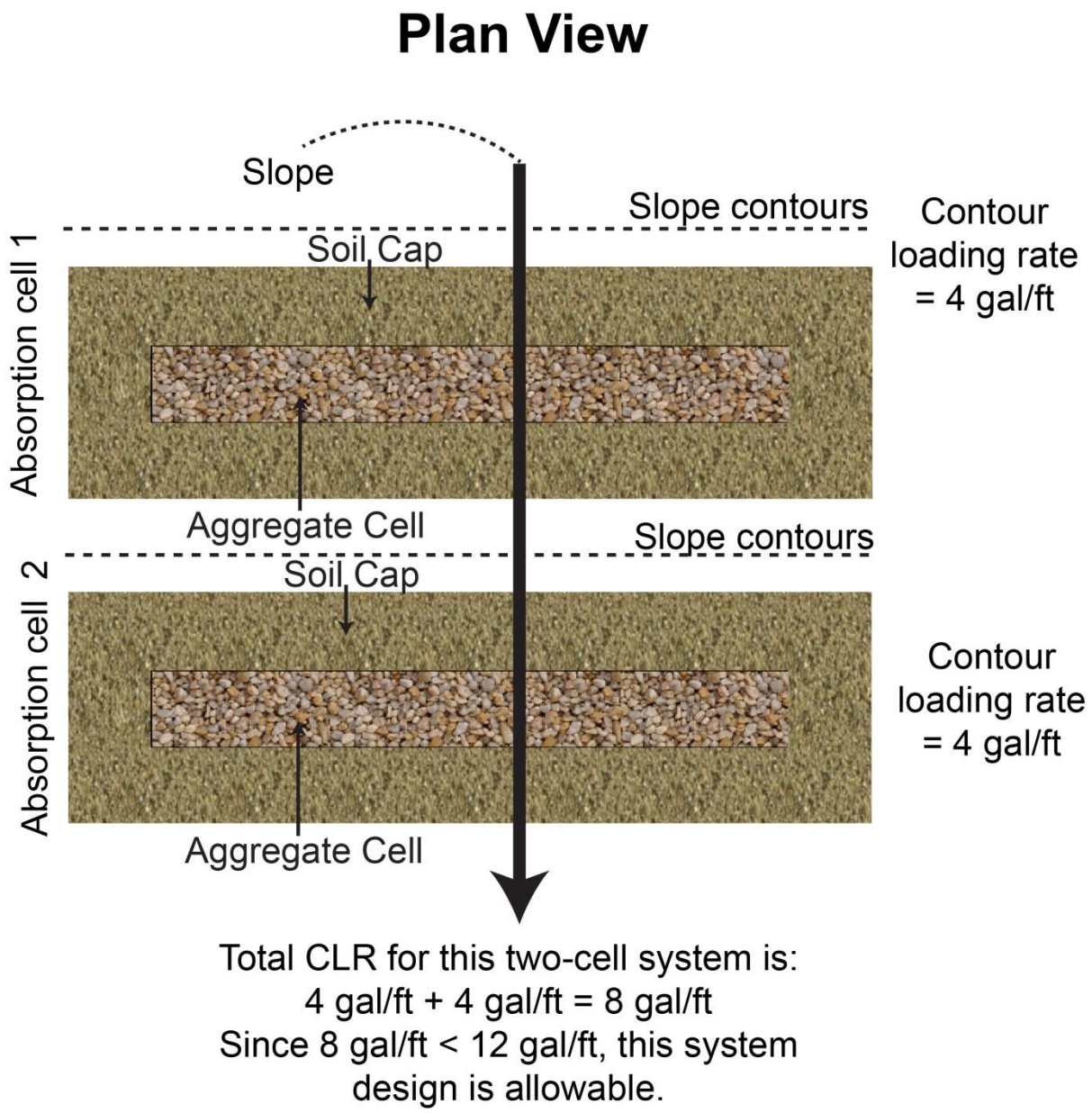


**Figure 4-2. Additive contour loading rate example.**

### *4.2.3.2 Pressure Distribution Design*

The design of the low-pressure distribution system shall meet the requirements of section 4.17 with the exception of the requirements contained within this section.

1. Pressurized distribution lateral placement and spacing within the aggregate cell shall meet the following requirements:

a. Flat sites: the lateral placement shall meet the requirements for beds and spacing shall meet the requirements for distribution laterals in section 4.17.3.1.

b. Sloped sites: only one pressurized distribution lateral is required and it shall be placed on the upslope edge of the aggregate.

2. The maximum orifice spacing shall meet the following requirements:

a. Flat sites: the orifice spacing shall result in a maximum disposal area of 6 $ft^2$ per orifice.

b. Sloped sites: the orifice spacing shall not be greater than 12 inches.

3. Dosing is recommended to be timed, but may be demand.

4. Each dose delivered to the infiltrative surface of the at-grade absorption system should not exceed 15% of the daily wastewater flow prior to the addition of a safety factor.

*Example: Three bedroom home (250 gpd prior to the addition of a safety factor). Each dose delivered to the infiltrative surface would not exceed 37.5 gallons total.*

### *4.2.3.3 Aggregate Cell Design*

At-grade absorption cells must be filled with aggregate meeting the requirements of section 3.2.8.1.1. The aggregate cell must account for the effective absorption area and meet the additional design requirements below.

1. Aggregate must be placed along the slope contour on the uphill side of the at-grade soil absorption system for sloped sites.

2. Aggregate placement must be at least 6 inches deep below and at least 2 inches above the pressurized distribution pipe. (Figure 4-3)

3. Aggregate must be placed in a consistent depth meeting the minimum requirements described in aggregate cell design requirement 2 throughout the entire effective absorption area after which the aggregate shall be tapered to meet native grade at a maximum slope of 3:1.

4. An additional 3 feet of aggregate must be placed as described in design requirement 2 on either end of the aggregate cell that extends past the terminal ends of the pressurized distribution pipe.

a. This additional aggregate shall not be credited as part of the effective absorption area.

b. After the additional aggregate placement is met the aggregate may taper to native grade at a maximum slope of 3:1

5. On sloped sites the aggregate upslope of the pressurized distribution pipe shall be tapered to native grade at a maximum slope of 3:1, but shall not be shorter than two feet.

6. Three observation ports should be installed at the toe edge of the aggregate cell extending from the drainrock/native soil interface through the soil cap at approximately the one-sixth, one-half, and five-sixth points along the aggregate cell.

a. The observation ports should contain perforations in the side of the pipe extending up 4 inches from the bottom of the port.

b. Observation ports must be accessible from grade, have a removable cap, and be stabilized to prevent their removal.

c. On flat sites the observation ports should be located on both sides of the aggregate cell. On sloped sites the observation ports should be located on the downhill side of the aggregate cell.

7. The entire aggregate cell shall be covered by geotextile fabric. Geotextile fabric shall only extend to the edge of the aggregate.

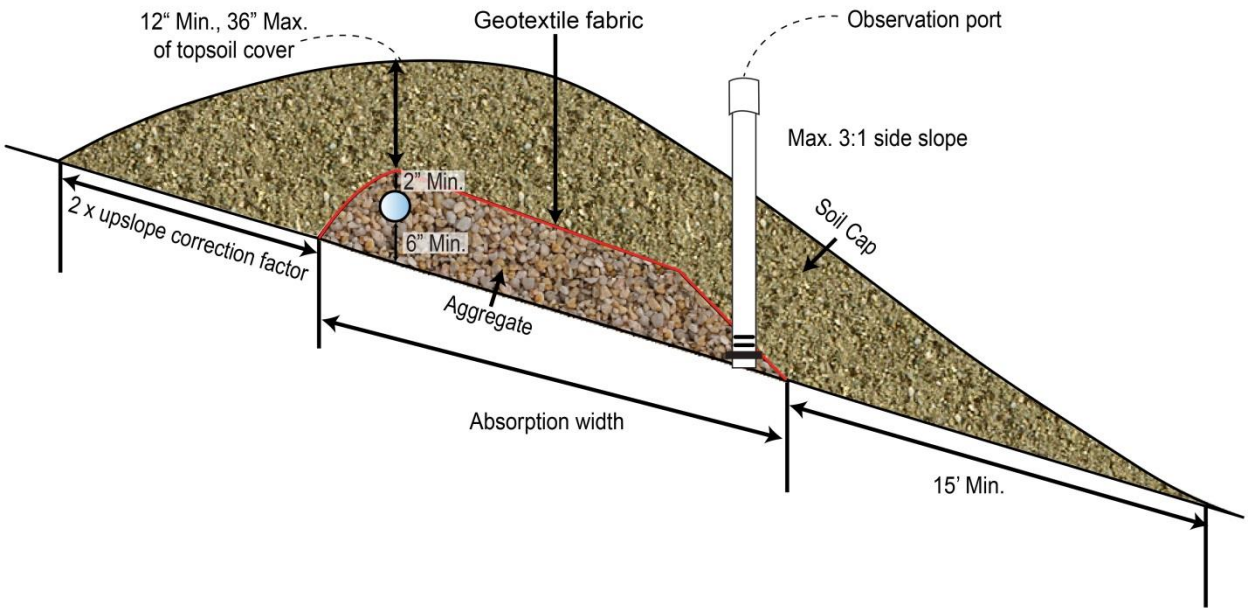


**Figure 4-3. Cross section of an at-grade soil absorption system on a slope.**

### *4.2.3.4 Soil Cap Design*

The at-grade aggregate cell must have a soil cover meeting the following minimum requirements:

1. A minimum soil cap depth of 12 inches shall be placed over the entire aggregate cell (Figure 4-3). On flat sites the soil cap at the center of the cell shall be crowned to 18 inches to promote runoff.

   a. Depth of the soil cap shall not exceed 36 inches over any portion of the system.

   b. It is recommended to maintain the soil cap depth near the minimum depth requirements to promote evaporation during warmer months where practical.

2. For flat sites the soil cap width is determined by adding 5 feet to half of the aggregate cell width from the ends of the aggregate cell on all sides, or a minimum of 10 feet, whichever value if greater. The soil cap must maintain a maximum slope of 3:1 or less.

   *Example: The aggregate cell has a design width of 9 feet. The soil cap width would be 5 feet + 4.5 feet, or 9.5 feet. Use the minimum width of 10 feet. The soil cap would extend 10 feet from the edge of the aggregate cell in all directions.*

3. For sloped sites the slope correction factors as provided in Table 4-3 should be used to determine the downslope and upslope width of the soil cap.

   a. The downslope soil cap width is calculated by multiplying the height of the at-grade soil absorption system by the correction factor, adding 5 feet to the total width of the absorption cell, or a minimum of 15 feet. Whichever value is greater is used as the downslope cap width.

      *Example: The height of the at-grade soil absorption system (aggregate plus cap) is 1.75 feet (9 inches of aggregate plus 12 inches of soil cover). The downslope soil cap width on a 10% slope would be 1.75 x 6.67, or 11.7 feet. Use the minimum width of 15 feet. The soil cap would extend 15 feet from the downslope edge of the aggregate cell.*

   b. The upslope soil cap width is calculated by multiplying the height of the at-grade absorption system by the correction factor.

      *Example: The height of the at-grade soil absorption system (aggregate plus cap) is 1.75 feet (9 inches of aggregate plus 12 inches of soil cover). The upslope soil cap width on a 10% slope would be 1.75 x 2.86, or 5 feet. The soil cap would extend 5 feet from the upslope edge of the aggregate cell.*

   c. The soil cap extending from the ends of the aggregate cell shall be determined by adding 5 feet to half of the absorption cell width or a minimum of 10 feet, whichever value is greater.

      *Example: The aggregate cell has a design width of 9 feet. The soil cap width would be 5 feet + 4.5 feet, or 9.5 feet. Use the minimum width of 10 feet. The soil cap would extend 10 feet from the ends of the aggregate cell.*

   d. All sides of the soil cap must maintain a maximum slope of 3:1 or less.

**Table 4-3. Downslope and upslope correction factors for soil cap width.**

| Slope (%) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Downslope Correction Factor | 4.17 | 4.35 | 4.54 | 4.76 | 5.00 | 5.26 | 5.56 | 5.88 | 6.25 | 6.67 | 7.14 | 7.69 | 8.26 | 8.92 | 9.57 | 10.24 | 10.94 | 11.67 | 12.42 | 13.2 |
| Upslope Correction Factor | 3.85 | 3.7 | 3.57 | 3.45 | 3.33 | 3.23 | 3.12 | 3.03 | 2.94 | 2.86 | 2.78 | 2.7 | 2.62 | 2.55 | 2.48 | 2.41 | 2.35 | 2.29 | 2.23 | 2.18 |

4. The texture of the fill material used for the soil cap shall be the same as or one soil design subgroup finer than that of the upper layer of the natural site soil, except that no fill material finer than clay loam may be used.
5. The soil cap material shall be free of debris, stones, frozen clods, or ice.
6. Soil cap should be protected to prevent damage caused by vehicular, livestock, or excessive pedestrian traffic. The toe of the soil cap must be protected from compaction.
7. At-grade soil absorption systems on slopes should have design considerations taking surface runoff diversion into account.

### 4.2.4 Construction

1. Lay out the system with the length following the slope contour.

2. Grass and shrubs must be cut close to the ground surface and removed from the at-grade soil absorption system site.
    a. If extremely heavy vegetation or organic mat exists, these materials should be removed before scarification and replaced with medium sand meeting the specification requirements in section 3.2.8.1.2.
    b. Larger than 2-inch caliper trees and shrubs and large boulders are not to be removed. Trees should be cut as close to ground level as possible and the stumps left in place. If stumps or boulders occupy a significant area in the at-grade soil absorption system placement area, additional area should be calculated into the total basal area of the at-grade soil absorption system to compensate for the lost infiltrative area.
3. When the soil is dry and site vegetation has been cut or removed, the ground in the basal placement area of the at-grade soil absorption system and soil cap should be scarified using a chisel plow or backhoe teeth to a depth of 6–8 inches.
4. Pressure transport line from the dosing chamber should be installed first.
    a. The pressure transport line should slope down to the pump so that the pressure line will drain between discharges.
    b. If a downward slope from the at-grade soil absorption system to the pump chamber is not practical due to the length of run, then the pressure transport line should be laid level below the anticipated frost line for that region.
    c. On a sloped site, the pressure transport line should enter the aggregate cell from the end of the aggregate cell or upslope side of the at-grade soil absorption system; do not enter the aggregate cell from the downslope side of the system.
5. Six inches of clean aggregate will then be placed and shaped before it freezes or rains. No vehicles with pneumatic tires should be permitted on the scarified area to prevent the soils from being compacted. For sloped sites, all work should be done from the upslope side or ends of the at-grade soil absorption system placement area if possible.
6. After shaping the first six inches of aggregate, the low-pressure distribution system manifold, laterals, and monitoring ports will be installed. The system should be tested for uniformity of distribution. After uniformity is verified an additional lift of clean aggregate shall be placed, shaped, and leveled to ensure the aggregate extends at least 2 inches above the low-pressure distribution system.
7. Geotextile fabric must be placed over the aggregate cell and backfilled with the soil cap.
8. Typical lawn grasses or other appropriate low-profile vegetation should be established on the soil cap as soon as possible, preferably before the system is put into operation. Do not plant trees or shrubs on the soil cap, or within the mature rooting radius of the tree or shrub from the soil cap. Trees with roots that aggressively seek water should be planted at least 50 feet from the at-grade soil absorption system and soil cap (e.g., poplar, willow, cottonwood, maple, and elm).
9. At-grade soil absorption systems placed upslope and downslope from each other should maintain a soil cap-toe to soil cap-toe separation distance of 35 feet (Figure 4-4).

a. The first 15 feet below the upslope at-grade soil absorption system should remain free of vehicular traffic and other activities resulting in soil compaction.

b. The 20 feet above the downslope at-grade soil absorption system should be maintained for construction of the downslope mound.

10. A separation distance of 15 feet should be maintained from the soil cap-toe of each at-grade soil absorption system when multiple at-grade soil absorption systems are constructed on the same elevation contour.

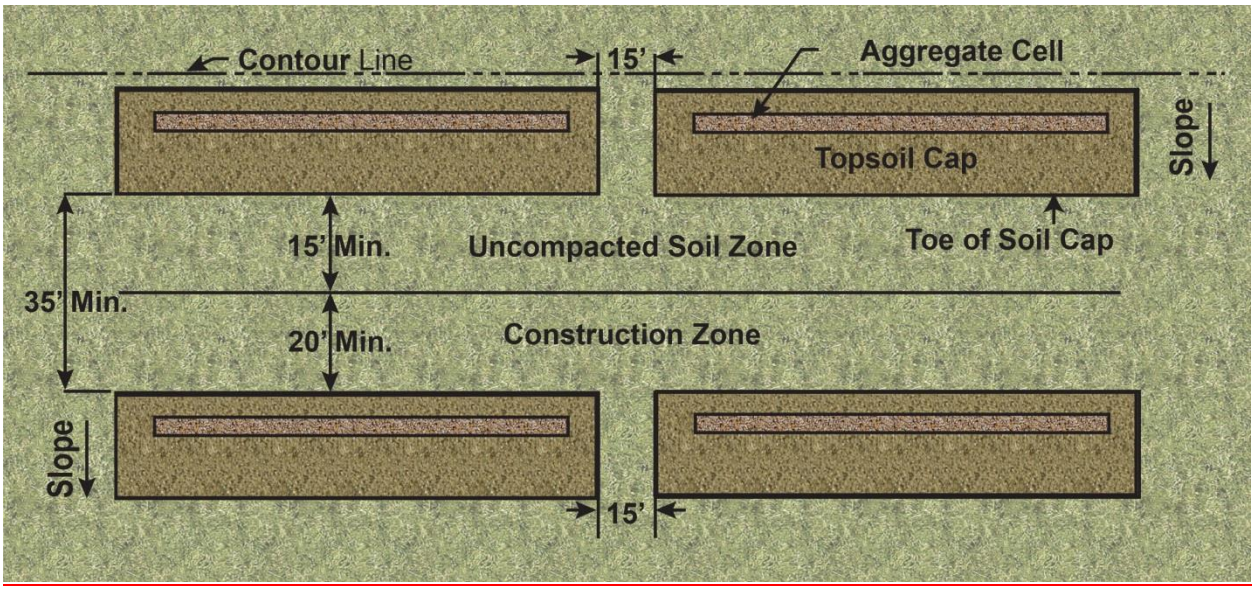


**Figure 4-4. At-grade soil absorption systems placed upslope and downslope of one another.**

### 4.2.5 Inspections

1. Site inspections shall be conducted by the health district at the following minimum intervals (IDAPA 58.01.03.011.01):

   a. Preconstruction conference that should be conducted with the health district, responsible charge engineer, complex installer, and property owner (if available) present.

   b. During construction as needed, including scarification, pressure line installation, absorption cell construction, pressure distribution piping construction, and soil cap placement.

   c. Final construction inspection including a pump drawdown/alarm check, pressure test of the distribution network, and soil cap material and placement.

2. The responsible charge engineer shall provide the health district with a written statement that the system was constructed and functions in compliance with the approved plans and specifications. Additionally, the responsible charge engineer shall provide as-built plans to the health district if any construction deviations occur from the permitted construction plans. (IDAPA 58.01.03.005.15).

### 4.2.6 Operation and Maintenance

An O&M manual shall be developed by the system's design engineer that contains the following minimum requirements and shall be submitted as part of the permit application (IDAPA 58.01.03.005.14):

1. Operation and maintenance is the responsibility of the system owner.
2. Sludge depth in the septic tank should be checked annually and the tank should be pumped when the sludge exceeds 40% of the liquid depth.
3. All pump and pump chamber alarm floats and controls should be inspected on a regular schedule to ensure proper function.
4. Pump screens and effluent filters should be inspected regularly and cleaned. All material created by cleaning the screen should be discharged to the septic tank.
5. Monitoring port caps should be removed and the monitoring ports observed for ponding. Corrective action should be taken, if excessive ponding is present, as specified by the system design engineer.
6. Observation ports for testing of residual head should be inspected regularly to ensure the residual head meets the system design minimum residual head.
7. Lateral flushing should occur annually to ensure any biomat buildup is removed from the distribution lateral. Lateral flushing procedures should be described and include a method to prevent wastewater and sludge from creating a public health hazard (e.g., routing flushed water and sludge back to the inlet of the septic tank via a dedicated hose).
8. Any other operation and maintenance as recommended by system component manufacturers and the system design engineer.

# Appendix K

### *1.4.2.3 Gravelless System Product Approvals*

Manufacturers seeking approval of a gravelless system product (e.g., chamber or synthetic media) as an alternative to drainfield aggregate shall submit product information to the DEQ on-site wastewater coordinator for review by DEQ and the Technical Guidance Committee. In addition to product information described in section 1.4 manufacturers must submit NSF/ANSI Standard 240 approvals, reports, and associated data. Any additional third-party standards evaluated for the gravelless system product must also be submitted including approvals, disapprovals, reports, and associated data.

DEQ will issue gravelless system product approval with associated sizing reduction allowances. Sizing reductions will be determined through analysis of open trench bottom area, associated sidewall area, and storage capacity in comparison to a standard trench. Each component will be analyzed independently of one another in comparison to a standard trench. Approval of products that have not undergone NSF/ANSI Standard 240 will not be considered for sizing reductions.

# Appendix L

**006. INSTALLER'S REGISTRATION PERMIT AND SERVICE PROVIDER ENDORSEMENT.**

**01. Permit Required.** Every installer or service provider shall secure from the Director, an installer's registration permit. Service providers must also obtain a service provider's endorsement in addition to a complex installer's registration permit. Two (2) types of installer permits and one type of service provider endorsement are available. (5-7-935-21-15)

**a.** A standard and basic alternative system installer's registration permit is required to install all individual systems not listed under Subsection 006.01.b. (5-7-93)

**b.** A complex alternative system installer's registration permit is required to install evapotransipration systems, extended treatment systems, lagoon systems, large soil absorption systems, pressure distribution systems, intermittent sand filter, in-trench sand filter, sand mounds or other systems as may be specified by the Director (5-7-93)

**c.** A service provider endorsement is required to perform operation, maintenance, and monitoring of complex alternative systems. The Director shall specify the systems that must undergo professionally managed operation, maintenance, service, and effluent testing as allowed in Subsection 009.03. (5-21-15)

**02. Examination.** The initial issuance of the installer's permit and service provider endorsement shall be based on the completion of an examination, with a passing score of seventy (70) or more, of the applicant's knowledge of the principles set forth in this chapter and the applicable sections of the Technical Guidance Manual. The examination will be prepared, administered and graded by the Director. (5-7-935-21-15)

**03. Permits Required Annually.** Registration permits expire annually on the first (1st) day of January and all permits issued thereafter will be issued for the balance of the calendar year. Additionally, at least one (1) refresher course approved by the state of Idaho, Department of Environmental Quality, be attended every three (3) years. Installer and service provider courses shall not be substituted for one-another. (5-7-935-21-15)

**04. Contents of Application.** Applications for installer permits and service provider endorsements shall be in writing, shall be signed by the applicant or by an officer or authorized agent of a corporation, shall contain the name and address of the applicant, shall indicate whether the permit is to be for installation of standard and basic alternative systems or, for installation of standard, basic and complex alternative systems, or for installation of standard, basic and complex alternative systems and endorsement as a service provider, and shall contain the expiration date of the bond required by Subsection 006.05. Additionally, for applications seeking endorsement as a service provider the application shall also contain a copy of the service provider's property owner contract required by Subsection 006.06.a. (5-7-935-21-15)

**05. Bond Required.** At the time of application, all applicants shall deliver to the Director a bond in a form approved by the Director in sum of fivefifteen thousand dollars ($15,000) for a standard and basic alternative system installer's registration permit, or in the sum of fifteenthirty thousand

dollars ($~~15~~30,000) for standard, basic and complex alternative system installer's registration permit including those with a service provider endorsement. The bond will be executed by a surety company duly authorized to do business in the state of Idaho and must run concurrent with the installer's registration permit to be approved by the Director guaranteeing the faithful performance of all work undertaken under the provisions of the installer's registration permit. Any person who suffers damage as the result of the negligent or wrongful acts of the registrant or by ~~his~~ their failure to competently perform any of the work agreed to be done under the terms of the registration permit shall, in addition to other legal remedies, have a right of action in ~~his~~ their own name on the bond for all damages not exceeding ~~five~~ fifteen thousand dollars ($15,000) for standard and basic alternative systems or ~~fifteen~~ thirty thousand dollars ($~~15~~30,000) for complex alternative systems or required operation, maintenance, and monitoring performed by endorsed service providers. The maximum liability of the surety and/or sureties on the bond, regardless of the number of claims filed against the bond, shall not exceed the sum of ~~five~~ fifteen thousand dollars ($15,000) for standard and basic alternative systems or ~~fifteen~~ thirty thousand dollars ($~~15~~30,000) for complex alternative systems or required operation, maintenance, and monitoring performed by endorsed service providers. (~~5-7-93~~5-21-14)

**06. Service Provider Responsibilities.** All endorsed service providers who provide operation, maintenance, and monitoring for any system is jointly and individually responsible for compliance with each of these rules that are relevant to those services. Additionally, each service provider shall: (5-21-15)

**a.** Develop a service contract outlining the operation, maintenance, and monitoring services that will be provided to individual property owners to fulfill the property owner's operation, maintenance, and monitoring responsibilities required through the property owner's subsurface sewage disposal installation permit as allowed in Subsection 005.14. Contracts shall be severable by either party upon proper notification outlined in the contract not to be less than thirty (30) days. (5-21-15)

**b.** Maintain a comprehensive list of property owners that are contracted with the service provider that includes the current property owner name, service property address, property owner contact address, and subsurface sewage disposal permit number. This list shall be provided to the Director upon submission of annual operation, maintenance, and monitoring reports for individual property owners. (5-21-15)

**c.** Submit all operation, maintenance, and monitoring records in the form of an annual report for each individual property owner that the service provider contracts with to fulfill the property owner's operation, maintenance, and monitoring responsibilities required through the property owner's subsurface sewage disposal installation permit as allowed in Subsection 005.14. The annual reports shall be provided to the Director by the timeframe specified in the Technical Guidance Manual for the specific complex alternative system that operation, maintenance, and monitoring is required for. (5-21-15)

**~~06~~07. Exemption.** An installer's permit shall not be required for: (5-7-93)

**a.** Any person, corporation, or firm constructing a central or municipal subsurface sewage disposal system if that person, corporation, or firm is a licensed public works contractor as provided in Title 54, Chapter 19, Idaho Code, is experienced in the type of system to be installed and is under the direction of a professional engineer licensed in the state of Idaho; or (5-7-93)

**b.** An owner installing his own standard or basic alternative system. (5-7-93)

**~~07~~08. Application Fee.** All applications shall be accompanied by payment of the fee specified in IDAPA 58.01.14, Section 120, "Rules Governing Fees for Environmental Operating Permits, Licenses, and Inspection Services". (5-7-93)

**~~08~~09. Grounds for Revocation.** Failure to comply with these rules shall be grounds for revocation of the permit. (5-7-93)