

Large On-Site Sewage System  
Rule Committee Meeting Summary  
June 26, 2008  
9:30am – 3:30pm

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**Action Items:**

**Next Rule Advisory Committee Meeting: July 30, 2008. Department of Ecology office, Lacey**

Main Focus

- Review of Technical Subcommittee Recommendations.
- Hydrogeology Report Issue Paper.

• **Next Technical Review Subcommittee Meeting: August 6, 2008. DOH Tumwater**

Main Tasks

- Issue Paper **Review: Issues #11, 21**

• **First Operating Permit Subcommittee Meeting: July 16, 2008. DOH, Tumwater**

**Follow-Up Items:**

- **DOH follow-up: Issue 8B: Non-residential Design Flow**
  - RV parks are not covered in the RS&G – yet. Should be.
- **DOH follow-up. Issue 12A: Hydraulic Loading Rates**
  - Research and consider at a later date: Greater reductions for very high quality effluent; Type 6 soil might be suitable for LOSS
  - Not for July meeting.
- **DOH follow-up: Issue 12A: Hydraulic Loading Rates**
  - Consider discussing the last 2 bullets in the RS&G.
- **DOH follow-up:** Prepare a summary of issues addressed, decided, underway, and yet to be discussed. Send to all.

## Welcome and Introductions

Dave Lenning welcomed committee members, reviewed the agenda with committee members, and asked committee members, DOH staff and audience members to introduce themselves. There were 10 committee members present constituting a quorum. There were no comments or additions to the agenda.

## Task 1 – Technical Review Subcommittee Recommendations

Richard Benson and Dave Lowe began presenting the issue papers reviewed by the Technical Review Subcommittee (TRS) and their recommendations from the May 19, 2008 meeting. The results from the TRS June 20, 2008 meeting will be presented at the July LRAC meeting. The Benson-Lowe PowerPoint presentation highlighted the decisions and recommendations. Copies of the issue papers with TRS results and recommendations were sent to the committee members prior to the meeting. After explanations, the panel discussed the issues, and voted on whether to accept the TRS recommendation for each issue paper.

### **Subcommittee Recommendations and Rule Committee Discussion and Votes**

#### **1. Issue 8A: Residential Design Flow**

A. For flows between **3,500 and 14,500 gallons per day (gpd)**

**Committee Vote: 10-Green.**

- Use 120 gpd/bedroom, with minimum design flow of 240 gpd per residence.
- DOH may allow reductions with appropriate engineering justification.

B. For flows between **14,500 and 100,000 gpd**

**Committee Vote: 10-Green.**

- Minimum design flow: 270 gpd per residence.
- DOH may allow reductions with appropriate engineering justification.

#### **2. Issue 8B: Non-residential Design Flow**

A. Use the Design Flow Table from the LOSS Foundation Document (slightly modified from existing Recommended Standards and Guidance (RS&G)).

**Committee Vote: 10-Green.**

B. Allow “comparable use” data – including the appropriate peaking factor –OR design flows referenced in the most current version of reputable reference sources (e.g. Ecology Orange Book, EPA On-site Manual).

**Committee Vote: 10-Green.**

Discussion\Comments:

- Peaking factor not always 150%.
- LRAC added to TRC recommendation: don't specify a date or version of a guidance document in rule – use “most recent version” or similar language.
- How are RV parks handled? Design engineer must address the strength of waste and volume per dump issues.

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- Transient parks vs. “park model”? Latter may be handled as a residential development: 120 gpd per bedroom.
- LRAC added: “appropriate peaking factor”.
- **DOH follow-up**: RV parks are not covered in the RS&G – yet. Should be.

### 3. Issue 12A: Hydraulic Loading Rates

A. Adopt soil types and soil loading rates from the small system rule: WAC 246-272A.

**Committee Vote: 10-Green.**

Comments:

- Details were considered and researched by the small system technical review committee.
- May need to have a soil lab analysis to determine soil type.
- May need to consider using a permeability (“perc”) field test to evaluate the soil. Not required, but could be used.
- LRAC added “soil types” to the subcommittee recommendation.

B. Allow drain field size reductions with pretreatment, consistent with WAC 272A.

**Committee Vote: 10-Green.**

C. Require 100% primary and reserve area based on sizing without advanced treatment.

**Committee Vote: 10-Green.**

D. No additional reductions allowed for use of gravel-less distribution technology.

**Committee Vote: 10-Green.**

E. Research and consider at a later date: Greater reductions for very high quality effluent; Type 6 soil might be suitable for LOSS.

**Committee Vote: None.**

Comments:

- **DOH follow-up**. Not for July meeting.
- We will not consider Type 6 soil.
- International Building Code Table 1804.2 says 110 lb/cubic foot.

Discussion\ Comments (all parts):

- Add the requirement for soil logs to be included in the pre-design report. This information is important to the discussion of what is possible and necessary in the design.
- Should we note that only one reduction is allowed per project? (i.e. Cannot have both treatment reduction and low usage reduction.)
- Concern: don’t take away the opportunity to design for a specific use and/or specific location. Use “professional judgment” in design. Especially true when using advanced treatment.
- **DOH follow-up**: Consider discussing the last 2 bullets in the RS&G.

**4. Issue 12B: Organic Loading Rates**

A. Do not include or reference specific organic loading rates in the rule.

**Committee Vote: 10-Green.**

B. State in the rule that the effluent waste strength applied to the soil must be equal to or better quality than typical residential septic tank effluent (Treatment Level E).

**Committee Vote: 10-Green.**

**5. Issue 12C: Linear Loading Rates**

A. Linear loading rates should be addressed in the hydrogeology report where appropriate.

B. This is not an issue for every project.

C. Specific expectations could be addressed in guidance rather than the rule.

**Committee Vote for all 3 items: 10-Green.**

**6. Issue 14A: Sewage Tank Sizing: Residential**

A. Minimum 1000 gallons capacity per equivalent residential unit (ERU) for a community sewage tank.

Comments:

- \$10 difference between 750 gallon and 1000 gallon tanks
- Will increase tankage size.
- Trade-off: low flow fixtures reduce hydraulic volume but increase the strength of the waste – which needs a larger tank for increased detention time to achieve adequate treatment.

B. Refer to sizing in WAC 272A for:

- Individual tanks that flow to a community tank (STEP system)
- Multiple dwellings on a single tank that produce less than 3500 gpd, and then flows to a community tank.

**Committee Vote for both items: 9-Green, 1-Yellow.** Jenn Kunkel, BIAW, will take this back to her constituents for comments re cost issues. **BIAW follow-up:** comments to be considered at July LRAC meeting.

**7. Issue 14A: Sewage Tank Sizing: Non-Residential**

A. Minimum tank size = three times the daily design flow, regardless of waste strength. Unique situations with infrequent extreme peak flows may be handled differently.

**Committee Vote: 10-Green.**

Comments:

- Concern about WSDOT rest areas and parks during high times (such as holidays). May use surge tank or other solution.
- LRAC added: “Unique situations with infrequent extreme flows may be dealt with differently”. **TRS follow-up:** discuss this at August meeting.
- This sizing requirement is designed to give adequate detention time for treatment, so pump-outs are not needed as frequently.
- Came from the small on-site sewage system rule development.

**8. Issue 14A: Sewage Tank Sizing: Miscellaneous Requirements**

- A. When the sewage tank is used as the primary treatment, an effluent filter shall be required at the tank outlet or last point before the pump chamber.
- B. Maximum mesh or opening size shall be 1/8 inch.

**Committee Vote for both items: 10-Green.**

**9. Issue `14B: Other Tank Requirements**

- A. Require pressure distribution with timed dosing for all LOSS.
- B. For flows 3500 – 14,500 gpd: require 24 hour reserve capacity.
- C. For flows 14,500 – 100,000 gpd: require 12 hour reserve capacity.
- D. No reduction in reserve capacity allowed for back-up power.

**Committee Vote for all four items: 10-Green.**

Questions\Comments:

- Consider reduction if the site and treatment can be shut down (such as a rest area or park).
  - Other failures besides power outage can shut the pumps down (float malfunction) – need reserve capacity.
  - What if the site is remote and there is a delay or failure in notification or response? Need the reserve capacity.
  - Extend outlet baffle into riser to above the top of the sewage tank – when allowed to flood swage tank as part of the reserve volume
- E. For  $\leq 3$  feet of cover: minimum 24 inch access riser.
  - F. For  $> 3$  feet of cover: minimum 30 inch access riser.

Comments:

- Opening at tank not specified. Use tank rule panel recommendations.
  - The point is to allow adequate access to properly maintain the tank – pump-out/solids removal.
  - May not need different minimums to be specified; specify one absolute and also say must allow access for maintenance.
  - Need to combine with access opening spacing (next item for vote.)
  - Tank manufacturers want smaller sizes; not responsible for future maintenance, more sensitive to initial market price for tank.
- G. Access opening every 8 feet in a compartment.
  - H. **REVISED** recommendation for vote: Minimum 24 inch access riser, access openings in a tank compartment shall be no farther apart than 8 feet, center to center, and these dimensions must be designed at or above the minimums to allow adequate access to the tank to perform proper maintenance.

**Committee Voted on H, to replace items E, F, G: 10-Green.**

**Committee and Audience – Feedback: Is the technical review subcommittee (TRS) process working/effective?**

- Yes – appreciate “experts” evaluation; helps those who have never designed or installed a LOSS.
- Yes – appreciate getting the information in advance, so can research, be prepared at the meeting.

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- We suggest additional issues for the TRS:
  - Treatment Levels.
  - Issue 11 – verify technology performance.
- TRS members agreed to meet again to cover these issues.
- **DOH follow-up**: Prepare a summary of issues addressed, decided, underway, and yet to be discussed. Send to all.

## WORKING LUNCH

### Task 2 – Update on LOSS Operating Permits:

During our working lunch, Linda Pang presented information on how our operating process works now and what changes the legislation will make. This background was prepared as a starting point for an upcoming Operating Permit Subcommittee meeting, proposed for July 16, 2008. She concluded with outlining the challenges ahead of us.

#### **Questions/Comments:**

- What about evaporative lagoons greater than 3500 gpd? There is no surface discharge, so Ecology does not permit. There is no subsurface disposal or treatment, so the system is not a LOSS.
- Will local health jurisdictions be able to approve LOSS? No. DOH has the responsibility for all LOSS.
- How many LOSS will come from Ecology? Ecology estimates there will be fewer than 50 systems. (per John Stormon)
- Where will funding for repairs to existing systems come from? This was targeted to LOSS not currently in our operating permit system. Association of Washington Business and other groups may want legislative help for funding.
- Although not noted in legislation, DOH staff anticipates there will be field visits/site surveys to assess LOSS condition. We have no vision yet whether this will be a periodic survey, (like Ecology and Office of Drinking Water do) or a one-only assessment. Would periodic surveys only apply to large LOSS? This will need coordination with staff resources. The other programs survey on a 5 or 3 year period.
- Is on-going monitoring an issue for the operating permit? It is a separate issue, though the requirements may be displayed on the face of the permit.
- Have we considered how we will prioritize or how we identify and bring LOSS into compliance? Answer = We will target Puget Sound counties, and sensitive aquifer areas, such as Spokane's, first.
- DOH has direction to run a fee-supported permit program. How will this impact operating permit fees? How will Initiative 960 impact us? Answer = We don't know yet.

### Task 3 – Audience Comments

No additional comments.

## **Task 1 Continued: Technical Review Subcommittee Recommendations**

### **9. Issue 14B: Other Tank Requirements**

I. Tanks must be field tested after installation for water tightness.

- Fill with water 2 inches into the riser, or
- Vacuum test.

Comments:

- Not all sites will need a full water test depending on depth to ground water.
- The water for testing is often hard to come by and hard to dispose of.
- It's more important to test the tank in place than at the point of manufacture.
- We need to consider infiltration AND exfiltration.

Need to define what amount of leakage is acceptable. Use standard testing protocols appropriate for type of tank material.

- What does "no detectable" leakage mean?
- In high groundwater situations, the tank needs to be designed so that the top does not float off. Testing may not demonstrate that.

J. Design engineer must certify for water tightness.

**Committee Vote on I and J: 10-Green.**

K. Always require duplex pumps for redundancy.

**Committee Vote: 10-Green.**

### **10. Issue 14B: Other Tank Requirements – Grease Interceptors**

A. Minimum capacity: 3 times the daily flow routed to the interceptor.

B. Minimum size: 1000 gallons.

**Committee Vote: 10-Green.**

Comments:

- Consider alternatives such as filter plus heat (Echo system).
- **DOH follow-up:** don't forget to address operations and maintenance needs for grease traps.

**DOH follow-up:** Go through all the voted changes proposed to tank volume and compare to today's requirements. What is the bottom line impact?

### **11. Issue 18: 150% Drainfield Construction**

A. Continue to require construction of 150% drainfield capacity with Treatment Level E – for sewage tank treatment systems.

B. Eliminate the 150% requirement for higher levels of treatment, pretreatment, or with use of subsurface drip.

C. Retain set-aside for reserve area.

**Committee Vote for A, B, and C: 10-Green.**

#### **Questions\Comments:**

- RS&G says the 150% requirement may be waived for seasonal applications (e.g. camps). We expect to continue to do this.
- 150% requirement is intended for biomat control.
- Why not 150% sand filter, not in drainfield? This is in the RS&G.

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- If the system is large (close to 100,000 gpd), the LOSS will probably have pretreatment due to the need to remove organics such as nitrogen, so “B” applies.
- 150% for a drainfield for 100,000 gpd would require a large amount of land: probably not cost-effective.
- **DOH follow-up**: Evaluate the cumulative effect of the recommended changes before the rule is adopted.
- What about a requirement for metering? It’s important to know what the flow through the system is, especially as actual flow begins to approach the design flow.
- Is a drip system appropriate for seasonal systems? Yes, but requires hydraulic testing (and repair, if needed) before start-up. This would be included in their operations and maintenance manual.

### **Task 4: Introduction into Issue 5: Hydrogeological Report Requirement**

Nancy presented the issue paper she prepared to address hydrogeo reports. They are the key to ensuring that an environmental evaluation is made. She summarized the key points, and asked the LRAC to review the paper before next meeting. This will come back to LRAC in July.

#### **LRAC follow-up:**

- Review the questions posed in the issue paper.
- Are there any additional options the LRAC would like to discuss/consider?
- Consider under what conditions a hydrogeo report should be required. (Or when not required.)
- Consider the level of detail and cost.
- Does the hydrogeo evaluation replace safety factors in the design?
- Send questions and comments to Nancy Darling: 360.236.3040.  
[nancy.darling@doh.wa.gov](mailto:nancy.darling@doh.wa.gov)

#### **Comments/Questions:**

- What is a nitrate screening balance? Nancy explained it can be quite simple, with existing data (Idaho example), or very complex, including collecting data with dedicated monitoring wells. The point is to estimate nitrate loading from the LOSS at the property line, and at the discharge point.

### **Wrap-Up, and Action Items**

#### **Action Items and Homework**

- **DOH**: Schedule a meeting for the Operating Permit Subcommittee and notify all. The tentative date is Wednesday, July 16, 2008.
- **DOH**: Schedule a meeting for the Technical Review Subcommittee in early August.
  - Topics: Issue 10 and 11. Hydrogeo reports may be discussed, but will be considered by all at next LRAC meeting.
- **DOH**: Evaluate the cumulative impact of changes. Keep a running tally.
- **DOH**: Research other states information on greater reductions for drainfields for very high quality effluent. Not for July LRAC meeting.

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- **DOH:** Prepare TRC summary information from June 20, 2008 meeting and send to LRAC.
- **DOH:** Prepare a summary of issues addressed and yet to do – use priority exercise results summary?
- **LRAC:** Review hydrogeo issue paper #5.
- **LRAC:** Let Melissa know if you whether you are able to attend the July 30 and August 28 LRAC meetings, so we can be sure to have a quorum.

### **Next Meeting: July 30, 2008. Lacey Ecology Office - Auditorium**

- Main focus: June 20 TRS recommendations, Issue 5 Hydrogeo Reports.  
*Notes on location issues:*
  - Ecology office is off the Martin Way exit on I-5. We will provide a link to a map.
  - Visitor parking:
    - On the left, just before the parking garage.
    - In the parking garage (limited). Do not use “reserved” or “paid parking” spaces.
    - Lot behind the parking garage.
    - Department of Natural Resources – way back parking (old St Martin’s University dorms)
  - Sign in at guard station (front door)
  - Auditorium is downstairs.

### **August Meeting: Thursday, August 28: Should DOH cancel it?**

- LRAC said No.

### **Committee and Audience - Meeting Feedback**

- Worked great; extra stuff covered.
- Going well.
- Making headway.
- TRS efforts were wonderful – as evidenced by many unanimous green votes.
- Made for quick action.
- Liked the hydrogeo presentation.
- Good process; efficient.
- Need to watch our abbreviations and jargon. Not all are known to all LRAC members.

[Adjourn 3:35](#)

**Meeting Attendees**

***Department of Health***

Maryanne Guichard, Director, Office of Shellfish and Water Protection  
 Dave Lenning, Manager, Wastewater Management Program  
 Denise Lahmann P.E., Engineering Supervisor, WWMP  
 Melissa McEachron, WWMP Rule Coordinator  
 Richard Benson P.E., Technical Issues Lead

<b>Committee Members and Alternates</b>	<b>Special Guest</b>
Bill Stuth, Installers	Dave Lowe, H.D. Fowler
David Jensen P.E., Design Engineers	<b>Guests</b>
Dale Broyles, WA State Parks	Jerry Walton, Geoflow Inc.
John Stormon, Ecology	Craig Goodwin, Northwest Cascade
Jenn Kunkel, BIAW	Peter Michel, AIM Manufacturing
Bill Dewey, Environmental Interests, Taylor Shellfish	Jim Gleason, Enviroquip
Judy Hockett, WSDOT- Operations	Robert Nation, Fextex Systems, Inc
Art Starry (Alt), Thurston Co. Public Health	
Mark Nelson, Private Utility District, Evergreen Valley Utilities	
Theresa Janzen, Manufactured Housing Association of WA	
<b>DOH Staff</b>	
Linda Pang P.E., Wastewater Management Program	
Jeanne Andreason, P.E., Wastewater Management Program	
Mamdouh El-Aarag P.E., Wastewater Management	
Nancy Darling, Wastewater Management Program	
Kelly Cooper, Environmental Health Div.	

**Parking Lot Items**

2/28/08

*Legislative Issues:*

- UTC regulation of private, for-profit management companies, if allowed.
- Staffing to implement the rule. (inspection workload)

3/25/08

No adds

## Draft Meeting Summary

4/24/08

*Attorney General consultation topics:*

- Stretch “annual” permit to reduce costs.
- Interpret “initial permit in compliance”.

6/26/08

No adds