

Technical Advisory Panel Meeting
September 17, 2008
9:00 am – 3:30 pm

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Welcome and Introductions

Angie Thomson welcomed everyone and reviewed the agenda. Jim McCauley, Washington State Department of Ecology (Ecology), reviewed the schedule for Technical Advisory Panel (TAP) topics through the end of the year. Jim discussed the statutory language changes in 90.46 that are currently being written. Tim Gaffney, Ecology, said they will cover these changes in more depth at the Rule Advisory Committee (RAC) meeting later this month.

Task #1 Review the draft recommendations for pathogens

Jim distributed the draft recommendations and conceptual language for pathogen removal and inactivation. Jim also distributed a handout clarifying the difference between a statute, rule, and guidance. This can be a handy reference for the rule making process. Jim said the final rule is complex and will be hard to change, so if there is an element of the rule that needs to be flexible in order to keep up with new technology then it may need to go in guidance. That being said, Jim felt that there are some things that should not go in guidance because they are the basis for the rule.

Jay Swift said he reviewed the State of Oregon’s pathogen standards that were developed last year. In the past, Oregon considered using pathogen indicators such as E. coli, but stayed with the total coliform standard in their final rule for Class A, B, and C reclaimed water. Jay said Oregon’s rule should not be the basis for Washington’s rule. It was noted that Oregon did in fact end up using E. coli as an indicator of pathogens for their Class D reclaimed water.

Craig Riley said he looked into North Carolina’s draft language and found that it proposes using E. coli, clostridium, and coliphage as indicators. Craig said he spoke with Terry Slitheo from L.A. County Sanitation District who felt that total coliform is a better indicator because it is more general. Craig thought that consistency of processes was important and sampling is managed differently for E. coli than coliform. Craig said if E.

coli is found in samples, the public health impacts are greater. Craig felt that the current coliform standards work well and should be kept in place. Craig said Terry recommended staying with coliform standards because there is a lack of good numbers and experience with E. coli. Craig thought that flexibility should be allowed in the rule if in the future more information is available on indicators.

Jay asked if coliphage is in fact a pathogen or an indicator of viruses. Craig said all phage are indicators, they can be used as an indicator of virus removal because they are based on exposure levels. Jay asked if clostridium is a protozoa. Craig said it is a cyst, and an indicator of cyst removal (Clostridium is actually a genus of intestinal bacteria, not a protozoan cyst). Bill Persich thought the most simplistic approach is best for day-to-day routine monitoring. Jay asked if the removal rates for the North Carolina standards are based on log removal. Craig said he was not sure but would do some more research and get back to the group about the North Carolina standards.

Angie asked Jim to review the draft language so panel members could consider if the language allows for enough flexibility for new information to be considered when it becomes available.

Section 1 Non-potable Water with No Human Contact

Jim said the language in the first category is patterned after what is in the current standards for Class D, with the only change the option of E. coli standards as an alternative to using total coliform. Bill asked what the basis was for the numbers in the E. coli standards, and Jim replied that he was not sure but thought they might be from the Oregon standards.

Craig said last time the panel talked about pathogens, members agreed the levels would be set after secondary treatment. Craig asked if bullet a.i. "Oxidized water following secondary treatment" could be defined as secondary effluent in the rule so that language is not so repetitive. Jim said the panel wanted to stay away from defining a treatment technique. Ron Brown thought that a paragraph could be included in the beginning of the section to define secondary treatment. Ron said there was also a concern that secondary treatment may require nutrient removal which may not be beneficial for all reuse categories. Craig agreed but thought that it may not be practical to repeat this standard over and over. Craig thought that if the panel could define the minimum treatment standards and outline those up front, the language would read clearer.

Jay thought the only advantage of using E. coli would be if the state also used it in secondary treatment and marine standards. Jay said since Washington does not use E. coli in any other standards, he did not see the advantage to using it in the reuse standard. Bill asked if the old standards led to questionable public health risks. Craig said the Department of Health (DOH) knows of no health related incidents with reclaimed water. Jim said the state does not have a lot of experience with this class because most of the systems are Class A. Ken Butti said he would be uncomfortable including the E. coli standards in Sections 1 or 2. The panel agreed to remove the E. coli standards as an alternative to total coliform from the conceptual language.

Section 2 Non-potable Water with Limited or Restricted Human Contact

Jim reviewed Section 2 in the handout for what is currently Class C reclaimed water and noted the main difference in this category is a tighter coliform standard. Panel members were fine with the category the way it was written assuming the E. coli standards would be removed from this section as well.

Section 3 Former Class B

Jim said there was some debate about whether this category was necessary. Jim said there are a narrow set of uses that fall under Class B now and the coliform standards are the same as Class A. Bill thought that Class B should be removed and all of the former Class B uses should be consolidated into other categories. Jim agreed and said most of the uses would fall under Limited/Restricted Human Contact or Unrestricted Human Contact depending on their beneficial use. Jay suggested that the panel review each use under former Class B to decide if it should move up or down a category.

- Food crops with no edible portion contact – move down to the Limited/Restricted Human Contact category
- Restricted recreational impoundments – move down to the Limited/Restricted Human Contact category
- Fish hatchery basins – move up to the Unrestricted Human Contact category
- Washing of private restricted grounds – move up to the Unrestricted Human Contact category

Angie suggested putting all of the uses in a matrix to make sure there is consistency. (Note: the current Washington Water Reclamation and Reuse Standards Table 1 does this, but revisions to this table would be necessary). Angie asked if panel members were satisfied that all of the uses would fit under other categories and this section could be eliminated. Panel members agreed Section 3 Former Class B could be removed. Craig said there should be some guidance to determine what category new uses would fit under. Bill Backous agreed and said the guidance should help you figure out if there is an equivalent use. Ken thought the guidance should include a risk assessment process to evaluate whether there is an increased risk with a particular use on a case-by-case basis. Craig thought that when utilities come in with a request, there should be a justification that is the same for everyone so it is fair and consistent.

Section 4 Non-potable Water with Unrestricted Human Contact

Jim said section four includes substantial differences from the current standards for what we now call Class A reclaimed water. Jim reviewed the water quality standards for human contact. Jim thought the uses in the pathogen section may not match with the uses in the commercial/industrial section. Jim suggested using the matrix idea that Angie proposed to ensure consistency. Angie suggested including consistency as an additional topic on a future agenda.

The panel discussed the risks associated with aerosols and whether this category is the appropriate place to include uses that produce aerosols. Ken thought that public

perception would drive the level of risk because if a person walks by a fountain and gets sprayed, they will consider that being exposed. Ken said Class A treatment would require another level of tertiary technology. Craig thought not many plants will produce anything but Class A reclaimed water because of the marketability of the water. Other panel members agreed. Ron thought that the costs of these systems are coming down and the state may see a lot more of them in the near future. Ken thought it was up to the municipalities to determine beneficial use.

Bill asked if the way the language is written in bullet v. (a.) [virus standards] allows a utility to skip filtration. Craig thought that this was true. Ken asked if Ecology would be okay with a utility that has a plant configuration that would meet one of the options under bullet v but not the others. Ken asked if the plant's system would be in compliance under this scenario. Craig thought it would be (Note: The language states that virus removal or inactivation may be achieved using ONE of the four options provided). Bill thought the language would allow a plant to take UV treated effluent, added a bunch of chlorine and meet the standard without filtration. Jay said the plant would still have to meet the filtration standards under bullet iii. Bill thought there should be a clause included that says filtration is required. Ken suggested saying "filtered reclaimed water or equivalent." Bill suggested adding this to bullet v.(a.) "two barriers, one of which should be filtration or equivalent."

Ken thought that bullet v.(d.) should specify after secondary treatment. Jay thought that this section should include the potential to pre-approve a technology that is not currently in the purple book. He suggested rewording to say "may be approved or specified". Craig suggested rewording to say "have a study plan that is pre- approved by both agencies." Jim asked if this section belongs in guidance. Craig thought pre-approval of the study plan should go in regulation, but the guidance will say how you do it. Jay asked to revise bullet v to read "design standards for virus removal for disinfected reclaimed water."

Craig thought that the standards under bullet vi. for corrective action levels should be reviewed with those in the surface water treatment rule for consistency. Ken asked if the corrective action levels could include a percentage. Ken said a plant could run on the edge but still make the average, which would not make the regulators feel very good about the quality of effluent that was being produced. Jim said they have not yet defined what corrective action means and it might just trigger additional monitoring. Angie suggested that Jim do a little more work to develop this section and bring it back to the committee for final review.

Section 5 Potable Water

Jim said direct reuse follows the old direct injection standards which require reverse osmosis (RO); indirect reuse includes a residence time to allow for further reduction of pathogens. Craig suggested renaming this category "Potable Source Water" instead of just "Potable Water."

Kathy Cupps, Ecology, commented that the existing standards prohibit direct use of reclaimed water for drinking water and allowing it would be a big departure from the

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current practices. Bill said the current standards allow direct injection to a potable aquifer which assumes dilution. Craig said this language appears to be silent on surface percolation which needs to be incorporated. Kathy said it is also silent on surface water indirect potable use upstream. Bill thought that the turbidity standards should be incorporated into the pathogen standards section. Craig thought that the aquifer recharge section would address that. Jim agreed with Bill that the turbidity requirement might be better here. Craig said California is moving away from residence time and instead using travel time.

Ken asked if the section includes surface percolation. Jim said it has to be compatible with another section on that topic. Ken wanted to be sure LOTT's facility would comply with surface percolation standards established in the new rule. Jim said this brings up the question of whether the panel is recommending enough criteria, or if it is weaker than the current standard. Jim thought that if the rule sets criteria lower than the existing standards it needs to be justified.

Craig said currently the standards do not allow potable use as written. Jim said the subgroup recommended exploring this option further. Denise Lahmann thought that the regulation should not be silent on this issue, whether or not people chose to do it. Ron thought the bullet should be clarified to say this is for potable or groundwater direct injection to a potable aquifer. Jim said he did not think that was the intent; this was meant to allow highly treated reclaimed water to go to purple pipe distribution for a drinking water purpose with no environmental dilution. Bill asked if the rule should include another barrier in addition to RO if the water goes directly to a drinking water system. Bill said the drinking water regulations will not address some of the pathogens that the panel is worried about. Denise said the language already requires compliance with Safe Drinking Water Act (SDWA). Craig said there are no pathogen limits for surface water as a drinking water source and the SDWA is surprisingly limited on source water quality. Craig suggested leaving the standard at less than 2.2 MPN total coliform because that is essentially pathogen free.

Denise said there is confusion about if this allows reclaimed treatment to potable use, or reclaimed treatment to a potable treatment plant intake. Jim said reclaimed water does not fit in any source categories for a water utility. Jay said the Potable Source Water category includes three different situations: direct injection, reclaimed treatment to potable use, and reclaimed treatment to potable treatment plant intake. Jay suggested differentiating between the three by creating three sub points under this category. Angie asked if panel members were okay with including the reclaimed treatment to potable use as an option. Bill thought that the panel needs to be clear that the water treatment plant has the right level of treatment for reclaimed water as a source. Ken said a water treatment plant has to demonstrate health and if this rule defined reclaimed treatment to potable use it would be crossing the two disciplines. Ken thought that reclaimed treatment to potable use may become more prevalent in the future and should be an option in the rule.

Angie asked if the three sub points under this category would have different standards. Ken thought that compliance with the SDWA should be a requirement for reclaimed

treatment to potable use but not for direct or indirect. Jim asked if the panel thought it necessary to prescribe an additional barrier for the reclaimed treatment to potable use option. Panel members did not think another barrier was necessary. Jim said he was trying to consider how a public works director would explain this to the public. Angie said that a utility could add an additional barrier if they are concerned about public perception. Ken said at one point people stayed away from reclaimed water because of public perception. Angie suggested that Jim work on rewriting this section with the three options discussed today.

Bill Backous said the rule should outline the potential options or tools to create safe water; convincing the public should be up to the jurisdiction. Denise thought the nature of the utility changes with direct reclaimed treatment to potable use because of the regulatory authority. Denise said this is not a technical issue that this advisory panel needs to deal with. Craig asked if Potable Source Water should also allow reclaimed treatment to bottled water. Jim asked if use for bottled water would change the treatment prescribed for any other potable water system.

There were no comments from the panel on section six of the working draft language.

Section 7 Exempted Use of Recycled Water

Craig asked that (internally) recycled water be added to the definitions list to be clear that the water is limited to uses within a facility. Ken said the Budd Inlet pipes terminate at a pump station; during the winter the pipes are shut because the water is not needed for irrigation. Ken said technically this use would meet Craig's internal recycled water definition during the winter months. Ken thought the definition should include use of the water even when it is transported to a treatment plant facility if there are no uses in between. Angie asked if bullet b. covers what Ken is talking about. Jim said in order to avoid review of the distribution system a plant needs preapproval of a substation. Bill Backous said these requirements would fall under a facility plan. John Malady asked if the language allows use at a "scalping" facility that does not have a National Pollution Discharge Elimination System (NPDES) permit. Jim said the intention is that it would. Jay suggested adding "collection system component" to the language to address this issue. Bill suggested adding "state discharge or reclaimed water permit to cover all facilities" to the language as well. Bill Persich also suggested rewording bullet c. to say "spray, drift or direct runoff."

Task #2 PPCP & EDC Presentation

Melanie Redding, Ecology, provided a presentation on pharmaceuticals and personal care products (PPCPs) and endocrine disrupting compounds (EDCs). Melanie works in Ecology's Environmental Assessment Program and has been doing a literature review on PPCPs and EDCs. Melanie said the rationale for the review was to figure out how big an issue these compounds are, what research has already been done to evaluate impacts, and to determine where Ecology should focus efforts on this topic state-wide.

Melanie provided some background on PPCPs and EDCs including definitions, pathways to the environment, and why they are defined as an emerging issue. Melanie provided some statistics from the literature reviews on how PPCPs and EDCs affect fish, earthworms, vultures and humans. Melanie reviewed the challenges with measuring and monitoring PPCPs and EDCs in the environment and why it has been difficult to develop indicator parameters for the compounds. Melanie discussed PPCP and EDC management and prevention techniques for minimizing the compounds in the environment. She also discussed types of wastewater treatment and removal efficiencies for PPCPs and EDCs. Melanie addressed PPCPs and EDCs removal through reclaimed water treatment as well. Melanie reviewed statistics on types of personal care products used by Americans every day and how they may contribute to this emerging issue. Melanie concluded by summarizing the study that Ecology is conducting to better understand wastewater treatment removal efficiencies.

Task #3 Discussion on PPCP & EDC

Bill asked if any other states have addressed this issue yet. Craig said California has looked at indicators and are now focusing on methodologies to pick the right indicators. Craig said Germany has had some success with indicators but they have a lower incidence of drug use. Bill said an indicator would have to be something that is ubiquitous and relatively representative. Craig said non ionic compounds are not removed through RO. Jay thought there was a bioassay to measure the endocrine effect for EDCs. Melanie confirmed there is, and said there are different methodologies. Jay asked if this has been considered as a regulatory parameter. Melanie said most methods are really expensive. Ken said environmental effects monitoring depends on how the study is defined and you cannot design one study to look at all the parameters. Ken said you may be able to observe a compound in one area, but not in another area. Ken thought it would be better to come up with best management practices (BMP).

Angie asked if enough is known on this topic to develop any technical standards for reclaimed water. Jim said typically before an agency develops a rule like this there is an information collection period and the rule is based on scientific evidence. Panel members did not feel that there was enough research to develop any standards that would have a solid scientific basis. Angie asked if a standard is not included in the rule whether it needs to be addressed at all. Ken thought the rule should allow for flexibility; if in five years some definitive information comes out on this topic the state should have the flexibility to implement a standard. Jim said he would like to hear from Dr. Plues at the next meeting before a final decision is made on this topic. Denise thought the panel should send a statement to the Rule Advisory Committee (RAC) regarding the panel's position on this issue instead of just being silent.

Ron said the panel should acknowledge that there is a concern and this is an emerging issue, but say that not enough is known yet. Ron said there is an education component imbedded in this issue as well; there needs to be more education to make people aware that there is a proper way to dispose of some of these things to minimize the risk. Melanie

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said this is an emerging issue for a lot of different reason. Ken reminded the panel that the group's responsibility is with reclaimed water and does not have the responsibility of making a general statement on this issue. Ken also said that reclaimed water as a source has a relatively minimal risk comparatively because it is achieving the highest level of treatment.

Denise thought it was important to be clear about how the contaminants that are removed from reclaimed water are dealt with. Craig said research on bioaccumulation of contamination in crops with managed applications of biosolids has shown that levels are undetectable. Ken added that a lot of these compounds have short half lives out in the environment and may not all be a problem in the environment through application of biosolids. Denise said this is a good story to tell for reclaimed water: not only are we reducing the compounds through the treatment process, but management of the compounds is tightly regulated which lowers amount of the compounds in the environment.

Jay thought that Ecology may want to explore the possibility of encouraging municipalities to monitor concentrations in their influent, effluent and biosolids. Jay said this could be a consideration for the rule, but the rule should be sensitive to the costs of monitoring. Jay asked how much LOTT is paying for the EDC study they are participating in. Ken said they are participating as a part of a larger EPA study so the costs were minimal (approximately \$6,000 total). Jim suggested taking the approach that drinking water uses which requires the larger municipalities to shoulder the burden of sampling. Ken suggested waiting for the data from the studies to see which treatment train might show the best results for removal. He said eventually there could be an all known, available and reasonable methods of prevention, control, and treatment (AKART) standard developed for reclaimed water. Melanie said Ecology is looking at the entire treatment process at four different plants in their current study. She said a lot of studies just look at one treatment method which makes it hard to compare studies. She said that each plant participating in the study voluntarily contributed to the sampling. Melanie suggested that a voluntary approach may be better than a mandate. Ken thought that the panel should include a clause in the rule that says Ecology will continue to look at this issue and see if additional standards are needed in the future when additional data is available. Denise said Ecology has a standard of using AKART, so if something significant came out they could deal with it through AKART before a regulatory statement could be issued. Craig thought that the cost benefits of removing additional compounds should be evaluated as well.

Angie said it sounds like there is agreement that this is not ready for inclusion in the rule. Angie thought that the panel should focus on listing the reasons why a recommendation for a standard is not possible. She said the discussion on what should happen in the future for a rule on this issue is important, but this group may not be the right group for that.

Challenges to implementing a standard on PPCPs and EDCs.

- There is currently no definitive data

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- The panel acknowledges there is a concern which should be addressed at some point
- There is also a need for greater education
- Reclaimed water as a source of PPCPs is minimal because it is treated to higher standards
- There is a concern about solids byproducts and media transfers
- Avoid causing another problem by trying to avoid PPCPs.
- Information collection needs to include the cost/benefit of a program (can be expensive)
- Human health vs. environmental health? Which to be protective of? Pathway? Water chain or food chain?
- Public perception issue

Melanie said she was not sure what the panel's role is, but thought the group may be able to promote the education of reclaimed water to put the issue in perspective for the public. Jim said there is a subgroup of the RAC, the Removing Barriers SubTask Force, which might be a better group for that. The Removing Barriers group is working on identifying barriers and incentives to dealing with reclaimed water, and education is one part of their work. Craig said the WaterReuse Foundation is going to issue a contract called "talking about water" that will serve as a guide to talking about these issues.

Task #4 Reliability and Redundancy

Jim said the revised strawdog #2 is based on previous panel discussions on this topic. Jim summarized the changes that were made from the previous version.

John said he thought the difference between long-term and short-term storage requirements was confusing in this version. Jim said under bullets 1 and 2 the water has already been treated to reclaimed water standards, but cannot be used for whatever reason. John thought that this would not qualify as a reliability issue but an issue of not being able to put the water to beneficial use. Bill said if there are no other permitted alternatives then you have to store the water. John suggested that reliability or production of the water should be first in this section, then outline what happens if a plant has met the requirements but cannot put the water to beneficial use. Ken suggested only talking about reclaimed water through the explanation and then deal with the issue of not being able to put the water to beneficial use. Angie asked John to identify a better place to put that section so it is not confusing. John suggested inserting it between bullets nine and ten on the second page.

Bill suggested adding a phrase to bullet 4 about recording diversions. John said it seems like you have the option of an automatic diversion, storage or discharge. He suggested adding an introduction sentence in front of each option to show what needs to be done under each option. John asked if there was another option to shut off a facility. Ken said some plants can shut off the feed if they have a malfunction. At Budd Inlet, the sand filters shut off during a malfunction and the water gets cycled around. Denise agreed that

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an introduction is necessary to address all the options including plant shutdown. Ken explained that during the last TAP meeting a scenario was brought up where 100 % of the water coming in was going towards reclaimed water and this was meant to address what happens at a plant like that. Ron suggested referring to the reliability definition in the current standards.

Denise wondered whether bullet 4 should also include power supply. Jay said this is not a separate option from bullet 6. Craig said the question is whether an overall power supply option is needed. Denise suggested adding power supply language to bullet 4. Ron suggested adding “to enable fully automatic diversion in the event of loss of power” to clarify.

John asked why bullet 5 would not apply to automated diversion. Bill thought that sub points a, b, c and d could apply to bullet 4 as well. Angie clarified if the panel was suggesting rewriting bullet five to make it apply to all the scenarios. The panel confirmed, and suggested revising to say that “all facilities must provide diversion and either retention or discharge options.”

John asked how prompt corrective action is defined under bullet 6. John thought saying appropriate corrective action, which should be defined in the engineering report, would be better. Ken said appropriate is subjective, immediate would be more accurate. John said the corrective action to be taken is dependent on the reliability features and there may not be anything that needs to be done immediately. Jay suggested “corrective action consistent with the approved reliability assessment.”

Ken suggested adding independent of the primary power supply to sub point 7d. John asked why conduit is included in sub point 7c. John asked if this was meant to mean electrical or piping. Jim said it was meant to be piping. John asked if pumping and pump back equipment is the same thing. John suggested just using the word pumping instead of pump back. Denise suggested adding the phrase “to ensure proper treatment after the diversion event.”

Panel members thought that sub points c and d under bullet 8 should be consistent with the sub points under bullet 7. John asked what the difference is between short and long term retention because the same language is used in both. John asked if long-term and short-term are defined differently, where the differences would apply. Ken explained that a plant relying on reclaimed water for the whole treatment strategy needs long-term storage. A plant that uses short-term storage might have some other alternative for dealing with the effluent. John asked if a statement should be added about facilities that cannot provide adequate short-term storage. Ken said Ecology and Health will determine if they require short or long term detention in their plan, depending on which one is required there will be parameters. Craig said what is missing is the reliability assessment which is required to be approved and will say what needs to be done to make sure under all circumstances that a plant can deal with the effluent.

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Jim thought there has to be some concrete criteria in the rule. Craig said he thought approving a reliability assessment would be required by rule, but the criteria for that should go in guidance. Ken asked if there are examples where an agency could propose less than 24 hours of storage because they have a unique procedure. Craig thought the reliability assessment could show where you might be able to cut down on some of the standards. Ron thought that the minimum should be set in rule ? but allow for a variance. Jim insisted that some criteria should be part of the rule. He said the impetus for writing the rule is to provide project clarity for the minimum criteria. John said once you have the approved plan, there is no difference between short and long term except for the duration. Denise suggested changing the duration and including a minimum. John agreed.

The same changes were suggested for sub points a, b and c under bullet 9 to be consistent. Ron asked if “obtain a permit” should say “obtain an appropriate permit” for the discharge. Ken thought this was for facilities allowed to discharge to another location. Ken said plants that only produce reclaimed water need to be permitted to discharge to a lagoon, wetland or some outfall which would fall under NPDES. Ken asked why this would not fall under diversion. Craig said if the effluent went from South Plant to West Point in King County you would need additional permitting to accept additional flow but would not be considered diversion. The panel decided it was fine the way it was written.

Panel members suggested revising bullet 10 to say “shall be in accordance with” instead of “generally in accordance with.” John asked if this bullet should include something to deal with operations. He said a treatment plant has a side system to do reclaimed water should specify at what point the effluent needs to get diverted back to the plant if it does not meet the standards. John asked if it could be diverted to the disinfection process of the main plant. Ken said at Bud Inlet it goes back to head works. The panel discussed under each scenario what part of the wastewater system the effluent could be discharged to. Jim said this relates to the plan approval. John wanted to see the flexibility to address this in the engineering report.

Angie said she did not think there was time to address the design guidance topic today. Angie asked if the panel wanted to spend more time discussing reliability again at a future meeting. The panel did not want to review the language again. Angie suggested that panel members send Jim their comments individually so he can complete this section. Jim also noted that the record should show that Craig Riley had volunteered to co-write the pathogen standard portion of the recommendations and that he would participate prior to the next meeting in making revisions to the draft language. Jim said he would send out the draft language revisions via email for comments.

Wrap-Up and Action Items

Jim said he had planned to have Dr. Pleus present on the PPCP and EDC issues in October. Jim said Dr. Pleus is not available during the regular TAP meeting time and asked if panel members would like to meet another date during October so that Dr. Pleus could attend. He said Dr. Pleus was available on October 9, 10, 20 or 21. Ken said he has

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heard Dr. Pleus talk previously about his studies on the effects of compounds on organisms. Ken said Dr. Pleus typically gives this presentation to agencies that want to develop standards. Ken was not sure that the panel would benefit from this presentation because ultimately it is up to Ecology to determine what to accept for standards. Jim said the plan was to have Dr. Pleus review the study they are doing with the Water Environment Research Foundation.

Angie asked if the panel received a presentation from Dr. Pleus, or someone else on this topic, whether that would provide enough information to write a standard. The panel did not think that a presentation would provide enough information to develop a standard. Ron said he is interested in the information but would prefer not to sit through a presentation. Jim said he would see if Dr. Pleus would come to a separate meeting for those people who are interested so it does not take up panel meeting time. Ken said he will share the results from the LOTT study when they are ready as well. Craig Riley offered to contact Gretchen Bruce of Intertox to see if she would release the presentation paper she gave at the WateReuse annual conference in Dallas which Craig attended. Angie reviewed the topics for the next panel meeting. She said the panel will need to go through the pathogen language again and address both disinfection systems and review the design guidance piece for reliability that was not addressed today. The panel will also work on finalizing draft language for groundwater and ASR next month. Jim said he will identify an additional topic to address next month since the panel decided to remove the PPCP and EDC issue. The next TAP meeting is on October 15th from 9:00 am – 3:30 pm at Ecology offices in Lacey.

Meeting Attendees

Angie Thomson, Facilitator
Emily Neff, Note Taker

Committee Members and Alternates	Guests
Bill Persich, Brown & Caldwell	Karla Fowler
Bill Backous, CH2M Hill	
Ron Brown, CH2M Hill	
Denise Lahmann, DOH	
Craig Riley, DOH	
Jay Swift, Gray & Osborne	
John Malady, Kennedy Jenks	
Ken Butti, LOTT	
Department of Ecology	
Katharine Cupps, Agency Lead	(part of meeting – via phone)
Tim Gaffney, Rule Writer	
Jim McCauley, Sr. Engineer	