



WASHINGTON STATE
DEPARTMENT OF
E C O L O G Y

A Report on the State Reclaimed Water Facility Operators Workshop

Ephrata City Hall, 121 Alder Street

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A Report on the State Reclaimed Water Facility Operators Workshop

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Water Quality

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The Washington State Department of Ecology (Ecology) sponsored and facilitated its second reclaimed water facility operators workshop on April 28, 2004. The workshops provide a forum for reclaimed water facility operators to interact with each other and with state regulatory personnel.

The workshop was held on April 28, 2004, at the city hall in the city of Ephrata. It was well received and strongly attended. Twenty-eight operators, representing fifteen of the state's water reclamation facilities, were present. Representatives from Ecology, the Washington Department of Health (DOH), the Pacific Northwest Clean Water Association (PNCWA), and the Evergreen Rural Water Association also participated in the workshop. Following the workshop, operators visited and toured the city of Ephrata's water reclamation plant.

Jerry Anderson organized and facilitated the workshop for Ecology. He requested operator priorities to set the agenda for the workshop. The operators and other invited speakers led the discussions. Both operators and agency staff found the interactive format valuable and recommended continuing with this format.

Ecology completed the following actions based on information received at the 2003 workshop:

- Provided operators with a contact list and basic information about each of the reclamation facilities. (Note: An updated list is attached).
- Sponsored and facilitated the 2004 interactive workshop between state regulators and operators and a tour of the Ephrata reclamation facility.
- Investigated options for operator certification or endorsement for reclaimed water facilities. Invited speakers to present information on these options at the 2004 workshop.
- Obtained PNCWA support for an interactive website for information exchange and troubleshooting.
- Participated in conferences to present information regarding reclaimed water to communities, engineers, and operators.
- Requested King County operators to discuss their procedure for training users (customers) about reclaimed water at the 2004 workshop.

The operators expressed that an open discussion format was important to continued dialog with other operators and others in attendance. Operators in attendance participated freely in the presented topics and appreciated the additional information presented on a number of their top priorities from the 2003 workshop. The items will be explored further and information disseminated to the operators for their review and input. The operators' issues, responses, and suggestions were recorded by Ecology staff and presented in the following categories:

1. Continue forum to discuss concerns and exchange information on operations and maintenance problems
2. Continue research on certification/endorsement of reclaimed water facilities operators
3. Continue development of a web-site for operators to exchange information
4. Provide Ecology contact to maintain a data base of operators and facility information

Operators agreed that the workshop was quite valuable and they want to continue to meet with each other and the regulatory staff in this type of forum each year. Operational priorities will set the specific agenda for future workshops.

The city of Walla Walla agreed to host a workshop in 2005. It has been suggested that the 2005 operators workshop be a whole day event. We agreed on a two-day event due to the travel time required. Operators stated that they could get away from their facilities long enough to attend this workshop. Since Walla Walla is a greater distance to travel for many operators, especially from Western Washington, some operators would have to stay overnight.

Disinfection Systems and Coliform Compliance

Issue Question:

Why the up and down total coliform readings? The spikes occur at any time. The reading may be high one time and the next sample may be okay.

Discussion and Suggestions:

- Suggest checking baffles at sides of UV units. Leaking along the wall may allow coliform to escape adequate disinfection. These baffles may crack away from the walls due to differential expansion. Schedule to clean tank, especially at square corners where deposits may occur.
- Operators related their success in sealing baffles and maintaining compliance since March 2003. Operator suggests installation of baffles near surface to redirect flow into UV bulbs for better disinfection.
- Suggest exploring location of sample points near where deposits may occur. Operator reported that extra precaution in taking samples is important, especially if taking samples at a number of different locations and for different purposes and during seasonal changes in process.
- Ecology asked what we can do to insure proper sampling for total coliform. Development of trouble shooting focus sheets is needed that will identify the do's and don'ts of sampling.

Operators requested the following action items:

- Training on sampling protocols to avoid sample contamination.
- A "Sampling Do's and Don'ts" booklet.
- A disinfection process troubleshooting guide.

Pretreatment and Upstream Unit Processes (Management of Nocardia and other filamentous organisms)

Issue Question:

Are there any reliable products to help reduce the grease and fats in the influent to treatment plant to help reduce filamentous organisms? Operator tries to maintain mixed liquor and adjust aeration, but nothing seems to work. However, they are meeting permit limitations; but foaming and clean up is a problem. Royal City's special problem requires additional public contact to educate the citizens to reduce the amount of grease and fats they discharge into the sewer system.

Discussion and Suggestions:

- Several operators noted that Ecology does not provide enough assistance or emphasis on the importance of source control and pretreatment. This area is increasingly important when the goal is producing water that meets the more stringent treatment, reliability and quality requirements of reclaimed water. In particular, a discussion of fats, oil and grease (FOG) from residential sources was noted as a problem in small communities.

Operators requested the following action items regarding oil and grease:

- More agency emphasis on source control and pretreatment.
- Sample sewer ordinances requiring grease traps and cleaning.
- Educational material for the public.

Operators exchanged information regarding equipment and unit process reliability.

- An operator related a study they did on grease and fat products that showed no change in concentrations during the test period. Suggest installation of grease traps at all restaurants and require scheduled cleaning (vactor trucks). For some cities, with only one small restaurant and fats, oil, and grease problem, grease traps may not help.
- Consider developing a sewer ordinance that requires grease traps and cleaning. Ordinance may include rates based on installation of grease traps and cleaning schedules. An Ordinance with rate adjustment for disposal of grease and fats and an information sheet with the sewer bill may help change practices. Requiring grease traps at trailer parks, labor camps, and apartment buildings will help reduce problem.
- With proper dissemination of information, providing dump stations for greases and fats at different locations in city could also help solve problem. Installing mechanical (i.e., helical) screens would help reduce problems at facility and improve maintenance.
- An operator suggested the EPA Pretreatment course as a good way to get information on reducing problem discharges to treatment plant. Suggest Ecology put greater emphasis in Water Reclamation for small communities to address pretreatment.

Pretreatment and Upstream Unit Processes (Oxidation reduction potential (ORP) probes reliability problems)

Issue Question:

When using ORP probes, do other operators have to clean or replace frequently? Probes, used to monitor and control dissolved oxygen, dechlorination process, etc., need constant cleaning and changing of contacts.

Discussion and Suggestions:

- Some operators have found that some probes are more desirable because they find them more reliable and easy to clean.
- There are many different manufacturers of probes. King County recently completed a study of the different probes and has a report that they will send out to all operators for their consideration. Based on this study, King County has recommended a particular probe for all their monitoring locations (48). The only maintenance needed is pulling the probe out of the wastewater and wiping off the cap. No calibration is required.
- Ecology will include results of the study and share the information on cost, operation, maintenance, replacement, etc.

- DOH and Ecology will look into developing a questionnaire/survey type form to get operator input on different sensors. The questionnaire would include information regarding cost, reliability, availability, vendor response, number of failures, the time between failures, and the time frame for repair and replacement.

Responsibilities for Use Areas of Reclaimed Water

Issue Question:

What is the operator's role and responsibility and potential liabilities for use areas, tanker trucks, different city department users, and private customers?

Discussion and Suggestions:

- King County operators explained their program to educate the end users, the responsibility assigned to them through a training program, and a signed agreement. Training is modeled/tailored for each facility and its assigned beneficial use. The training for private users specifies the requirements they agree to meet when using the reclaimed water at their reuse site.
- A problem was identified that some operators have with other city departments that use the reclaimed water. The operators expressed a problem with using the water without any requirements; i.e., watering on a play area where children can run through the sprinklers. The operators of wastewater treatment plants have no control over what these departments do with the water. They also may have a private user of the reclaimed water that also uses the water without any requirements. An example was a break in a reclaimed water supply line that was not reported and occurred over many days prior to being repaired.
- The reclaimed water discharge permit requires a binding agreement among the parties involved. It is required to ensure that construction, operation, maintenance, and monitoring meet all requirements of the DOH and Ecology. Therefore, the operator of the facility that reclaims water for private distribution is responsible for the proper use in accordance with reclaimed water standards. The operator is required by the permit to have a binding agreement with the user(s).
- DOH states that the city departments are responsible for reporting a break in the reclaimed water line. This is a public health issue and the city department is liable and could have been issued a State Health Order.
- Operators need to better understand their role and responsibility and potential liabilities for use areas. King County operators presented their training method as a model that others might be able to use. Ecology agreed to the following actions:
 1. Provide a generic model of a reclaimed water user training program based on information from King County and others. Post it to Ecology website.
 2. Review permit language to assure the responsibilities for distribution and use are clearly defined. Update the language, as necessary.
 3. Work with DOH to assure that all required user agreements and ordinances are in place.

- Ecology reported that the revision of the standards would take time to include reuse area requirements and criteria for use area agreements.

Training Program and Operator's Role and Responsibility for Use Areas

Issue:

King County operators presented their training program for reuse area customers and their need to better understand their role and responsibility and potential liabilities for use areas.

Discussion and Suggestions:

- King County mentioned that they had a training program for users who took water via truck for construction purposes. The users then had to sign a liability agreement that they had received the training and understood their responsibility. This may be usable as a model for other facilities.
- Operators explained the rationale in the training requirement and the concerns by citizens in being exposed to Class A reclaimed water. King County's reclaimed water facilities raw wastewater has approximately 20,000,000 fecal coliforms. When treated to Class A requirements, it has less than 2.0 total coliforms 80% to 90% of the time.
- Consider that a Water Quality discharge permit allows 400 organisms of fecal coliform per 100 milliliters in the wastewater effluent to receiving water that allows primary contact recreation; and that the same effluent will have 8,000 total coliform organisms. If you compare this with Class A reclaimed water that is required to be less than 2.2 total coliforms, you can see the level of public health protection that is provided. *Total Coliform counts are normally about 10 times higher than fecal coliform (FC) counts.*

King County provides for the tracking and records procedure of the private users and the reuse sites. King County provided a hand out of their training and a fact sheet about their Reclaimed Water Program.

Operator Certification and Endorsement for Reclaimed Water

Issue:

The afternoon session was used to present and discuss the concern for a reclaimed water treatment facilities operators certification or endorsement. Since this was an important issue, Ecology, with assistance from PNCWA, has explored the difference between certification and endorsement, and what opportunities each will provide operators of reclaimed water facilities.

Discussion and Suggestions:

- A PNCWA member was invited to present an option for a voluntary certification or endorsement through PNCWA. Operators believed that the certification should come from the state and not through another organization. Operators also wanted portability to transfer the certification to other states.
- PNCWA described the potential of a certification endorsement for water reclamation operators administered by Ecology or PNCWA.
- There was a wide range of responses. In general, the operators preferred a mandatory program administered by Ecology. However, several operators expressed concern about making things too difficult for operators, or too expensive for cities. One alternative mentioned was to include water reclamation and reuse material into the Group III operator test. Ecology would look into this possibility with ABC, the national organization that produces the tests. Any new test developed for a certification endorsement would need to be legally defensible, so it is not practical for Ecology to develop its own test. Ecology would need to work with ABC to develop any new tests.
- The most firm consensus was that PNCWA could continue researching training programs. It was felt that training specifically for reclamation would be useful, even if it did not lead to a state certification. Our committee could research existing training materials developed in California (CSU-Sacramento certification training programs), Oregon (endorsement for filtration), Texas, Florida, etc., for their applicability in Washington. Maybe PNCWA could host a short course, workshop, etc., for reuse operators.
- PNCWA presented the subcommittee's progress on the concerns for certification and endorsement. Endorsement may be limited to receiving endorsement for water reclamation facilities versus endorsement for different treatment units or knowledge of filters, coagulation, disinfection, etc. PNCWA reported that nationwide there are certification programs for collection systems and cross-connection control.
- Certification for reclaimed water operators will require a change to state law to allow a separate program or an addition to the current program. Would a certification program require testing or additional CEU (Continuing Education Units)? Would prior work experience with reclaimed water or equivalent units of treatment be required and accepted?
- Ecology, Operators Wastewater Certification Program, was on hand to answer questions and offer options with regard to the possibility of there being a water reuse endorsement to go with an operator's wastewater certification. From the discussion, a few of the operators would like the endorsement for a possible salary increase; others do not think

we need an endorsement, but think that reuse questions should be included on the existing wastewater Association of Boards of Certification (ABC) exam; and still others would like the endorsement, but think it should be voluntary.

- Ecology provided information on the state certification and the national ABC certification process. There is currently no national exam for reclaimed water certification. However the ABC board is discussing the topic. At this time the most straightforward approach appears to be to add some water reuse questions to the Group III operator test. This is allowable under ABC requirements. Most operators favored including water reuse questions on the Group III exam at this time.
- Ecology suggested that questions should be included on the wastewater exams that cover need to know reuse issues, but that it may be unnecessary to have an endorsement program at this time. They will be encouraging the ABC to begin discussions into guidance/recommendations with regard to water reuse operations, because eventually reuse will be widespread enough to warrant more attention. They are not sure it will be in the form of an endorsement or more relevant questions on the existing water and wastewater exams.
- The question was asked about the effect on smaller towns, especially if additional CEUs were required beyond the current Operator 3 or 4 certification program. It was suggested and accepted that any CEUs received for wastewater or for reclaimed water would apply to both certifications and endorsements.
- A Reclaimed Water Operator program may allow the operator to work at the reclaimed water facility for one year to receive an endorsement. Since the operation of a water reuse collection system is integral to the treatment system, it was also suggested that a reclaimed water certification program should also include the collection system.
- An ABC testing program would include questions on different aspects of reclaimed water. For example, monitoring and testing, storage basins, wetlands, macro/micro filtration, water reuse site, by-pass basins, etc.
- There are a number of different endorsement programs already out there. It may be useful to look into the wastewater treatment study course at California State University, Sacramento (CSU) which includes a section on water reclamation.
- The following information was added by the DOH (05/06/04): At the recent WOW conference, operator certification persons were saying that the CSU tests are being re-evaluated for CEUs and having the awards pulled back significantly. Some training programs advertised that 4-4.5 CEUs were only being given 1.5-1.8 in this state. This might be something to checkout to make sure the CEU levels are compatible.
- Reported by Ecology operator certification (05/11/04): The DOH is having Washington Environmental Training Center (WETRC) re-evaluate the CSU program because they feel that the number of CEUs assigned is too high for the amount of time the training should take. Ecology will inform operators when the results of their review are posted.
- Operators from City of Snoqualmie asked: “Do we need a new certification to cover the production of the water at the sewer plant (water reclamation plant) because the state already requires adequate operator certification through its group III certification?”

- Should the State require operators that work in a reclamation plant and manage the distribution system to obtain water distribution certifications, like Water Distribution Manager II?”

Training, Interactive Website

Issue:

The second half of the afternoon session was used to present and discuss the development of an operator’s forum on the PNCWA web site.

Discussion and Suggestions:

- PNCWA Members presented the PNCWA water reuse operators subcommittee’s plan to develop a discussion forum on the PNCWA website. There was general interest in the site. Some operators favored the option to submit anonymous messages. The committee will continue working with PNCWA to set up the forum.
- The forum would be accessible through the PNCWA main website. The site would have links to related websites, (i.e., Ecology’s Reclaimed Water webpage).
- Since the PNCWA website will be going through a change of servers, the soonest the Reclaimed Water Operators forum could be up and running is late 2004.
- PNCWA presented the following ideas to the operators for their consideration:
 1. Make the site like a chat room where the operators could pose a question and receive all the responses that have been posted.
 2. The operators could pose a question and receive a notice by e-mail that responses have been posted.
 3. Private e-mail options that would allow only the operators who are subscribed to the website access to the forum.
 4. The chat room could be accessed by anyone who belongs to PNCWA and they could offer responses to the questions posed by an operator. This may be preferable, since it opens up the possibility that more and possibly better information or suggestions would be offered.
 5. Could a question or comment be submitted anonymously? It was pointed out that all e-mail is discoverable and it may not be legal to offer this service or PNCWA may not want to offer the service.
- The operators agreed that a website open to all member responses, e-mail notice of posting of responses, and subscribers only access to pose questions or comments is preferable.
- The PNCWA sub-committee will meet again to discuss the above options for the forum and formulate a final plan.
- Operators noted that their number one priority is training, training, training. This is the area that the state regulatory agencies and organizations such as PNCWA should

emphasize. Operators suggested a two or three-day workshop on various reclaimed water topics. They also noted that engineers could benefit from some training in operations.

- PNCWA presented the work done for an interactive website forum for operators on the PNCWA website. This should be available in a couple of months.
- Ecology and the PNCWA Water Reuse committee agreed to look into opportunities for a comprehensive operator training on water reuse.

Attendance List
Ecology Operator's Workshop
April 28, 2004

FACILITY OPERATORS			
City	Name	Phone	E-mail
Cheney, city of	Bill Benner Dan Ferguson	509-498-9300 509-498-9302	wbenner@cityofcheney.org dferguson@cityofcheney.org
College Place, city of	Robert Jamison	509-529-2859 509-525-0510 (ext. 33)	cocpww@hscis.net
Ephrata, city of	Troy Zerb Mike Beavers	509-754-2992	wprwater@nwi.net
Everett, city of	Jeff Wright	425-257-8230	JWright@ci.everett.wa.us
King Co DNR South Plant (Renton)	Rick Butler Curtis Steinke	206-684-2456	Rick.Butler@METROKC.GOV
King Co DNR West Point Plant	Showell Osborn	206-263-3831	Showell.Osborn@METROKC.GOV
Medical Lake, city of	Steve Cooper Bonnie Aguiar Wayne Edger	509-299-6860	wwtp@icehouse.net
Olympia, city of	(LOTT) Donna Bradshaw Terri Prather	360-753-8167	dbradsha@ci.olympia.wa.us
Pullman, city of	Bruce Wickard Joel Anderson Joe Benson	509-334-4555 (ext.233)	Johnny.Parkins@ci.pullman.wa.us
Quincy city of	(Earth Tech) Richard (Rick) Wolf, Jr. Travis Kirk Gareth Moore	509-787-2423 (ext. 501)	Richard.Wolf@earthtech.com
Royal City, city of	Allen Watson Harry Yamamoto	509-346-1811 509-346-2263	RCPW@centurytel.net
Snoqualmie, city of	Dane Cossett Thomas Holmes	425-888-4153	snoqualmie@mindspring.com
Walla Walla, city of	(OMI) William (Willy) Breshears Paul Olson	509-527-4509	omiwal@omiinc.com
Warden, city of	Steve Mattox	509-349-2326	kshuler@cityofwarden.org
Yelm, city of	Jon Yanasak James Doty	360-458-5411	yanasak@yelmtel.com

**Attendance List
Ecology Operator's Workshop
April 28, 2004**

DEPARTMENT OF ECOLOGY			
Name	City	Phone	E-mail
Kathy Cupps, P.E., State Water Reclamation and Reuse Lead	Olympia	360-407-6452	Kcup461@ecy.wa.gov
Jerry Anderson, P.E., Eastern Regional Office, Reclaimed Water Engineer	Spokane	509-329-3427	jand461@ecy.wa.gov
Otis Hampton, Operator Assistance Out-reach, Eastern Washington	Yakima	509-884-6807	Oham461@ecy.wa.gov

DEPARTMENT OF HEALTH			
Name	City	Phone	E-mail
Craig Riley, P.E. Reclaimed Water Engineer, Division of Drinking Water	Spokane	509-456-2466	craig.riley@doh.wa.gov

EVERGREEN RURAL WATER			
Name	City	Phone	E-mail
Jill Parker, Operator Trainer	Shelton	360-462-9287	jparker@erwow.org

PACIFIC NORTHWEST CLEAN WATER ASSOCIATION (PNCWA) Water Reuse Committee			
Name	Phone	E-mail	
Chad Newton; Gray & Osborne	206-284-0860	cnewton@g-o.com	

An Operators List of Water Reclamation Facilities

April 28, 2004

Chehalis, city of (Lewis County)

Operator in-charge: Patrick Wiltzius
Operators: Nathan Acoba, Dan Chitwood, Jeff Eaton, Andrain Franks
Phone: 360-748-0238
E-mail: pwiltzius@ci.chehalis.wa.us
Address: P.O. Box 871, 2007 N.E. Kresky Ave, Chehalis, WA 98532
Class: (Future) A
Uses: (Future) Poplar tree irrigation
Capacity: WWTP (maximum month)= 6.0 MGD; WWTP (peak)= 13.0 MGD
Reclaimed water (maximum month)= 3.5 MGD
Treatment system: Activated sludge, sequencing batch reactors
Coagulation: (Future)
Filtration system: (Future) Dynasand sand filter
Disinfection system: UV with Cl₂ for reclaimed water system

Cheney, city of (Spokane County)

Operator in-charge: William Benner, Manager; wbenner@cityofcheney.org
Contact: Daniel Ferguson, Operator IV
Phone: 509-498-9300
E-mail: dferguson@cityofcheney.org
Address: 119 Anderson Road, Cheney, WA 99004-1866
Class: (Future) A
Uses: (Future irrigation of EWU campus and local parks)
Capacity: 2.70 MGD (maximum month), 6.0 MGD (peak)
Treatment system: Activated sludge, anoxic basins, 'Carousel' oxidation ditch
Coagulation: (Future), polymer/coagulant
Filtration system: (Future)
Disinfection system: Chlorination/dechlorination

College Place, city of (Walla Walla County)

Operator-in-charge: Robert Jamison
Operators: Robert Fowler, Kevin Anderson, Craig Delph, Calli Olsen
PW Director: Paul Hartwig
Phone: 509-529-2859; 509-525-0510 (ext. 33)
E-mail: cocpww@hscis.net
Address: (mail) 625 S. College Avenue, College Place, WA 99324, (location) 430 Owens Rd., Walla Walla, WA. 99362
Class: A, nitrogen removal
Uses: Stream flow augmentation, tree irrigation
Capacity: 1.65 MGD (maximum month), 2.00 MGD (peak)
Treatment system: Activated sludge, sequencing batch reactors
Coagulation: In-line mixer w/polymer
Filtration system: Aqua disk (Aqua-Aerobics)

An Operators List of Water Reclamation Facilities

April 28, 2004

Disinfection system: Medium pressure, high intensity UV (Aquionics In-Line)	
Ephrata, city of (Grant County)	
Operator-in-charge:	Troy Zerb
Wastewater Manager:	Troy Zerb
Phone:	509-754-2992
E-mail:	wprwater@ephrata.org
Address:	121 Alder S.W., Ephrata, WA 98823
Class:	A plus nitrogen removal
Uses:	Ground water recharge, in-plant, landscape irrigation, construction water
Capacity:	1.12 MGD (maximum month) - 1.96 MGD (peak)
Treatment system:	Activated sludge - 'Carousel' oxidation ditch
Coagulation:	In-line static mixer, polymer
Filtration system:	Continuous backwash upflow sand media (Waterlink)
Disinfection system:	Low-pressure, low-intensity UV (Trojan)
Everett, city of (Snohomish County)	
Operator in-charge:	Charles Johnstone
Process analyst/ lab supervisor:	Jeff Wright
Phone:	425-257-8231
E-mail:	jwright@ci.everett.wa.us
Address:	3200 Cedar St., Everett, WA 98201
Proposed class of water reuse :	To be determined
Uses:	Non-contact cooling water for paper mill
Capacity:	11 MGD (max. month), 16 MGD (peak)
Treatment system:	Trickling filter/ solids contact
Coagulation:	No
Filtration system:	No
Disinfection system:	Chlorine (future sodium hypochlorite on-site generation)
Holmes Harbor Sewer District (Island County)	
Contract operator:	Brian Walker, Group III (Kelly Wynn's Water & Wastewater Services)
Operators:	Jeff Ezzy (Group II)
Phone:	360-331-4636
E-mail:	sbr@whidbey.com
Address:	P.O. Box 1330, Freeland, WA 98249
Class:	A
Uses:	Golf course irrigation
Capacity:	0.2 MGD (maximum daily)
Treatment system:	Collection system , septic tank effluent pressure, activated sludge, dual sequencing batch reactors
Coagulation:	Flocculation; polymer

An Operators List of Water Reclamation Facilities

April 28, 2004

<p>Filtration system: Traveling bridge sand filter</p> <p>Disinfection system: Sodium hypochlorite</p>
<p>King Co DNR South Plant – Renton (King County)</p> <p>Operator in-charge: Rick Butler</p> <p>Operator: Curtis Steinke 206-684-2456</p> <p>Contact: Mike Fisher – South Plant Manager</p> <p>Phone: 206-684-2400 – (Fax: 206-684-2448)</p> <p>E-mail: Rick.Butler@METROKC.GOV</p> <p>Address: 1200 Monster Road S.W., Renton, WA 98055</p> <p>Class: A</p> <p>Uses: Irrigation</p> <p>Capacity: 1.0 MGD (maximum day)</p> <p>Treatment system: Air activated sludge w/o nutrient removal</p> <p>Coagulation: In-line mixing, alum with potential for polymer</p> <p>Filtration system: Upflow sand media (Parkson Dynasand)</p> <p>Disinfection system: Hypochlorite</p>
<p>King Co. DNR West Point Plant (King County)</p> <p>Operator in-charge: Eugene Sugita,</p> <p>Operator: Showell Osborn 206-263-3831</p> <p>Contact: Richard [Dick] Finger, West Point Manager</p> <p>Phone: 206-263-3817</p> <p>E-mail: Eugene.Sugita@METROKC.GOV</p> <p>Address: 1400 Utah Avenue W., Seattle, WA 98199</p> <p>Class: A</p> <p>Uses: On-site irrigation</p> <p>Capacity: 0.70 MGD (maximum day)</p> <p>Treatment system: Biological Treatment System</p> <p>Coagulation: In-line mixing, alum w/polymer</p> <p>Filtration system: Upflow sand media (Dynasand)</p> <p>Disinfection system: Chlorine</p>
<p>Medical Lake, city of (Spokane County)</p> <p>Operator-in-charge: Steve Cooper</p> <p>Operators: Chuck Clawson, Bill Ahlf, Bonnie Aguiar, Wayne Edgar</p> <p>Public works director: Doug Ross</p> <p>Phone: 509-299-6860; 509-299-7715</p> <p>E-mail: wwtp@icehouse.net</p> <p>Address: P.O. Box 369, Medical Lake, WA 99022</p> <p>Class: A, nitrogen and phosphorus removal</p> <p>Uses: Lake level augmentation</p> <p>Capacity: 1.85 MGD (maximum month), 4.10 MGD (peak)</p> <p>Treatment system: Activated sludge, 'Carousel' oxidation ditch w/anoxic & anaerobic selector basin</p>

An Operators List of Water Reclamation Facilities

April 28, 2004

Coagulation:	In-line mixer w/polymer
Filtration system:	Traveling bridge granular media
Disinfection system	Low-pressure, low-intensity UV (Trojan)
North Bay Case Inlet (Mason County)	
Operator in-charge:	Steve Cole
Operator:	Dave Dougherty, Pat Reidt
Utilities project mgr:	Tom Moore
Phone:	360-280-0584 (pager = 360-971-9829)
Address:	P.O. Box 578, Shelton, WA 98584
Class:	A
Uses:	Irrigation (existing 20-acre forest owned by DNR), groundwater recharge (surface percolation), WWTF non-potable water
Capacity:	0.365 MGD (maximum month), 0.608 MGD (peak)
Collection system:	Grinder pump system
Treatment system:	Activated sludge, sequencing batch reactor
Coagulation:	Mixing, polymer/coagulant
Filtration system:	Disk fabric filter (Aqua Aerobics)
Disinfection system:	Low-pressure low-intensity UV
Olympia, city of – LOTT (Thurston County)	
Operation supervisor:	Laurie Pierce
Operators:	Wayne Robinson, Donna Bradshaw, Terri Prather
Water quality:	Paula Williamson
Phone:	360-753-8386
FAX:	360-753-8031
E-mail:	dbradsha@ci.olympia.wa.us
Address:	500 Adams St NE, Olympia, WA 90501
Class:	A
Hawks Prairie design (Under Construction):	
Class:	A satellite facility
Uses:	wetlands, irrigation, ground water
Capacity	1.0 MGD with future upgrade to 5.0 MGD
Treatment system	Membrane bioreactor facility
Disinfection system	UV disinfection
Budd Inlet Plant Constructed Uses:	
Uses:	Irrigation and commercial/industrial water, groundwater recharge, WWTP process, (planned submerged MBR w/dischARGE to created wetlands)
Capacity:	1.0 MGD (maximum month) future upgrade to 5 MGD
Treatment system:	Activated sludge
Coagulation:	In-line mixing, polymer
Filtration system:	Up flow sand filter (Dynasand)

An Operators List of Water Reclamation Facilities

April 28, 2004

<p>Disinfection system: Secondary UV and sodium hypochlorite on class A recharge</p> <p>Capacity: 1.0 MGD with future upgrade to 5 MGD</p>
<p>Pullman, city of - Washington State University (Whitman County)</p> <p>Operator in-charge: Johnny Parkins</p> <p>Operators: Bruce Wickard, Joel Anderson, Joe Benson</p> <p>City contact: Mark Workman (PW Dir.); Art Garro (Utility Engineer.)</p> <p>Phone: 509-338-3233</p> <p>E-mail: Johnny.Parkins@pullman-wa.gov</p> <p>Address: (Mail – 325 SE Paradise St.), NW 1025 Guy, Pullman, WA 99163-0249</p> <p>Proposed class: A</p> <p>Uses: Irrigation (school, parks, golf)</p> <p>Capacity: 3.20 MGD (maximum month), 13.0 MGD (peak)</p> <p>Treatment system: Activated sludge, aeration basins</p> <p>Coagulation: (Future installation)</p> <p>Filtration system: Proposed aqua disk (Aqua-Aerobics, pile cloth)</p> <p>Disinfection system: Chlorination/dechlorination</p>
<p>Quincy, city of (Grant County)</p> <p>Operator-in-charge</p> <p>(DBFO): Richard (Rick) Wolf, Jr. (Earth Tech), Travis Kirk (Asst. Mgr.)</p> <p>Operators: Paul Worley, Rich Simpson, Ed Moore, Ron Roduner, Gareth Moore</p> <p>City contact: Daniel Frazer, Public Wks Dir. Phone: (509) 787- 3523 E-mail: dfrazier@nwi.net</p> <p>EarthTech contact: Rick Wolf, Operations Mgr.</p> <p>Phone: 509-787-2423, (ext 501)</p> <p>E-mail: Richard.Wolf@earthtech.com</p> <p>Address: Earth Tech, P.O. Box 756, Quincy, WA 98848</p> <p>Class: A plus nitrogen removal</p> <p>Uses: Ground water recharge, in-plant</p> <p>Capacity: 1.54 MGD (maximum month), 2.11MGD (peak)</p> <p>Treatment system: Activated sludge, sequencing batch reactors</p> <p>Coagulation: In-line mixer w/polymer</p> <p>Coagulation:</p> <p>Filtration system: Upflow sand media (dynasand)</p> <p>Disinfection system: High intensity, low pressure UV (IDI)</p>
<p>Royal City, city of (Grant County)</p> <p>Operator-in-charge: John Lasen (City contract)</p> <p>Operators: Allen Watson (509-346-1811)</p> <p>PW Director: Harry Yamamoto</p> <p>Phone: 509-346-2263</p> <p>E-mail: RCPW@centurytel.net</p> <p>Address: P.O. Box 1239, Royal City, WA 99357</p>

An Operators List of Water Reclamation Facilities

April 28, 2004

Class:	A plus nitrogen removal
Uses:	Ground water recharge, in-plant, crop irrigation
Capacity:	0.25 MGD (maximum month), 0.50 MGD (peak)
Treatment system:	Activated sludge, package plant (aeroMod)
Coagulation:	In-line mixer w/polymer (magnasol)
Filtration system:	Disk fabric media (Aqua Aerobics – pile cloth)
Disinfection system:	Low-pressure, low-intensity UV (Trojan)
Sequim, city of (Clallam County)	
Operator in-charge:	Al Chrisman
Operators:	David Howe, James McBride, Marty Hogoboom, Arnold (Pete) Tjemsland
Phone:	360-683-3883
E-mail:	reuse@olypen.com
Address:	152 W. Cedar, Sequim, WA 98382
Class:	A
Uses:	Streamflow augmentation, constructed wetlands, irrigation (city park, highway rest stop), toilet flushing (city park, city PW shop), WWTF non-potable water (process)
Capacity:	0.79 MGD (maximum month), 1.8 MGD (peak)
Treatment system:	Activated sludge, 'Carousel' oxidation ditch with class A biosolids
Coagulation:	In-line mixer w/polymer
Filtration system:	Down flow anthracite media (US Filter)
Disinfection system:	Low-pressure, low-intensity UV (Trojan)
Snoqualmie, city of (King County)	
Operator in-charge:	Vern Allemand
Operators:	Dane Cossett, Thomas Holmes, Dean Collins
Phone:	425-888-4153 (FAX: 425-888-4379)
E-mail:	snoqualmie@mindspring.com
Address:	P.O. Box 987 Snoqualmie, WA 98065
Class:	A
Uses:	Golf course irrigation, businesses landscaping, city right-away landscaping
Capacity:	1.24 MGD (maximum month), 2.15 (peak)
Planned upgrade	
Treatment system:	Activated sludge, oxidation ditch
Coagulation	(Added prior to clarifier): CCI chemical (RO-5000)
Filtration system:	Traveling bridge
Disinfection system:	UV w/hypo chlorine
Sunland Water District (Clallam County)	
Operator in-charge:	Willy Burbank
Supervisor/operator:	William Thomsen, II
Phone:	360-683-3880
FAX:	360-683-3324
Address:	137 Fairway Drive, Shelton, WA 98382

An Operators List of Water Reclamation Facilities

April 28, 2004

Class:	D
Uses:	field irrigation
Planning class:	A for golf course, park, stream flow, infiltration
Capacity:	0.130 MGD (maximum month), 0.285 MGD (peak)
Treatment system:	Sequencing batch reactor
Coagulation:	Flocculation basin, polymer (design)
Filtration system:	Cloth disk filter (Aqua Aerobics)
Disinfection system:	Chlorine (proposed UV)
Walla Walla, city of (Walla Walla County)	
Operations manager	
(OMI):	William (Willy) Breshears,
Operators:	Paul Olson
City contact:	Frank Nicholson, Utility Engineer
Phone:	509-527-4509
E-mail:	omiwal@omiinc.com
Address:	OMI, 572 Hatch Street, Walla Walla, WA 99362-5501
Active:	Upgrading to class A
Uses:	To irrigation district for crop irrigation
Capacity:	9.60 MGD (maximum month), 12.30 MGD (peak)
Treatment system:	Activated sludge, trickling filters & 'Carousel' oxidation ditch (with anoxic and anaerobic selector basins)
Coagulation:	(Future installation) polymer/coagulant
Filtration system:	Existing traveling bridge (mixed media)
Disinfection system:	Sodium hypochlorite (on-site generation) (future = UV disinfection)
Warden, city of (Grant County)	
Operator-in-charge:	Steve Mattox
City admin:	Mike Thompson
Phone:	509-349-2326
E-mail:	kshuler@cityofwarden.org
Address:	P. O. Box 428, 201 South Ash, Warden, WA 98857
Proposed class:	A
Proposed uses:	Ground water recharge
Capacity:	0.512 MGD (maximum month), 1.24 (peak)
Treatment system:	Activated sludge (oxidation ditch)
Coagulation:	In-line mixer w/polymer
Filtration system:	Fabric disk
Alternative	
treatment/filtration:	Aeration basin w/membrane biofilter
Disinfection system:	UV disinfection

An Operators List of Water Reclamation Facilities

April 28, 2004

Yelm, city of (Thurston County)

Operator in-charge: Jon Yanasak
Operators: James Doty, Randy Hatch, Robert Rhoades
Phone: 360-458-8411
E-mail: jony@ci.yelm.wa.us
Address: P.O. Box 479, Yelm, WA 98597-4079
Class: A
Uses: Irrigation at schools, park ponds, wetlands, ground water recharge, energy generation.
Capacity: 1.0 MGD (maximum month), 2.50 MGD (peak)
Treatment system: Collection system = septic tank effluent pressure, activated sludge: sequencing batch reactor
Coagulation: In-line mixer w/poly aluminum chloride
Filtration system: Upflow sand media (Dynasand)
Disinfection system: Chlorine