ORWEF
Oregon Water
Education Foundation

Water Environment School 2015

Laboratory Operations & Maintenance

39th Annual

Biosolids Management Supervision and Leadership Collections Source Control

Technology and Asset Management Stormwater

Wastewater Basics Safety and Health

March 24-26

ORWEF
Vendor Display

Clackamas Community College

Oregon Water Education Foundation

Session Descriptions

Thank you Water Environment School Committee

Chair: Ken Black *Registration:* Anya Relleve

Treasurers: Pam Flynn & Claire Houston

Operations & Maintenance
Craig Prosser, Mark Walter

Stormwater
Jeannie Andersen, Luke Bushman, John Nagy

Source Control
Kathy Caldwell, Diana Lindoff, Andria Swann, Matt Young

Safety & Health
Judy West

Collections
Mike Bergeron, Paul Eckley

Laboratory
Kristen Thomas, Keith Chapman

Basics
Kay Hust, Monica Ullrich

Technology
Tony Bisson, Erin Duffy

Biosolids
Brian Hemphill

Vendor Display
Ken Black

Please give us your feedback on the 2015 Water Environment School at
https://adobeformscentral.com/?f=jwBfeqKwYTRYV8cDibSjVQ
If you'd like this link emailed to you, include your email address on your CEU Card.
Thank you so much for taking the time to complete the survey!

Lunch Menu

Tuesday	Wednesday	Thursday
BBQ Pulled Pork Sandwich Grilled Sausage BBQ Baked Beans Coleslaw Potato Salad Chips Assorted Cobblers Soda Service Vegetarian Option available by asking in the cafeteria	Meat Lasagna Creamy Vegetarian Lasagna Tossed Green Salad w/ dressing Green Beans Garlic Parmesan Bread Sticks Brownies Soda Service Vegetarian Option available by asking in the cafeteria	Turkey Garlic Mashed Potatoes w/ Gravy Sweet Corn Stuffing Tossed Green Salad w/ Dressing Dinner Roll w/ Butter Chips Assorted Cookies Vegetarian Option available by asking in the cafeteria

2015 Vendor's Display

This year's vendor's display will be on
Wednesday, March 25, 2015 in Randall Gymnasium.

Vendor's Day Raffle
Rules and Procedures

- Check the number on your name badge. This number corresponds with a number that has been put into a raffle jar that is located with the vendor coordinator.
- Beginning around 10 AM on vendor's day, a few prizes to be awarded are selected per hour.
- A number is selected from the raffle jar. The number is taped number to the item, and written down on the wall behind the raffle items. People are invited to check throughout the day to see if they have won anything.
- Prizes may be claimed any time before 2:50 pm at the vendor's display.
- The items selected and awarded throughout the day <u>are not</u> the largest or most valuable items.
- All items will have been awarded by the end of the afternoon break – 2:50 to 3:10 PM
- From 2:50 to 3:00 PM all of the remaining items except for the few very most valuable ones will be selected.
- *ANY selected prize that has not been claimed by **3:00 PM** will be recycled into the raffle pool.*
- *<u>Prizes not claimed by 2:50 pm are forfeited and raffled off to a new number from the jar. Numbers already drawn are not recycled into the raffle.</u>*
- From 2:50 to 3:05 pm **<u>all</u>** remaining items, including the most valuable, will be raffled off.
- The raffle will be completed by 3:05 to give enough time to get to the last class.
- Prize claimants must be present to win.
- If for some reason you have won a prize that is too big to carry with you, WES committee members will take it to the registration desk and hold it for you until after the last class.

Municipalities or other employers have varying standards for gifts that can be accepted at events like this, however the raffle items are purchased by ORWEF, and no particular prize could be attributed to any particular vendor. Anyone who claims a prize is responsible for determining if they are in compliance with their employer's policy, and anyone who claims a prize is responsible for any tax implications.

Please plan to visit & participate in the raffle!

Tuesday, March 24

Session	OPERATIONS & MAINTENANCE McLoughlin Auditorium	SOURCE CONTROL Pauling 101	COLLECTION SYSTEMS Gregory Forum A	WASTEWATER BASICS Pauling 103
7:00 – 8:00	**REGISTRATION, COMMUNITY CENTER**			
8:00	**OPENING CEREMONY**			
1 8:35	*Keynote Speaker:* **A Career In Water Quality** -- *J. Michael Read*			
9:45	**MORNING BREAK — COFFEE, TEA, ETC. DONUTS/BAGELS/FRUIT – Comm. Center**			
2 10:10	**Optimizing Biological Phosphorus Removal Stability Through Online Instrumentation and Controls** *Adrienne Menniti* *Clean Water Services*	*No Session*	**Asset Management** *Richard Ludlow* *Oak Lodge Sanitation Dist.*	**U.V. Disinfection** *Bill Reilly* *Wm. H. Reilly & Co*
3 11:10	**Top Ten List for Arc Flash and Electrical Safety – Protect Personnel and Comply with Mandates** *Gary P. Larkins*	*No Session*	**Asset Management** *Barry Buchanan, P.E.* *Keller Associates Inc.*	**Operator Certification** *Mark Ingman* *DEQ*
12::00-1:00	**LUNCH for Attendees – CAFETERIA**			
4 1:00	**How to Read P&ID Drawings** *Joel Borchers* *Clean Water Services*	*No Session*	**Root Foaming** *Justin Fearn* *Root Tamers*	**DEQ Inspections and Compliance** *Tiffany Yelton Bram* *DEQ*
5 2:00	**Maintenance and Operation of Mechanical Seals** *Bruce Johnson* *AEFSeal Inc.*	*No Session*	**Air Pipe Plug Safety** *Jared Williams* *Allwest Underground, Inc.*	**Nitrification and Trickling Filters** *Pat Curran P.E.* *Curran-McLeod Inc.*
2:50 – 3:10	**AFTERNOON BREAK – Cafeteria**			
6 3:10	**Developing Equipment Hierarchy** *Rich Ludlow* *Oak Lodge Sanitary District*	*No Session*	**Managing Your Grease Producers** *Rick Allen* *BioLynceus*	**Nitrification and Trickling Filters** *Pat Curran P.E.* *Curran-McLeod Inc.*
7 4:10	**Lubrication Monitoring to Improve Reliability** *Dale Hodge* *Hydacusa*	*No Session*	**Managing Your Grease Producers** *Rick Allen* *BioLynceus*	**Introduction to Master Planning** *Pat Curran P.E.* *Curran-McLeod Inc.*

Session	BIOSOLIDS MGMT P102	STORMWATER Gregory Forum B & C	SAFETY & HEALTH P132	LABORATORY PRACTICES P131	TECHNOLOGY and ASSET MGMT P164
7:00 – 8:00	**REGISTRATION, COMMUNITY CENTER**				
8:00	**OPENING CEREMONY**				
1 8:35	*Keynote Speaker:* **A Career In Water Quality** -- *J. Michael Read~Oak Lodge Sanitary District*				
9:45	**MORNING BREAK — COFFEE, TEA, ETC. DONUTS/BAGELS/FRUIT – Community Center**				
2 10:10	**Biosolids Jeopardy** *Dave Arguello Clean Water Services*	**The Buried Creeks, Gulches and Lakes of Old Portland** *Part 1 Tracy Prince, PhD PSU*	**Nutritional Health and Wellness** *Sam Rader Proactive Injury Prevention Inc.*	**Water Quality Lab Analysts Section Meeting** *Kristen Thomas*	**Optimization at Wastewater Treatment Plants** *Michael Re Ch2MHill*
3 11:10	**Biosolids Regulatory Issues** *Ron Doughten DEQ*	**The Buried Creeks, Gulches and Lakes of Old Portland** *Part 2*	**Nutritional Health and Wellness** *Continued*	**Sustainability at Widmer Brothers Brewing Company** *Julia Person Widmer Brothers Brewing*	**Operators – The Front Line for Your Asset Management Strategy** *Juston Manville HDR*
12::00-1:00	**LUNCH for Attendees – CAFETERIA**				
4 1:00	**Site Authorizations and Soils/NCRS** *Paul Kennedy DEQ*	**Construction Stormwater Management: Effectiveness, Compliance, and Inspection** *James Stupfel Jason Kelly*	**Ergonomics in an Hour** *Linda Pressnell Oregon OSHA*	**Basics of Polymer Chain Reaction (PCR) Analysis** *James T. Nurmi Clackamas Community College Suzanne DeLorenzo Clackamas River Water*	**Asset Management at the City of Oregon City – Water Infrastructure / Associating Work to Assets** *Michael Pooschke City of Oregon City*
5 2:00	**Biosolids Management Plans** *Paul Kennedy DEQ*	**Clean Water For Salmon** *Anna Huttel Salmon Safe*	**You've Identified the Hazards, Now What Do You Do?** *Tim McDonald SAIF Corporation*	**PCR Laboratory Tour and Demonstration** *James T. Nurmi Clackamas Community College Suzanne DeLorenzo Clackamas River Water*	**ORWARN – Update** *Chris Wanner*
2:50 – 3:10	**AFTERNOON BREAK – Cafeteria**				
6 3:10	**Clean Water Services Biosolids Program** *Dave Arguello Clean Water Services*	**Willamette River Algae Blooms** *Aaron Borisenko ODEQ Rebecca Hillwig OHA*	**You've Identified the Hazards, Now What Do You Do?** *Continued*	**Fundamentals of Electrochemistry: pH** *Mark McElroy Thermo Orion Company*	**Cybersecurity and Your SCADA System** *Chris Wanner*
7 4:10	**Biosolids: Working With Farmers** *Eric Thwaites Triveca Transport Dave Arguello CWS Dennis O'Neill Sustainable AG Consulting*	*No Session*	**You've Identified the Hazards, Now What Do You Do?** *Continued*	**Enzyme-based Nitrate Analysis** *Brady Miller Astoria-Pacific Company*	**Treatment for Reuse – Differences in Standards Around the Country** *Lee O'Dell CH2M Hill*

Wednesday, March 25

Session	OPERATIONS & MAINTENANCE McLoughlin Auditorium	SOURCE CONTROL Pauling 101	COLLECTION SYSTEMS Gregory Forum A	WASTEWATER BASICS Pauling 131
8 8:00	**Preparing a Hauled Waste Plan** *ACWA & DEQ*	**Dental Regulations** *Curtis Barton* *Clackamas County Water Environment Services*	**Field Operations--the Critical Component of Quality Data Collection** *Al Rossmeisl* *Infrastructure Technologies*	**Basic Activated Sludge** *Rick Kelly, P.E.* *Brown & Caldwell*
9 9:00	*Vendor's Display* *Randall Gymnasium*	*Vendor's Display* *Randall Gymnasium*	**Integration of Collected Data Into CMMS** *Al Rossmeisl—* *Infrastructure Technologies*	**Basic Activated Sludge** *Rick Kelly, P.E.* *Brown & Caldwell*
9:45	**MORNING BREAK — COFFEE, TEA, ETC. DONUTS/BAGELS/FRUIT – Comm. Center**			
10 10:10	**Telemetry Systems** *Carl Serpa* *Portland Engineering*	**Community Based Pretreatment Program** *Clayton Brown* *Clean Water Services*	*Vendor's Display* *Randall Gymnasium*	**Basic Activated Sludge** *Rick Kelly, P.E.* *Brown & Caldwell*
11 11:10	**Aeration Systems** *Ken Black* *Beaver Equipment* *Umer Serdar* *Xylem- Sanitaire*	**Hazardous Waste Basics** *Dave Kunz* *Department of Environmental Quality*	**GHS/Haz-com** *Don Fleck*	*Vendor's Display* *Randall Gymnasium*
12::00-1:00	**LUNCH for Attendees – CAFETERIA**			
12 1:00	**State Point Analysis to Forecast Clarifier Performance (part 1 of 2)** *Rick Kelly* *Brown & Caldwell*	**Industrial Sampling Techniques** *Jeremy Bartleson* *Veolia Water/Gresham*	**New Confined Space Standards Overview** *Greg McDonald* *Public Works Supply*	**Job Searches, Applications and Resumes** *Monica Ullrich* *Oak Lodge Sanitary District*
13 2:00	**State Point Analysis to Forecast Clarifier Performance (part 2 of 2)** *Rick Kelly* *Brown & Caldwell*	**Update and Guidance on the Reasonable Potential Analysis (RPA)** *Spencer Bohaboy* *Department of Environmental Quality*	**Confined Space Equipment Proper Use and Inspection** *Greg McDonald* *Public Works Supply*	**Interviewing Tips and Techniques** *Monica Ullrich* *Oak Lodge Sanitary District*
2:50 – 3:10	**AFTERNOON BREAK – Cafeteria**			
14 3:10	**Chemical Removal of Phosphorus Using Actiflo at Rock Creek AWWTF** *Chris Maher* *Clean Water Services*	**The Unexpected Results of a Portland pH Investigation** *Eric DeBerry* *City of Portland*	**Pipeline Assessment Certification Program Overview** *Marilyn Shepard* *Nassco Master Trainer*	**Centrifugal Pump Basics** *Joe Evans* *Pump Tech Northwest*
15 4:10	**Odor Control Technology Overview** *Ken Galardi, PE* *CH2MHIll*	**Inspection Basics** *Andria Swann* *Clark Regional Wastewater District*	**Pipeline Assessment Certification Program Overview** *Continued*	**Centrifugal Pump Basics** *Joe Evans* *Pump Tech Northwest*

Session	BIOSOLIDS MGMT P102	STORMWATER Gregory Forum B & C	SAFETY & HEALTH Pauling 132	LABORATORY PRACTICES P131	TECHNOLOGY and ASSET MGMT Pauling 164
8 8:00	**Biosolids Program Considerations** *Ryan Carney* *Kennedy Jenks*	**Pervious Concrete Pavement Design and Implementation** *Diane Warner PE* *Northwest Region of the Portland Cement Association*	**Key Elements of Comprehensive Safety Program** *Eric Fullan* *City of Hillsboro*	**Workshop on Building Your Own Laboratory Quality Manual** *Scott Hoatson* *Oregon DEQ*	**Totally Integrated Automation** *Nathan Schiavo* *WESCO*
9 9:00	**The Cannibal System at Oak Lodge Sanitary District** *Mark Walter* *OLSD*	**Willamette Falls Legacy Project** *Dave Elkin* *Metro*	**Key Elements of Comprehensive Safety Program** *Continued*		**Secure Network And Be Internet Accessible?** *Nathan Schiavo* *WESCO*
9:45	**MORNING BREAK — COFFEE, TEA, ETC. DONUTS/BAGELS/FRUIT – Comm. Center**				
10 10:10	**Am I Running Dirty?** *Kelly Brown* *BDP*	**Surface Water Green Infrastructure Research Facility** *Meghna Babbar-Sebens, PhD* *Oregon State University*	**Safety Committee Success Secrets** *Steve Geigle* *CSHM* *Geigle Safety Group, Inc.*	**Workshop on Building Your Own Laboratory Quality Manual** *Continued*	**Screw Press Dewatering Technology - Operation, Maintenance & Life Cycle Advantages** *Trent Bohman* *FKC, Co., Ltd.*
11 11:10	**Autothermal Aerobic Digestion** *Tim Munro* *City of McMinnville*	**City of Eugene Polk Street Water Quality Vault** *Doug Singer, PE*	**Safety Committee Success Secrets** *Continued*		**Ice Pigging** *John Kitchens* *Water System Consultant* *Utility Service Group*
12::00- 1:00	**LUNCH for Attendees – CAFETERIA**				
12 1:00	*Vendor's Display* *Randall Gymnasium*	*Vendor's Display* *Randall Gymnasium*	**Electrical Safety Facts and Myths** *Roger Blank,* *CUSP—Pacific Power*	**Workshop on Building Your Own Laboratory Quality Manual** *Continued*	**H2S Managing Odors and Reducing Corrosion** *Rick Allen* *BioLynceus*
13 2:00	**How to Tell Your Biosolids Story (Dealing with the Media)** *Sheri Wantland* *Clean Water Services*	**Preparing For Climate Change** *Alice Brawley-Chesworth, PE* *BES*	*Vendor's Display* *Randall Gymnasium*		*Vendor's Display* *Randall Gymnasium*
2:50 – 3:10	**AFTERNOON BREAK – Cafeteria**				
14 3:10	**Biogas Utilization Technology Experiences at CBWTP** *TBD* *City of Portland BES*	**Portland Green Infrastructure 1989-2015: Lessons Learned** *Tom Liptan* *Retired– BES*	**Fall Protection Formal Equipment Inspection: Requirements and Best Practices** *Jim Johnson* *D2000 Safety, Inc.*	**Workshop on Building Your Own Laboratory Quality Manual** *Continued*	*No Session*
15 4:10	**Fundamentals of Anaerobic Digester Mixing** *Brian Hemphill* *Hemphill Water Engineering*	*No Session*	**Fall Protection Formal Equipment Inspection: Requirements and Best Practices** *Continued*		*No Session*

Thursday, March 26

Session	OPERATIONS & MAINTENANCE McLoughlin Auditorium	SOURCE CONTROL Pauling 101	COLLECTION SYSTEMS Gregory Forum A	WASTEWATER BASICS Pauling 103
16 8:00	**Strategic Energy Management - Oregon Energy Trust** *Kati Harper* *Project Manager*	**Midnight Dumper: Case Study Involving Illegal Discharges to POTWs** *Josh Allen* *EPA Special Agent—Seattle*	**Work Zone Traffic Safety** *Bill Kolzow* *T2*	**PLCs for Dummies** *Jeff Kanyuch* *CH2M Hill* *Tim Scott* *SCWWTP*
17 9:00	**Nutrient Recovery** *Brett Laney* *Clean Water Services*	**A Successful FOG Program** *Paul Kramer* *City of Gresham*	**Work Zone Traffic Safety** *Continued*	**PLCs for Dummies** *Jeff Kanyuch* *CH2M Hill* *Tim Scott* *SCWWTP*
9:45	MORNING BREAK — COFFEE, TEA, ETC. DONUTS/BAGELS/FRUIT – Community Center			
18 10:10	**Pump Stations** *Jared Stensland* *Xylem Flygt*	**Ready a Lab Report or What we Need – What you Need** *Kent Patten* *Apex Laboratories*	**Work Zone Traffic Safety** *Continued*	**PLCs for Dummies** *Jeff Kanyuch* *CH2M Hill* *Tim Scott* *SCWWTP*
19 11:10	**Continuous Improvement** *Doug Smyres* *City of Salem – PNCWA*	**Public Outreach** *Sheri Wantland* *Clean Water Services*	**Work Zone Traffic Safety** *Continued*	**PLCs for Dummies** *Jeff Kanyuch* *CH2M Hill* *Tim Scott* *SCWWTP*
12::00- 1:00	LUNCH for Attendees – CAFETERIA			
20 1:00	**Lessons Learned: 35 Years of Optimizing Coupled Treatment Processes** *Dan Hanthorn*	**Pretreatment 101** *Kathy Caldwell* *Clean Water Services*	**Lateral Launch Technology and Cross Bore Dangers** *Avery Wilson* *Cues Northwest*	**PLCs for Dummies** *Jeff Kanyuch* *CH2M Hill* *Tim Scott* *SCWWTP*
21 2:00	**Lessons learned: 35 Years of Optimizing Coupled Treatment Processes** *Continued*	**Waterlife (Film) Part I** *Joint Session w/Stormwater in Gregory Forum B&C*	**Oregon Utility Notification Council** *Tobin Werner* *Bryan Baxter*	**PLCs for Dummies** *Jeff Kanyuch* *CH2M Hill* *Tim Scott* *SCWWTP*
2:50 – 3:10	AFTERNOON BREAK – Cafeteria			
22 3:10	**Operations Forum** *Mark Walter* *Oak Lodge Sanitary District*	**Waterlife (Film) Part II**	**Rapid Acoustic Testing for Sewer and Stormwater Pipelines** *Michelle Beason* *National Plant Services*	**PLCs for Dummies** *Jeff Kanyuch* *CH2M Hill* *Tim Scott* *SCWWTP*
23 4:10	*No Session*	*No Session*	**Lateral Lining** *Michelle Beason* *National Plant Services*	**PLCs for Dummies** *Jeff Kanyuch* *CH2M Hill* *Tim Scott* *SCWWTP*

Session	BIOSOLIDS MGMT P102	STORMWATER Gregory Forum B & C	SAFETY & HEALTH Pauling 132	LABORATORY PRACTICES Pauling 131	TECHNOLOGY and ASSET MGMT Pauling 164
16 8:00	**2013 Lagoon Biosolids Removal Project in Troutdale, Oregon** *Bill Fasth* *Brown & Caldwell*	**Expo Center Stormwater Wall** *Mike Faha* *Greenworks* *Amy Chomowicz* *City of Portland* *Dave Elkin* *Metro*	**Job Hazard Analysis: The Who, What, When, Where, Why and Especially How!** *Craig Hamelundm* *Oregon OSHA*	**BOD Trouble-Shooting** *Panel*	**On-site Treatment Technologies for Total Nitrogen Removal** *Dale Richwine* *Richwine Environmental*
17 9:00	**Agronomic Rate Calculations** *Dan Sullivan* *Oregon State University*	**How Does the Proposed Rule for Determining "Waters of the U.S." Impact Wastewater Treatment and Stormwater Management Utilities?** *Jerry Linder* *Clean Water Services*	**Job Hazard Analysis: The Who, What, When, Where, Why and Especially How!** *Continued*	**Laboratory Skill Training Videos** *Keith Chapman* *Oregon Environmental Laboratory Association*	**Peracetic Acid Full Scale Pilot at the Tri-City WPCP** *Mike Trent* *Water Environment Services* *Dale Richwine* *Richwine Env.*
9:45	MORNING BREAK — COFFEE, TEA, ETC. DONUTS/BAGELS/FRUIT – Community Center				
18 10:10	**Nutrient Management** *Dan Sullivan* *Oregon State University*	**Luther Road Restoration** *Joe Richards* *BES*	**Confined Space Code Revision Overview** *Mark Maguire* *Eugene Water & Electric Board*	**Ethical Dilemmas for the Laboratory** *Keith Chapman* *OELA*	**What's the Status of Your Assets? Use Repeatable Condition Assessment to Track Changes Over Time** *Dale Jutila* *CH2M Hill*
19 11:10	**Increasing Digestion Capacity at the Tri-City WWTP** *Dale Richwine* *Richwine Environmental*	**The Problem Is Complicated But the Solutions Don't Have To Be: Salem's Hydromodification Assessment** *Marjorie Wolfe P.E.* *Wolf Water Resources* *Keith Bondaug–Winn* *City of Salem*	**Confined Space Code Revision Overview** *Continued*	*No Session*	**BNR Alternative Processes and Emerging Technologies** *Jeff Coyne* *Project Engineer* *MWH Global*
12::00-1:00	LUNCH for Attendees – CAFETERIA				
20 1:00	**Regulatory Issues for Recycled Water Programs** *Ron Doughten* *DEQ*	**Endangered Species and Water Quality Considerations Associated With Constructing the Portland-Milwaukie Light Rail Transit Project** *Dave Unsworth* *TriMet Capital Projects*	**Workplace Violence and Street Smarts What You Need to Know Part 1** *John Posey, CPP* *Corporate Security Services, Inc.*	*No Session*	*No Session*
21 2:00	**Recycled Water Program Considerations** *Chris Stoll* *Kennedy Jenks*	**WATERLIFE Part I** *Film - **Joint Session*** ***w/Source Control In Gregory Forum B&C***		*No Session*	*No Session*
2:50 – 3:10	AFTERNOON BREAK – Cafeteria				
22 3:10	**Recycled Water Program at Clean Water Services** *Jared Kinnear* *Clean Water Svcs*	**WATERLIFE Part II**	**Workplace Violence and Street Smarts Techniques and Countermeasures for Personal Safety--Part 2** *John Posey* *CPP Corporate Security Services, Inc.*	*No Session*	*No Session*
23 4:10	**Wrap Up** *Brian Hemphill* *Hemphill Water Engineering*	*No Session*		*No Session*	*No Session*

Keynote Speaker

Tuesday, March 24 8:35 AM Randall Gymnasium

A Career In Water Quality

J. Michael Read

J. Michael Read began his water quality career in 1972 as a laborer at the East Side Wastewater Treatment Plant in Oswego New York as a temporary job between his sophomore and juniors in college.

Now 43 years later, he is looking to retire in 2016.

His career brought him to Oregon from New York and included great leadership positions with the City of Portland, Clackamas County, HDR Engineering, and Oak Lodge Sanitary District. Along the way, he was honored to serve on the boards of the National Association of Clean Water Agencies, the Oregon Association of Clean Water Agencies, the Pacific Northwest Clean Water Association, and the Water Environment Federation where he served as President in 2005 – 2006.

Michael will present highlights of his career with the intention of honoring the water quality industry and the dedicated environmental professionals who do so many great things every day for the water environment.

Tuesday, March 24, 2015		
#2	10:10	**Optimizing Biological Phosphorus Removal Stability Through Online Instrumentation and Controls** *Adrienne Menniti~Clean Water Services* The Durham Advanced WWTF relies on enhanced biological phosphorus removal (EBPR) and has installed several online instruments to help troubleshoot and optimize the EBPR process. This presentation will provide an overview of instrument performance and review the insights gained on the causes of instability of the EBPR process.
#3	11:10	**Top Ten List for Arc Flash and Electrical Safety – Protect Personnel and Comply with Mandates** *Gary P. Larkins* Electrical shock is the seventh leading cause of industrial fatalities and, according to industry statistics, electrical arc flash incidents occur between five and ten times a day. With a near-death experience, the presenter knows first-hand the dangers of electricity and his mission is to help protect personnel from electrical hazards. Join us to hear Gary's "Top Ten List for Electrical Safety" which is compiled from extensive field experience and experience in providing electrical safety training and safety program development to wide variety of organizations.
#4	1:00	**How to Read P&ID Drawings** *Joel Borchers~Clean Water Services* What P&IDs are,How are they used, and who uses P&IDs. Design drawing title blocks, Instrumentation and Control Legends, layout and process flow in a P&ID. We'll trace out a P&ID. We'll discuss how Control Loop Descriptions can complement P&IDs and what makes up a good Control Loop Description
#5	2:00	**Maintenance and Operation of Mechanical Seals** *Bruce Johnson~AEFSeal Inc.* The application, installation, operation and maintenance of mechanical seals.
#6	3:10	**Developing Equipment Hierarchy** *Rich Ludlow~Oak Lodge Sanitary District* Review methods for creating an asset hierarchy in order to optimize preventive maintenance and asset management.
#7	4:10	**Lubrication Monitoring to Improve Reliability** *Dale Hodge~Hydacusa*
Wednesday, March 25, 2015		
#8	8:00	**Preparing a Hauled Waste Plan** *ACWA & DEQ* Oregon DEQ is requiring facilities that accept hauled waste at the headworks to develop a Hauled Waste Plan to ensure additional wastes do not cause water quality or employee health and safety problems. Accepting appropriate amounts of hauled waste has financial benefits for utilities, when properly approached. Attend this session to learn more about what DEQ requires in a Hauled Waste Plan, and about available resources for completing one.
#9	9:00	***VENDOR'S DISPLAY—Randall Gymnasium***
#10	10:10	**Telemetry Systems** *Carl Serpa~Portland Engineering* Telemetry applications in wastewater systems and an update to the ever changing technology used to monitor and control remote systems.
#11	11:10	**Aeration Systems** *Ken Black~Beaver Equipment & Umer Serdar~Xylem- Sanitaire* Various uses and applications of aeration systems used for treatment processes.

#12	1:00	**State Point Analysis To Forecast Clarifier Performance (part 1 of 2)** *Rick Kelly~Brown & Caldwell* Using State Point Analysis to maximize Secondary Clarifier performance.
#13	2:00	**State Point Analysis to forecast clarifier performance (part 2 of 2)** *Rick Kelly~Brown & Caldwell*
#14	3:10	**Chemical Removal of Phosphorus Using Actiflo at Rock Creek AWWTF** *Chris Maher~Clean Water Services* Recent start up performance and fundamentals of chemical phosphorus removal.
#15	4:10	**Odor Control Technology Overview** *Ken Galardi, PE~CH2MHIll* Presentation will cover various odor control options available for wastewater treatment systems.
Thursday, March 26, 2015		
#16	8:00	**Strategic Energy Management – Oregon Energy Trust** *Kati Harper~Project Manager* Overview of options for Strategic Energy Management at WWTPS
#17	9:00	**Nutrient Recovery** *Brett Laney~Clean Water Services* Review of nutrient recovery efforts related to the OSTARA systems operating at Rock Creek and Durham AWWTFs.
#18	10:10	**Pump Stations** *Jared Stensland~Xylem Flygt* Bypass pumping and backup pump systems.
#19	11:10	**Continuous Improvement** *Doug Smyres~City of Salem* Cross functional teams made up of front line employees to solve problems identified through employee recommendations and suggestions.
#20	1:00	**Lessons Learned: 35 years of Optimizing Coupled Treatment Processes** *Dan Hanthorn* Overview of the advantages and disadvantages of operating coupled treatment systems.
21	2:00	**Lessons Learned: 35 years of Optimizing Coupled Treatment Processes** *Continued*
#22	3:10	**Operations Forum** *Mark Walter~Oak Lodge Sanitary District* Group discussion on current challenges facing Operations and Maintenance Staff. Facilitator will work with audience to develop list of issues and facilitator will lead group through collective problem solving. These issues will also be the basis for future training opportunities.
#23	4:10	*No Session*

Tuesday , March 24, 2015 —*No Sessions*		
Wednesday, March 25, 2015		
#8	8:00	**Dental Regulations** *Curtis Barton~Clackamas County Water Environment Services* Update on the Dental Regulations and how they will impact all communities and also Mercury Reduction Plans.
#9	9 :00	***VENDOR'S DISPLAY—Randall Gymnasium***
#10	10:10	**Community Based Pretreatment Program** *Clayton Brown~Clean Water Services* What's involved in the Community Based Pretreatment Programs and who will need them.
#11	11:10	**Hazardous Waste Basics** *Dave Kunz~Department of Environmental Quality* Basics of Hazardous Waste Regulation and the nuts and bolts of hazardous waste management.
#12	1:00	**Industrial Sampling Techniques** *Jeremy Bartleson~Veolia Water/Gresham* Your opportunity to get some tips, techniques and ask questions regarding industrial sampling.
#13	2:00	**Update and Guidance on the Reasonable Potential Analysis (RPA)** *Spencer Bohaboy~Department of Environmental Quality* Have questions regarding the RPA? Have there been any updates or changes? This is your opportunity to find out and get guidance in preparing your RPA.
#14	3:10	**The Unexpected Results of a Portland pH Investigation** *Eric DeBerry~City of Portland* This presentation details a low pH investigation in Portland that revealed a little known fact that should be important for anyone in Pretreatment (or who works in the collection system).
#15	4:10	**Inspection Basics** *Andria Swann~Clark Regional Wastewater District* If you have done many inspections, this is your session. Learn about the types of inspections and the general steps involved in an inspection along with some "how would you handle this situation".
Thursday, March 26, 2015		
#16	8:00	**Midnight Dumper: Case Study Involving Illegal Discharges to POTWs** *Josh Allen~EPA Special Agent—Seattle* Focus is on a recent case in the State of Washington involving the illegal disposal of industrial wastes and septage via an illicit connection to municipal sewage lines and infrastructure. The talk will address why such discharges are significant to POTW operators, regulators and taxpayers as well as touch on related legal issues.
#17	9:00	**A Successful FOG Program** *Paul Kramer~City of Gresham* Learn why we think teamwork and our Sewer Code ensures that we have a successful FOG Program.
#18	10:10	**Ready a Lab Report or What We Need – What You Need** *Kent Patten~Apex Laboratories* Learn about new technology for reporting sample analysis. Also, what does the lab really need from us, and what do we want from the lab?
#19	11:10	**Public Outreach** *Sheri Wantland~Clean Water Services* Established and successful tactics for gaining public involvement in planning and decision-making processes at your municipality.
#20	1:00	**Pretreatment 101** *Kathy Caldwell~Clean Water Services* Does your municipality need to set-up a Pretreatment Program? Come learn how it's done!

#21	2:00	**Waterlife (Film) Part I** *Joint Session w/Stormwater in Gregory Forum B&C* WATERLIFE follows the epic cascade of the Great Lakes to the Atlantic Ocean. From the icy cliffs of Lake Superior to the ornate fountains of Chicago to the sewers of Windsor, this feature-length documentary tells the story of the last huge supply (20 per cent) of fresh water on Earth. The source of drinking water, fish and emotional sustenance for 35 million people, the Great Lakes are under assault by toxins, sewage, invasive species, dropping water levels and profound apathy. Some scientists believe the lakes are on the verge of ecological collapse.
#22	3:10	**Waterlife (Film) Part II**
#23	4:10	*No Session*

Tuesday , March 24, 2015		
#2	10:10	**Asset Management** *Richard Ludlow~Oak Lodge Sanitation District* Assigning criticality to the collection system assets What do we know? How can we develop a scoring matrix?
#3	11:10	**Asset Management** *Berry Buchanan~Keller Associates Inc*
#4	1:00	**Root Foaming** *Justin Fearn~Root Tamers* Root Foaming in the collection system.
#5	2:00	**Air Pipe Plug Safety** *Jared Williams~Allwest Underground, Inc.* Safety in choosing and setting pipe plugs.
#6	3:10	**Managing Your Grease Producers** *Rick Allen~BioLynceus* Sewer system maintenance.
#7	4:10	**Managing Your Grease Producers** *Rick Allen~BioLynceus* Sewer system maintenance.
Wednesday, March 25, 2015		
#8	8:00	**Field Operations: The Critical Component of Quality Data Collection** *Al Rossmeisl~Infrastructure Technologies*
#9	9:00	**Integration of Collected Data Into CMMS** *Al Rossmeisl~Infrastructure Technologies*
#10	10:10	***VENDOR'S DISPLAY—Randall Gymnasium***
#11	11:10	**Topic: GHS/Haz-com** *Don Fleck* Safety.
#12	1:00	**New Confined Space Standards Overview** *Greg McDonald~Public Works Supply* The new OSHA Standard is out and some changes have been made that may affect your work place.
#13	2:00	**Confined Space Equipment Proper Use and Inspection** *Greg McDonald~Public Works Supply*
#14	3:10	**Pipeline Assessment Certification Program Overview** *Marilyn Shepard~Nassco Master Trainer* Manage TV inspection codes to create comprehensive and reliable data used in prioritization, planning and renovation of the waste water systems.
#15	4:10	**Pipeline Assessment Certification Program Overview** *Continued*
Thursday, March 26, 2015		
#16	8:00	**Work Zone Traffic Safety** *Bill Kolzow~T2* Safe traffic control in the work zone.
#17	9:00	**Work Zone Traffic Safety** *Continued*
#18	10:10	**Work Zone Traffic Safety** *Continued*
#19	11:10	**Work Zone Traffic Safety** *Continued*

Collection Systems

#20	1:00	**Lateral Launch Technology and Cross Bore Dangers** *Avery Wilson~Cues Northwest*
#21	2:00	**Oregon Utility Notification Council** *Tobin Werner/Bryan Baxter* Utility locating in the collection system.
#22	3:10	**Rapid Acoustic Testing for Sewer and Stormwater Pipelines** *Michelle Beason~National Plant Services* The benefits of utilizing acoustic inspection technology.
#23	4:10	**Lateral Lining** *Michelle Beason~National Plant Services* How to, when and why.

Tuesday, March 24, 2015		
#2	10:10	**U.V. Disinfection** *Bill Reilly~Wm. H. Reilly & Co.*
#3	11:10	**Operator Certification** *Mark Ingman~DEQ Certification Coordinator*
#4	1:00	**DEQ Inspections and Compliance** *Tiffany Yelton Bram~DEQ Source Control Manager*
#5	2:00	**Nitrification and Trickling Filters** *Pat Curran P.E.~Curran-McLeod Inc.* 1. Exploring and testing the mechanisms for nitrification. 2. Presentation of data collection and analysis. 3. Identification of the field conditions and economics of the options.
#6	3:10	**Nitrification and Trickling Filters** *Pat Curran P.E. ~Curran-McLeod Inc.* 1. Selection of the optimum arrangement. 2. Design and orientation of the facility. 3. Costs and results.
#7	4:10	**Introduction to Master Planning** *Pat Curran P.E. ~Curran-McLeod Inc.*
Wednesday, March 25, 2015		
#8	8:00	**Basic Activated Sludge** *Rick Kelly, P.E. ~ Brown & Caldwell*
#9	9 :00	**Basic Activated Sludge** *Rick Kelly, P.E.~Brown & Caldwell*
#10	10:10	**Basic Activated Sludge** *Rick Kelly, P.E. ~ Brown & Caldwell*
#11	11:10	***VENDOR'S DISPLAY—Randall Gymnasium***
#12	1:00	**Job Searches, Applications and Resumes** *Monica Ullrich~Oak Lodge Sanitary District*
#13	2:00	**Interviewing Tips and Techniques** *Monica Ullrich~Oak Lodge Sanitary District*
#14	**3:10**	**Centrifugal Pump Basics** *Joe Evans~Pump Tech Northwest*
#15	**4:10**	**Centrifugal Pump Basics** *Joe Evans~Pump Tech Northwest*
Thursday, March 26, 2015		
#16	**8:00**	**PLCs for Dummies**~*Jeff Kanyuch~CH2M Hill & Tim Scott~SCWWTP*
#17	**9:00**	**PLCs for Dummies**~*Jeff Kanyuch~CH2M Hill & Tim Scott~SCWWTP*
#18	**10:10**	**PLCs for Dummies**~*Jeff Kanyuch~CH2M Hill & Tim Scott~SCWWTP*
#19	**11:10**	**PLCs for Dummies**~*Jeff Kanyuch~CH2M Hill & Tim Scott~SCWWTP*
#20	**1:00**	**PLCs for Dummies**~*Jeff Kanyuch~CH2M Hill & Tim Scott~SCWWTP*
#21	**2:00**	**PLCs for Dummies**~*Jeff Kanyuch~CH2M Hill & Tim Scott~SCWWTP*
#22	**3:10**	**PLCs for Dummies**~*Jeff Kanyuch~CH2M Hill & Tim Scott~SCWWTP*
#23	**4:10**	**PLCs for Dummies**~*Jeff Kanyuch~CH2M Hill & Tim Scott~SCWWTP*

Tuesday, March 24, 2015		
#2	10:10	**Biosolids Jeopardy** *Dave Arguello~Clean Water Services* An entertaining learning experience on the fundamentals of biosolids management.
#3	11:10	**Biosolids Regulatory Issues** *Ron Doughten~DEQ* Federal and state rules and regulations relating to biosolids management.
#4	1:00	**Site Authorizations and Soils/NCRS** *Paul Kennedy~DEQ* Developing site authorizations employing the NCRS soils mapping tools.
#5	2:00	**Biosolids Management Plans** *Paul Kennedy~DEQ* Basics of developing and submitting biosolids management plans to meet regulatory requirements.
#6	3:10	**Clean Water Services Biosolids Program** *Dave Arguello~Clean Water Services* A description of the successful biosolids management program operated by Clean Water Services.
#7	4:10	**Biosolids: Working With Farmers** *Eric Thwaites~Triveca Transport* *Dave Arguello~CWS* *Dennis O'Neil~Sustainable AG Consulting*
Wednesday, March 25, 2015		
#8	8:00	**Biosolids Program Considerations** *Ryan Carney~Kennedy Jenks* An overview of the elements of a successful program, including processing systems and application management.
#9	9:00	**The Cannibal System at Oak Lodge Sanitary District** *Mark Walter~OLSD* A description and history of the design and startup of the Cannibal system at the upgraded Oak Lodge Water Reclamation Facility.
#10	10:10	**Am I Running Dirty?** *Kelly Brown~BDP* A discussion of the significance of the solids recovery rate in mechanical thickening and dewatering systems.
#11	11:10	**Autothermal Aerobic Digestion** *Tim Munro~City of McMinnville* A description of the design and operation of autothermal aerobic digestion as implemented at McMinnville.
#12	1:00	***VENDOR'S DISPLAY—Randall Gymnasium***
#13	2:00	**How to Tell Your Biosolids Story (Dealing with the Media)** *Sheri Wantland~Clean Water Services* Methods and considerations involved with member of the media about your biosolids program.
#14	3:10	**Biogas Utilization Technology Experiences at CBWTP** *TBD~City of Portland BES* Biogas systems experience at the Columbia Boulevard Wastewater Treatment Plant, including direct sale; cogeneration; microturbines; fuel cells. Also, plans for implementation of CNG for vehicles.
#15	4:10	**Fundamentals of Anaerobic Digester Mixing** *Brian Hemphill~Hemphill Water Engineering* Current trends in application of various methods of mixing anaerobic digesters.

Thursday, March 26, 2015		
#16	8:00	**2013 Lagoon Biosolids Removal Project in Troutdale, Oregon** *Bill Fasth~Brown and Caldwell* Case history of a project to remove accumulated biosolids from a lagoon.
#17	9:00	**Agronomic Rate Calculations** *Dan Sullivan~Oregon State University* How to develop appropriate biosolids loading rates for your sites based on principles of agronomic rates.
#18	10:10	**Nutrient Management** *Dan Sullivan~Oregon State University* Tools for effective management of soil nutrients at biosolids application sites.
#19	11:10	**Increasing Digestion Capacity at the Tri-City WWTP** *Dale Richwine~Richwine Environmental* A description of the processing facilities at the two WES treatment facilities and the biosolids management program.
#20	1:00	**Regulatory Issues for Recycled Water Programs** *Ron Doughten~DEQ* State regulations regarding production and use of recycled water.
#21	2:00	**Recycled Water Program Considerations** *Chris Stoll~Kennedy Jenks* Factors in implementation of a recycled water program at your treatment facility.
#22	3:10	**Recycled Water Program at Clean Water Services** *Jared Kinnear~Clean Water Services* The Clean Water Services recycled water program, including the natural treatment system under development in Forest Grove.
#23	4:10	**Wrap Up** *Brian Hemphill~Hemphill Water Engineering* Group discussion; recap of the biosolids & recycled water sessions.

Tuesday, March 24, 2015		
#2	10:10	**The Buried Creeks, Gulches and Lakes of Old Portland** *Tracy Prince, PhD~Portland State University* Focusing on the early days of Portland, Dr. Tracy Prince, author of Portland's Goose Hollow and co-author of Portland's Slabtown, presents a slide show of historic photos and maps to demonstrate how dramatically different the terrain of Old Portland (the west side—from the Willamette River to the West Hills) was from today's terrain. This changed terrain includes: burying Tanner Creek, Johnson Creek, and Balch Creek; filling Couch Lake, Guild's Lake, and several other lakes; filling the 20-block long, 50-feet deep Tanner Creek Gulch and the 14 block long Johnson Creek Gulch; building streets on 20-50 foot pilings in areas that today's residents would describe as flatlands; and largely forgotten Native American and Chinese American histories on now infilled wetlands. Such incredible alterations to Portland's natural landscape were seen as necessary for growing a young frontier city and to accommodate real estate development.
#3	11:10	**The Buried Creeks, Gulches and Lakes of Old Portland (pt.2)** *Tracy Prince, PhD~Portland State University* Development has significantly changed the landscape of our communities and the waterways they contain. Rerouting and piping of streams, filling of marshes and lakes has changed not only the drainage and habitat, it also has impacts to the populations that lived along them. Learn how this occurred in portions of Old Portland. (see Session #2 for full description)
#4	1:00	**Construction Stormwater Management: Effectiveness, Compliance, and Inspection** *James Stupfel QC Manager~Jason Kelly, PE* Construction related stormwater discharge is regulated by a number of local, state, and federal agencies through the issuance of many different permits. Depending on the project, compliance with all permit conditions can be time intensive for contractors and inspectors. We'll discuss multiple project examples and BMP effectiveness, compliance, and inspection.
#5	2:00	**Clean Water For Salmon** *Anna Huttel~Salmon Safe* Salmon-Safe, one of the nation's leading environmental certification organizations, will introduce its new green infrastructure certification program that is now being piloted with the City of Portland. This current stormwater-focused initiative with the City of Portland was inspired by the recent challenge from Mayor Charlie Hales that all city bureaus follow the lead of Salmon-Safe certified Portland Parks and transition to certification. Founded in the late 1990s by river and native fish conservation organization Pacific Rivers Council, Salmon-Safe has helped inspire the transformation of a myriad of market sectors, beginning with Northwest wine growers. Today more than 350 vineyards have transitioned to Salmon-Safe certification. The session will include a discussion of stormwater impacts on native fish and innovative stormwater approaches to protect urban watersheds. Salmon-Safe also will discuss its market-based conservation work with some of our region's highest profile landowners ranging from Nike and University of Washington to Oregon Convention Center and PSU.

#6	3:10	**Willamette River Algae Blooms** *Aaron Borisenko~ODEQ* *Rebecca Hillwig~OHA* OHA and ODEQ will present a summary of the September 2014 harmful algae bloom in the Willamette River. Information on how these agencies coordinate a response to HAB events in rivers will be provided. OHA will describe blue-green algae (cyanobacteria), the potential health risks they pose, and briefly discuss OHA's harmful algae bloom program and blooms across the state. The presentation compares the 2014 Willamette bloom event with an earlier, larger event from 2003. DEQ will discuss the environmental conditions leading up to the Willamette bloom and strategies for monitoring the severity and extent of the bloom.
#7	4:10	*No session*
Wednesday, March 25, 2015		
#8	8:00	**Pervious Concrete Pavement Design and Implementation** *Diane Warner PE ~Northwest Region of the Portland Cement Association* Reasons for designing pervious surfaces, and how to design a pervious concrete pavement for both strength and adequate infiltration rates. Concrete pavement design basics will be discussed as well as current specifications and testing methods for pervious concrete. Construction equipment and best practices will be addressed. The presentation will take attendees through a basic design example and conclude with during construction and completed project examples from across the Northwest.
#9	9:00	**Willamette Falls Legacy Project** *Dave Elkin~Metro* Discussion of the Willamette Falls Legacy project site (Formerly the Blue Heron Paper Mill in Oregon City) and the opportunities and examples for retrofit within the redevelopment of a waterfront industrial site.
#10	10:10	**Surface Water Green Infrastructure Research Facility** *Meghna Babbar-Sebens, PhD ~ Oregon State University* The OSU-Benton County Green Stormwater Infrastructure Research Facility is a three-celled stormwater research facility for field-scale experiments and testing on green infrastructure (e.g., raingardens, bioswales, etc.). The cells provide the ability to test various stormwater treatment technologies and treatment of various stormwater contaminants. These cells are also instrumented with multiple sensors to enable better data collection and modeling. The facility intercepts and captures runoff from approximately 100,000 square feet of catchment area from Benton County property. The research facility also provides education and outreach to engage the general public in taking action to support enhancing water quality.
#11	11:10	**City of Eugene Polk Street Water Quality Vault** *Doug Singer, PE* The Polk Street Water Quality Vault treats a 770-acre mostly commercial and industrial area of Eugene. Originally the vault was a pump station and overflow when Eugene had combine sewers, but was virtually abandoned when the sanitary and storm systems were separated. In 2008 the City converted the vault to a multi-chamber stormwater treatment system that removes 25-tons of material annually that would otherwise discharge to the Willamette River. The vault removes oils and greases, floatables like leaves and trash, and sediments in separate chambers. The vault outfall can be closed and routed to the sanitary system during spill events. The presentation will discuss the planning, construction, function and maintenance of the vault.
#12	1:00	***VENDOR'S DISPLAY—Randall Gymnasium***

#13	2:00	**Preparing For Climate Change** *Alice Brawley-Chesworth, PE~ BES* Climate changes are already being seen nationally and internationally – larger storm surges in New York, heat waves in Chicago, heavy rain events and flooding in Europe. But local impacts from climate change on the city or county scale here in Oregon are still uncertain. But uncertainty is no excuse for inaction. This talk will outline how the City of Portland and Multnomah County put together a climate change preparation plan for both the built and natural stormwater, wastewater, and watershed health interests of the community. Next steps in research, implementation, and monitoring will also be discussed.
#14	3:10	**Portland Green Infrastructure 1989-2015: Lessons Learned** *Tom Liptan~Retired BES* Vegetative systems designed to manage stormwater are finding favor with municipalities in many cities throughout the world. Not only do these systems, such as rain gardens, green streets and ecoroofs manage rain and stormwater, they also provide numerous other benefits. Portland constructed its first green stormwater project in 1989 and was or is recognized as the leader in green infrastructure implementation. However, how well do vegetative systems stand the test of time? This presentation will address that question with attention to costs, performance and maintenance. Several projects of 10-20 years of age will be evaluated.
#15	4:10	*No Session*
Thursday, March 26, 2015		
#16	8:00	**Expo Center Stormwater Wall** *Mike Faha~Greenworks* *Amy Chomowicz~City of Portland* *Dave Elkin~Metro* The recently constructed stormwater wall at the Expo Center in Portland, Oregon is a first of its kind in the nation. In a blend of art, science and sustainability, 10,000 square feet of roof runoff is managed by a 30 foot by 60 foot vertical green infrastructure system. This freestanding vertical stormwater management system benefited from multiple partnerships among government agencies. This presentation will discuss the project and its multiple project details.
#17	9:00	**How Does the Proposed Rule for Determining "Waters of the U.S." Impact Wastewater Treatment and Stormwater Management Utilities?** *Jerry Linder~Clean Water Services* EPA and the Army Corps of Engineers (Corps) have proposed a new rule to better define the meaning of what waters are considered "Waters of the United States" and therefore subject to the jurisdiction of EPA and the Corps. After over a decade of unclear and perhaps contradictory decisions by the United States Supreme Court regarding the limits of jurisdictional authority, clarification of this definition should be welcome. This session will examine whether the new definitions will help or hinder effective wastewater and stormwater practices. Is the definition so broad that creative practices such as Natural Treatment Systems and green infrastructure are at risk of additional regulation and delay? Will the new rule add multiple water bodies to the 303(d) list and require water quality standards for ditches? These and other regulatory issues will be discussed, along with the potential impacts on wastewater and stormwater practices.

#18	10:10	**Luther Road Restoration** *Joe Richards~BES* The Luther Road Habitat Restoration project (Project) is located along Johnson Creek where the exposed 76-inch Lents Sewer Interceptor crosses Johnson Creek (near SE 76th Avenue). Project goals included stabilization of the trunk sewer, construction of a new stream channel, increased floodplain reconnection, stormwater outfall treatment and neighborhood park facilities. In addition, opportunities were identified to stabilize stream banks exhibiting signs of excessive erosion, increase in-stream complexity and facilitate stream stewardship through education of local residents. The following topics will be considered: Historical conditions, project selection and the alternatives analysis process, challenges/opportunities during the design & construction process, revegetation and future park development and lessons learned.
#19	11:10	**The Problem Is Complicated But the Solutions Don't Have To Be:** **Salem's Hydromodification Assessment** *Marjorie Wolfe P.E. ~Wolf Water Resources* *Keith Bondaug–Winn ~ City of Salem* The new MS4 permits for Phase 1 jurisdictions in Oregon require a hydromodification assessment. Rather than dictating how stormwater agencies should address hydromodification impacts, these assessments allow local conditions to drive approaches that will be most effective for their watersheds and storm systems. Using the watershed characterization and results from the pilot modeling analysis, the City worked across departments to determine strategies and schedules that effectively address hydromodification. This approach prioritizes strategies that are most effective, easy to implement, and can demonstrate success over time.
#20	1:00	**Endangered Species and Water Quality Considerations Associated With Constructing the Portland-Milwaukie Light Rail Transit Project** *Dave Unsworth, Director of Project Develop/Permitting~TriMet Capital Projects* The Portland-Milwaukie Light Rail Project is 7.3 miles in length and crosses 7 creeks and rivers while crossing through the cities of Portland and Milwaukie and Clackamas County. The presentation will describe the planning, permitting and construction challenges associated with building and operating this project.
#21	2:00	**WATERLIFE (pt.1)** *Film - Joint Session w/Source Control In Gregory Forum B&C* WATERLIFE follows the epic cascade of the Great Lakes to the Atlantic Ocean. From the icy cliffs of Lake Superior to the ornate fountains of Chicago to the sewers of Windsor, this feature-length documentary tells the story of the last huge supply (20 per cent) of fresh water on Earth. The source of drinking water, fish and emotional sustenance for 35 million people, the Great Lakes are under assault by toxins, sewage, invasive species, dropping water levels and profound apathy. Some scientists believe the lakes are on the verge of ecological collapse.
#22	3:10	**WATERLIFE (pt.2)** *Film - Joint Session w/Source Control In Gregory Forum B&C* WATERLIFE follows the epic cascade of the Great Lakes to the Atlantic Ocean. From the icy cliffs of Lake Superior to the ornate fountains of Chicago to the sewers of Windsor, this feature-length documentary tells the story of the last huge supply (20 per cent) of fresh water on Earth. The source of drinking water, fish and emotional sustenance for 35 million people, the Great Lakes are under assault by toxins, sewage, invasive species, dropping water levels and profound apathy. Some scientists believe the lakes are on the verge of ecological collapse.
#23	4:10	*No Session*

Tuesday, March 24, 2015		
#2	10:10	**Nutritional Health and Wellness** *Sam Rader, Owner~Proactive Injury Prevention Inc.* This session is an interactive discussion on nutritional choices, dieting and the importance of staying properly hydrated at work. It targets the overall wellness of employees, mentally and physically. Learn strategies to help overcome obesity, stress and chronic fatigue. This program is designed to help diagnose potential health concerns before they come serious injuries.
#3	11:10	**Nutritional Health and Wellness** *Continued*
#4	1:00	**Ergonomics in an Hour** *Linda Pressnell~Education Specialist, Oregon OSHA* If you thought ergonomics only applied to monitor position and chair height you need to attend this class to see how 'ergonomics' affects you every day, at work and home.
#5	2:00	**You've Identified the Hazards, Now What Do You Do?** *Tim McDonald, Senior Safety Management Consultant~SAIF Corporation* Accidents are often predictable, and most importantly, preventable. With a good process to assess the risks associated with workplace conditions, an effective strategy can be determined to prevent adverse outcomes. This session focuses on the next steps to take following hazard/unsafe behavior identification: assessing the risk, prioritizing the risks aand identifying the control measures to take.
#6	3:10	**You've Identified the Hazards, Now What Do You Do?** *Continued*
#7	4:10	**You've Identified the Hazards, Now What Do You Do?** *Continued*
Wednesday, March 25, 2015		
#8	8:00	**Key Elements of Comprehensive Safety Program** *Eric Fullan, Safety Officer~City of Hillsboro* This program will focus on the elements of a good safety program. You will discover what needs to be built-in into your written safety program including but not limited to confined space, safety committees, accident investigation, fall protection, PPE, LOTO, training requirements, and safety inspections. You will learn who is responsible for the safety at your place of business, is it management or the employee? Plus find out where you can go for help as you assemble all of these elements into your company's safety program.
#9	9:00	**Key Elements of Comprehensive Safety Program** *Continued*
#10	10:10	**Safety Committee Success Secrets** *Steve Geigle, CSHM, CET President~ Geigle Safety Group, Inc.* Discover some of the secrets to transforming your safety committee into an effective solutions-oriented safety team!
#11	11:10	**Safety Committee Success Secrets** *Continued*
#12	1:00	**Electrical Safety Facts and Myths** *Roger Blank CUSP, Safety & Training Manager~Pacific Power* Basic electrical safety that: • Raises your awareness of electrical hazards • Helps you to recognize electrical hazards • Emphasizes the extreme importance of observing all electrical safety requirements and practices • Instructs you on what to do during an electrical accident

#13	2:00	***VENDOR'S DISPLAY—Randall Gymnasium***
#14 #15	3:10 4:10	**Fall Protection Formal Equipment Inspection: Requirements and Best Practices** *Jim Johnson, CEO~D2000 Safety, Inc.* In addition to inspections performed by users, manufacturers and ANSI specify that fall protection equipment must undergo formal inspections by competent persons on a regular basis (usually every year). This program explores how to set up and administer a formal inspection program. This includes tracking the equipment, developing retirement guidelines, performing the inspections and ensuring your locations program and policies reflect the manufactures' requirements and best practices.
Thursday, March 26, 2015		
#16	8:00	**Job Hazard Analysis: The Who, What, When, Where, Why and Especially How!** *Craig Hamelundm, Education Specialist~Oregon OSHA* The session guides you thought the job hazard analysis (JSA) procerss with an emphasis on hazard evaluation and solutions. Through interactive discussion and exercises, this workshop provides useful practice that will hone your shills so you are prepared when it really matters, back home at the workplace.
#17	9:00	**Job Hazard Analysis: The Who, What, When, Where, Why and Especially How!** *Continued*
#18	10:10	**Confined Space Code Revision Overview** *Mark Maguire, CSP Safety Supervisor~Eugene Water & Electric Board* Confined Space: Implementation of Oregon OSHA's New Confined Space Standard in the Public Sector New confined space standards are in place that covers both general industry and construction. This course starts with an overview of the new Oregon OSHA Confined Space Standard and then reviews how the Eugene Water & Electric Board has adapted their existing confined space program to meet the new requirements and implemented the new standard. There will also be discussion around the challenges associated with rescue operations in confined spaces.
#19	11:10	**Confined Space Code Revision Overview** *Continued*
#20 #21	1:00 2:00	**Workplace Violence and Street Smarts** **Part 1 Work Place Violence: What You Need to Know** *John Posey, CPP, PSP President~Corporate Security Services, Inc.* This program provides detailed information about why workplace violence occurs, how it can best be avoided, and best practices for reacting in the event an incident occurs. Attendees are exposed to information derived from actual workplace violence incidents and situations. Included are details on the latest techniques and countermeasures needed to successfully manage real life workplace violence incidents.
#22	3:10	**Workplace Violence and Street Smarts** **Part 2—Street Smarts: Techniques and Countermeasures for Personal Safety** *John Posey, CPP, PSP President~Corporate Security Services, Inc.* The 'Street Smarts' program is designed to level the playing field between criminals and potential victims. This will address 'real world' personal safety risks and countermeasures of living in the U.S. in 2015 and beyond. The session focus is on real life examples to convey the best practices to avoid being victimized by street crime, security and emergency situations, as well as case studies and practical demonstrations.
#23	4:105	**Workplace Violence and Street Smarts** **Part 2—Street Smarts: Techniques and Countermeasures for Personal Safety** *Continued*

Tuesday, March 24, 2015		
#2	10:10	**Water Quality Lab Analysts Section Meeting** *Kristen Thomas* Meeting of PNPCA Oregon Region Laboratory section which has been active since 1977. Topics include New lab developments, getting connected and involved in the work of this group, also time for discussion of lab problems, networking, etc.
#3	11:10	**Sustainability at Widmer Brothers Brewing Company** *Julia Person, Sustainability Manager ~Widmer Brothers Brewing* As a company, Widmer Brothers believes in minimizing the environmental impact of their brewing operations. They are a Sustainability at Work Gold business, purchase wind power through Pacific Power's Blue Sky program, and partner with Bonneville Environmental Foundation. Topics covered include waste to energy efforts, reduction in water use, BOD reduction, reducing carbon footprint, as well as recycling and recovery of resources.
#4	1:00	**Basics of Polymer Chain Reaction (PCR) Analysis** *James T. Nurmi~CCC Water & Environmental Technology Program* *Suzanne DeLorenzo~Clackamas River Water* Fundamentals of Polymer Chain Reaction method of identifying microbial organisms such as E.coli.
#5	2:00	**PCR Laboratory Tour and Demonstration** *James T. Nurmi~CCC Water & Environmental Technology Program* *Suzanne DeLorenzo~Clackamas River Water* Continuation of preceding session on PCR. Tour of PCR laboratory at Clackamas CC and demonstration of PCR techniques and current project to identify sources of E.coli in the Clackamas River watershed.
#6	3:10	**Fundamentals of Electrochemistry: pH** *Mark McElroy~Thermo Orion Company* A brief discussion of pH theory will lead to a practical discussion of electrode selection, calibration suggestions, the effect of temperature on pH measurements, care and maintenance ideas, best practices as they relate to buffer use, troubleshooting guidelines, and measurement hints. An update of the newest pH technologies such as ROSS Ultra Electrodes featuring the ROSS Ultra 18 month maintenance free Triode, LogR temperature compensation, and specialty electrodes will be given.
#7	4:10	**Enzyme-based Nitrate Analysis** *Brady Miller~Astoria-Pacific Company* Presentation on a new enzyme-based method of analyzing for Nitrate in water which does not require the use of toxic chemicals such as Cadmium.

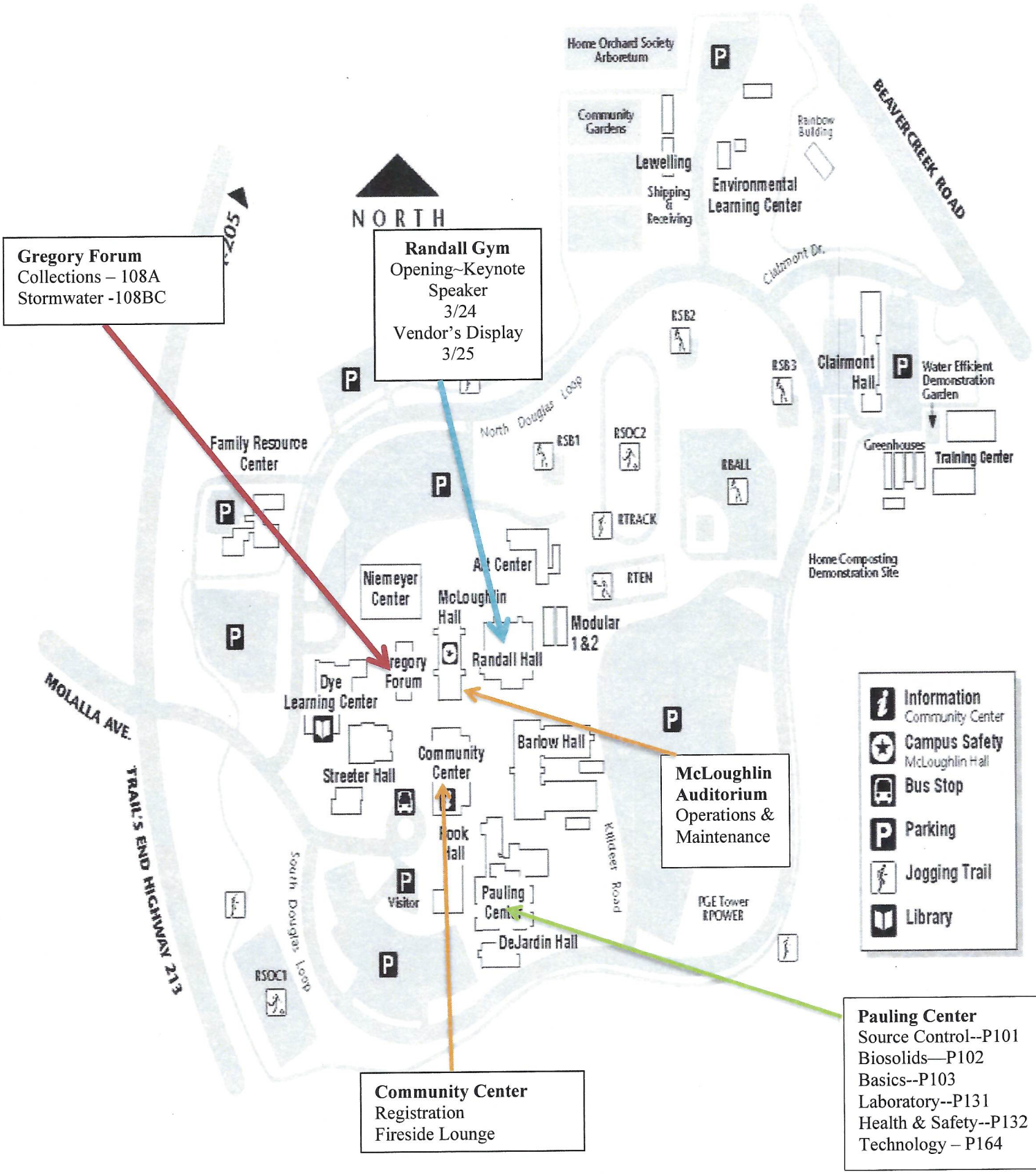
Wednesday, March 25, 2015		
#8 #9 #10 #11 #12 #13 #14 #15	8:00 9:00 10:10 11:10 1:00 2:00 3:10 4:10	**Workshop on Building Your Own Laboratory Quality Manual** *Scott Hoatson, Agency Quality Assurance Officer~Oregon DEQ* "Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures." (EPA 40 CFR part 122.41) As stated in DEQ's QA Guidance for Self Monitoring Laboratories (NPDES and WPCF), "it is essential that all labs analyzing compliance samples adhere to defined quality assurance procedures. This is to insure that routinely generated analytical data are scientifically valid and defensible and are of known and acceptable precision and accuracy. To accomplish these goals, each laboratory should prepare a written description of its quality assurance activities (a QA plan)....The QA plan must be available for analysts and for inspection by authorities." This workshop is a hands-on session designed to help small wastewater laboratories develop a comprehensive Quality Manual (or Quality Assurance Manual) using the free Quality Manual template available on DEQ's website. Each person will have a computer workstation to develop their own quality manual. The course objective is for each attendee to leave with a Draft Quality Manual for their facility. Each attendee must review the template prior to the course and bring information regarding their facility to use to fill in the quality manual. Each attendee must bring a thumb-drive in order to save their draft QA manual. It is suggested that you bring a copy of your plant's NPDES Discharge Permit as well as your existing Quality Manual. If so desired you may also bring your own laptop computer on which you have the documents mentioned above. Class size may be limited to 24.
Thursday, March 26, 2015		
#16	8:00	**BOD Trouble-Shooting** *Panel* Bring your questions about Biochemical Oxygen Demand for an discussion with a group of experienced BOD analysts.
#17	9:00	**Laboratory Skill Training Videos** *Keith Chapman~Oregon Environmental Laboratory Association* Preview of Video Training in basic laboratory skills and instrumentation.
#18	10:10	**Ethical Dilemmas for the Laboratory** *Keith Chapman~Oregon Environmental Laboratory Association* A consideration of non-ethical human behavior based on famous 20th century social psychology experiments. A different slant on laboratory ethics training.
#19 #20 #21 #22 #23	11:10 1:00 2:00 3:30 4:30	*No Session*

Tuesday, March 24, 2015		
#2	10:10	**Optimization at Wastewater Treatment Plants** *Michael Re~Ch2MHill* There are typically 4 main cost to operating a wastewater treatment facility: Labor, Energy, Chemicals and Solids Handling. The focus is to look at methods used in each of these to help optimize operations and keep operating costs down. Wastewater treatment technology has also changed as manufacturers are focusing on automation, energy conservation, and ease of operations. This presentation will focus on just the first steps to start a good optimization plan.
#3	11:10	**Operators – The Front Line for Your Asset Management Strategy** *Juston Manville~HDR*
#4	1:00	**Asset Management at the City of Oregon City – Water Infrastructure / Associating Work to Assets** *Michael Pooschke~City of Oregon City* Discover how the City of Oregon City uses Asset Management tools to track work performed on water assets and uses historical data for planning and costing as well as generating maps of selected assets.
#5	2:00	**ORWARN – Update** *Chris Wanner*
#6	3:10	**Cybersecurity and your SCADA system** *Chris Wanner* Given the increasing complexity and vulnerability of control systems, how can a utility attempt to stay ahead? A look at Portland Water Bureau's SCADA system with references to recent upgrades and working with the Department of Homeland Security.
#7	4:10	**Treatment for Reuse – Differences in Standards Around the Country** *Lee O'Dell~CH2M Hill*
Wednesday, March 25, 2015		
#8	8:00	**Total Integrated Automation** *Nathan Schiavo~WESCO* Learn how to create an automated system using a variable frequency drive, touch screen and PLC to control and monitor a process. With 1 software package to program all the devices it's easier than you think.
#9	9:00	**Secure Network And Be Internet Accessible?** *Nathan Schiavo~WESCO* Learn how to set up a VPN using an industrial security appliance to secure critical networked components and ease remote programming and support.
#10	10:10	**Screw Press Dewatering Technology - Operation, Maintenance & Life Cycle Advantages** *Trent Bohman~FKC, Co., Ltd.* Dewatering installation design and operation can make the most of screw press technology advantages. Screw presses allow for longer, unattended operation with no increase in maintenance, no increase in operating man-hours or loss of dewatering performance. Operators, maintenance personnel and owners can understand these advantages when providing input and selecting dewatering equipment for their facility.
#11	11:10	**Ice Pigging** *John Kitchens, Water System Consultant~Utility Service Group* Problems typically caused by sediment accumulation within the wastewater collection system, force mains and siphons include higher energy use, higher wet well levels, and increased potential overflows. This presentation will detail the science behind Ice Pigging, how the operation is carried out, applications where systems see benefits and will present case studies where ice pigging has been successfully used from a force main in Pennsylvania to sewer siphones under a California Aqueduct.

#12	1:00	**H2S Managing Odors and Reducing Corrosion** *Rick Allen~BioLynceus* A look into the underlying issues of managing H2S in collection systems and wastewater plants. This session covers diagnosing and managing H2S including current solutions and remedies, overall safety and management of this caustic and corrosive element.
#13	2:00	***VENDOR'S DISPLAY—Randall Gymnasium***
#14	3:10	***No Session***
#15	4:10	***No Session***
Thursday, March 26, 2015		
#16	8:00	**On-site Treatment Technologies for Total Nitrogen Removal** *Dale Richwine~Richwine Environmental* The Kitsap Public Utilities District in Poulsbo, WA is obtaining the authority to provide wastewater treatment services in their service area to assist in the removal and improvement of the treatment that septic systems provide. This will ultimately reduce the Total Nitrogen (TN) entering Hood Canal and the surrounding Puget Sound waters. An evaluation was performed by Richwine Environmental, Inc. to determine the appropriateness and capital and O&M costs of on-site technologies that can be used for flows up to 100,0000 gpd that provide various levels of TN removal. This presentation will provide a review of the technologies available for small on-site systems and the relative costs and TN removals that can be obtained.
#17	9:00	**Peracetic Acid Full Scale Pilot at the Tri-City WPCP** *Mike Trent~Water Environment Services* *Dale Richwine~Richwine Environmental* The Tri-City WPCP currently used gaseous chlorine for disinfection of the effluent from the conventional treatment plant. Issues relating to safety, risk management, nitrogen interference and peak flow treatment led to an investigation of alternative disinfection methods for the facility. An evaluation of conversion to hypochlorite with bisulfite, UV and peracetic acid was performed with the use of peracetic acid being the preferred option. There is limited experience with the use of peracetic acid so a full scale pilot was performed to evaluate the performance of this product under actual operating conditions. This presentation provides the results of the alternative analysis that led to the selection of peracetic acid and the results of the full scale pilot project.
#18	10:10	**What's the Status of Your Assets? Use Repeatable Condition Assessment to Track Changes Over Time** *Dale Jutila~CH2M Hill* Condition is a vital component in an asset management program to understand risks to the system. Whether part of a comprehensive asset management program or whether a matter of describing the status of the system for other purposes, it is prudent to use a structured approach to evaluate condition of assets. The structured approach increases credibility of the results, and it allows the evaluation to be repeated at a later time to determine if changes are occurring. This presentation will explain elements of a structured condition evaluation approach and describe one utility's experience with repeating condition assessment using a structure that was established five years earlier.

#19	11:10	**BNR Alternative Processes and Emerging Technologies** *Jeff Coyne, Project Engineer~MWH Global* As nutrient limits have become more stringent, biological nutrient removal (BNR) processes have become more common in wastewater plants across the country. Often, these BNR processes consist of the Modified Luzack-Ettinger process, the Bardenpho process, or some variation of the two. This presentation will introduce alternatives to the more common biological nutrient removal processes, which include Sequencing Batch Reactors (SBR), Integrated Fixed-film Activated Sludge (IFAS) reactors, and Moving Bed Biofilm Reactors (MBBR). The presentation will also cover emerging process technologies, including side stream ammonia treatment, phosphorus recovery, and energy recovery. These processes are becoming more important and prevalent as the wastewater industry undergoes a paradigm shift from "treatment" to "resource recovery."
#20	1:00	*No Session*
#21	3:10	*No Session*
#22	3:30	*No Session*
#23	4:10	*No Session*

Clackamas Community College
Oregon City Campus Map



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BIOSOLIDS

Despite benefits of farming with biosolids, it remains a tough sell

MARCH 13, 2015 11:45 PM • BY BROOKS JOHNSON

A toilet flushes in Cowlitz County, a flower grows in Wahkiakum.

It doesn't happen that fast, but treated waste from the Three Rivers Wastewater Treatment Plant in Longview is being spread in fields around Cathlamet — keeping the Columbia River clean, landfills less full and fields naturally fertile.

It sounds great from an environmental perspective, but some area residents haven't been too keen on the smell.

At a recent Wahkiakum County commissioners meeting, residents complained of a deposit of biosolids — treated sewage fit for fertilizing — and the odor it was causing in their hilly Cathlamet neighborhood.

"I think anytime you do something different in an area, people notice it," Three Rivers Superintendent Duane Leaf said Thursday. "But if no one wanted to put up with odors, there wouldn't be this beneficial use that has been such a boon to farmers."

Greenwood Road residents complained of an odor reaching their houses and persisting for days — which Leaf chalked up to off-and-on rains. Normally the smell goes away pretty quickly after application or stockpiling, he said.

"It has been horrendous," Steve Marshall said at the March 3 meeting, according to the Wahkiakum Eagle. "My eyes burned; I couldn't breathe. I can't stand to be in my yard."

So Fred Stanley took the biosolids back from the field to store on his Puget Island property, and that took care of the complaint.

Stanley is the Three Rivers contractor in charge of hauling and distributing the biosolids. Cowlitz County pays him between $130,000 and $150,000 a year to take the treated waste and find agricultural uses for it.

The 72-year-old farmer uses it on his own land on Puget Island and offers it to others for free, since he likely won't be able to use all 7,000 to 8,000 wet tons of biosolids Three Rivers exports per year.

"We've been using it for six years and what we've noticed is a big increase in wildlife, and grass is real green — it's just a wonderful product," said Stanley, who has lived on Puget Island since 1967. "This has lots of lime in it so it's what our soils need."

Complaints like Marshall's highlight the challenges Stanley may have in recycling Cowlitz County's useful waste. Even though he's giving it away, only charging for delivery, it may take a growing season to find the benefit behind the odor.

"Biosolids are not odorless," Leaf said, "But once they see the crops..."

Biosolids can replace fertilizer and Leaf says it beats the store-bought stuff on two fronts — it's free and it releases nitrogen and other vital nutrients slowly, protecting fields and waterways.

And the stuff Stanley trucks out of Three Rivers is Class A, which means it has been fully heated and treated and is free of bacteria and other pathogens.

"If someone came down and wanted a 5-gallon bucket of it for their rose garden, we could give it to them," Leaf said.

Stanley went a little further to describe its safety.

"You can dump it and your kids can play on it immediately," he said.

Class B biosolids are less treated and not pathogen-free and have to permitted. Wahkiakum County has banned them but is involved in a fight over the matter with the state that could end up in the state Supreme Court.

On Friday, Stanley wandered up to where he stores the biosolids his company trucks from Three Rivers. Just two hours after a new load had been dropped off, he said he could hardly smell it.

"My local neighbors have never complained," Stanley said. "In fact I've got neighbors who want to put it on themselves."

In 1992, the Legislature mandated keeping biosolids out of landfills and returning them to the land to improve soils.

The Department of Ecology says biosolids are "a valuable commodity that can be beneficially used in agriculture, forestry, and landscaping."

Three Rivers often takes in septic tank sludge from property owners or bigger loads from other treatment plants, casting a wide net for the closed-loop waste recycling system.

Leaf said alternatives to using biosolids as a fertilizer would be to burn it for energy — setting up new challenges for odor and some negative environmental effects.

Regardless, it's not going into the river, and Stanley is glad to take it off Cowlitz County's hands.

"This is the best we've ever got farming, I'll tell you that much," the lifelong farmer said. "I've never had free fertilizer before."