Permitting of LOTT Clean Water Alliance Martin Way/Hawks Prairie Facility

Reclaimed Water Workshop

October 12, 2010

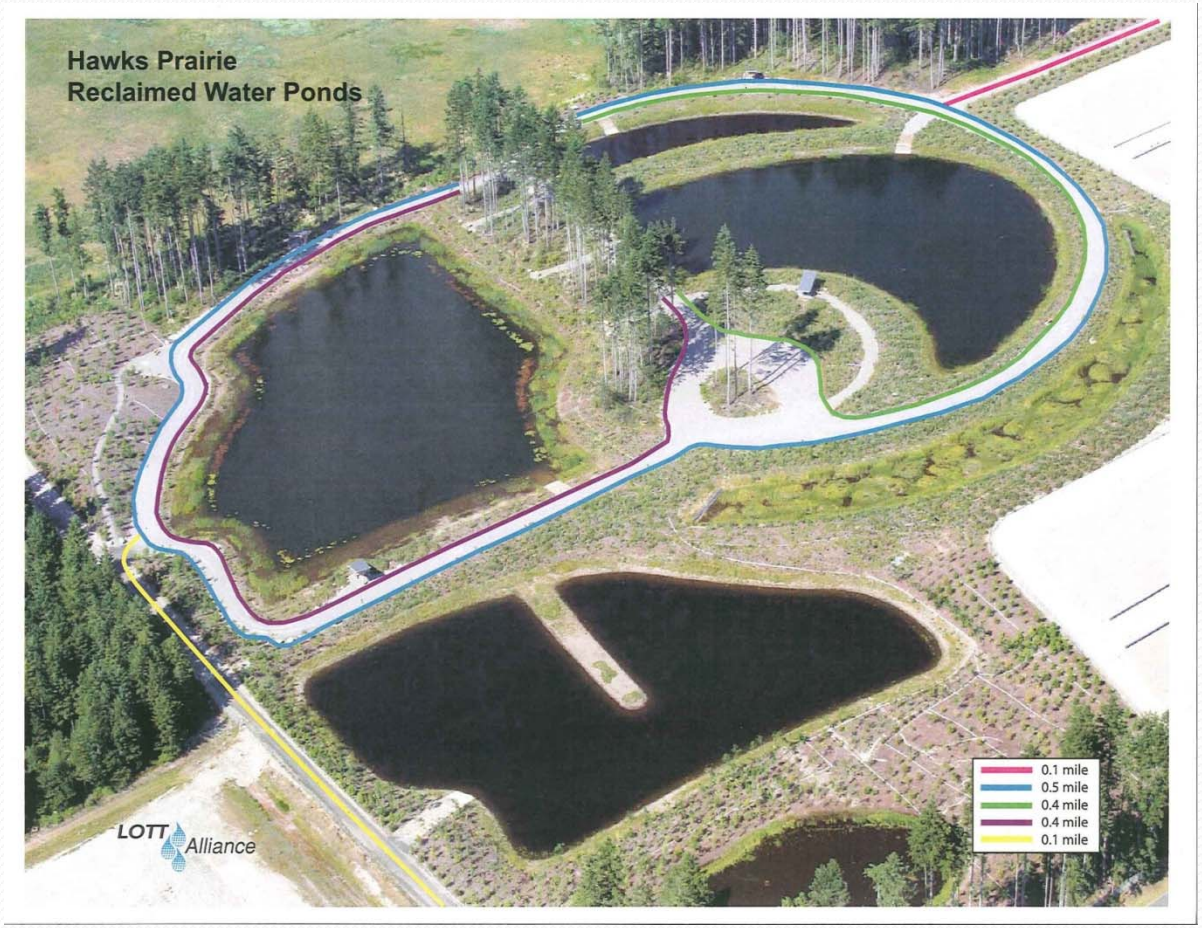
Background

- The Martin Way Reclaimed Water Plant is first satellite plant in LOTT system
- Initial design is 2 MGD
- Uses membrane bioreactor (MBR)
- Produces Class A reclaimed water
- Intended uses of reclaimed water include irrigation and infiltration (surface percolation)
- Replaces a marine discharge to Budd Inlet

Distribution and Use Area

- Three mile distribution line to Hawks Prairie recharge site
- Recharge site includes five wetland ponds for storage
- Eight infiltration basins
- No other present uses

Hawks Prairie Recharge Site



Hawks Prairie Recharge Site

Timeline

- Construction was started in 2004
- Reclaimed water permit written in 2005
- Reclaimed water permit issued on March 20, 2006
- Permit effective April 1, 2006
- Plant started up in 2006
- In 2010 average 1.15 MGD of Class A reclaimed water production
- Permit expires March 31, 2011

Basis of Permitting

- Chapter 90.46 RCW Reclaimed Water Use
- Water Reclamation and Reuse Standards (September 1997)
- Information provided in:
    1. Facility Plan & EIS
    2. Plans & Specifications
    3. Permit Application
    4. Groundwater modeling at recharge site

Permitting Guidance

Guided by Water Quality Program Permit Writer's Manual

http://www.ecy.wa.gov/biblio/92109.html

Manual includes:

1. Technology based limits
2. Guidance on determination of water quality based limits
3. Recommendations for monitoring

Permitting Tools

- Permits developed using shells/boilerplates
- LOTT Permit based on 2002 Reclaimed Water Permit shell
- Includes both Special and General Conditions
- Shells include technology based limits and recommended monitoring
- Shell based on State Waste Discharge permits
- Separate shells for NPDES based permits or inserts to NPDES permits

Issuance Date: _?_
Effective Date: _?_
Expiration Date: _?_

RECLAIMED WATER PERMIT NUMBER ST XXXX

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
(Regional Office)

In compliance with the provisions of the
State of Washington Reclaimed Water Act, Chapter 90.46 Revised Code of Washington
and the
Water Pollution Control LawChapter 90.48 Revised Code of Washington, as amended,

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
(list DOH when commercial/industrial uses are included)

In compliance with the provisions of
Chapter 90.46 and 43.70Revised Code of Washington

Permittee

Mailing address

City State Zip

to discharge wastewater in accordance with the special and general conditions which follow.

Plant Location:	Discharge Location: Legal Description : Section, Range, Township
Treatment Type	Latitude: xx° xx' xx" N Longitude: xxx° xx' xx" W

Name
Section Supervisor
_?_ Regional Office
Washington State Department of Ecology

Class A Permit Limits

Standard Limits

Parameter		
Flow	MGD	
BOD	20 mg/L	30 mg/L
TSS	30 mg/L	45 mg/L
DO	Present	
Turbidity	2 NTU	5 NTU
Total N	10 mg/L	15 mg/L
Total Coliform	2.2 MPN/ 100 ml	23 MPN/ 100 ml
pH	6 to 9	
Chlorine Residual	0.5 mg/L	

LOTT Permit

Parameter		
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Groundwater Limitations

Recommended

- 17 Parameters listed: Nitrate, Nitrite, As, Cd, Cr, Fluoride, Hg, Ni, Total Trihalomethanes, TDS, Chloride, Sulfate, Cu, Pb, Mn, Ag, and Zn

LOTT Permit

- Same 17 Parameters and limitations
- One additional Parameter: Iron limited to 0.3 mg/L

Reclaimed Water Monitoring

Recommended

- Influent: Flow, BOD, TSS, pH, TKN, Nitrate, Ammonia, and Total P
- Effluent: BOD, TSS, pH, DO, Temperature, Turbidity, Total N, Total Coliform, Chlorine Residual, and Coagulant

LOTT Permit

- Influent: Flow, BOD, TSS, pH, and Total Nitrogen
- Effluent: Flow, BOD, TSS, pH, DO, Temperature, Turbidity, Total N, Total Coliform, Chlorine Residual, and priority pollutants

Ground Water Monitoring

Recommended

- Quarterly: Static well water elevation, Temperature, DO, pH, Conductivity, Nitrate, Nitrite, TKN, TDS, Total Coliform, Chloride and Total Trihalomethanes
- Annual: Ca, Mg, K, Na, Bicarbonate, Carbonate, Fluoride, Sulfate, As, Cd, Cr, Cu, Pb, Hg, Ni, Ag, and Zn

LOTT Permit

- Quarterly Monitoring the same
- Annual Monitoring the same plus Iron and Manganese

Ground Water Monitoring Wells

- Location of monitoring is site specific
- Need multiple wells
- As close as possible to where discharge reaches groundwater
- No further than property boundary
- Normally Permittee determines well locations and Ecology evaluates if appropriate
- Site has ten monitoring wells installed

Special Conditions

- Reclaimed Water Limitations
- Reclaimed Water Monitoring Requirements
- Reporting and Recordkeeping Requirements
- Reclaimed Water Distribution and Use
- Operation and Maintenance
- Residual Solids

Reclaimed Water Distribution and Use

- Authorized Uses and Locations
- Use Area Responsibilities
- Service and Use Area Contracts
- Specific Uses: Irrigation and Surface Percolation
- Authorization for New Uses - Water Reuse Summary Plan
- Revocation of Authorization

General Conditions

- Twenty-two General Conditions
- Signatory Requirements
- Right of Inspection
- Permit Actions
- Duty to Reapply
- Penalties for Violating Permit Conditions
- Reporting Planned Changes

Fact Sheet

- Gives background information
- Description of the facility
- Description of permit requirements
- Explains permit decisions
- Response to comments

Permit Issuance

- Entity Review
- Public Comment Period
- Response to Comments
  - Had 34 comments from four entities
- Next permit
  - Application for renewal just received

Questions?

Reclaimed Water Data

Parameter	Average
BOD	2.74 mg/L
TSS	<2.0 mg/L
pH	6.5-7.8
N	4.88 mg/L
DO	7.42 mg/L
Total Coliform	0-41 CFU/100 ml
Total Residual Chlorine	2.7 mg/L