Seminar on Permitting Basics

June 30, 2025

Technical Session

Presented to Three Basin Rule Rulemaking Advisory Committee

Objective

- Background information on water quality permitting and how DEQ evaluates functional equivalency.
- Provide information and understanding to advisory committee members.

Zoom Meeting Logistics

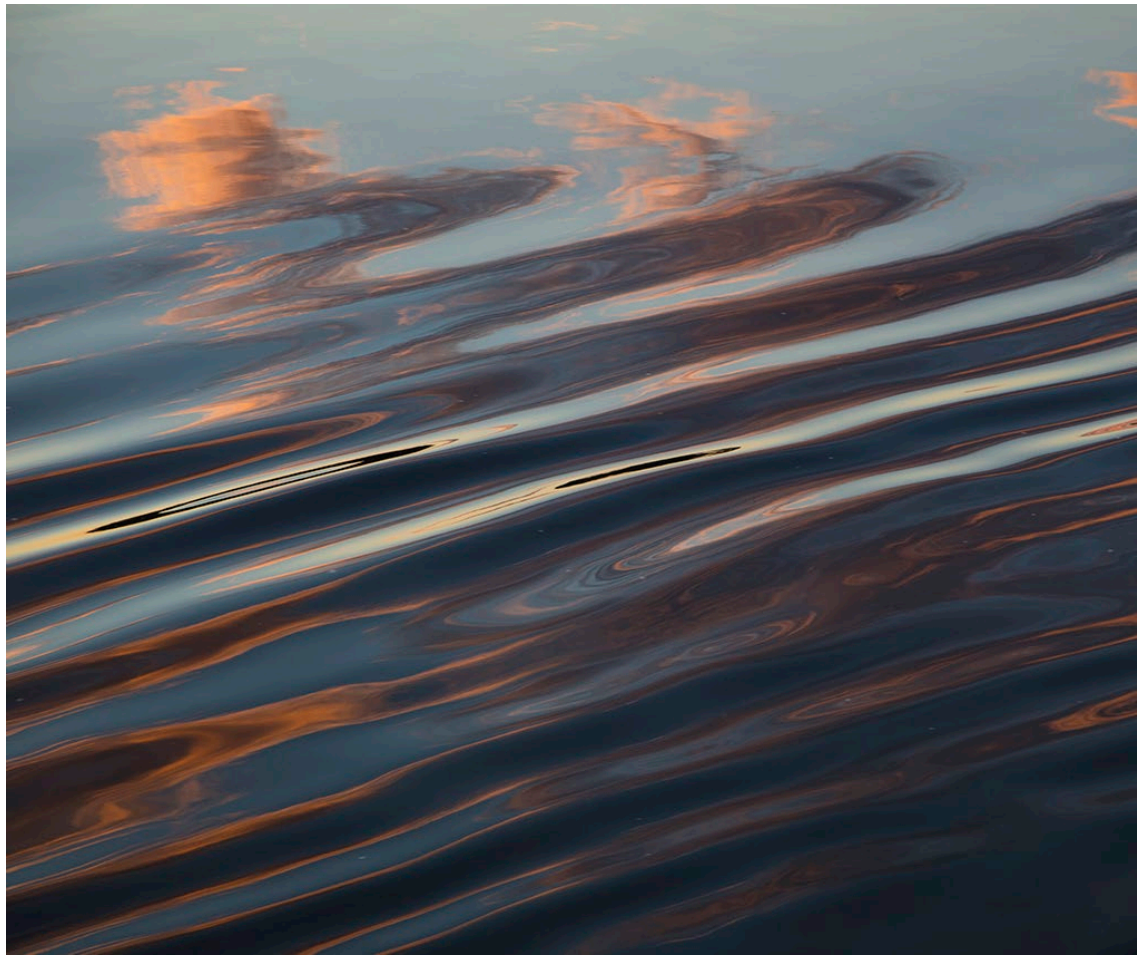
- Trina Mayberry – DEQ Admin. and Technical Support
- “Raise hand” to be recognized for questions or comments
- Feel free to post questions into the chat and we will respond
- If you are listening on the phone:
  - Press *9 To raise your hand
  - Press *6 Unmute/Mute your line
- Today’s meeting will be recorded

Agenda

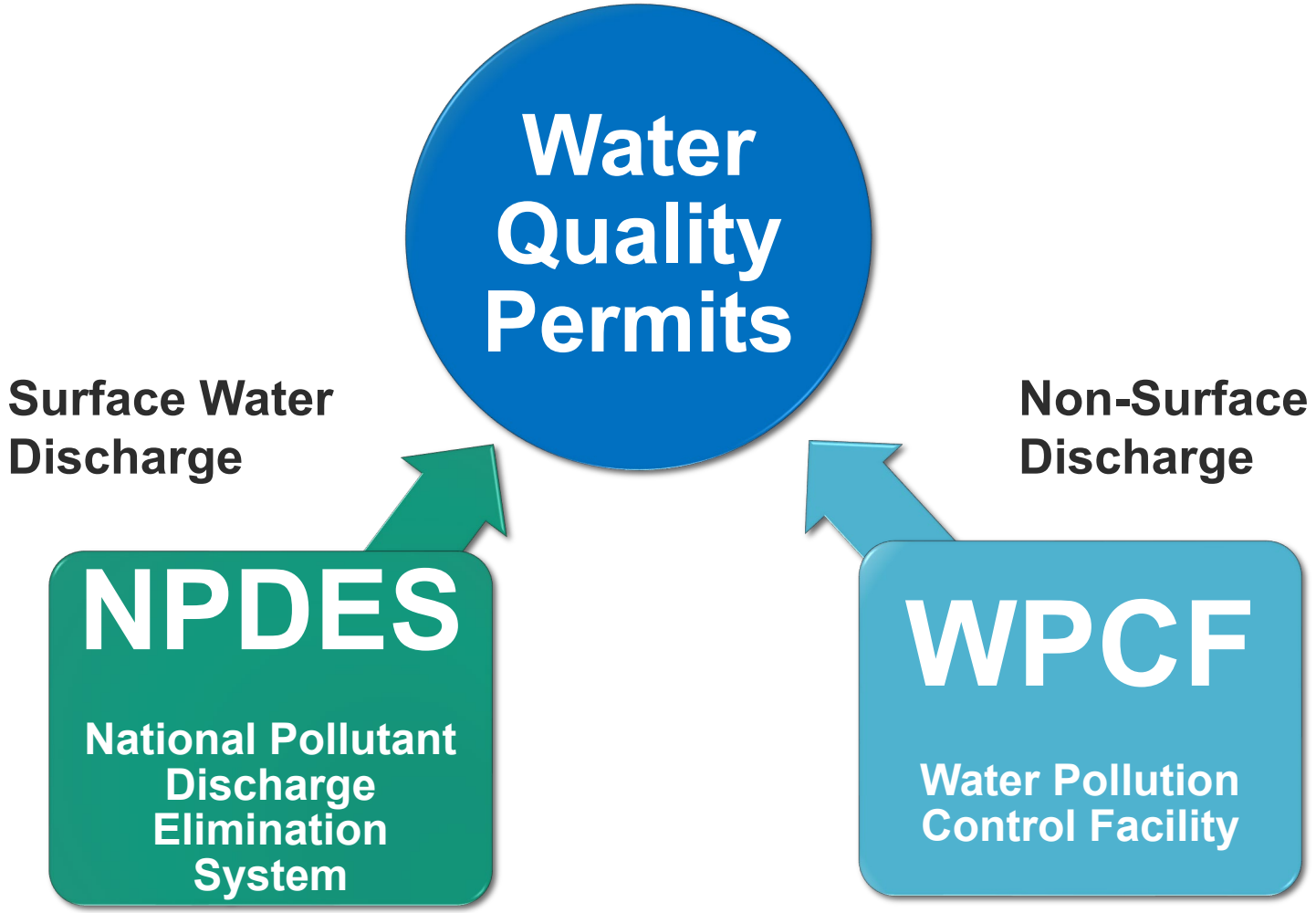
1 p.m.	Introductions and Agenda (Aron Borok, DEQ facilitator)
1:15 p.m.	Groundwater Protection Requirements and Permits (Justin Sterger, Water Quality Permit Writer)
1:45 p.m.	NPDES Permitting Overview (Rob Burkhart, Water Quality Specialist, Permitting)
2:15 p.m.	Break (10 min)
2:25 p.m.	Functional Equivalency (Aliana Britson, Ph.D., Senior Permit Policy Consultant)
2:55 p.m.	Wrap-up (Aron Borok)
3 p.m.	Adjourn

Ground rules

- Meeting for Advisory Committee members.
- DEQ cannot discuss Three Basin Rule rulemaking or specific facilities.



Types of Wastewater Discharge Permits



How are WPCF and NPDES permits similar?

- Protect waters of the state.
- Prevent further degradation of waters of the state.
- Permits include:
  - Discharge limitations.
  - Monitoring and reporting requirements.
  - Compliance schedules as needed.
  - Other special or general conditions.

Groundwater Protection Requirements and Permits

Water Quality Permitting and Compliance

June 30, 2025

Technical Session

Justin W. Sterger, Senior WQ Permit Writer and Compliance Specialist | Oregon Department of Environmental Quality

Regulatory Basis for Permitting

- DEQ Wastewater Permits are required and issued in accordance with OAR 340-045.
- Type of system determines the type of permit DEQ will need to assign.

OAR 340-045-0015
Permit Required

(1) Without first obtaining a permit from the Director, a person may not:

(a) Discharge any wastes into the waters of the state from any industrial or commercial establishment or activity or any disposal system;

(b) Construct, install, modify, or operate any disposal system or part thereof or any extension or addition thereto;

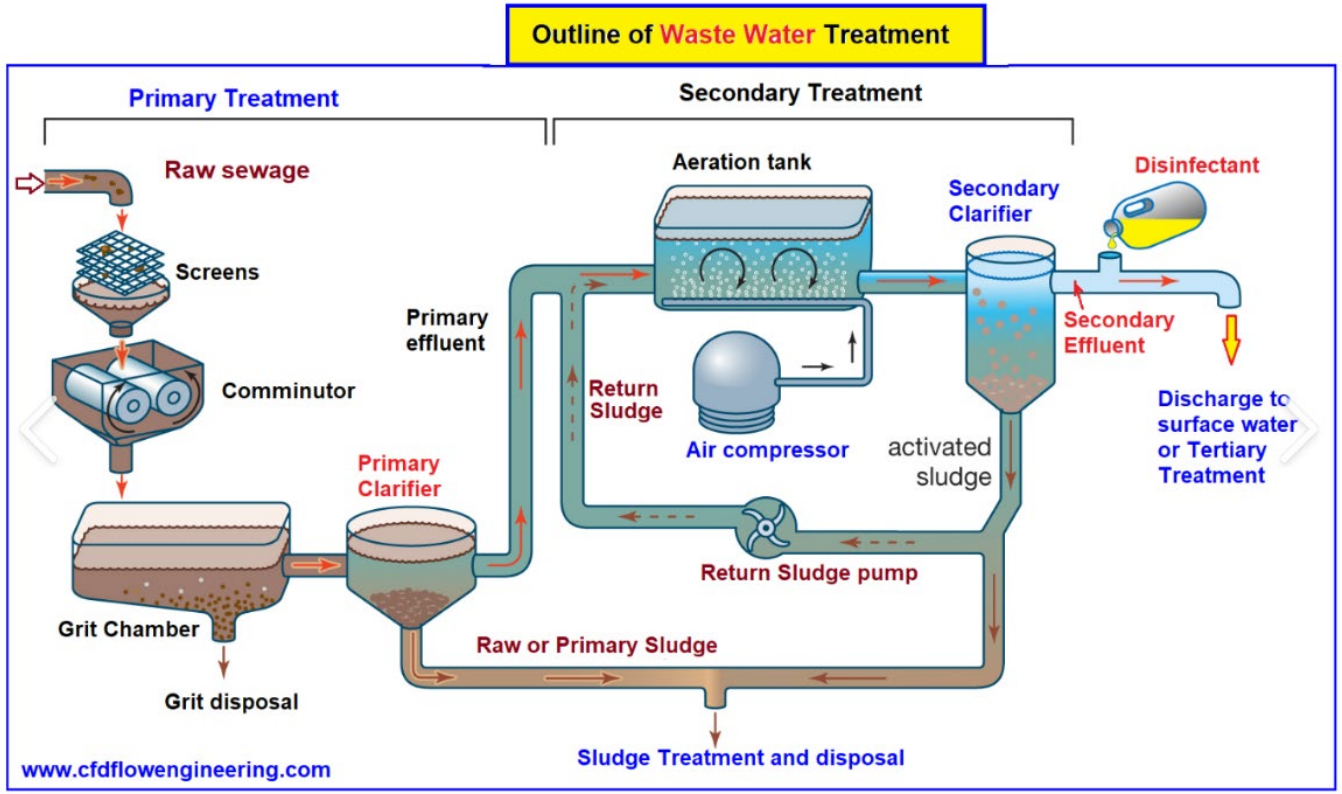
Types of DEQ-Issued Permits

- Two types of wastewater management permits.
  - NPDES Permits
  - WPCF Permits
- NPDES ensure that discharges into navigable waterways meet federal and state water quality standards.
- WPCF for discharges that are not direct or functional equivalent discharges into navigable waterways.

NPDES Permits

The Clean Water Act requires a permit when there is a discharge from a point source into navigable waters.

Often this is a pipeline that conveys treated wastewater effluent into a navigable waterway.



WPCF Permits

- State permit for sources that do not discharge directly to a navigable waterway.
- Often, evaporative lagoon systems, some of which provide recycled water to croplands or for other beneficial reuse of the water.

Groundwater Requirements

Groundwater Protection Requirements are located under OAR 340-040

Groundwater protection is required under **both** NPDES and WPCF permits.

- Both types of permits can discharge to groundwater.
- From rule: In regulating point source activities that could result in the disposal of wastes onto or into the ground in a manner which allows potential movement of pollutants to groundwater, the Department shall utilize all available and appropriate statutory and administrative authorities, including but not limited to **permits**, fines, EQC orders, compliance schedules….”

Anti-Degradation Policy for GW Pollution

340-040-0020

General Policies

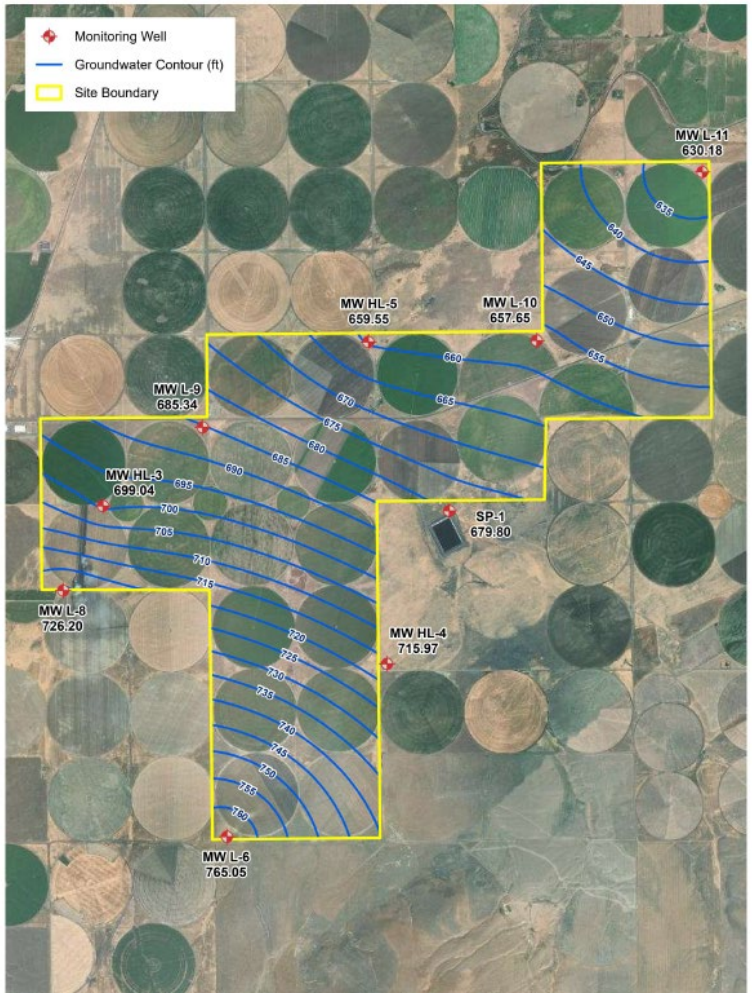
(1) Groundwater is a critical natural resource providing domestic, industrial, and agricultural water supply; and other legitimate beneficial uses; and also providing base flow for rivers, lakes, streams, and wetlands.

(2) Groundwater, once polluted, is difficult and sometimes impossible to clean up. Therefore, the EQC shall employ an anti-degradation policy to emphasize the prevention of groundwater pollution, and to control waste discharges to groundwater so that the highest possible water quality is maintained.

GW Regulation By Permits

- Facilities with potential for adverse impacts to groundwater quality are required to develop a groundwater protection program.
- Examples:
  1. Unlined wastewater lagoons
  2. Rapid Infiltration Basins
  3. Underground Injection Systems

Groundwater Protection Program Process



1. Hydrogeologic characterization.
2. Development of groundwater monitoring plan.
3. DEQ Hydrogeologists are consulted early in process to ensure appropriate well locations.
4. DEQ Hydrogeologists recommend groundwater limits to include in a permit based on the rule and the data attained at the site.

Permit Limits and GW Protection

Limits set based on whether the system is considered a new system or an existing facility.

- Compliance wells downgradient of waste management area.
- Facility given time to gather data before limits set.
- The facility must treat effluent sufficiently to prevent groundwater pollution.

OREGON ADMINISTRATIVE RULES
CHAPTER 340, DIVISION 40 - DEPARTMENT OF ENVIRONMENTAL QUALITY

TABLE 1
(OAR 340-40-020)

Numerical Groundwater Quality Reference Levels:[1]

Inorganic Contaminants	Reference Level (mg/L)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Fluoride	4.0
Lead	0.05
Mercury	0.002
Nitrate-N	10.0
Selenium	0.01
Silver	0.05

Groundwater Impacts

- Facilities that identify groundwater impacts above compliance well concentration limits are required to take additional actions.
- Goal is to ensure restoration of groundwater and mitigation of impacts to protect current and future uses.

Summary

- DEQ requires facilities to minimize pollution under wastewater permits.
- Facilities with potential to impact groundwater are required to develop a groundwater protection program.
- Facilities can avoid groundwater protection plan requirements by system design.
- For sites that cannot be designed not to discharge to groundwater, treatment or other controls are used.

Questions?

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NPDES Permitting Overview

Rob Burkhart, DEQ Water Quality Permitting and Program Development

June 30, 2025

Technical Session

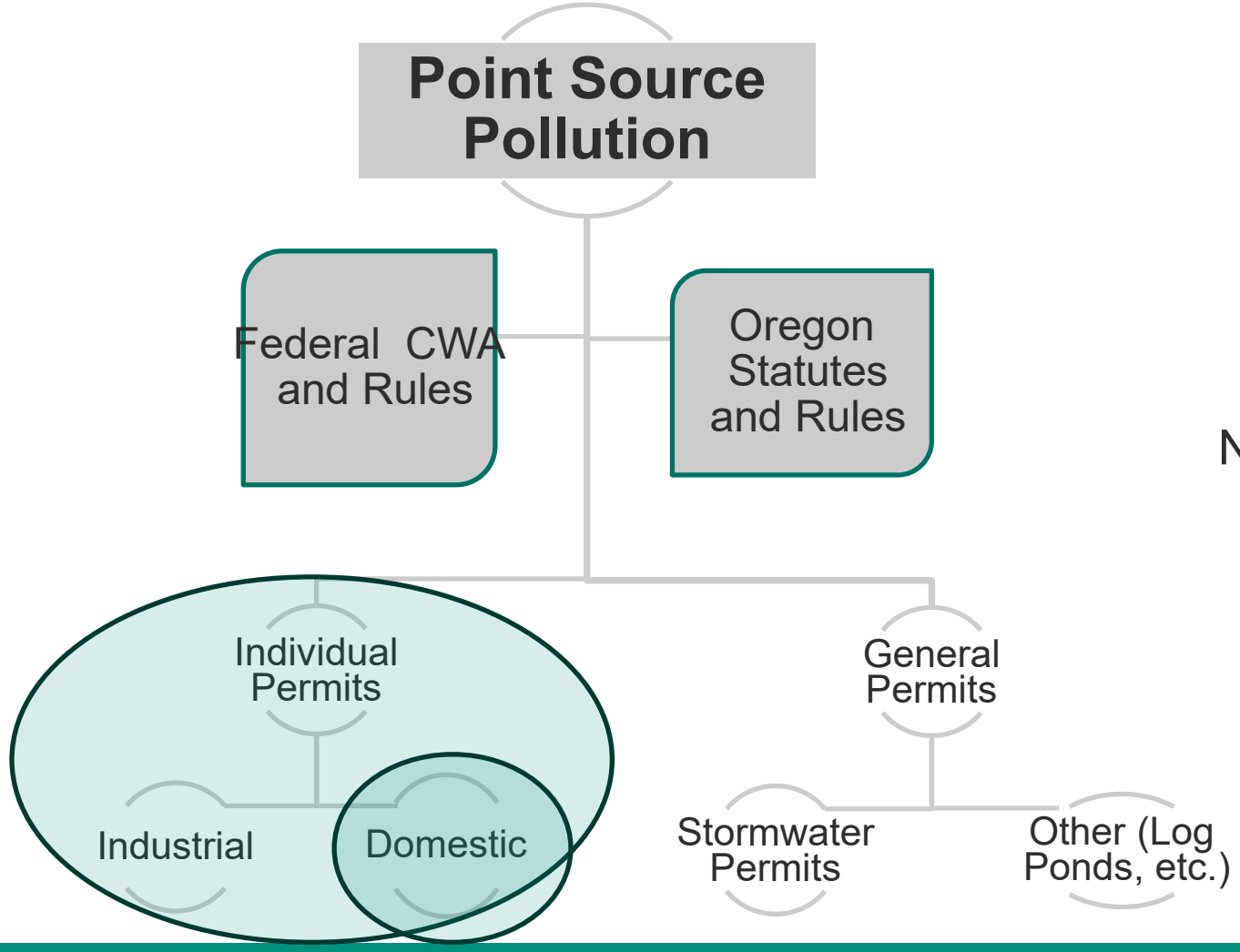
NPDES Permitting Overview: Regulatory Authorities

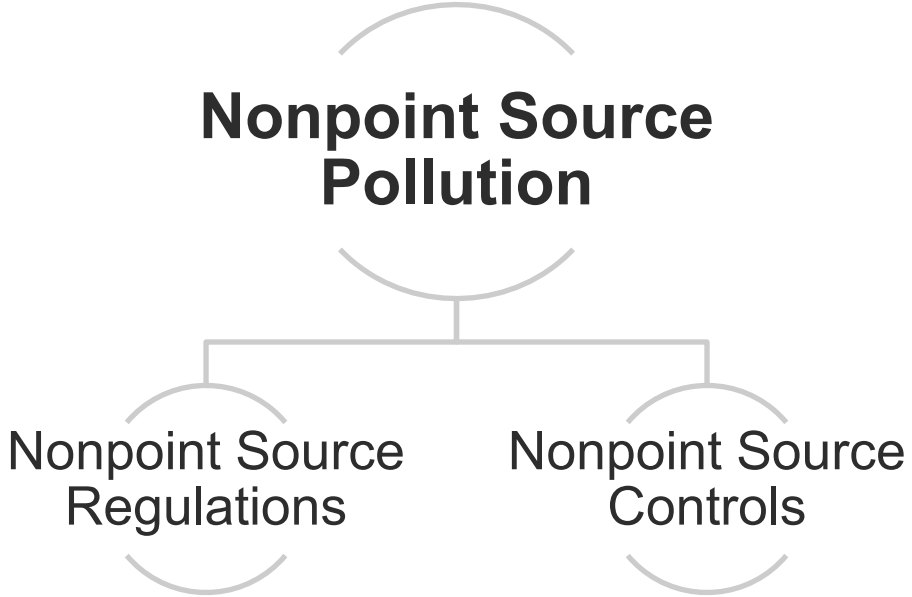
NPDES permit program was created in 1972 under the Clean Water Act to help address water pollution by regulating point source discharges to surface waters.

DEQ federal authority: EPA delegated permitting authority to DEQ in September 1973, and maintains oversight authority through a Memorandum of **Agreement.**

DEQ state authority: Oregon Statutes and Administrative Rules (primarily chapter 340, Division 45).

Categories of Surface Water Pollution and Controls





NPDES Individual Domestic Wastewater Permit

- Technology-based controls.
- Water quality-based controls.

Technology-based controls

- Federal Requirements:
  - "Secondary Standards" with specific permit limits for BOD, TSS and pH.
- State of Oregon Requirements:
  - Basin-specific Design Criteria for BOD and TSS – generally more restrictive than federal requirements during the summer. Bacteria requirements are also included.

Water quality-based controls

- Addressing water quality criteria.
  - For Pollutants of Concern, ensure no “reasonable potential” to cause or contribute to exceedances of instream water quality criteria.
  - For any pollutant found to have a reasonable potential to exceed a water quality criterion, a permit limit is assigned.
- Addressing antidegradation requirements.
- Addressing any existing TMDL requirements.

Example: Domestic NPDES Permit Limits

SCHEDULE A: WASTE DISCHARGE LIMITS

Outfall 001 – Permit Limits

During the term of this permit, the permittee must comply with the limits in the following table:

Table A1: Permit Limits

Parameter	Units	Average Monthly	Average Weekly	Daily Maximum
	mg/L	10	15	-
BOD_5 (June 1 – October 31)	lb/day	21	31	42
	% removal	85	-	-
	mg/L	10	15	-
TSS (June 1 – October 31)	lb/day	21	31	42
	% removal	85	-	-
	mg/L	30	45	-
BOD_5 (November 1 – May 31)	lb/day	52	83	104
	% removal	85	-	-
	mg/L	30	45	-
TSS (November 1 – May 31)	lb/day	63	94	125
	% removal	85	-	-
pH	SU	Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 9.0		
E. coli	#/100 mL	Must not exceed a monthly geometric mean of 126, no single sample may exceed 406		
Excess Thermal Load	million kcal/day	2.9 as a 7-day rolling average		

NPDES Permitting in a Nutshell

- Permits must require a minimum level of pollution controls, regardless of where the wastewater is discharged: **technology-based controls**
- Permits must also include any additional **water quality-based controls** necessary to ensure:
  1. The water quality standards in the receiving streams are met, and
  2. Antidegradation requirements are addressed.

Questions?

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Functional Equivalency: Implementing the Maui Decision

Water Quality Permitting and Program Development

June 30, 2025
Technical Session

Aliana Britson, PhD | Senior Permit Policy Consultant | Oregon Department of Environmental Quality

The Maui Decision (A Quick History)

- Lahaina Facility in Maui
  - 3-5 MGD of treated wastewater injected into groundwater, which entered nearby ocean.
  - UIC permit to protect groundwater quality, no NPDES permit.
  - Environmental groups sued, claimed an NPDES permit needed to protect surface water.
- Appealed to Supreme Court
  - 2020 ruling clarified which type of permit is needed.

The Decision

"We hold that the statute requires a permit when there is a direct discharge from a point source into navigable waters or when there is the *functional equivalent of a direct discharge*." – Justice Breyer, Majority Opinion

What this means: an NPDES permit is required for "A Functional Equivalent of a Direct Discharge" under the Clean Water Act

Challenge: Determining Functional Equivalency

7 factors provided:

1. Transit time
2. Distance
3. Nature of material through which pollutant travels
4. Extent of dilution or chemical change
5. Amount entering navigable water relative to amount leaving point source
6. Manner by or area in which pollutant enters navigable waters
7. Degree to which pollution has maintained specific identity

Oregon-Specific Challenges

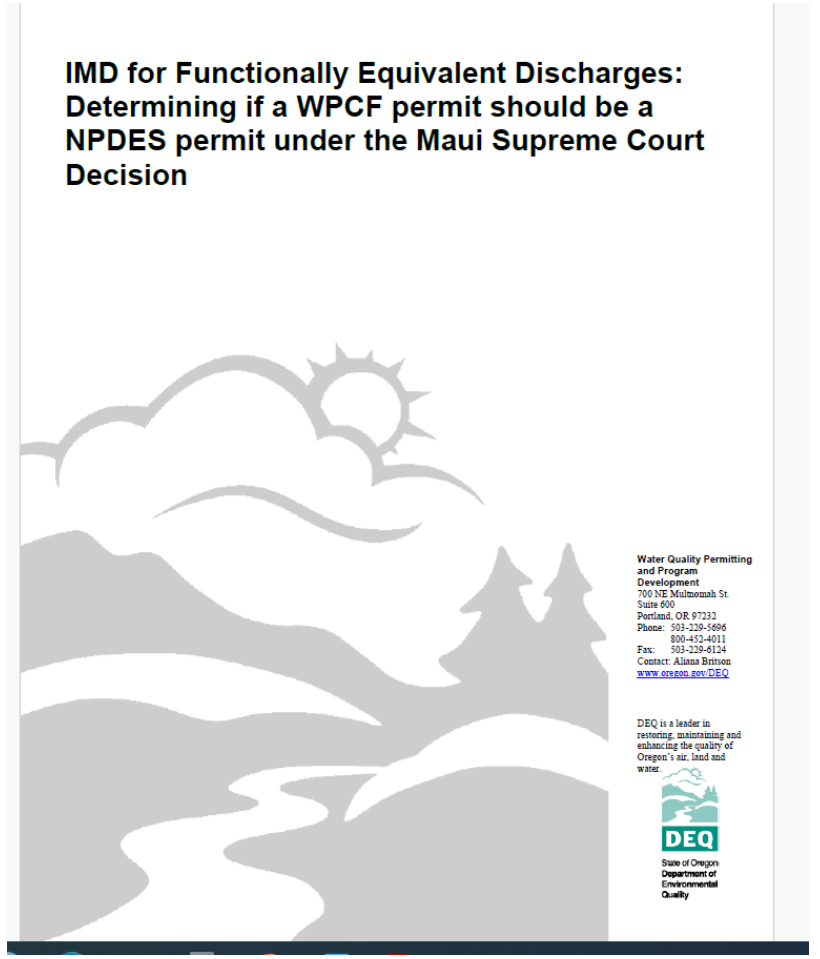
- Need to incorporate existing state regulatory conditions
- Prior to Maui Decision any permit discharging to land was a WPCF, no matter the proximity to surface waters

DEQ Developed Functional Equivalent IMD to address these challenges and provide consistent decision-making process

Oregon DEQ's Functional Equivalent IMD

Goal: Provide consistent process to determine if a WPCF permitted facility meets functional equivalent criteria

- Published May 2024
- Written for DEQ staff
- Publicly posted for transparency
- Based on the text of the Maui Decision and subsequent relevant court cases



Making a Functional Equivalent Determination

- Rankings are:
  1. Unable to Assess
  2. Unlikely Factor
  3. Ambiguous Factor
  4. Likely Factor
- DEQ Hydrogeologists are consulted when interpreting information
  - Groundwater reports
  - Modeling data

8. Appendix A: Functional Equivalent Worksheet

For each factor below document the known information. Once the data has been evaluated for each factor place a checkmark under the appropriate box (Unable to Assess, Unlikely Factor, Ambiguous Factor, or Likely Factor) using this IMD to help inform the decision.

Factor 1: Transit Time

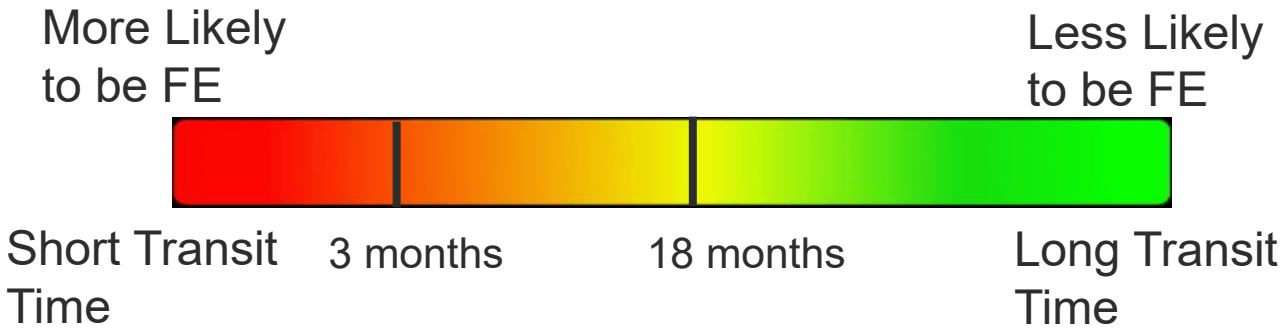
Information:			
Unable to Assess (no info)	Unlikely Factor	Ambiguous Factor	Likely Factor

Factor 2: Distance Traveled

Information:			
Unable to Assess (no info)	Unlikely Factor	Ambiguous Factor	Likely Factor

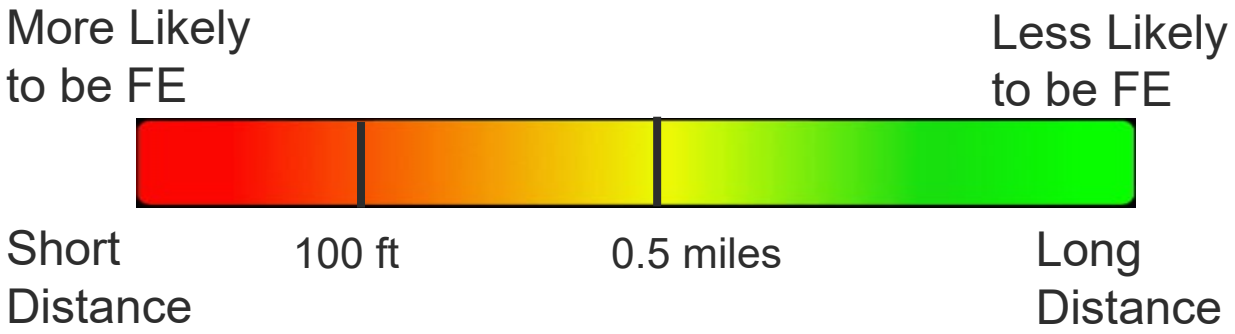
Ranking Considerations

Factor 1: Transit Time



- Benchmarks based on transit time of the Lahaina facility

Factor 2: Distance



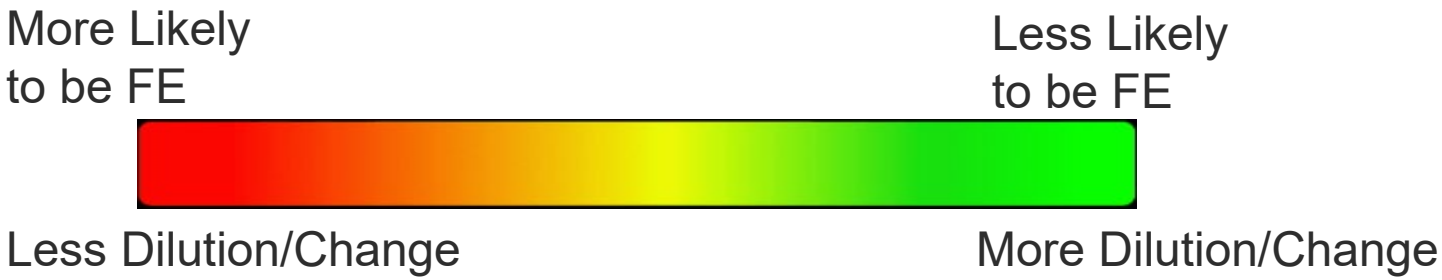
- Benchmarks based on Lahaina Facility and High Mountain Mining Co. court case distances

Ranking Considerations

Factor 3: Nature of the material through which the pollutant travels

- Soil or bedrock characteristics such as density and porosity have large effects on transit time
- Chemical profile of the material effects the final pollutant mix entering surface water

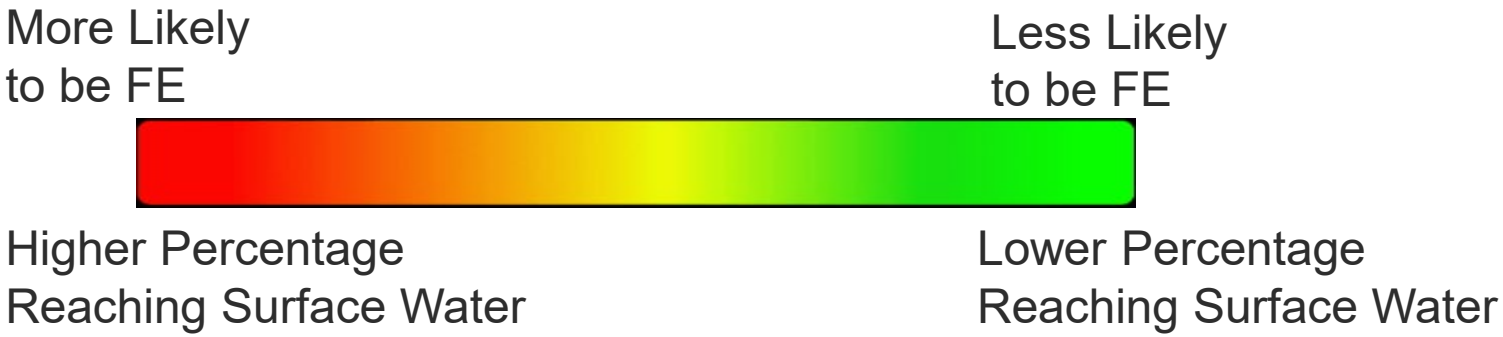
Factor 4: Extent to which the pollutant is diluted or chemically changed as it travels



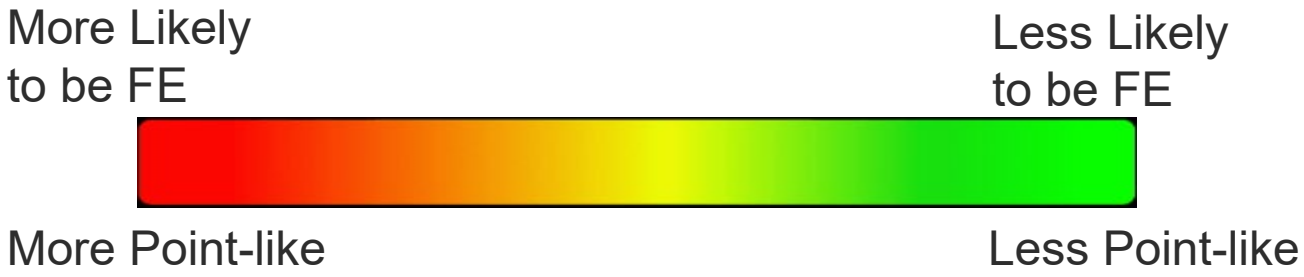
- Analysis done for each individual pollutant

Ranking Considerations

Factor 5: Amount of pollutant entering the navigable waters relative to amount of pollutant that leaves the point source



Factor 6: The manner by or area in which the pollutant enters the navigable water



Ranking Considerations

Factor 7: The degree to which the pollution has maintained a specific identity

- Looks at all pollutants together
- The more it resembles the original discharge, the more likely it is to be a FE

Making a Functional Equivalent Determination

Rankings are tallied to provide an overall ranking

- Appendix A provides a worksheet to organize information and tally rankings
- All factors have equal weight when being tallied

The permitting pathway is determined by the ranking with the highest score

8. Appendix A: Functional Equivalent Worksheet

For each factor below document the known information. Once the data has been evaluated for each factor place a checkmark under the appropriate box (Unable to Assess, Unlikely Factor, Ambiguous Factor, or Likely Factor) using this IMD to help inform the decision.

Factor 1: Transit Time

Information:			
Unable to Assess (no info)	Unlikely Factor	Ambiguous Factor	Likely Factor

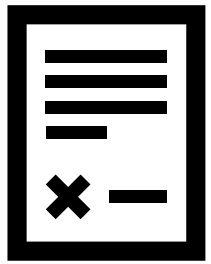
Factor 2: Distance Traveled

Information:			
Unable to Assess (no info)	Unlikely Factor	Ambiguous Factor	Likely Factor

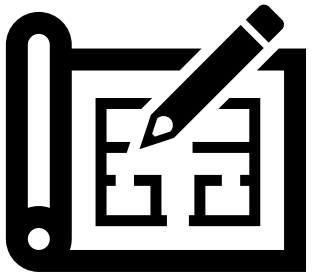
The Pathways

Ranking	Response	Caveat
Unable to Assess	Proceed with the pathway having the next highest score	
Unlikely Factor	DEQ renews as a WPCF permit	*If only one or two factors were able to be assessed, DEQ may request further studies in renewed WPCF permit*
Ambiguous Factor	DEQ renews as a WPCF permit	*DEQ requests further studies in renewed WPCF permit*
Likely Factor	DEQ determines most appropriate pathway for permitting, discusses with applicant/permittee.	*If score is 2 or less, follow pathway for "Ambiguous Factor"*

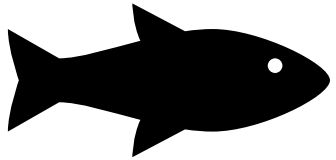
When is the FE IMD utilized?



When a WPCF facility's permit is being issued or renewed.



When a WPCF facility submits engineering designs.



Other situations as necessary.

Permit writer or engineer uses IMD and consults with Functional Equivalent SME.

Summary

- Maui Decision clarifies what type of permit is needed.
- DEQ developed the Functional Equivalent IMD to ensure consistent decision-making process to protect water quality.
- Each factor is ranked and all rankings are tallied to provide final determination on Functional Equivalency.
- IMD is utilized during WPCF permit issuance/renewal, upgrades, or as needed.

Questions?

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