

Rathdrum-Prairie Aquifer

Different Rules

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➤ Different Water Reuse Rules over the Rathdrum Prairie Aquifer in Northern Idaho?

- Details on the Rathdrum Prairie Aquifer
- Rules and regulations to be considered related to ground water protection
- Permitting strategies

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Rathdrum-Prairie Aquifer

Hydrogeology

➤ What is the RPA and How Did it Get There?

- Underground rocky formation containing water
- Formed 18,000 – 12,000 years ago during last Glacial Age from massive floods
- About 10 trillion gallons flowing as much as 60 feet per day in some areas

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Hydrogeology (cont.)

➤ Boundaries of the RPA

- 370 square miles between Idaho and Washington
- Starts in Idaho and flows southwest into Washington

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Uses

- Drinking water for 500,000 people in Idaho and Washington
- Recharges Spokane River
- Important resource for the region

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Rathdrum-Prairie Aquifer

Water Quality Requirements

- Federal & State
- Ground Water Quality Rule
- Sensitive Resource Aquifer

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FEDERAL

Designation -Sole Source Aquifer (Federal Register Vol. 43, No. 28, 1978)

1978 EPA designated the Spokane Valley-Rathdrum Prairie Aquifer as a Sole Source Aquifer. Reasons:

- Principal Source of Drinking water for the area
- If contaminated would become a significant hazard to public health
- No alternative drinking water source(s)
- Aquifer is vulnerable to contamination
- Currently has good water quality

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FEDERAL

Project Review Authority / Coordination

Federal financially-assisted projects which have the potential to contaminate the aquifer are subject to EPA review. Examples of federally funded projects reviewed by EPA under the SSA protection program include:

1. Highway improvements & new road construction
2. Public water supply wells and transmission lines
3. Wastewater treatment facilities
4. Construction projects that involve disposal of storm water

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Designation – Sensitive Resource Aquifer

In 1997 Board of Environmental Quality designated the Rathdrum Prairie Aquifer as a Sensitive Resource Aquifer

Criteria –Sensitive Resource Aquifer

- The water quality is better than the ground water quality standards and maintenance of quality is needed to protect beneficial uses
- The ground water in the aquifer is considered to be highly vulnerable
- The ground water in the aquifer represents an irreplaceable source for beneficial use

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Criteria –Sensitive Resource Aquifer (cont)

- The water quality is better than the ground water quality standards. The ground water within an aquifer is hydrologically interconnected with surface water and additional protection is needed to maintain the quality of either the surface or ground water. Hydrologic interconnection is either natural or induced ground water recharge or discharge areas.

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Project/Activity Review Authority

Any project/activity that has permit requirements that address ground water quality or has caused a release degrading ground water quality.

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Rathdrum-Prairie Aquifer Water Quality Requirements

- Federal & State
- Idaho Ground Water Quality Rule
- Sensitive Resource Aquifer

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Ground Water Quality Rule – IDAPA 58.01.11

Water Quality Standards

Establishes minimum requirements for protection of ground water quality through:

- Numerical and narrative standards
- Aquifer categorization process
- This rule does not in and of itself create a permit program

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Ground Water Quality Rule – IDAPA 58.01.11

Permitted Activities

Project/activity that has permit requirements that address ground water quality.

- Individual/Subsurface Sewage Disposal Rule – IDAPA 58.01.01
- Wastewater Rules – IDAPA 58.01.16
- **Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater – IDAPA 58.0.17**

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Ground Water Quality Rule – IDAPA 58.01.11 (cont.)

Permitted Activities

- Idaho Rules for Public Drinking water Systems – IDAPA 58.01.08
- Rules of the Panhandle Health District 1 – IDAPA 41.01.01

Permit can contain ground water quality requirements for the project/activity as per IDAPA 58.01.11 to be demonstrated before implementation of activity

Requirements based on type of activity and aquifer categorization

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Rathdrum-Prairie Aquifer

Water Quality Requirements

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Sensitive Resource Aquifer

❖ IDAPA 58.01.11.300 .01

Spokane Valley – Rathdrum Prairie Aquifer is Sensitive Resource Aquifer (the only one in the state)

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Sensitive Resource Aquifer

❖ IDAPA 58.01.11.300.01.a

Spokane Valley – Rathdrum Prairie Aquifer

In addition to the ground water quality standards in section 200, the following narrative standard applies: the aquifer shall not be degraded, as it relates to beneficial users, as a result of point source or nonpoint source activity unless it is demonstrated by the person proposing the activity that such change is justifiable as a result of necessary economic or social development

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Sensitive Resource Aquifer

- Sensitive Resource Category Aquifers

Activities with the potential to degrade sensitive resource aquifers shall be managed in a manner which maintains or exceeds existing ground water quality through the use of best management practices and best available methods.

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Writing a permit that works within the regulatory framework and is practical

- Tool Box
- Soil Moisture Probes
- Agra-Met Station Crop Water Usage Data
- Historical Irrigation Water Requirements (IWR)

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Writing a permit that works within the regulatory framework and is practical

- Soil Testing
- Plant Tissue Analysis
- Ground Water Monitoring
- Effluent Monitoring

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REUSE FARMING OVER A SENSITIVE RESOURCE AQUIFER

HARSB Reuse Farm

HARSB NEEDS

IDEQ & REUSE REQUIREMENTS

CROPS

FARMER

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HARSB Reuse Farm

HARSB OBJECTIVES

DISPOSAL OF THE EFFLUENT

TREES vs CROPS

FLOW METERS

MOISTURE SENSORS –

10 CENTABARS

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HARSB Reuse Farm TREES



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HARSB Reuse Farm

Livestock Crops

Alphafa

Orchard Grass

Timothy Grass

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HARSB Reuse Farm TREE OPERATIONS

TREE MAINTENANCE

TREE SPECIE SELECTION

BUGS

WIND DAMAGE

IRRIGATION & ITS CHALLENGES.

FLOW MEASUREMENT

TREES FOR SALE

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BUGS – SAW FLY



AFTER THE BUGS FINISH EATING



BUG SPRAY



HARSB Reuse Farm

Livestock Crop Farming

Maintenance – Pivot, Tires, Gear Boxes

Irrigation system and it challenges

Top and Lower Spray Positions

Flow measurement

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HARSB Reuse Farm

Livestock Crop Farming:

“The Farmer”

Irrigation and Farmer Needs

Farmer Crop Harvesting

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HARSB Reuse Farm Summary

**Primary Purpose - Effluent
Disposal**

IDEQ & Their Requirements

No Effluent Reaches the SRA

Crop Yield

Nitrogen Balance

Irrigation and Farmer Needs

Maintenance

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