

Treasure Valley Ground Water Protection



Ed Hagan, Idaho DEQ

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Overview

- Ground Water Quality Protection Statutes
- Common Contaminants
- Source Water Protection

Ground Water (The Lifeblood of Idaho)

- Ground water is vital to Idaho's economy.
- Provides fresh water for irrigation, industry, and communities
- Ground water & surface water are connected - replenishes rivers and streams.
- Ground water is the source of drinking water for 95% of Idahoans.

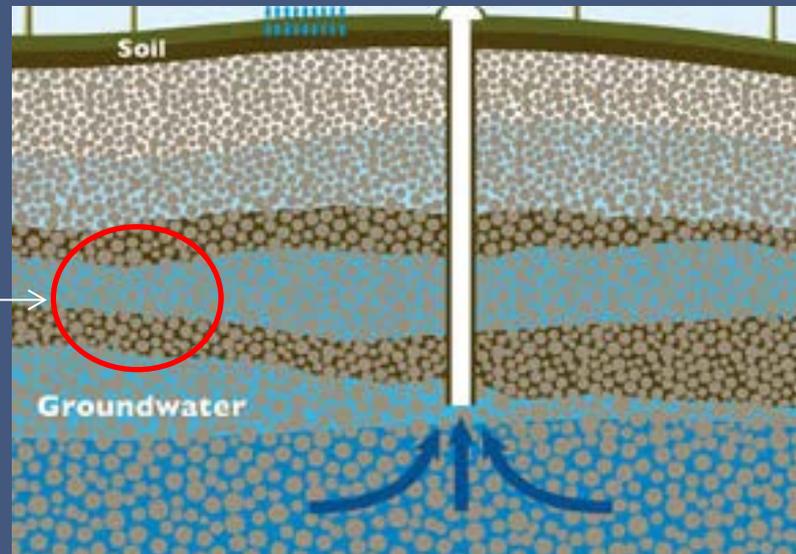


Ground Water Defined

Ground water is ...

the **water beneath the earth's surface**. It is the water that fills the natural open spaces in soil and rocks underground in much the same way as water fills a glass of ice.

Voids/pore spaces

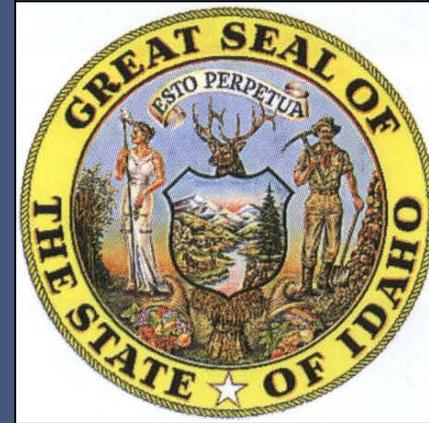


Ground Water Quality Protection Authorities



Federal Regulations

- No Clean Ground Water Act
- Federal Standards (Site Specific)
 - Waste Programs (RCRA)
 - Underground fuel tanks
 - Superfund (CERCLA)



Idaho State Regulations

- Ground Water Quality Plan
- State Statutes and Rules
 - GWQR – Standards
 - WW Rules – Aquifer Recharge
 - Policies – Nitrate Priority Areas

Idaho Ground Water Quality Plan

The Plan provides guidance and direction to state agencies, local governments, and citizens in preventing ground water contamination.

IDAHO GROUND WATER QUALITY PLAN

Protecting
GROUNDWATER
Q · U · A · L · I · T · Y
I N I D A H O



Environmental Protection and Health Act

- 39-102 – State Policy on Environmental Protection
 - All ground water shall be protected as a valuable public resource ...
- 39-120 - State Agency Responsibilities:
 - DEQ: Quality - lead agency for ground water quality protection programs and collecting data for water quality management purposes
 - IDWR: Quantity - lead agency to maintain ground water information system & collect baseline data
 - ISDA: lead agency to regulate pesticides & fertilizers and licensing applicators

Environmental Protection and Health Act

- 39-126 – Duties of State and Local Units of Government
 - All state agencies, cities, counties and other political subdivisions of the state shall incorporate the adopted ground water protection plan in the administration of their programs
 - State agencies, cities, and counties or other political subdivisions must take into account the effect of permitted activities on ground water and may attach conditions to mitigate those effects

Local Land Use Planning

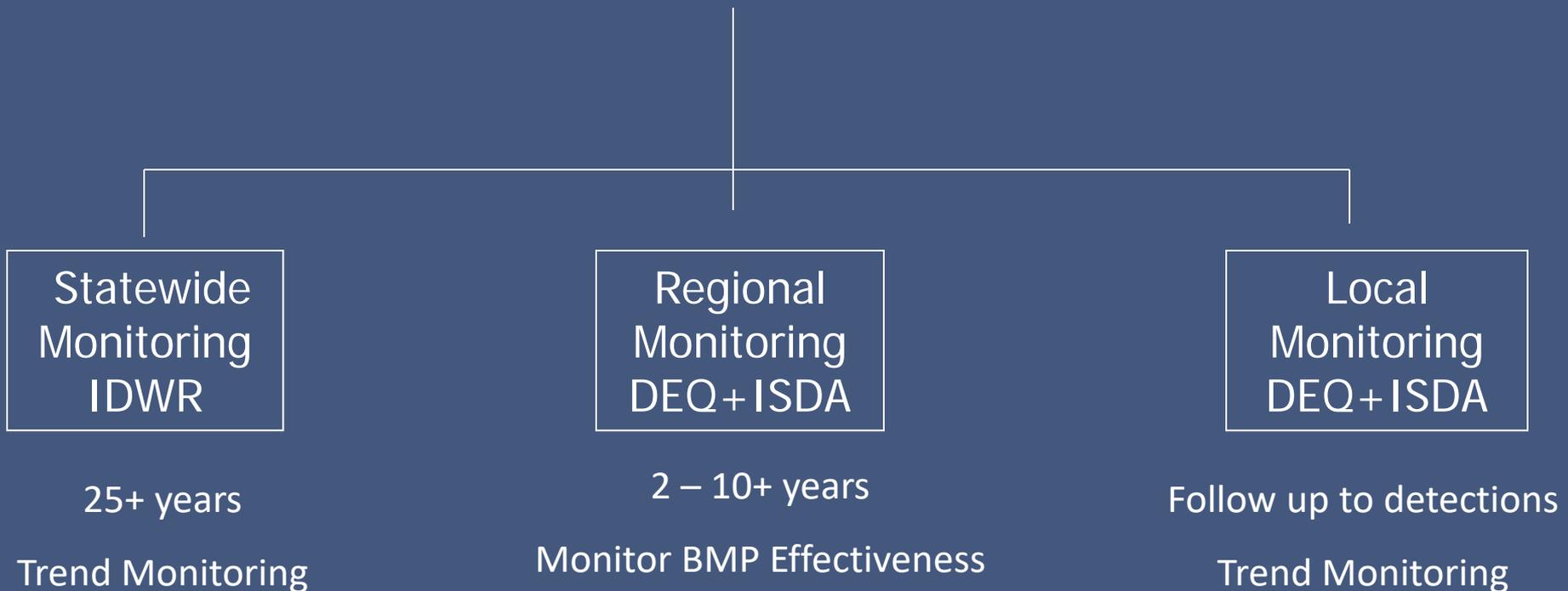
- 67-6537 – Use of Surface and Ground Water
 - When considering amending, repealing or adopting a comprehensive plan, the local governing board shall consider the effect the proposed amendment, repeal or adoption of the comprehensive plan would have on the **source, quantity and quality of ground water in the area.**

Aquifer Protection Districts

- 39-501 through 39-508
- 39-501: PURPOSE. The protection of ground water quality is essential for life, health and furthering matters of commerce. ... The purposes of establishing an aquifer protection district include protection of the state's economy, maintaining a water supply that does not require extensive treatment prior to human consumption or commercial use, avoiding the economic costs of remedial action, and protecting the well-being of communities that depend upon aquifers for essential human needs.
- 39-503: Limited to counties where a state designated sensitive resource aquifer has been declared as prescribed by rules of the department of environmental quality, and such designation was made prior to the enactment of this act.

Ground Water Quality Monitoring

- Idaho Code 39-120
- Ground Water Quality Plan



Common Contaminants

- Nitrate
- Arsenic
- Uranium
- Microbial
- Pesticides
- Petroleum hydrocarbons
- Chlorinated solvents

Nitrate

- Numerous sources
 - (fertilizer & animal/human waste)
- Ground water degradation found wherever there is human activity
- Shallow aquifers most at risk
- Long lasting – doesn't degrade
- Can migrate long distances
- Drinking Water Standard = 10 ppm

Uranium

Sources

- Naturally Occurring –
 - Erosion of granite
- Drinking Water Standard = 30 ppb

Arsenic

- Potential Sources
 - Naturally occurring
 - Historical use as pesticide
- In 2006 the Drinking Water Standard was reduced from 50 ppb to 10 ppb resulting in public water system treatment
- Widespread in southwest & south central Idaho



Microbial

- Potential sources
 - Septic tanks & sewer lines
 - Sewage lagoons – human
 - Waste lagoons - CAFOs
 - Surface water
- One exposure can cause illness
- Drinking Water Standard = detection

Pesticides

- Idaho State Department of Agriculture is the lead agency for monitoring agricultural chemicals.
- Multiple pesticides with drinking water standards (ppb concentrations)
- Infrequently detected

Petroleum Hydrocarbons

- Typically associated with regulated facilities
- **400+** UST sites within 1000 feet of a public water system well or spring
- Less dense than water so float on water table
- Degrade, so limited transport distance
- Multiple chemicals with drinking water standards (ppb concentrations)
- More frequently detected than pesticides

Chlorinated Solvents

- Typically associated with regulated facilities
- Industrial facilities and old dry cleaners
- Degrade slowly, so persistent
- More dense than water, so sinks in water
- Multiple chemicals with drinking water standards (ppb concentrations)

SOURCE WATER PROTECTION

- *“An ounce of prevention is worth a pound of cure.”* — Benjamin Franklin, February 4, 1735 edition of the Pennsylvania Gazette.

Source Water vs Drinking Water

Source Water Protection

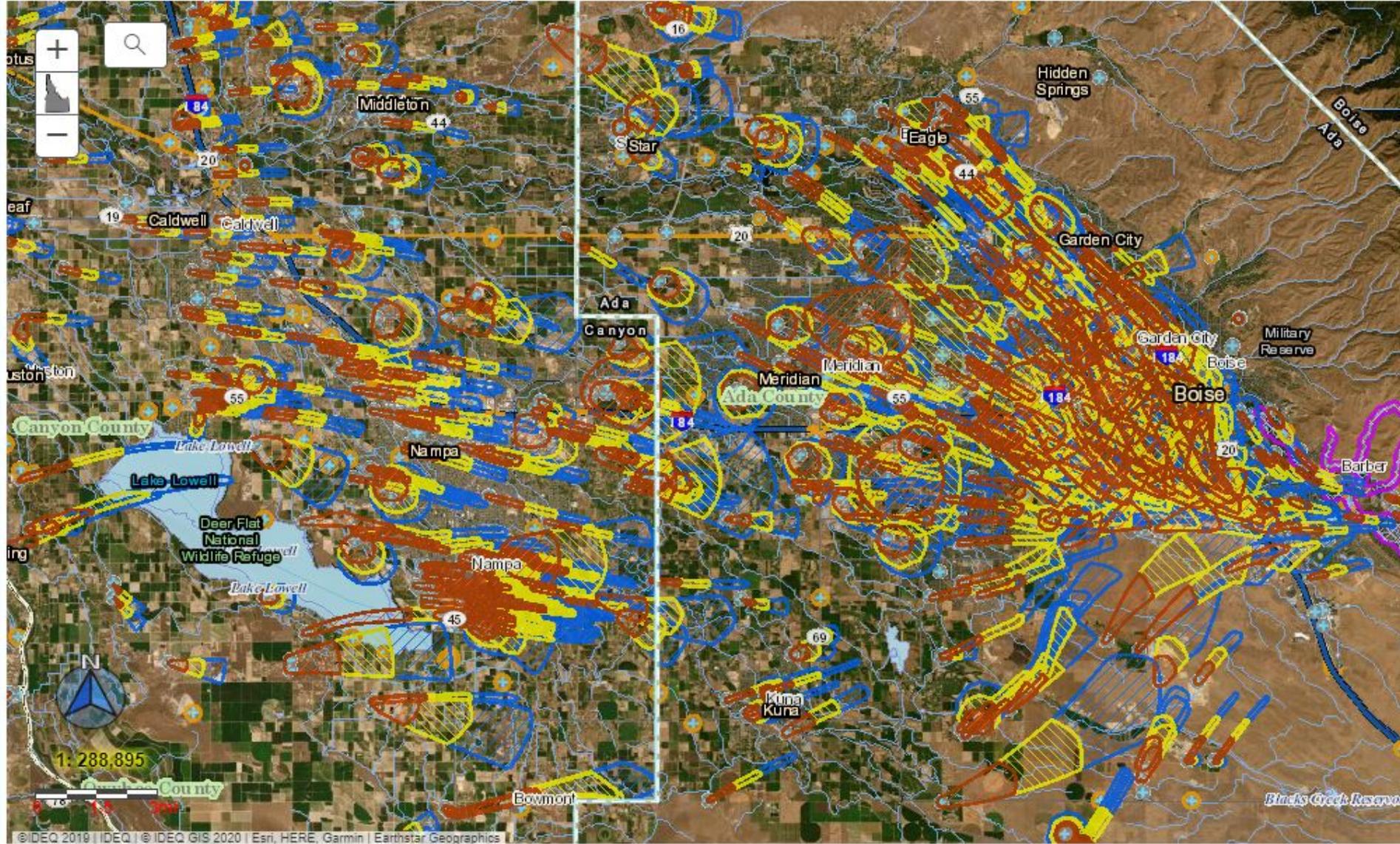
- Protect surface water and ground water that is the natural source or supply for drinking water
 - before treatment.

Drinking Water –Safe Drinking Water Act

- Provide safe drinking water at the tap
 - after treatment

Department of Environmental Quality
Source Water Assessment and Protection

Zoom In Zoom Out Prev Extent Next Extent Pan Clear Select SWA Measure Identify Print Map Help



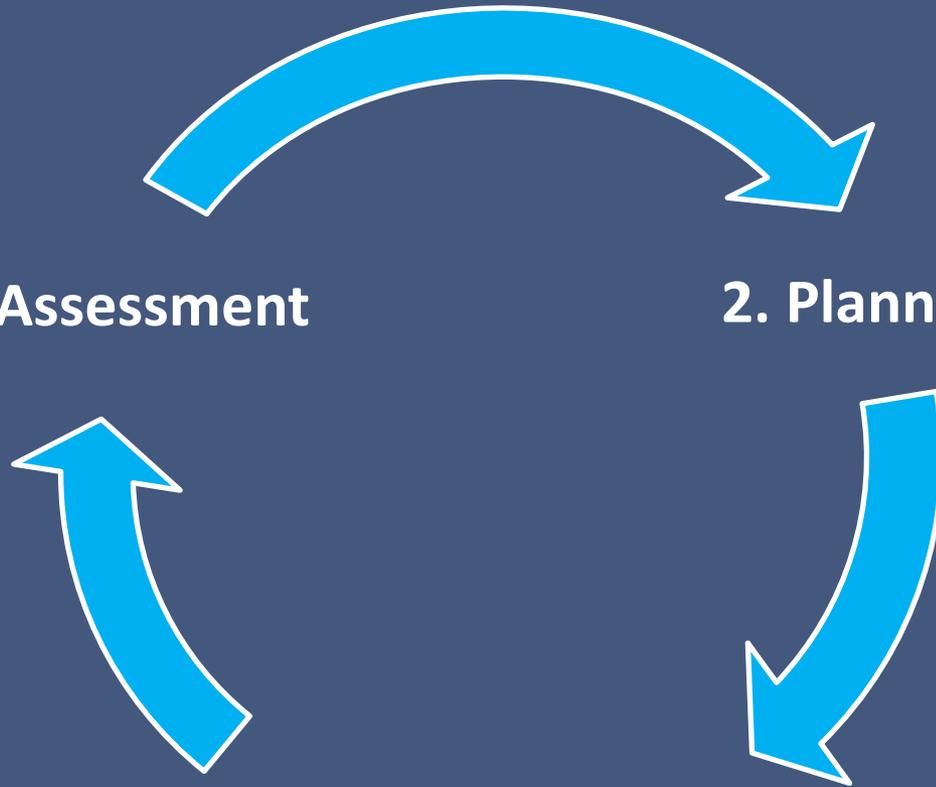
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Source Water Protection

1. Assessment

2. Planning

3. Implementation



Source Water Assessment Steps

Source Water Assessment

- Delineate source water areas;
- Conduct potential contaminant inventories;
- Calculate susceptibility scores; and
- Develop source water assessment reports

Purpose of the Source Water Assessment

To provide information which enables public water system owners, consumers, and elected officials to initiate, promote, and implement effective actions to protect drinking water sources.

PROTECTION

Ground Water Quality
Rule/Plan

Source
Water

CWA

Ground Water

Surface
Water

Contaminants

Landfills

Waste
Water

UIC

Mining

Septic

Agriculture

UST/LUST

ISWCC

DEQ

NRCS

IDL

Health Districts

Public Water Systems

Homeowners

Cities

EPA

Businesses

ISDA

Counties

IDWR

Drinking
Water

SDWA

Who Is Responsible for SWP?

Everyone Plays a Role in Source Water Protection

A variety of entities and agencies at the federal, state and local level have unique roles and responsibilities in source water protection.

(Idaho Source Water Assessment Plan)



Summary

- Ground water quality protection is required by Idaho statutes and rules.
- DEQ, ISDA, and IDWR have ground water quality protection responsibilities.
- Local units of government have authority to protect ground water.
- Coordination and collaboration is necessary to protect ground water/source water quality.

Thank you

Ed.Hagan@deq.idaho.gov

www.deq.idaho.gov/water-quality/ground-water/

