
Plan Review for a New PWS & the World of Setbacks



Jay MacPherson
Plan Review Coordinator



Oregon
Health
Authority

PUBLIC HEALTH DEPARTMENT,
DRINKING WATER SERVICES

Outline

- Step by step through plan review of a new PWS
 - Voice your experiences
 - New PWS Overview
 - Confirm
 - Inform
 - Process
 - Examples
 - Sand traps
- County/Dept. Agriculture Questions Regarding Setbacks
 - New wells and the WRD/OHA connection
 - Existing wells that violate setbacks
 - Short-term response
 - Long-term response
 - Is this workable within the constraints?



Voice Your Experiences



- Who feels like they were necessary to at least one essential part of a plan review?
- Who feels like they've conducted any major steps of a plan review
 - Confirm, inform, process, sand traps
- Who feels like they've been through an entire plan review (for new or existing system)?
- What issues do you have regarding plan review of new systems?
- How can we make plan review better?
- As we proceed, please voice questions/concerns/insights that arise (OK to interrupt me)

Plan Review for a New PWS – Overview

- A new public water system is identified
- Co., Ag., or DWS tech serv fills out and sends inventory update to DMCE (compliance.dw@state.or.us)
- OHA DMCE issues a PWS ID number
- PWS contacts DWS engineer with questions
- PWS submits plans to OHA DWS
- Well eval by hydrogeo; eng. reviews plans
- Additional information may be requested
- *Optional*: construction waiver application
- OHA writes PWS a letter of approval (or not)
- PWS confirms project completion (written)
- OHA sends final approval (or not)



New PWS Identified – Confirm & Inform

1. Regulator confirms it is actually a PWS
 - Communicate with a responsible party, get their address/phone/email
 - Recent owner change? Is it an inactive PWS (i.e. already in SDWIS)?
 - Number of connections and users
 - Duration of use in calendar year

2. Provide PWS with a plan review information packet(s), e.g.:

- Well
- Distribution
- Storage
- Treatment

Located at:

<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/PlanReview/Pages/index.aspx>



New PWS Identified - Process

1. Confirm it is actually a PWS
2. Provide PWS with a plan review information packet(s)
3. Fill out forms for Inventory Update (to compliance.dw@state.or.us)
 - Water System Information
 - Entry Structure Form
 - Entry Structure Diagram (may not be possible until after site visit)
 - Source Information (not possible until source installed)

Forms located in Inventory Updates page within County & Dept. Ag Res.
<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Partners/Pages/inventory.aspx>




New PWS Identified - Process

- Inventory Update
 - Water System Information
 - Entry Structure
 - Entry Structure
 - Source Information

<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Partners/Pages/inventory.aspx>





Water System Information

DHS Drinking Water Program

41
PWS ID

☐ New system – Fill out Inventory and Source Change forms.
 ☐ Built before 8/21/81

System:

Contact with:

Phone: ()

Staff member:

☐ State
 ☐ County
 ☐ Dept. of Agriculture
 ☐ Other

☐ Change system name: New name

☐ Change system statistics:

Type *
☐ Community (C)
 ☐ Non-transient non-community (P)
 ☐ Transient non-community (N)
 ☐ State regulated (S)

Size, Etc.
 Population:
 Connections:
 Service Chars*: ☐ ☐
 Ownership*: ☐
 County:

Season
☐ All year
 ☐ Seasonal
 Begins: mm/dd
 Ends: mm/dd

Coliform Sampling
 Period: ☐ Monthly ☐ Quarterly
 Samples Required:

*** see reverse for details**

Certification
 WT- WD- ☐ FE?

License
☐ Not lic. ☐ DHS ☐ Ag.

Responsible Agency
☐ State ☐ County ☐ Dept. of Ag.

☐ Contact change: ☐ Also Owner ☐ Also Operator ☐ Also Direct Responsible Charge (DRC)

Name & Title:
 Mailing Address:

PUBLIC HEALTH DEPARTMENT
Drinking Water Services

Oregon
Health
Authority

7

New PWS Identified - Process

- Inventory Update
 - Water System Information
 - Entry Structure Form
 - Entry Structure Diagram
 - Source Information (not shown)



Entry Structure Diagram
OHA Drinking Water Program

System: _____ PWS ID 41 ☐ ☐ ☐ ☐ ☐

Contact with: _____ Ph# _____ County: _____

Staff member: _____ Date: _____

Agency ☐ State ☐ County ☐ Dept of Ag ☐ Other

Entry Points

☐ Treatment Changes Only

		Source Type					Availability		Treatment Codes				Designated Sample Point (if different from EP)		
		Ground (G)	Surface (S)	GWUDI (U)	P. Grnd (W)	P. Surface (P)	Permanent (S)	Seasonal (S)	Begins	Ends	Emergency	Abandoned		Disconnected	None
ID	Name														None
A		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/	/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/	/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/	/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/	/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/	/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	/	/	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please Enter Diagram Entry Points
(Shows piping structure thru entry point to distribution. Mark

Sources
(IDs for sources on an EP start with the EP

New PWS Identified - Process

- Inventory Update
 - Water System Information
 - Entry Structure Form
 - Entry Structure Diagram
 - Source Information



Source Info		41 <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
OHA Drinking Water Program		PWS ID	
System:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Source Name:	<input type="text"/>	Entry ID	Source ID
Contact with:	() -	County:	<input type="text"/>
Staff Member:	<input type="text"/>	Date:	<input type="text"/>
<input type="checkbox"/> State <input type="checkbox"/> County <input type="checkbox"/> Dept. of Agriculture <input type="checkbox"/> Other			
<input type="checkbox"/> New Source <input type="checkbox"/> Pre '81 <input type="checkbox"/> Plan Review Approved <input type="checkbox"/> Needs Plan Review <input type="checkbox"/> Modify Source <input type="checkbox"/> Abandon/Disconnect Source			
<input type="checkbox"/> New Source Info		<input type="checkbox"/> Groundwater Info	
Availability <input type="checkbox"/> Permanent <input type="checkbox"/> Seasonal <input type="checkbox"/> Emergency Entry Point <input type="checkbox"/> System has single source Structure <input type="checkbox"/> Source on EP by itself <input type="checkbox"/> Other (please fill out EP diagram) Latitude: <input type="text"/> <input type="text"/> <input type="text"/> deg. min. sec. Longitude: <input type="text"/> <input type="text"/> <input type="text"/> deg. min. sec. Capacity: <input type="text"/> gal. Yr Installed: <input type="text"/> Basin Name: <input type="text"/>		Source Type <input type="checkbox"/> Well <input type="checkbox"/> Spring Water Resource <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Well ID: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Depth to 1st Wtr <input type="text"/> ft. Bearing Zn: <input type="text"/> ft. Addnl WBZs: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk. Static Water Lvl: <input type="text"/> ft. Source Elevation: <input type="text"/> ft. Casing Seal: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk. Seal Depth: <input type="text"/> ft. Screen Type: <input type="checkbox"/> Screened <input type="checkbox"/> Perforated <input type="checkbox"/> None WHPA delineated: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> CFR <input type="checkbox"/> Num. Method <input type="checkbox"/> Analytical/HM <input type="checkbox"/> Other	
<input type="checkbox"/> Land Use		<input type="checkbox"/> Aquifer Info	
<input type="checkbox"/> Pristine Forest (A) <input type="checkbox"/> Rural On-Site Sew. Disp. (H) <input type="checkbox"/> Irrigated Crops (B) <input type="checkbox"/> Urban On-Site Sew. Disp. (I) <input type="checkbox"/> Non-Irrig. Crops (C) <input type="checkbox"/> Rangeland (J) <input type="checkbox"/> Pasture (D) <input type="checkbox"/> Managed Forest (K) <input type="checkbox"/> Light Industry (E) <input type="checkbox"/> Commercial (L) <input type="checkbox"/> Heavy Industry (F) <input type="checkbox"/> Recreation Use (M)			

PUBLIC HEALTH DEPARTMENT
Drinking Water Services

Oregon
Health
Authority

New PWS Identified - Process

- What issues do you see with filling out forms for Inventory Update?
 - Water System Information
 - Entry Structure Form
 - Entry Structure Diagram (may not be possible until after site visit)
 - Source Information (not possible until source installed)
- Do you think it is the plan review engineer's responsibility to fill out these forms each time? If so, why? Does first contact make more sense? Form location...



New PWS Identified – Example 1

- Existing nursery (not a PWS) wants to add espresso bar and contacts County
- Expected population count does not meet minimum for PWS...yet
- To obtain license, nursery needs PR approval letter, Co > DWS



New PWS Identified – Example 1 con't

- DWS & nursery talk, at least 30 workers on-site at least 6 months of the year → NTNC
- Source exists (pre-1981)
- Owner confusion regarding PWS classification (Espresso vs NTNC)



New PWS Identified – Example 1 con't

- No well log for source
- Since operation existed before 1982, was it a PWS before 1982 (can the PWS be grand-parented from plan review)?
- Not a PWS before 1982 based on worker population. Therefore must meet current construction standards.
- No well log, \therefore not properly constructed, “In use without final approval”



New PWS Identified – Example 2

- Substance abuse counseling provider conducts due diligence for purchase of existing structure, contacts County who refers to DWS
- Expected population → TNC
- Is plan review necessary?



PUBLIC HEALTH DEPARTMENT
Drinking Water Services

Oregon
Health
Authority

New PWS Identified – Example 2 con't

- What was previous use of facility? River View OR4192031 !
- No plan review (PR) listed in Data Online. Is plan review necessary?
- River View inactive since January 2000, last survey in 1990
- Due to older plans not entered in SDWIS, it is a judgement call as to whether plan review is needed
- If no new wetted equipment added since 1990, no need for PR
- However, no well log, highly sensitive aquifer \therefore require assessment monitoring? Grey area...ask: what is protective of public health?



PUBLIC HEALTH DEPARTMENT
Drinking Water Services

Oregon
Health
Authority

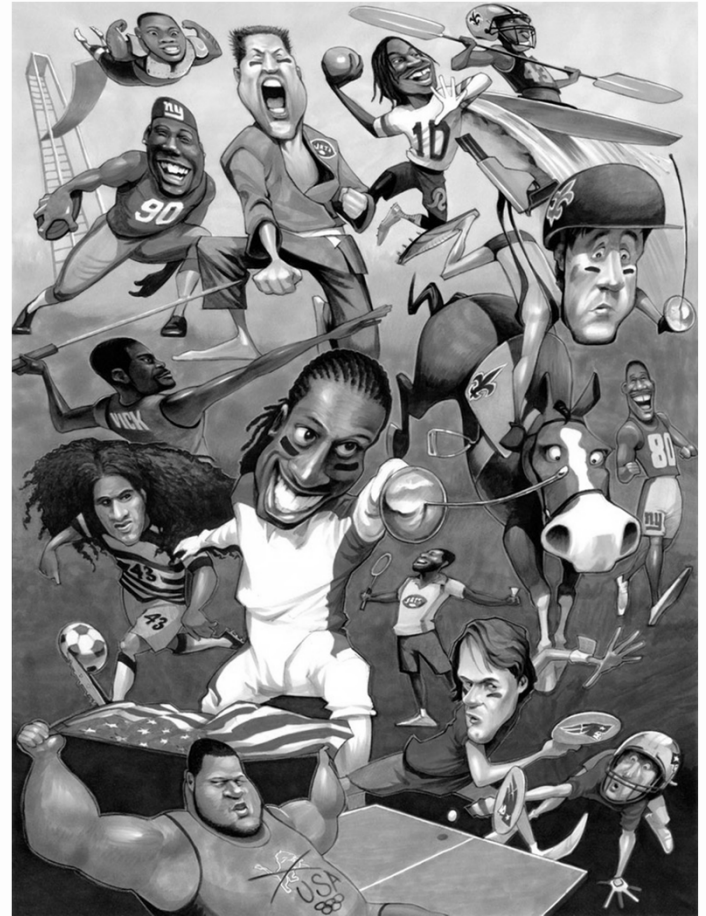
New PWS Identified – Example 3

- Facility noticed during Source Water Assessment field work (Sept 2016).
- NTNC
- Searching for well log, waiting on analytical (Dec 2016).
- First routine TC sample is negative...and has a chlorine residual (early March 2017).
- Arsenic treatment oxidizes III>V
- Well log found (March 28)
 - Not properly constructed
 - When was operation a PWS?
 - Worker population in 1981 small
- “In Use Without Final Approval”



New PWS Identified – Example 4

- Proposed Dollar General Store that requires land purchase
- First contact with developer Embree
- Facility will be a Dollar General Store
- Driller sends DWS well design
- Multiple Dollar General staff pursue O&M, ERP, CSP templates
- Construction contractor submits questions
- DWS sets up PWS ID w Dollar General, issues conditional approval to Dollar
- ...Owner is Embree (will lease to Dollar General)



New PWS Identified – Example 5

- Proposed NW Reflections care facility with existing well
- Well does not meet setback from property line (no 100' radius of control)
- Contact with neighbor unproductive (thus no easement)
- Lot size prevents meeting all setbacks, one is a road right-of-way (no road yet)
- Second well installed, aquifer unconfined
- Is waiver needed or is lack of existing road non-issue?
- Since road doesn't exist yet, it is not a hazard



New PWS Identified – Example 6

- 3 existing Union Pacific RR operations
- Continued operation for >100 years
- Houses built before 1981 for workers
- Eventually houses sold, remain on water supply, owners no longer with UPRR
- At 2 locations water not needed, UPRR wanted PR rejection
- *“Union Pacific Railroad told the six property owners in Telocaset the railroad company will contribute money to pay for new wells after deciding to shut off its own, which is no longer needed by the company” The Observer, La Grande on March 3, 2017*



New PWS Identified – Example 7

- Thompson's Mills State Heritage Site (park with hand pump)
- Park floods, 100-year storm level 42" above grade at best well location (based on setbacks for septic, neighbor, surface water)
- Platform would require ADA compliant ramp
- Applied for waiver from construction standards regarding well casing 2 ft above 100-yr flood elevation (min casing ht 5.5 ft above grade)
- Alternate measures to protect public health: close park; lock handpump; when water recedes, clean pump and disinfect well, lock pump, sample for coliform; after absent result from lab, remove lock



PWS Contacts DWS Engineer

- Typically first contact is a phone call
- Email is very useful as it allows fast file transfers
- PWS often does not have a well log available
 - Instruct PWS on where to find well ID
 - If no log, downhole camera may be required
- PWS often does not know what level of map detail to provide
- PWS often does not know what is a sanitary hazard
- PWS often does not know location of known hazard (septic field)



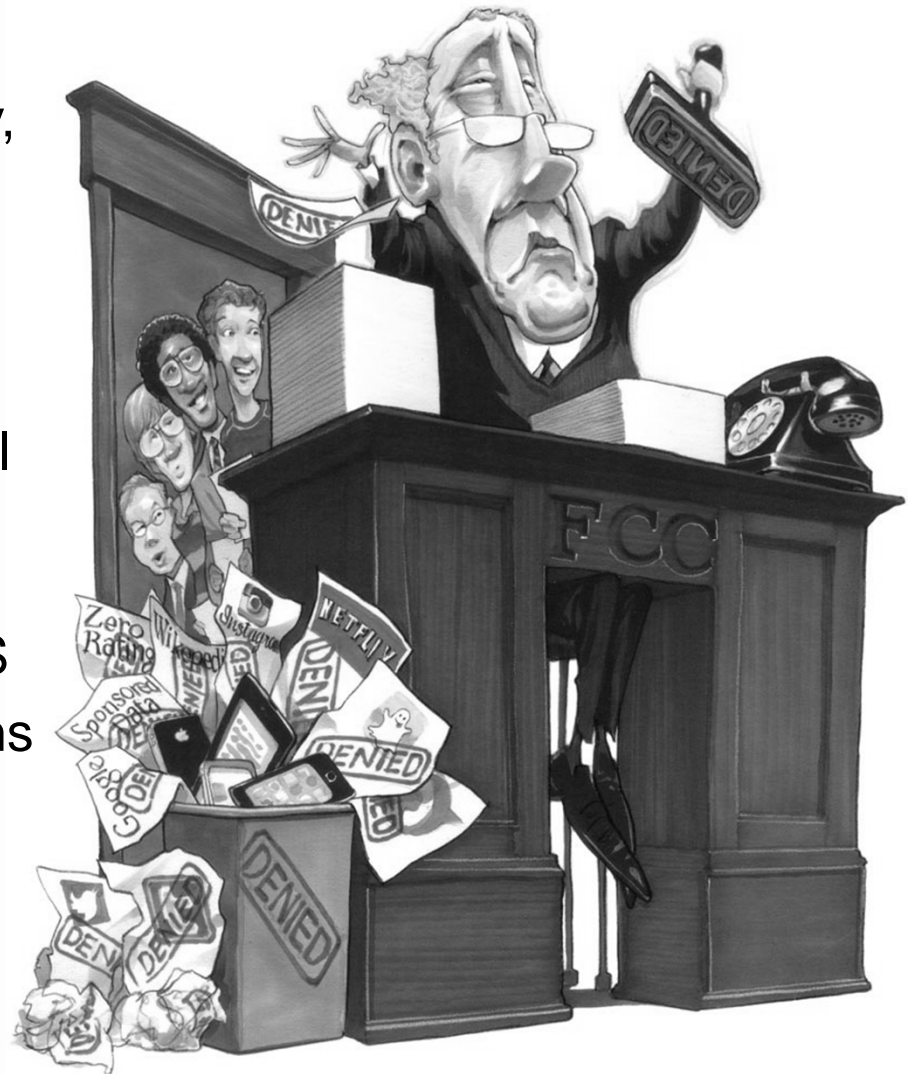
Land Use Compatibility Statement (LUCS)

- Needed if project occurs on land not previously used for PWS
- Some Counties require DWS PR approval before they provide LUCS approval. DWS LUCS form at:
(<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/PlanReview/Documents/LUCS.pdf>) option 3 states *"I understand that plan review approval for this project will not be effective until and unless the Department of Human Services has received a copy of the land use approval and determined it to be complete and adequate."* (headache to track and assure County LUCS issued)



Reminders

- Do not mention the application for construction standard waiver lightly, it is the last resort
- For setback issues with property lines, be sure PWS knows to document efforts to communicate with neighbor(s) to obtain perpetual restrictive easement
- Documented use before 1981 that conforms to the definition of a PWS
- If you submit inventory update forms to DMCE, and a few weeks to a month passes without a letter from DMCE, please remind them
- PR letter: O&M, ERP, CSP



New PWS – Sand Traps



- ‘New’ public water system that turns out as an inactive PWS
 - If an inactive, do they have new equipment or source?
 - No new equipment or source...no plan review
- Multiple sources, some inactive, switch made from inactive to active
 - If activated source went through plan review, no new PR
 - If no plan review in Data Online and source newer than 2000, PR
- New equipment that is for taste and odor, iron/magnesium, softening...no plan review, but send proof equipment is certified to Standard 61 (may be impractical for old equipment)
- Pre-1981 documentation that operation was a PWS by definition at that time
- No well log, ambiguous well log, or inadequate construction

New PWS – Sand Traps con't



- PWS name changes
- Subdivision of existing PWS
- PWS acquires or changes service provider
- Communications should identify PWS name, PWS#, PR#
 - PWS sends information with no context to who they are (maybe using different email) or the facility “*Here is the water test I just received from the seller. Let me know if you need anything more*” and lab report ‘Sample ID’ is an address. Email subject ‘data’
- Regulator sending in documentation – limited submissions are OK as long as owner/operator is leading and taking responsibility
 - Raises possibility of losing track of this information
 - Line between assistance/facilitation and advocacy

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

New PWS – Sand Traps con't

- Source water needs treatment
- Treatment involves backwash
- DEQ has requirement if they learn of the condition
- NPDES 200-J Permit (expired 31 July 2002)

“Discharge or land application of filter backwash, settling basin, and reservoir cleaning water which have been adequately treated prior to discharge. Flushing of raw water intakes after storm events and spring runoff are also allowed.”

- DEQ issues “Enforcement Discretion Letter,” not a permit
 - Application fee
 - Renewal fee every 5 to 10 years
 - No annual fee as with a ‘normal’ 200-J permit



(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

New Wells and the WRD/OHA Connection

- Past observations by Co/Ag that discussion is needed between OHA and Water Resources Department (WRD). Well drillers are able to drill within the 100' setback to a septic system without any penalty or enforcement from Oregon Water Resources
- WRD/OHA meetings have discussed this issue



New Wells and the WRD/OHA Connection *Rule*

- 690-210-0030(1) No person shall construct a water supply well within:
 - 50 ft of septic tank (same as OHA)
 - 100 ft of septic drainline (>OHA) or sewage sludge disposal (same as OHA)
 - 50 ft of closed sewage or storm drain system (except in or under bldg.)
 - 50 ft of confined animal feeding/holding; or animal waste holding (<OHA)
 - 50 ft of commercial fuel storage tank, 25 ft of residential fuel storage
 - 500 ft of hazardous waste storage, disposal, or treatment facility (>OHA)
- 690-210-0030(6) References additional OHA setbacks



New Wells and the WRD/OHA Connection

Complications

- WRD staff keep well locations in mind (call OHA about once/month)
- WRD staff cannot be on-site for ALL well installs
- Wells sometimes are drilled the day a start card is issued
- WRD unaware of whether OHA plan review is ongoing or if a construction waiver was granted
- WRD may or may not look at property boundaries before issuing a start card
- Clients don't necessarily inform drillers a well is for a PWS



Existing Wells that Violate Setbacks

- How to address wells that do not meet setbacks to hazards and how to deal with them in the long run
- Short-term
 - Without an existing waiver from construction standards, it is a deficiency
 - Can the hazard be moved? 333-061-0032(6)(f)(A)
 - Is there an alternate source of water? 333-061-0032(6)(f)(B)
 - Can the hazard be removed (eliminated)? 333-061-0032(6)(f)(C)
 - With an existing waiver from construction standards, it is OK
 - Apply for a waiver from construction standards (no guarantee of approval)



Existing Wells that Violate Setbacks

- What issues do **you** see with the short-term solutions that follow?
 1. Without an existing waiver from construction standards, it is a deficiency
 - a) Can the hazard be moved? 333-061-0032(6)(f)(A)
 - b) Is there an alternate source of water? 333-061-0032(6)(f)(B)
 - c) Can the hazard be removed (eliminated)? 333-061-0032(6)(f)(C)
 2. With an existing waiver from construction standards, it is OK
 3. Apply for a waiver from construction standards (no guarantee of approval)



Existing Wells that Violate Setbacks

Waivers

- PWS **applies** for Waiver from Construction Standard – form available at <http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/PlanReview/Documents/WAIVER.doc>
- Specific construction standard to waive needs to be identified in appl
- Project description involved with waiving the standard (e.g. “existing well location violates setback requirement”)
- Reason the waiver is **necessary** (typical place where applicant falls short as money alone is not a valid reason)
- Propose alternate measures to protect public health and welfare
- Remember, there is no guarantee of waiver approval.



Existing Wells that Violate Setbacks

Long-Term

- Old PR approval, or assumed approval (pre-2000 PWS)
 - Setback issue addressed with recommendation each survey (unless new hazard)
 - If hazard on adjacent property, may pursue land-use permit restrictions
- What is incentive to address a violation that is now many years old?
 - Example: Well improperly constructed but no *E. coli* confirmations → no incentive?
 - Example: Well in use without final approval → some future permit approval needed; pride?
- Recent PR “In use without final approval”
 - Results in a significant deficiency at every survey until corrected
- If future water quality problems occur, PWS will need to resolve

Review

- Plan review of a new PWS
 - County and DoAg experiences
 - New PWS PR
 - Confirm it is a PWS
 - Inform the PWS
 - Process
 - Examples
 - Sand traps
- County/Dept. Agriculture Questions Regarding Setbacks
 - New wells and the WRD/OHA connection
 - Existing wells that violate setbacks
 - Short-term response
 - Long-term response
 - Is this workable within the constraints?



In Closing...

- Additional questions? Ask Carrie Gentry, Kari Salis, Casey Lyon
- Action items review
 - Who
 - What
 - When
- What would have made this presentation even better?

