### **Surveys Review**



OHA Drinking Water Services
Survey Training Webinar
October 10, 2018



Wednesday, October 10								
Time	Topic	ppic Presenter						
10:00 – 11:30	Survey Overview		Webinar					
		Wednesday, October 17						
9:00 – 11:30	Survey Prep	Small Groups – DWS	2577 NE Courtney Dr. Crate Lake Conference Rm. Bend OR,					
	Working Lunch	Small Groups – DWS	Field Lunch					
12:30 – 2:30	Field Work	Small Groups – DWS	Group 1 Eagle Crest Group 2 Cline Butte Group 3 Sun Mountain					
3:00 – 5:00	Survey write up	Small Groups – DWS	2577 NE Courtney Dr. Crate Lake Conference Rm. Bend OR,					
		Thursday, October 18	•					
8:00 – 10:00	Survey write up	Small groups -DWS	1300 SW Wall St. Barnes/Sawyer Rm. Bend, OR					
10:00 – 3:00	Fall Training	DWS	1300 SW Wall St. Barnes/Sawyer Rm. Bend, OR					



## **Surveys Review**

- Survey basics –Tia
- Survey forms overview Tia/Carrie
- Preparing for survey Casey
- On-site inspection –Casey



Artesian emergency well



Called sanitary surveys by EPA, OAR 333-061-061-0020

(117) "Sanitary Survey" or "Water System Survey" means an on-site review of the water source(s), facilities, equipment, operation, maintenance and monitoring compliance of a public water system to evaluate the adequacy of the water system, its sources and operations in the distribution of safe drinking water. The sanitary survey also identifies sources of contamination by using the results of source water assessments where available.



- Frequency
  - Every 3 years for Community Water Systems (CWS), unless determined to meet "Outstanding Performer" criteria
  - Every 5 years for non-community (NTNC & TNC), and "Outstanding Performer" community water systems.
- DWS provides a list at beginning of calendar year of surveys to be completed that year.
- Systems on the list receive a letter from DWS notifying that they are due for survey and the fee for the survey.



### Survey basics – where to find forms

https://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Partners/Pages/index.aspx



#### County & Dept. of Agriculture Resources

#### Water System Surveys

Conferences & Training
Document Library
Inventory Updates
EPA Staff Resources
Coliform Resources
Monitoring Resources
Compliance Resources



Public Health > Healthy Environments > Drinking Water > County & Dept. of Agriculture Resources > Water System Surveys

#### Water System Surveys

The information on this page is designed for and intended for use by Drinking Water Services County and Department of Agriculture partners who have specialized training and are registered as an environmental health specialists. If you have questions regarding this material please contact Drinking Water Services at (971) 673-0405.

#### On this page:

- Survey Manual and Related Information
- Survey Form Templates
- Survey & Deficiency Follow-up
- For Operators

#### More Resources

Drinking Water Data Online Site Map

For Consumers

Contact Us

Drinking Water Services
Center for Health Protection

#### Survey Manual and Related Information

- M Water System Survey Reference Manual revised 03/09/2016
- Symbols for Schematics and Sample Water System Schematics
- Tounting Population and Connections for a Public Water System
- The Chemical Monitoring Schedules for Community and Non-Transient Non-Community groundwater systems
- Standard Monitoring Framework to assist with completing the water quality monitoring page of the survey
- · Outstanding Performance
- T Deficiency List revised 6/24/2015
- Setback Issues Found in a Survey Procedure New 12/15/2015

#### Survey Form Templates

- Machine About Survey Template Packets
- Survey Template Instructions
- In Outstanding Performer Template



### Survey form templates & resources

See "About Survey Template Packets" on which pages to use

#### Survey Form Templates

- About Survey Template Packets
- Material Survey Template Instructions
- Outstanding Performer Template

The following documents are password protected (they currently open best in Firefox):

- Packet 1: C-NTNC Groundwater Survey Template revised 10/12/2016
- Packet 2: C-NTNC Surface Water Survey Template revised 10/12/2016
- Packet 3: TNC-NP Survey Template revised 10/12/2016

#### Templates for Survey Cover Letters:

- Community Groundwater Systems includes outstanding performer information language
- MTNC, TNC, and Non-EPA Groundwater Systems
- Oommunity Surface Water Systems includes outstanding performer information language
- MTNC, TNC, and Non-EPA Surface Water Systems

#### Survey Deficiency Follow-up

- Failure to Take Corrective Action Template for Groundwater Systems
- Tollow-Up of Deficiencies Procedure New 12/15/2015

#### For Operators

Resources to assist operators with preparing for surveys and inspections are located on the main sit Operations.



- Open DWS website
  - www.healthoregon.org/dws



### Oregon Drinking Water Services

### Working to keep drinking water safe for Oregonians

Access to safe drinking water is essential to human health. Each person on Earth requires at least 20 to 50 liters of clean, safe water a day for drinking, cooking and simply keeping themselves clean. Oregon Drinking Water Services works to help keep drinking water safe for Oregonians.

Oregon Drinking Water Services (DWS) administers and enforces drinking water quality standards for public water systems in the state of Oregon. DWS focuses resources in the areas of highest public health benefit and promotes voluntary compliance with state and federal drinking water standards. DWS also emphasizes prevention of contamination

compliance with state and federal drinking water standards. DWS also emphasizes prevention of contamination through source water protection, provides technical assistance to water systems and provides water system operator training.

Open Partners page

#### **Oregon Drinking Water Services**

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Contact Us

Subscribe to Email Alerts

Data Online

#### Services

- · Cross Connection & Backflow Prevention
- · Emergency Preparedness & Security
- · Groundwater & Source Water Protection
- · Monitoring & Reporting
- · Operator Certification

#### Resources

#### County & Department of Agriculture Resources

- · Data Online
- · Domestic Well Safety Program
- · Drinking Water Advisory Committee (DWAC)
- · For Consumers
- · Rules & Implementation Guidance

#### \* News and

#### Link

Temporary and Prop

Cyanotoxin Resource

Information on Health

For water systems: F

0040 Dilling 146-1-

# County & Dept. of Agriculture Resources Oregon Drinking Water Services Dept. of Agriculture Resources Oregon Drinking Water > County & Dept. of Agriculture Resources

#### For Environmental Health Specialists

#### **Drinking Water Services**

County & Dept. of Agriculture Resources

Water System Surveys

Conferences and Training

Document Library

Inventory Updates

EPA Staff Resources

Monitoring Resources

Compliance Resources

Contact Us

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#### Notice to Partners

You no longer need the username and password to access the DWS partner's websitel

- · You can access the partner's site from the main DWS website, or by going to www.healthoregon.org/dwpartners
- . Some of the documents require a password to access. It is the same password you used to access the partners site.

#### Quick Reference

- · Enter Contact Reports and Boil Water Advisories
- 2014 Department of Agriculture Contract
- 🔒 Revised Program Element #50: Safe Drinking Water Effective July 1, 2018
- · All other requests or correspondence submit to Compliance Drinking Water

#### Key Resources

- Data Online
- For Consumers
- Site Map



- Download a blank survey form
- Open document

#### Survey Manual and Related Information

- Water System Survey Reference Manual revised 03/09/2016
- A Counting Population and Connections for a Public Water System
- A Chemical Monitoring Schedules for Community and Non-Transient Non-Community groundwater systems
- Standard Monitoring Framework to assist with completing the water quality monitoring page of the survey
- · Outstanding Performance
- Deficiency List revised 6/24/2015
- Setback Issues Found in a Survey Procedure New 12/15/2015
- Membrane Survey Staff Guide New 12/20/17

#### Survey Form Templates

- · About Survey Template Packets
- Survey Template Instructions
- . M Outstanding Performer Template

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- Packet 2: C-NTNC Surface Water Survey Template revised 05/30/2018
- Packet 3: TNC-NP Survey Template revised 05/30/2018

#### Templates for Survey Cover Letters

Community Groundwater Systems - includes outstanding performer information language
 NITNO TAIC and Non-EPA Croundwater Systems

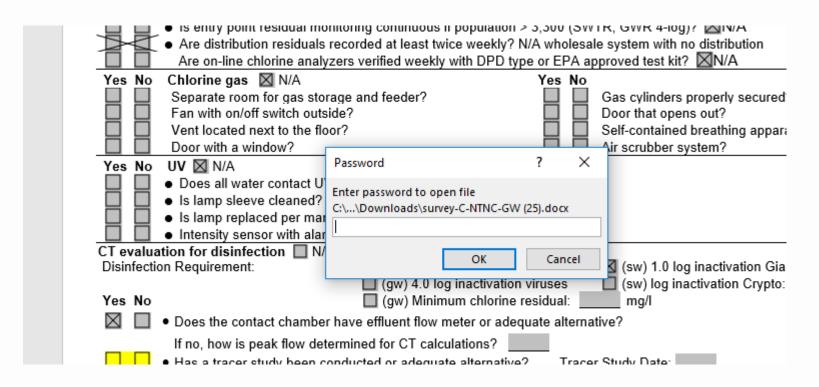


- Password protected
  - Public
  - Operators
  - Etc...

- Removing password
  - Historical files
  - Current version?

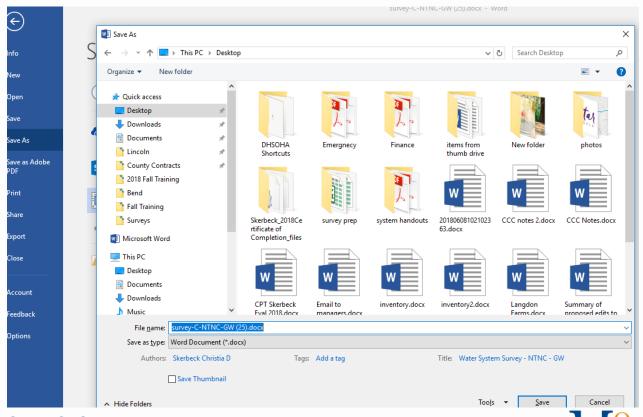


### Enter password

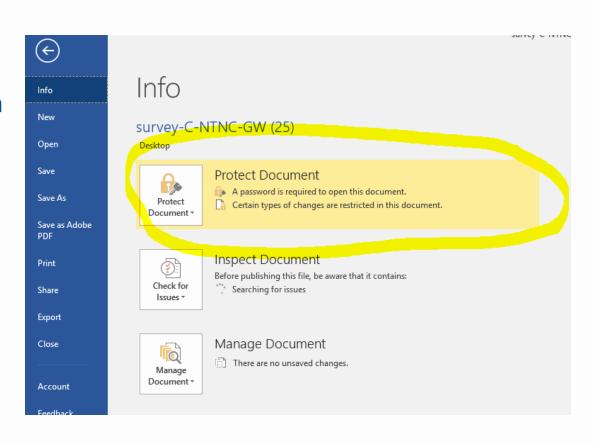




Save the file to your computer desktop



- With the survey open
- Go to FILE
- Click PROTECTDOCUMENT

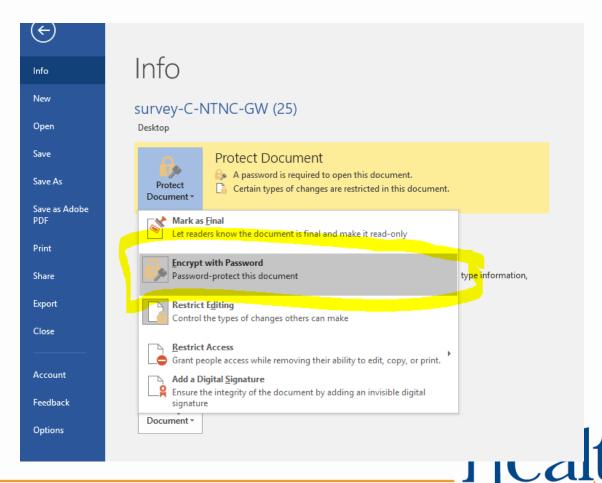




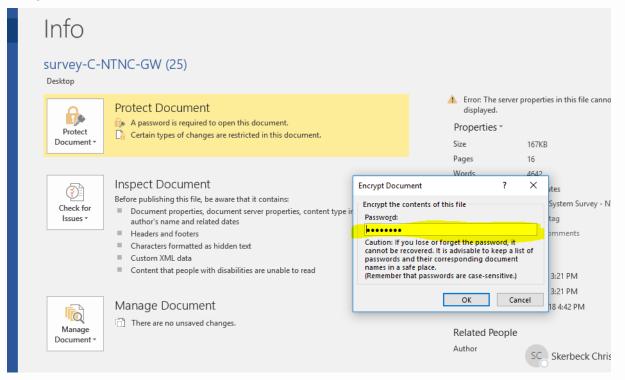


Go to ENCRYPT WITH

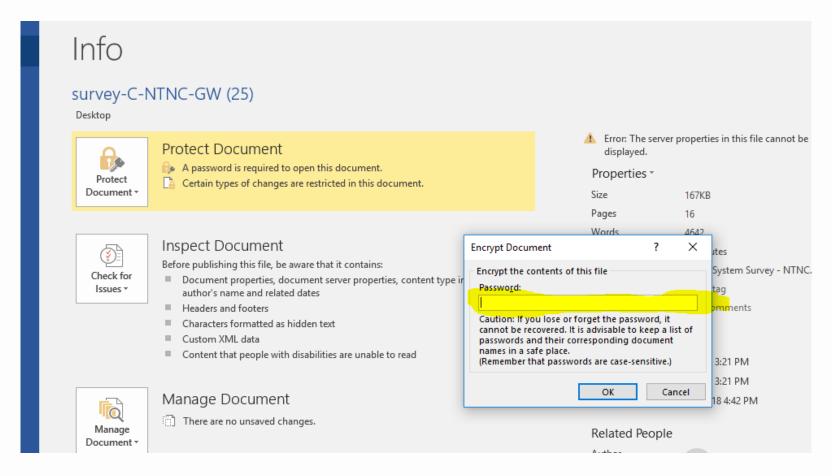
**PASSWORD** 



Delete the password that is in the box







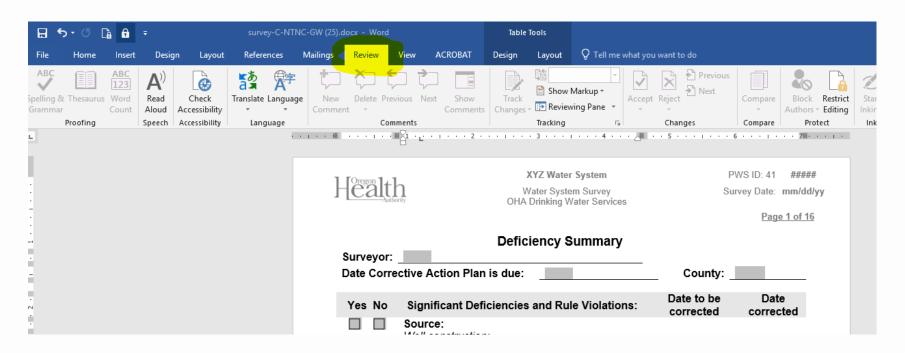


- Click OK
- Save document as the name you'd like



### **Survey basics – editing document**

Click on the REVIEW tab

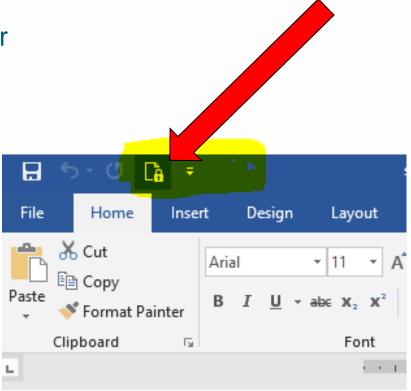




- Click on **RESTRICT EDITING**
- Click on STOPPROTECTION

🖒 Share want to do Previous Reject Block Restrict Compare Authors - Editing Inking Changes Compare Protect Ink 6 . . . . . . . 7#. . . . . Restrict Editi.. \* × Your permissions PWS ID: 41 ##### This document is protected from unintentional editing. urvey Date: mm/dd/yy You may only fill in forms in this region. Page 1 of 16 Date corrected Stop Protection

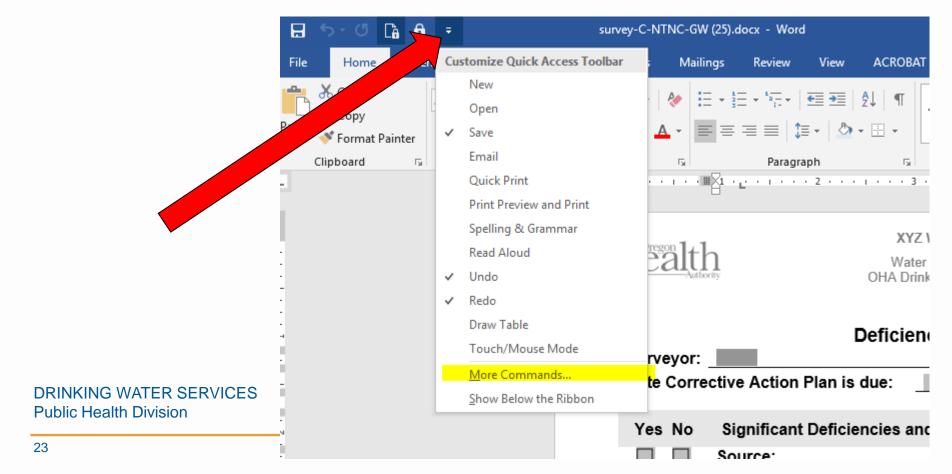
Add this feature to tool bar



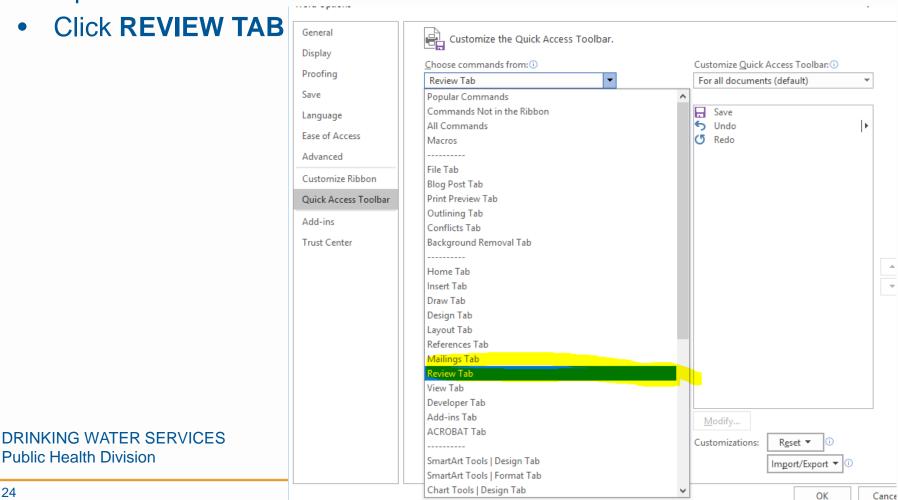




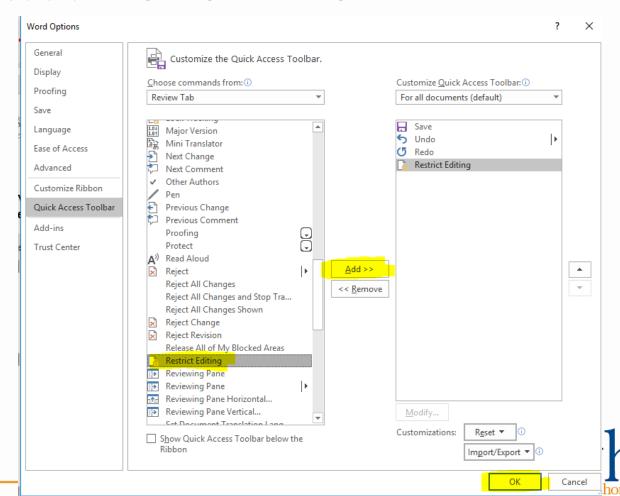
- Click the down arrow to CUSTOMIZE QUICK ACCESS TOOLBAR
- Click MORE COMMANDS



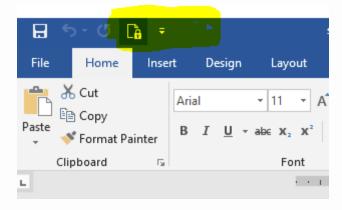
Open the **CHOOSE COMMANDS FROM** box



- From the review tab click RESTRICT EDITING
- Click ADD
- Click OK



Shortcut on top of tool bar





- We now know...
  - What it is
  - Where to find
  - How to remove password
  - Shortcut for restrict editing (unlocking/locking editing)

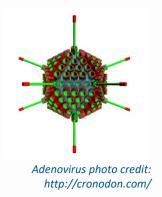


### **Survey elements**

- Deficiency summary
- Inventory and narrative
- Schematic
- Sources (wells, springs)
- Treatment (filtration, disinfection)
- Distribution systems
- Finished water storage
- Monitoring & reporting
- Management & operations
- Operator certification
- Cover letter



E. Coli photo credit: photo bucket





### **Survey forms overview**

- Tailor the forms to your specific system
- Delete, add, edit pages/tables as necessary
- Using the most recent version?
- Prepopulate before site visit
- Streamline for ease of fieldwork (double sided)



### **Survey forms overview**

- Don't leave blanks, mark "Yes, No, or N/A"
- Comments sections
  - Follow up of "no's"
  - Allows for further details
- Information pages (back sides usually) to assist with filling in sections (service area, treatment codes)



### **Survey forms overview**

Significant deficiencies & rule violations shown as bulleted items

Health	Water S	/ater System System Surve ng Water Sen	PWS ID: 41 ##### Survey Date: mm/dd/yy Page 7 of 15						
Well Information									
Source ID#: SRC-									
Source Name:	Choose an	Choose an	Choose an	Choose an	Choose an	Choose an			
Well log avallable?	item.	item.	item.	item.	item.	item.			
Well log ID (e.g., COLU123, L12345)									
	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No			
Well active?									
Pitless adaptor?									
Sanitary seal & casing watertight?									
Raw water sample tap?									
Treated water sample tap?   N/A									
If vented, properly screened?									
Wellhead protected from flooding?									
Concrete slab around casing? Casing height >12-in. above slab/grade?	88	88							
						H H			
Pressure gauge?		8 8	8 8	H H	HH	8 8			
Pump to waste piping?	<del>                                      </del>	8 8	8 8	H H	HH	6 6			
Well meets setbacks from hazards?		8 8	8 8	8 8	8 8	8 8			
• Well frieds setuation from frazalds:		0 0	0	0 0					
If no, identify list of hazard(s) within the setback and the distance to the hazard									
DISTANCE (ft):									
Protective housing?									
If yes, does it have:									
Heat?									
Light?									
Floor drain?									
Well pump removal provision?									
Pump Type:	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.			
Bearing lubrication:	Choose an	Choose an	Choose an	Choose an	Choose an	Choose an			
	item.	item.	item.	item.	item.	item.			
Pumping capacity (gpm):									
*If no well log available, record any know or casing diameter in the comments secti		regarding de	eptn of well, d	epth of grout	seal, year o	r installation,			
Comments:	un delow.								
Symmetry.									

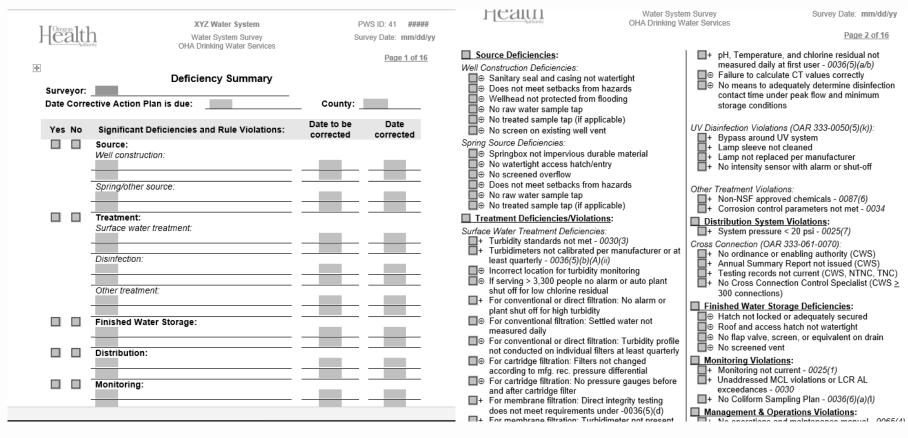


- If vented, properly screened ......
- Wellhead protected from flooding ......
- Well meets setbacks from hazards ......



### **Deficiency Summary**

- Capture deficiencies found during survey
- Tracking tool for corrections
- Consistency across cover letter, summary, and forms.



### **Inventory and Narrative**

- Demographics of system
- Operator Cert requirements
- Contact info

Haun

vvaler System Survey
OHA Drinking Water Services

Survey Date. IIIII/du/yy

Page 3 of 16

#### **Inventory and Narrative**

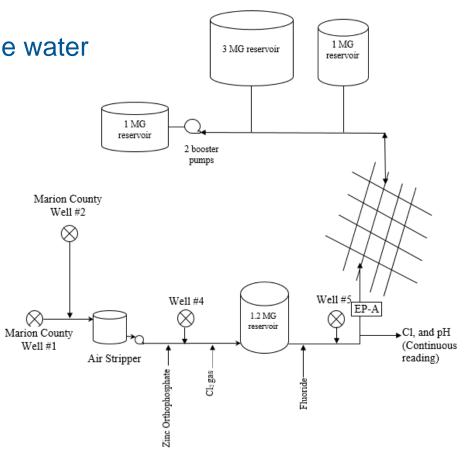
Outstanding Performer									
Type:	St	atus	Size	Season:	All year		Seasonal		
Community (C) Non-Transient Non-Commun	Popu	opulation:		Begins: (mm/dd)		ſ			
Transient Non-Community (7 Non-EPA (NP)		Connections:		Ends: (mm/dd)		/			
License: Not Lic. Healt				Ag	Service	Area Char	acteristics	<b>:</b> :	
Responsible Agency:	nty	☐ Ag	Owner 1	Гуре:					
Minimum WS Certification Requirements:	WD:	WT	:		FE	■ Sma	II WS		] N/A

Primary Administrative Contact (Ma	iling Address):
Contact Name:	Phone: ( )
Title:	Cell: ( )
Street Address:	Emergency #: ( )
City/State/Zip:	Email:
Legal/Owner Address:	
Contact Name:	Phone: ( )
Title:	Cell: ( )
Street Address:	Emergency #: ( )
City/State/Zip:	Email:
System Physical Address:	
Contact Name:	Phone: ( )
Title:	Cell: (( )
Street Address:	Emergency #: ( )
City/State/Zip:	Email:
Emergency Systems Available:	
Name:	PWS ID#: 41

### **Water System Schematic**

 Visual display of the flow of the water through the system (source to distribution)

Use DWS symbols

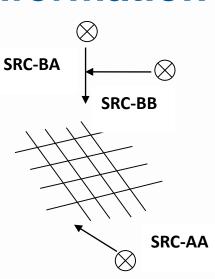






### **Source Information**

- Entry Point
- Source
  - AA
  - BA
- Data Online



#### Source Information

ID	Entry Points (Location where water enters	Source Type (Ground, Surface, GWUDI, Purchased ground,	Availability (Permanent, Seasonal*, Emergency) *If seasonal, indicate begin/end dates			
	distribution and is sampled)	Purchased surface)		Begin (M/D)	End (M/D)	
Α	EP for Well #1	Ground	Permanent			
В	EP for Wells #2 & #5	Ground	Permanent			

ID	Sources (Contributing to Entry Point)	Land Use*	Capacity (GPM)	Source Type (Ground, Surface, GWUDI, Purchased ground, Purchased surface)	Availability (Permanent, Seasonal, Emergency, Abandoned, Disconnected)	
AA	Well #1	l l	150	Ground	Permanent	
BA	Well #2	1	175	Ground	Permanent	
BB	Well #5		160	Ground	Permanent	

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Last Julyey Date: Juli VJ, ZV 14 - Outstanding I envinter:

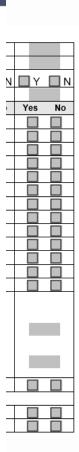
Sources							
Facility ID	Facility Name - Well Logs	Activity Status	<u>Availability</u>	Source Type			
EP-A	EP FOR WELL #1	Α		GW			
SRC-AA	WELL #1 - DESC1805	A	Permanent	GW			
EP-B	EP FOR WELLS #2 & #5	Α		GW			
SRC-BA	WELL #2 - DESC914	A	Permanent	GW			
SRC-BB	WELL #5 - L112240	Α	Permanent	GW			



# Well Report Query Oregon Water Resources Department Well Report Query

Well de

ow	nshi	р:			Sou	th 🗸	]		
D:	nao.	.			Wa	st 🗸	Well Log:	<b>~</b>	
1			Startcard:						
	Sections					닏	Well Tag:	I 19483	
	6	5	4	3	2				1-
	씯	Щ	Щ	Щ	Щ	씯	Completed Date		to
	7	8	9	10	11	12	Received Date		to
	Ш	Ш	Щ	Ш	Ш	Ш	County		~
	18	17	16	15	14	13	Bonded License#		Find a Driller
	19	20	21	22	23	24	Owner Last Name		
							Company Name		
	30	29	28	27	26	25 	Completed Depth		to
	31	32	33	34	35	36	Yield		to
							Taxlot		
	F	<b>T.</b> D	0.1				Type of Log		~
	Find	T-R	-5 b	y Ad	ares	S	Records per Page: 10		
							Search Reset	]	



DRINKING WATEI Public Health Divis



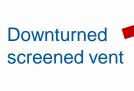
### **Deficiency review – wells**

### Significant deficiencies:

- Sanitary seal & casing not watertight
- No raw water sample tap
- No treated water sample tap (if applicable)
- No screen on existing well vent (if applicable)
- Well not protected from flooding
- Hazards within well's setback distance



Broken sanitary seal







Broken collar

### **Deficiency review – wells**

Provide comment to clarify deficiency

#### Well Information AA Source ID#: SRC-Well Source Name: Choose an Choose an Well log available?\* Nο item. item. Well log ID (e.g., COLU123, L12345) Yes No Yes Yes Well active? ..... Pitless adaptor? ..... Sanitary seal & casing watertight?..... Raw water sample tap?..... $\bowtie$ If vented, properly screened?..... Wellhead protected from flooding? ..... Concrete slab around casing?..... Casing height ≥12-in. above slab/grade?

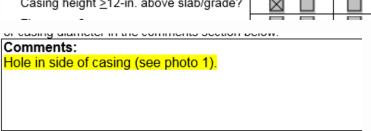




Photo 1. Wellhead



### **Disinfection**

Disinfection/residual maintenance

	Sources							
Facility ID EP-A	Facility Name EP for WELL	e - <u>Well Logs</u>	<u>Activity Status</u> A	Availability	Source Type GW			
SRC-AA	WELL - POLK	(1898	А	Permanent	GW  Find Purchasers/Sellers			
Treatment								
State ID WTP-A	Facility Name TP FOR WELL	Treatment Proce		Treatment Objective DISINFECTION	<u>Filter Type</u>			

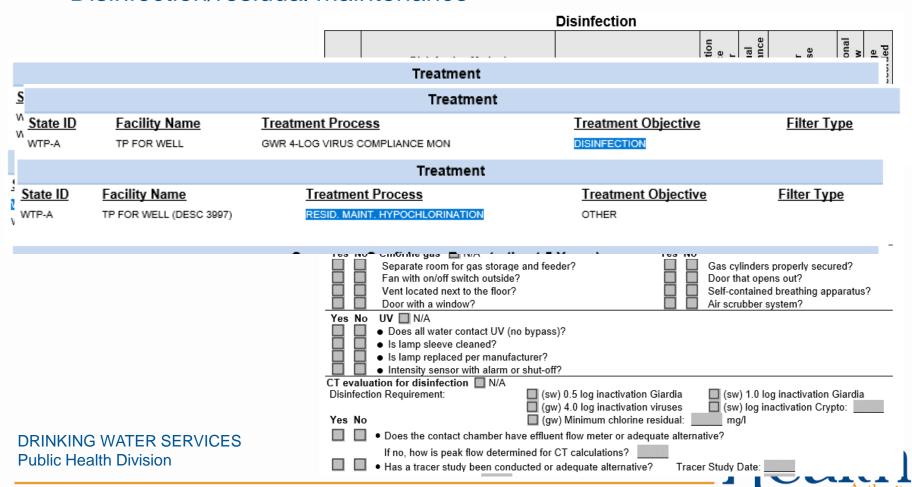
Sources							
Facility ID	Facility Name - Well Logs	Activity Status	<u>Availability</u>	Source Type			
EP-A	EP for WELL	Α		GW			
SRC-AA	WELL - DESC3997	A	Permanent	GW			
				Find Purchasers/Sellers			
Treatment							
State ID	Facility Name	Treatment Process	Treatment Objective	<u>Filter Type</u>			
WTP-A	TP FOR WELL (DESC 3997)	RESID. MAINT. HYPOCHLORINATION	OTHER				

DRINKING WATER SERVICES
Public Health Division



#### Disinfection

Disinfection/residual maintenance



### **Deficiency review – disinfection**

#### Chlorine residual significant deficiencies:

- No DPD or other EPA method used
- No NSF 60/61 certified product/equipment
- Distribution residuals not recorded at least 2x weekly









### **Treatment**

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Treatment details

· ac	tano		Process Used	Chemical Added	Purpose	Location in System	Code
			Residual Maint. Hypo	Sodium Hypochlorite	Residual Maintenance	WTP-A	X421
			_				
<u>Di:</u>	Corro	<u>sion Cont</u>	<u>rol</u>				
<u>Gr</u>	C441	Inhibitor,	Bimetallic P	hosphate			
D3	C443	Inhibitor,	Hexametap	hosphate 🍃			
X2	C445	Inhibitor,	Orthophosp	hate		s on disinfection equipmen	t. ***See
X4	C447	Inhibitor,	OrthoPolypl	hosphate Bl	end		
X4	C449	Inhibitor,	Silicate				
X4	C501	pH/Alkalir	nity Adjustm	ent-Lime		nemicals are used) 4-log, chemical MCL)	■N/A
X5	C502	pH/Alkalir	nity Adjustm	ent-Soda A	sh		
X8	C503	pH/Alkalir	nity Adjustin	ent-Caustic	Soda		
	C504	pH/Alkalin	nity Adjustm	ent-Sodium			
Z3	Bicarb	onate					
<b>Z</b> 7	C505	pH/Alkalir	nity Adjustm	ent-Calcite	Contractor	1	
	C506	Calcium (	Carbonate F	Precipitation		mperature rbidity	
	C550	LCCA for	L/C				
	C999	Blending					
		_				Conomor	1

**Treatment** 

DRINKING WATER SERVIC Public Health Division



### **Storage and Pressure Tanks**

Setting up the form

#### Storage and Pressure Tanks Tank Material Tank Type (Concrete, Steel, Volume (G)round. (E)levated. Redwood, Plastic, Number Built (gal.) (P)ressure Other) Clifford Reservoir 1984 Ground Concrete 100k Bia Red Reservoir 1991 50k Ground Steel Well 5 pressure tank 5000 Pressure Steel 2016

				To	tal Vo	lume:	·			
Reservoir Number:	1		2	2						
Reservoir Features	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Fence/gate?										
Hatch secured (e.g. locked, bolted, etc.)?										
All tank access points watertight?										
Screened vent?										
Overflow?										
Overflow protected (screen/flap/valve)?										
Drain to daylight?										
Water level gauge?										
Bypass piping? (● if used for contact time)										
Alarm for high or low levels?										
Separate inlet/outlet?										
Approved interior coating?										
Exterior in good condition?										
Annual interior/exterior inspection?										
Cleaning schedule?										
Continuously disinfected? (● post '81 redwood)										
Pressure Tanks	3									
Accessible for maintenance?										
Bypass piping?										
Drain?										
Pressure relief device?										
Air bladder/diaphragm?										
Valve for adding air?										
Comments										

DRINKING WATER SERVICES
Public Health Division



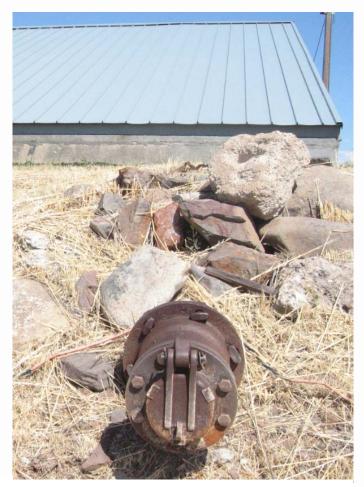
### **Storage and Pressure Tanks**

#### Significant deficiencies:

- Access hatch not secured
- Roof & access hatch not watertight
- Overflow not protected
  - Flap valve or screen
- No screened vent

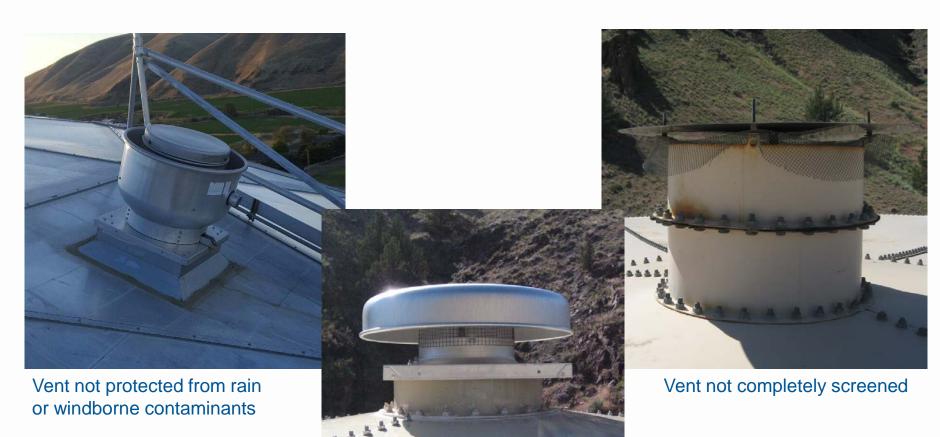


Drilled hole in concrete tank



Storage tank overflow flap valve

### **Storage and Pressure Tanks**



Mushroom-style screened vent

### **Distribution System Information**

- What to look at?
- It's all underground!

		Distribution System Information
Serv	ice /	Area and Facility Map
Yes	No	, ,
		Does the system have a service area and facility map (indicate features on map):
		Water lines (including size and material) Sources-wells & withdrawal points
		☐ Treatment facilities ☐ Pressure zones
		Storage facilities (reservoirs) Pressure regulating valves
		☐ Sampling points ☐ Booster pumps
Dist	ribut	ion Data
Yes	No	Comments
		System pressure ≥ 20 psi?
		Water system leakage <10%?
		Hydrants or blowoffs on all dead ends? N/A
		Routine flushing? (How often)
		Adequate valving?
		Routine valve turning? (How often)
		Does the distribution system have asbestos cement (AC) pipe?
		If yes, verify asbestos sampling is completed on Water Quality Monitoring Page (CWS, NTNC).
Cros	ss Co	onnection Control (CWS, NTNC, and TNC)
Yes	No	N/A Comments
		Assemblies tested annually? (CWS, NTNC, TNC)
		Ordinance or enabling authority? (CWS)
		Annual Summary Report submitted? (CWS)
		Certified Cross Connection
		Control Specialist? (CWS ≥ 300 connections)
Con	nmen	its:

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### **Distribution System Information**

Distribution system significant deficiency:

System pressure < 20 psi</li>

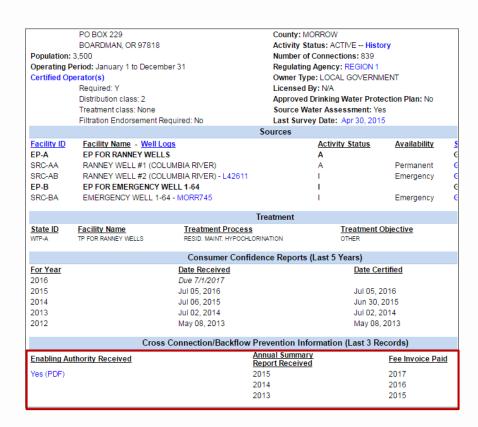
Cross Connection Control significant deficiencies:

- No Annual Summary Report (CWS)
  - Online survey now available
- Devices not tested yearly
- No ordinance or enabling authority (CWS)
- No certified specialist on staff (CWS only if ≥ 300 connections)



### **Distribution System Information**

Cross connection control



Cross connection questions? Talk to Molly Keller: cross.connection@state.or.us

### **Water Quality Monitoring**

Wate	r Qua	lity Monitoring	
Contaminant	N/A	Number & Frequency	Next Tests Due
Entry Point Sampling:			
Arsenic			
Inorganic Chemicals (Including Nitrite) (sw)			
Inorganic Chemicals (Including Nitrite) (qw)			
Nitrate			
Radionuclides (Community Water Systems Only):	_		
Gross Alpha	ш.		
Radium 226/228			
Uranium	Н.		
SOCs	Н.		
VOCs (sw)	Η.		
VOCs (gw)			
Distribution System Sampling:			
Coliform Bacteria	H.		
TTHMs and HAA5s	Η.		
Lead and Copper # sites:	Η.		
Other Sampling:			
TOC			
Turbidity	Ħ.		
Source Water Coliform	Ħ.		
Other (specify)			
Yes No  ■ Is all required monitoring current?			
Are samples collected at the correct	location	is in the system?	
**Discuss correct sampling location	ns for a	all sampling (SRC, EP, DIST)**	
**Discuss proper way to collect rep	resent	ative samples at all locations**	
**Discuss possible sample reduction	ons**		
Yes No		_	
■ • Have all MCL violations or LCR AL e		_	
DBP's collected at correct locations'	? 🔲 N/.	A	
Does the system have a written colif Does the plan include: Yes No		Yes	No
<b>a a b</b>	istributio	collection protocol on map oite locations	Rotation schedule Repeat locations Source locations
Comments:			

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### **Water Quality Monitoring**

- Review sampling plans & procedures:
  - # of samples collected at appropriate sites
    - Chemical & coliform
    - Lead & copper tap sites
      - Tier 1 1/1/83 6/30/85
  - DBP sampling sites (chlorinated only)
  - Coliform sampling plan represents WQ throughout service area
- Review WQ monitoring schedules with operator



Photo credit: Virginia Household Water Quality Program http://www.wellwater.bse.vt.edu



### **Management & Operations**

Management & Operations	
O&M Manual and Emergency Response Plan  Yes No  Does system have an operation and maintenance manual?  Does system have an emergency response plan?  Do any system components have auxiliary power?  If yes, describe:	
Operator Certification  Yes No N/A  I Is the DRC identified and certified at the appropriate level?  If the DRC is a contract operator, how do they work with the system?  Does system have written protocols for under-certified operators?	
Plan Review/Master Plan  Yes No N/A  Have all major modifications been approved by DWS?  Does the system have a current (<20 yr. old) master plan? (Not required if < 300 connection what year was the plan completed?	ns)
Compliance Status  Yes No N/A  Is water system in compliance (all orders resolved and not a priority non-complier)?  Does the system issue public notice as required?  Are consumer confidence reports sent to users each year?	
Comments:	

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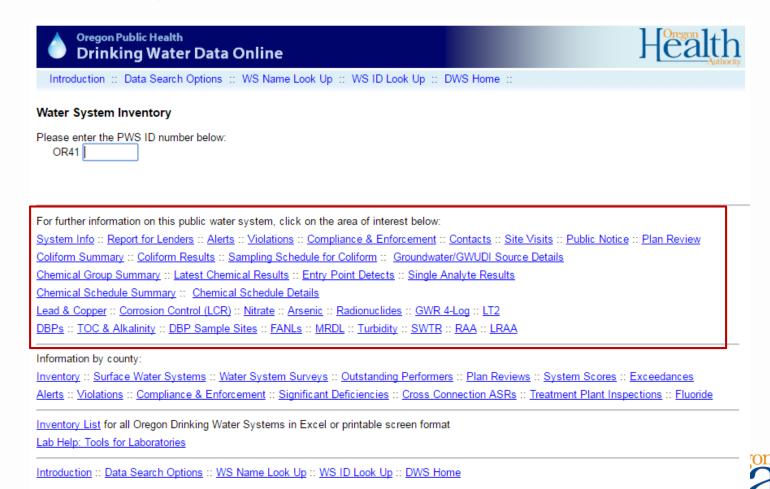
### **Management & Operations**

- Discuss open or pending plan review projects
  - Relay information to your PR engineer
- Review O&M manual, emergency response plan
- Cross Connection Control program (CWS)
- Consumer confidence reports completed yearly (CWS)

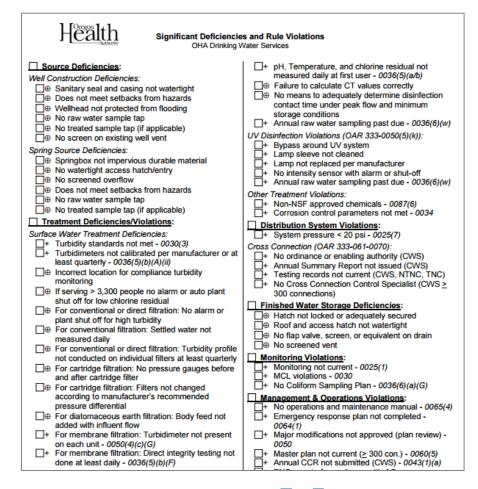
	Plan Review Records							
Plan ID	Project Name	Date All Received	Request for Additional Info	Conditional Approval	Preliminary Approval	Date Abandoned	Final Approval	Reviewer
44-2015	New Reservoir/Distribution Improvements	03/25/2015		03/27/2015				BG
168-2012	Master Plan	11/08/2012					11/30/2012	BG
244-2005	Mountain View Subdivision - Waterlines	09/14/2005		09/07/2006		09/30/11		BG
305-1996	Highlands Subdivision			10/24/1996		03/21/05		GB



Review PWS data in Data Online



- Review WS file
- Schedule survey at least 2 weeks before site visit
- Provide materials to prepare operator
  - Survey prep handout
  - Deficiency checklist
  - Outstanding performance criteria
  - Other resources & templates





### For Water System Operators: Preparing for a Water System Survey

A water system survey is an on-site review of sources, treatment facilities, and reservoirs, as well as office time to review the following records:

#### For all water systems:

- Written coliform sampling plan.
- A map of the distribution system.
- 3. Operation and Maintenance Manual, and other written procedures.
- 4. Emergency Response Plan.
- Chemical dosage records if treatment is applied.
- Proof of NSF Standard 60 certification for each chemical added to the drinking water.
- 7. Chlorine residual monitoring records if the system is chlorinated.
- 8. Results of any tracer study to verify disinfection contact time, if applicable.
- 9. Photos or other documents that provide enough detail to determine the current condition of storage reservoir features:
  - a. Access hatch in open and closed/locked positions,
  - b. Air vents that show all screening is secure with no gaps, and
  - c. Any other openings into the tank interior such as telemetry ports and cathodic protection.

#### In addition, for Community water systems:

- Cross-connection control program plan, records, latest Annual Summary Report, etc.
- 11. Written protocols for under-certified operators, if applicable.



- Research location
- Research weather
- Equipment needed
  - Flashlight
  - Camera (with charged batteries!)
  - Chlorine test kit
- Proper clothing
- Arrive on time
- Bring contact phone number (cell service?)



### **On-site inspection**

- Follow flow of water from source through treatment to distribution
- Surveys evaluate direct pathways for contaminants to enter DW
  - Multi-barrier concept to reduce human health risk



### **Multiple Barrier Approach**



Maintenance



Physical infrastructure

Verify barriers are working by monitoring



**Treatment** 

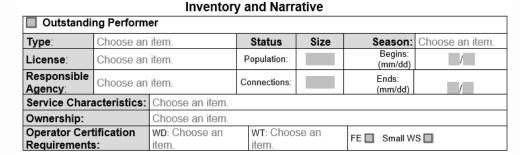


Source

Contaminant

### **On-site inspection**

- Emphasis on significant deficiencies & rule violations
- List other issues as comments & recommendations
- Verify inventory information with operator.
- Open ended questions



Primary Administrative Contact (M	failing Address):
Contact Name:	Phone: ( )
Title:	Cell: (
Street Address:	Emergency #: (
City/State/Zip:	Email:
Legal/Owner Address:	
Contact Name:	Phone: ( )
Title:	Cell: (
Street Address:	Emergency #: (
City/State/Zip:	Email:
System Physical Address:	
Contact Name:	Phone: ( )
Title:	Cell: (
Street Address:	Emergency #: ( )
City/State/Zip:	Email:
Emergency Systems Available:	
Name:	PWS ID#: 41
Narrative:	· · ·

### **Next week**

	<u> </u>		
		Wednesday, October 17	
9:00 – 11:30	Survey Prep	Small Groups – DWS	577 NE Courtney Dr. Crate Lake Conference Rm. Bend OR,
	Working Lunch	Small Groups – DWS	Field Lunch
12:30 – 2:30	Field Work	Small Groups – DWS	Group 1 Eagle Crest Group 2 Cline Butte Group 3 Sun Mountain
3:00 – 5:00	Survey write up	Small Groups – DWS	577 NE Courtney Dr. Crate Lake Conference Rm. Bend OR,
		Thursday, October 18	
8:00 - 10:00	Survey write up	Small groups -DWS	1300 SW Wall St. Barnes/Sawyer Rm. Bend, OR
10:00 - 3:00	Fall Training	DWS	1300 SW Wall St. Barnes/Sawyer Rm. Bend, OR



### **Water System Groups**

## Eagle Crest Resort 01355, CWS, 400 pop

- Helen
- Erin
- Kevin
- Matthew
- Tia

## Oregon Water Utilities -Cline Butte 01478, CWS, 950 pop

- Lance
- Jazzalynn
- Susan
- Kent
- Casey

## Sun Mountain Water System LLC 00111, CWS 740 pop

- Jillian
- Nicole
- Max
- Carrie



### Things to prepare

- Data online
- Explore forms
- Check weather



### **Questions?**



Drinking Water Services
<a href="mailto:Christia.d.skerbeck@state.or.us">Christia.d.skerbeck@state.or.us</a>
(971) 673-0415

Drinking Water Services
Phone Duty (971) 673-0405
dwp.dmce@state.or.us



### **Overview of Day**

		Wednesday, October 17	
9:00 - 11:30	Survey Prep	Small Groups – DWS	577 NE Courtney Dr. Crate Lake Conference Rm. Bend OR,
	Working Lunch	Small Groups – DWS	Field Lunch
12:30 – 2:30	Field Work	Small Groups – DWS	Group 1 Eagle Crest Group 2 Cline Butte Group 3 Sun Mountain
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		Thursday, October 18	·
8:00 - 10:00	Survey write up	Small groups -DWS	1300 SW Wall St. Barnes/Sawyer Rm. Bend, OR
10:00 – 3:00	Fall Training	DWS	1300 SW Wall St. Barnes/Sawyer Rm. Bend, OR

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### **Survey Prep**

- Review files
- Fill out forms
- Check data online



### **Water System Groups**

## Eagle Crest Resort 0013155, CWS, 400 pop

- Helen
- Erin
- Kevin
- Matthew
- Tia

## Oregon Water Utilities -Cline Butte 01478, CWS, 950 pop

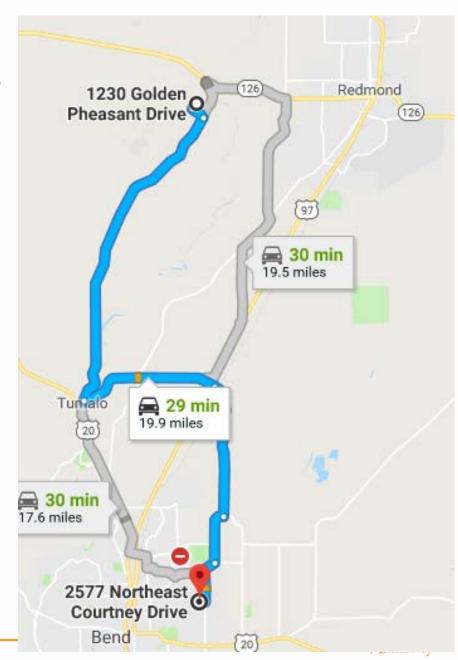
- Lance
- Jazzalynn
- Susan
- Kent
- Casey

## Sun Mountain Water System LLC 00111, CWS 740 pop

- Jillian
- Nicole
- Max
- Carrie

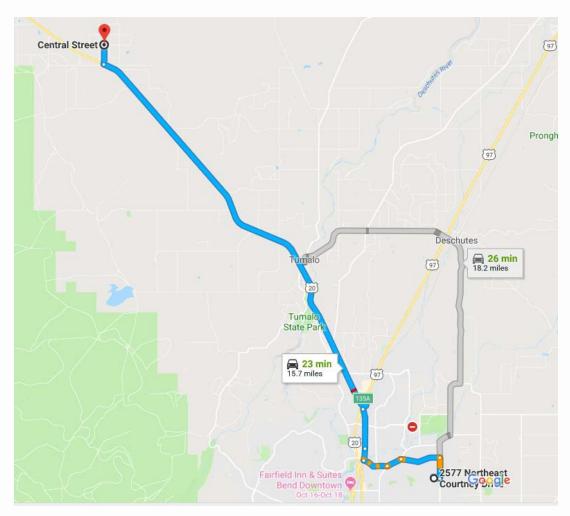


# **Eagle Crest Resort & Oregon Water Utilities**



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### **Sun Mountain**



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Public Health Division



### **Water System Groups**

## Eagle Crest Resort 0013155, CWS, 400 pop

- Helen
- Erin
- Kevin
- Matthew
- Tia

12:30 @ 1230 Golden Pheasant Dr, Redmond, OR 97756

## Oregon Water Utilities -Cline Butte 01478, CWS, 950 pop

- Lance
- Jazzalynn
- Susan
- Kent
- Casey

## Sun Mountain Water System LLC 00111, CWS 740 pop

- Jillian
- Nicole
- Max
- Carrie

12:30 @ 1706 Central Street Bend, OR 97756





### **Survey Write up**

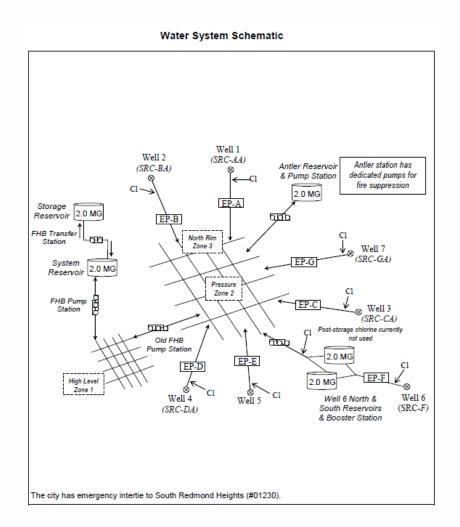
				bend on,					
	Thursday, October 18								
8	:00 - 10:00	Survey write up	Small groups -DWS	1300 SW Wall St.					
				Barnes/Sawyer Rm.					
L				Bend, OR					
1	0:00 - 3:00	Fall Training	DWS	1300 SW Wall St.					
				Barnes/Sawyer Rm.					
L				Bend, OR					



### **Survey write-up**

- Check all boxes or indicate NA
- Label all facilities on schematic
- Label or describe photos showing deficiencies







### **Survey write-up tips**

- Make sure deficiencies in survey match those in cover letter
- Ask someone to review survey & letter before sending to WS
  - spelling errors, readability

PUBLIC HEALTH DIVISION Environmental Public Health Office, Drinking Water Program \_Health

John A. Kitzhaber, MD, Governor September 28, 2011

NE Oregon Street, Suite #640 Portland, OR 97232-2162 (971) 673-0405 (971) 673-0694 – FAX (971) 673-0372 – TTY

Tom Spier City of Spray PO Box 83 Spray, OR 97874

Re: Water System Survey for City of Spray, PWS #4100832

Dear Mr. Spier:

I would like to thank you for your time to assist during the *City of Spray Water System Survey* on August 4, 2011. The main purpose of the survey is to evaluate the entire water system in terms of supplying safe drinking water to the public. A copy of the report is enclosed for your records. Please let me know if any corrections need to be made.

The first page of the report lists significant deficiencies and rule violations identified during the survey. Please notify the Drinking Water Program by November 2, 2011, with a plan of how the deficiencies will be corrected. All deficiencies must be corrected by January 25, 2012, or be on an approved corrective action schedule.

The significant deficiencies/rule violations are described in further detail below.

#### Significant Deficiencies/Rule Violations

- No lock on steel reservoir hatch. Adding a lock to the hatch will discourage access to finished water.
- No written Coliform Sampling Plan. The plan is to document routine, repeat, and source water coliform sample sites, along with a site rotation schedule that is representative of the entire distribution system. Sampling procedures, in addition to a site map showing sampling sites must be included.



### Review violations/system score

- Returning violations to compliance (RTC)
- Do violations require public notice?
  - Check Data Online WS public notice page

Violation History										
Violation Number		Monitoring P Begin	eriod End	Facility ID	Analyte Group	Violation Type - Analyte Count Show analytes for all violations	Enforcement Action - Date Show history	Points		
901619714	N	Sep 06, 2016			GWR	Failure to Correct Source Contamination - 1 Show analyte		5		
901619713	Υ	May 01, 2016	May 31, 2016		TCR	Routine Coliform - Did Not Report ANY - 1	Returned To Compliance - Jun 16, 2016	1		
901619710	N	Apr 01, 2016	Apr 30, 2016		TCR	Acute MCL for Fecal Coliform or E. coli - 1	Returned To Compliance - Jul 22, 2016	10		
901619707	Υ	Jul 01, 2014	Jul 31, 2014		TCR	Routine Coliform - Did Not Report Enough - 1	Returned To Compliance - Aug 14, 2014	1		
901619708	N	Jun 01, 2014	Jun 30, 2014		TCR	Public Notice Late/Nonreporting (Viol # 901619705) - 1	Returned To Compliance - Aug 14, 2014	1		
901619705	Υ	Jun 01, 2014	Jun 30, 2014		TCR	Total Coliform MCL - 1	Returned To Compliance - Sep 11, 2014	5		
901619706	N	Jun 05, 2014	Jun 20, 2014	DIST-A	GWR	Source Sample - Late/Nonreporting - 1 Show analyte	Returned To Compliance - Aug 14, 2014	1		

SYSTEM SCORE SUMMARY

5 Unaddressed Points:

Number of years the oldest violation has been unaddressed (n): 0 5

Points under formal enforcement:

Points RTC'd:



### **Data Online updates**

Sending WS changes to DMCE

See \_

changes

- Inventory, new sources/treatment, WQ schedules, etc.
- Highlight items, add post-it notes, or attach a note

Health Authority	Water S	of Heppner system Survey ng Water Prog		
			Page 3 of 17	
Outstanding Barfarmar	Inventory a	ınd Narra	tive County: Morrow	
Outstanding Performer  Type	Status	Size	Season	
Community (C)	Population:			
☐ Non Transient	Connections:		Begins: (mm/dd) /	
Non-Community (NTNC)	Service Chars:		Ends: (mm/dd)	
☐ Transient	Ownership:		Coliform Sampling	
Non-Community (TNC)	License		Period: Monthly Quarterly	
State Reg/Non EPA (NP)	Not Lic □ HD □		Samples Required: 2	
Operator Certification Require	ed		Responsible Agency	
WD 1 WT	FE Small	ws 🗌	State	
<b>Primary Administrative Conta</b>	ct (Mailing Add	lress):		
Contact Name: Chad Doherty		P	hone: (541) 676-9620	
Title: Public Works Director		C	ell: (541) 980-3402	
Street Address: PO Box 756		E	Emergency #: ( )	
City/State/Zip: Heppner, OR 97836			Email: cdohertyheppner@centurytel.net	
Legal/Owner Address:				
Contact Name: A Kim Cutsforth		P	Phone: (541) 676-9618 (city hall)	
Title: City Manager		C	Cell: ( )	
Street Address: 111 N Main St		E	Emergency #: _()	
City/State/Zip: Heppner, OR 9783	86	E	mail: heppner@centurytel.net	
System Physical Address:				
Contact Name:		P	hone: ( )	
Title:			ell: <u>(</u> )	
Street Address:		E	mergency #: ( )	
City/State/Zip:		E	mail:	



### Post Survey follow-up

#### Groundwater systems have...

- **30 days** to respond to survey deficiencies
  - Ensure report was received & corrective action understood
  - Document WS communication in a contact report
- 18 weeks from cover letter date to correct deficiencies or have approved Corrective Action Plan
  - If it falls on a holiday go to next business day
  - Date calculator <a href="https://www.timeanddate.com/date/dateadd.html">https://www.timeanddate.com/date/dateadd.html</a>
- Refer to Deficiency Follow-up procedure on website
  - http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/Part ners/Documents/deficiency-followup.pdf



### **Web Form**

Updating deficiency status online



### Top 10 deficiencies in 2016 surveys

- No operations & maintenance manual
- Emergency response plan not completed
- 3. No coliform sampling plan
- 4. Annual summary report not issues (CWS)
- 5. Monitoring not current
- Annual CCR not submitted (CWS)
- 7. Chlorine not measured & reported as required
- 8. Cross connection testing records not current (CWS, NTNC, TNC)
- 9. Does not meet setback from hazards
- 10. No certified operator at required level



### **Summary**

- Surveys evaluate any changes since the previous survey
- Pre-survey preparation is key to an effective survey
- Focus on significant deficiencies/rule violations bulleted items
- Review survey forms before ending the on-site inspection
- Follow-up with WS soon after survey to discuss deficiencies & ensure corrective action is understood
- Send follow-up letter if corrective action due date is missed
- Document all WS communications in case further action is needed

Check with your DWS contact if you have questions!



### **Questions?**



Tia Skerbeck
Drinking Water Services
Christia.d.skerbeck@state.or.us
(971) 673-0415

Drinking Water Services
Phone Duty (971) 673-0405
dwp.dmce@state.or.us

