WATER USE SURVEYS AND THE INSPECTIONS

PNWS/AWWA CONFERENCE - TACOMA APRIL 26,2018





What is a Survey, What is an Inspection, What is the Difference

Conducting Surveys and Inspections

What Triggers each

Getting Started

At the Site

Completion

Follow-up

Why Surveys and Inspections are so Important

Real World Events



WHY DO WE PERFORM SURVEYS???



Protect the distribution system? Protect the customers? Require backflow prevention assemblies? Require testing? Meet a State requirement?



PUBLIC HEALTH

IT IS A SURVEY OR INSPECTION



Survey

Significant preparation Part of a larger plan/strategy Meter to tap

Inspection Specific item or items to look at Reactionary Can lead to a survey

What is a survey or inspection NOT? A plumbing inspection An INVENTORY of backflow assemblies





What can trigger a survey or inspection?

Plan review Building permit application Tenant Improvement Windshield survey **High hazard/table 9 facility** Submission of a test report TV, newspaper, internet information Information from other entities **Backflow incident**



What are some obstacles to the survey or inspection process?

Lack of jurisdictional cooperation UPC vs DW regs vs purveyor rqts **Incomplete records Public mistrust Politics** Wrong people performing the survey





Who can perform surveys?

CCS – Cross Connection Control Specialist

Qualified vs

Certified



Getting Started Identify facilities in need of a survey **New construction Existing locations Prioritize based on Public Health High hazards** High risk areas of your system **Jurisdictional Issues Available resources may impact Establish Schedules** Ensure you have the support of your Organization



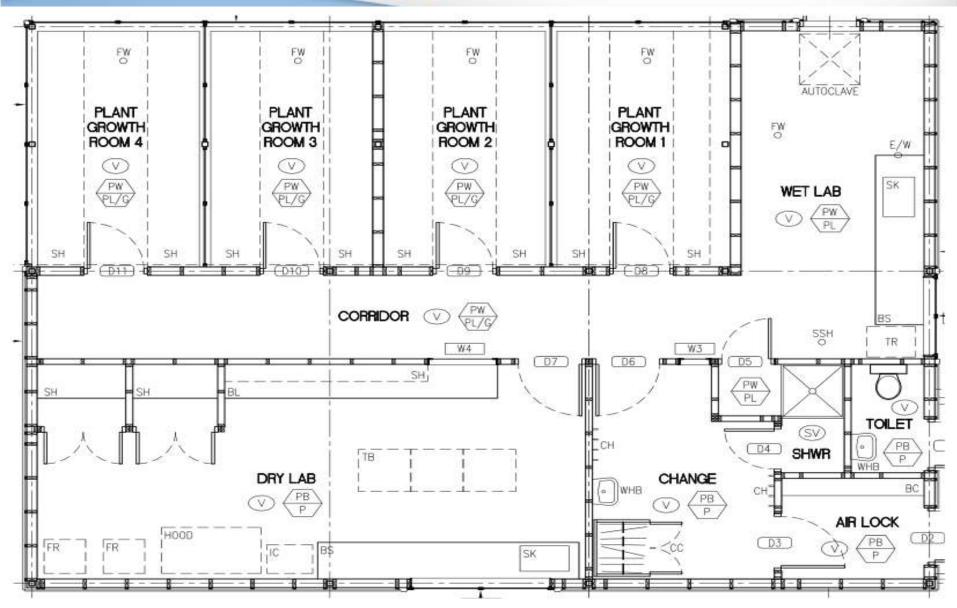
Getting Started

Familiarize yourself with the facility Review maps & drawings (yours and theirs) Google the customer

Prepare questions ahead of visit

Have a list of existing or typical hazards Will help to ask right questions







Getting Started

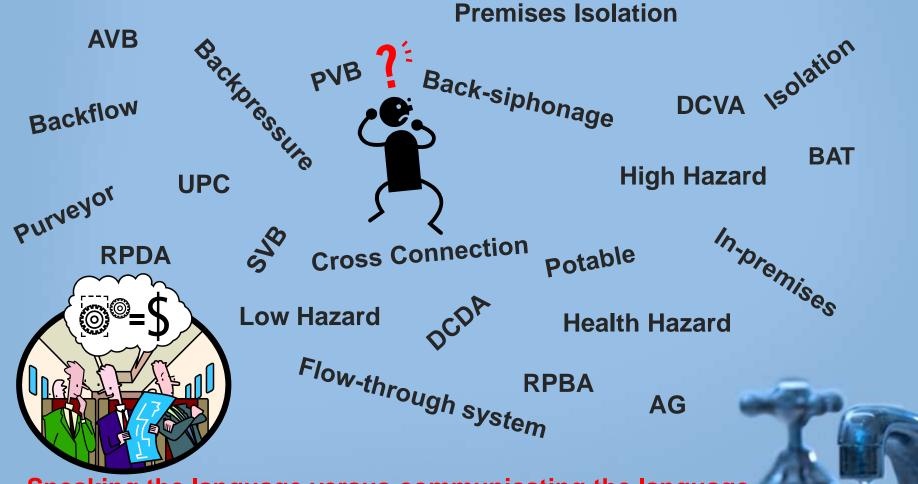
- **Contact Customer**
 - Get assistance from Chamber of Commerce, Economic Development Board, Account Executives, others....
- HELP customer understand WHAT needs to happen and WHY

Communicating effectively with all involved parties is the key to success

TERMINOLOGY







Speaking the language versus communicating the language





What do customers want to know?

Why me?

How long will it take?

How much will it cost me?





Getting Started Tools & Resources

> Safety equipment Maps/drawings **Consumption records Permit records** Camera **Tablet Pen/paper Flashlight** Informational material for customer 2nd inspector Past inspections/backflow records



Getting Started Review drawings, existing records Gather tools and equipment Check – ID $\overline{\mathbf{v}}$ Camera, flashlight with good batteries **Memory cards** Ink in pen **Correct paperwork**

Contact name and number

Business cards Security requirements – TWIC,



	Tacoma Public Utilities					
	Cross-Connection Co	Cross-Connection Control Survey/Inspection Report				
TACOMA PUBLIC UTILITIES						
Facility Name		Survey Date				
Facility Name 2		Survey By				
Service Loc/Address						
Contact Name		Contact Phone				
Area Name		Acct Number				
Service Type		Facility Status				
Comments						
BFP/CC Info						
#1 Location Floor	Location Room	Confined Space				
Assy Location		UnApproved				
Туре	File #	Freeze Protection				
Mfr	Meter #	Map Page				
Size	Hazard Type					
Model	Haz. Level	Protection Type				
Serial Num	Install Date	Status				
#2 Location Floor	Location Room	Confined Space				
Assy Location		UnApproved				
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Serial Num	Install Date	Status				
#3 Location Floor	Location Room	Confined Space				
Assy Location		UnApproved				
Туре	File #	Freeze Protection				
Mfr	Meter #	Map Page				
Size	Hazard Type					
Model	Haz. Level	Protection Type				
Serial Num	Install Date	Status				







On Site

Arrive on time and dressed appropriately Introduce yourself and describe what to expect Ensure person showing you around: Is knowledgeable Has authority/access/keys Who should this be? Verify permission to take photo/video

Ask if they have any questions





Begin the Survey

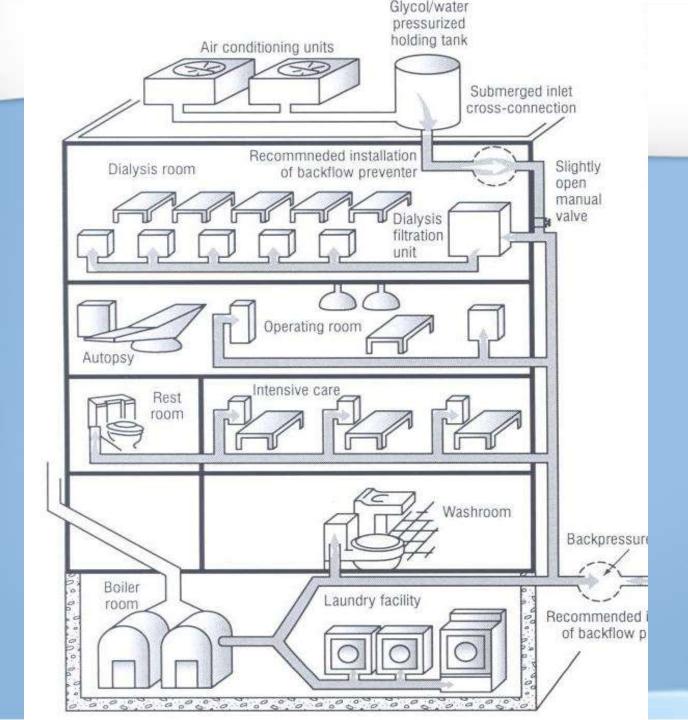
Start at the water meter and

FOLLOW THE FLOW

Multiple meters

Branch lines Outside the building Under slab

Riser room(s)







Follow the piping runs **Open doors** Lift deck plates and ceiling tiles Ask What is in there? What is this? Where does that go? What does this do?





Don't forget about existing assemblies **Observe pipe labels** Are they accurate Are they consistent Do labels tell you something you don't know or were not told Alternate water sources Inter-connections aka **Cross-connections** "Nothing to see in there"



Things to ask yourself

- Facility psi greater than Purveyor psi?
- **Actual or potential cross connection?**
- Probability of a backflow occurrence?
- What is the recommended BFP?
- What is the acceptable risk?



Take notes

Locations Process streams Backflow prevention present/missing/inadequate

Take pictures

Hazards Labels Backflow Installations

Draw sketches

Tablet with a pen

Do not rely on memory alone

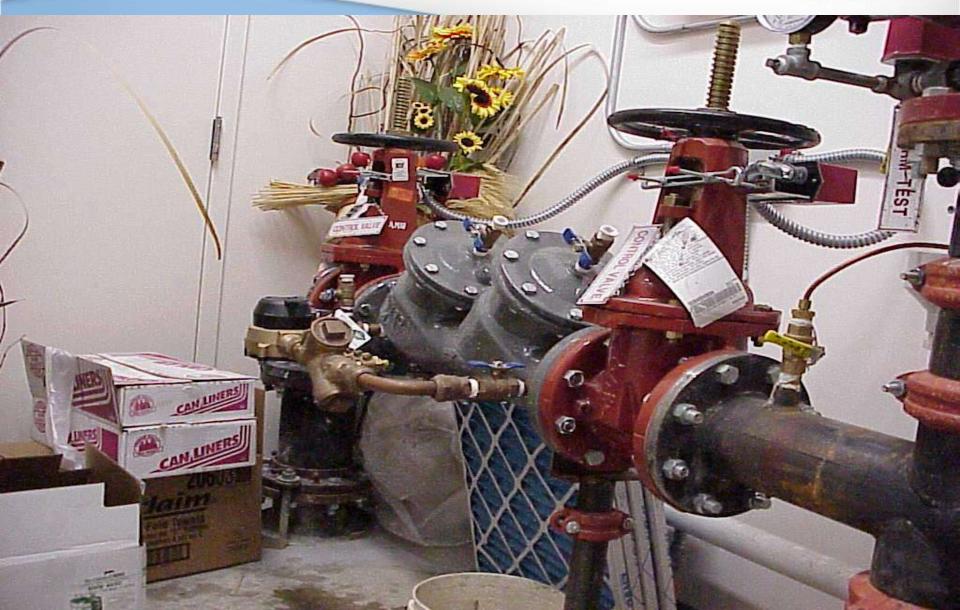


























Provide verbal summary for customer

Let them know a written report will follow and what to expect in it Observations Discrepancies Corrective actions



Provide a timeline for corrective action.

Provide a person (inspector) for the customer to contact directly with questions

Check-in with customer as due date approaches

Partnership – Common Goal



Considerations when requiring backflow prevention assemblies to be installed Hydraulic conditions/effect

Hydraulic conditions/effect Installation creates a hazard Cost to customer Planned work Notify AHJ/Fire Marshall

Acceptable Risk

Completion of Survey



Jurisdictional Communication Methods

Building Occupancy Sign off Tags Inspection Certificates

Completion of Survey



	Tacoma Water 3628 S. 35th Street P.O. Box 11007 Tacoma, WA 98411
Address	
Make	
Model	
Size	
S/N	
Purpose	
Inspected by	
Cert. #	
Date	
The backflow preventio	n assembly listed above

The backflow prevention assembly listed above meets all requirements for this installation per Tacoma Water and WAC 246-290-490. Any questions regarding this approval may be directed to Tacoma Water at 253-502-8215.

Completion of Survey

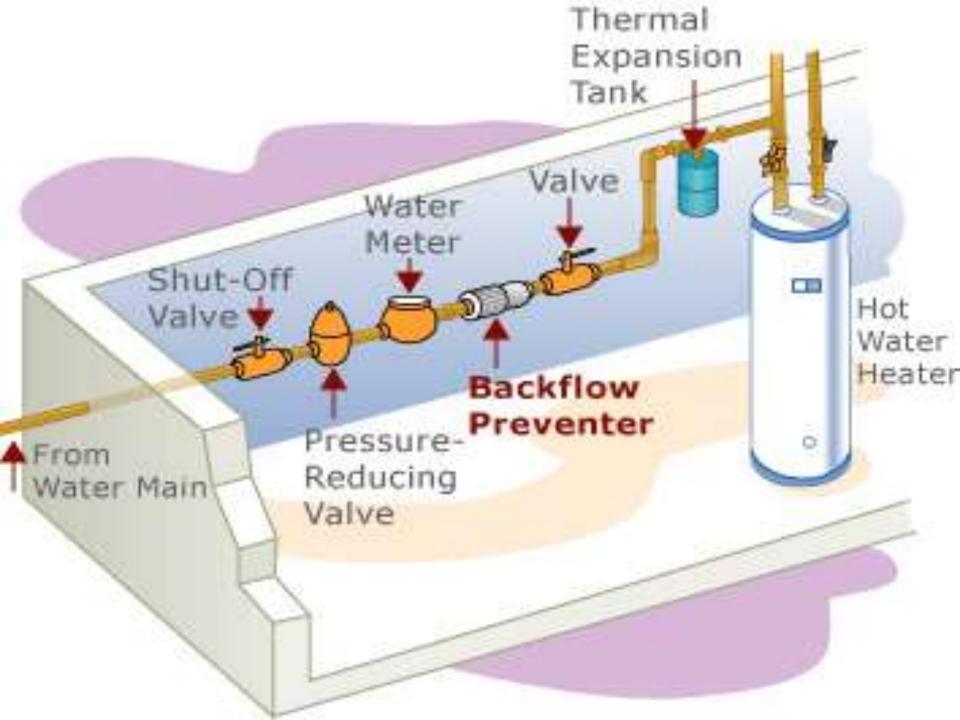




WATER PURVEYOR INSPECTION CERTIFICATE

This is to certif		has					
been inspected by		for compliance with cross					
connection con	trol requirements in acc	ordance wi	th WAC 246-290-	490, and all			
purveyor polici	ies and procedures.						
This property	☐ Meets all requireme	ents for prer	nise isolation for in	arty inspection required ternal assemblies. mer Responsible)			
(Check One)	□ Meets all requirements internal & premise isolation.						
	Does not meet requirements. Deficiencies noted on back.						
Inspector		Cert #	Phone #	Date			
				Front			
DC							
Deficiencies							
				Back			





ABC Bottling Company 3101 Any St S Tacoma, WA 98409

Dear ABC Bottling Company

On June 23, 2017 a water use survey was conducted at your establishment. The purpose of this survey was to assess any potential health hazards that may exist and to ensure that they are eliminated or isolated from the public water supply. During the inspection it was noted that the several items do not have the required backflow protection.

The water supply lines to the following items must be isolated by State of Washington approved reduced pressure backflow assemblies (RPBA).

Vehicle Repair Area

- Water supply to the vehicle repair shop
- Water supply to the parts washer.

Solution Mixing Room

- Water supply to the dilution system.
- Water supply to the carbonation mixing system No copper allowed on outlet side of RPBA.

Equipment Repair Area

Water supply to the wash down system

In addition, the water supply line to your fire service is required to have a double check valve assembly (DCVA) installed between the Tacoma Water meter and the riser manifold. All connections including fire department connections must be located downstream of the DCVA.

All assemblies except the DCVA for the fire system must be installed and tested prior to August 25, 2017. A suitable timeline for installation of the DCVA on your fire system will be established upon further review of your fire system hydraulic conditions and after consultation with the Tacoma Fire Department

After the required assemblies have been installed they are required to be inspected by my department and tested annually by a State of Washington certified backflow assembly tester. I have enclosed a list of certified testers for your convenience.

Please contact me with any question regarding the survey or these requirements. I can be reached by telephone at 253-502-8215 or email at shallenb@vityoftacoma.org.

Sincerely,

Scott D. Hallenberg Operations Manager Tacoma Water - Water Quality



Completion of Survey



Maintain record of survey

Determine next survey date

Share your experience with others in your group, Utility, industry

No need to reinvent the wheel

Past Survey Experiences



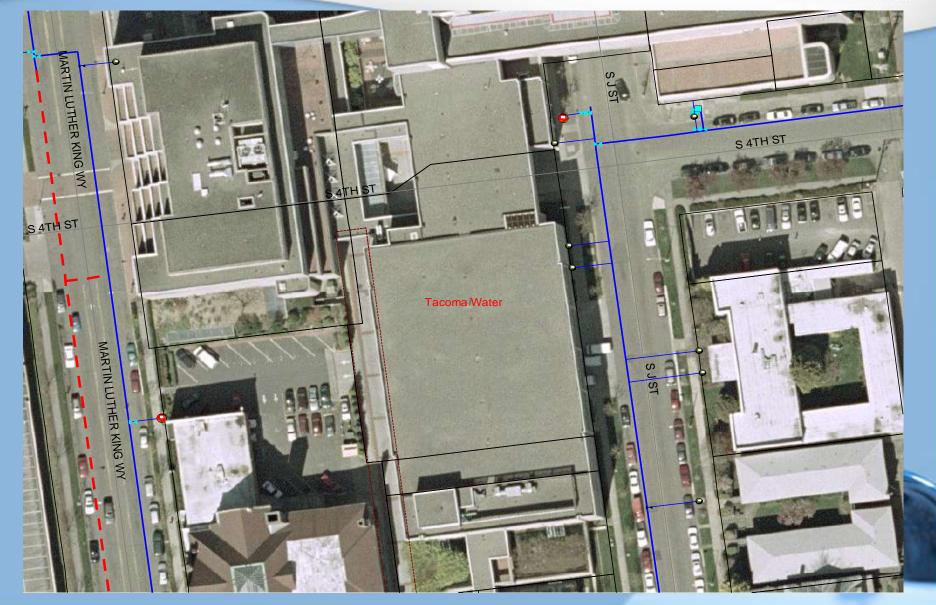
Army Reserve Center Pier

Past Survey Experiences



Tacoma Hospital





HOSPITAL CONTAMINATION EVENT



IDENTIFYING THE SOURCE

WORK HAD BEEN PERFORMED ON THE HVAC SYSTEM FOR THE NEW FLOORS BEING ADDED TO THE AFFECTED WING

ATTEMPTS MADE TO RECALL THE MECHANICAL CONTRACTOR

REVIEWED THE PLUMBING PLANS FOR THE EXISTING FLOORS OF THE HOSPITAL

HOSPITAL CONTAMINATION EVENT

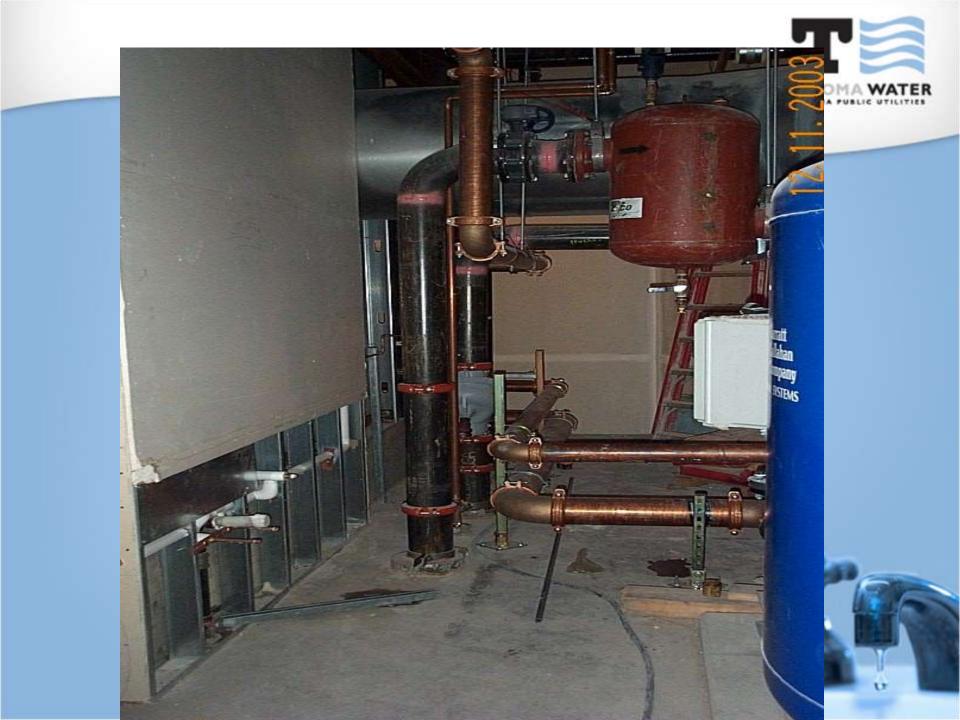


IDENTIFYING THE SOURCE

MECHANICAL CONTRACTOR FINALLY ARRIVES AT HOSPITAL

CONTRACTOR CONFIRMS THAT NEW PORTION OF HVAC SYSTEM WAS FILLED AND VENTED FOR CLEANING, BUT ASSURES ME THAT THERE IS NO CONNECTION WITH THE POTABLE WATER SYSTEM

INSPECTION OF HVAC FILL POINT REVEALS A PORTABLE HOSE CONNECTED BETWEEN AN EXPANSION TANK AND A HOSE BIB



HOSPITAL CONTAMINATION EVENT



KEY POINTS

CONTRACTOR CONVINCED THAT AN AVB WOULD PREVENT BACKFLOW

THERE WAS A HOSE BIB INSTALLED ON A NON-POTABLE WATER LINE AFTER AN RPBA SPECIFICALLY FOR THIS USE. APPROXIMATELY 10 FEET AWAY FROM THE TANK

HOSPITAL STAFF RESPONDED QUICKLY TO SECURE WATER USE IN AFFECTED AREA AND TO RESTORE WATER QUALITY





MARCH 20, 2014

During a planned maintenance shutdown oil was found at the water meter connection while establishing a highline.







Arrived at scene conducted inspection of service connection and premises. Two businesses sharing a common water service

Found 3 BFP's in 1st customer location. One appeared to be for service protection, others for boiler and hydraulic lift

Further inspection showed a branch line ahead of RPBA's serving hydraulic lift and oil cooler.



None of these backflow assemblies were known to Tacoma Water

This facility had not been inspected by Tacoma Water

Directed water meter to be physically removed from the system. Wiped inside of meter and pipe on city side of meter to check for oil residue – none found.



Had Tacoma Water portable RPBA delivered to site and restored water service to facility via highline through RPBA. RBPA was tested upon installation

Facility still without fire service

NW Detention Facility also without fire and domestic water service – main depressurized

Concerns with restoration of main due to contamination possibility



Spent next two days inspecting affected property for cross-connection issues

Identified several cross-connections

Old building with complicated piping runs

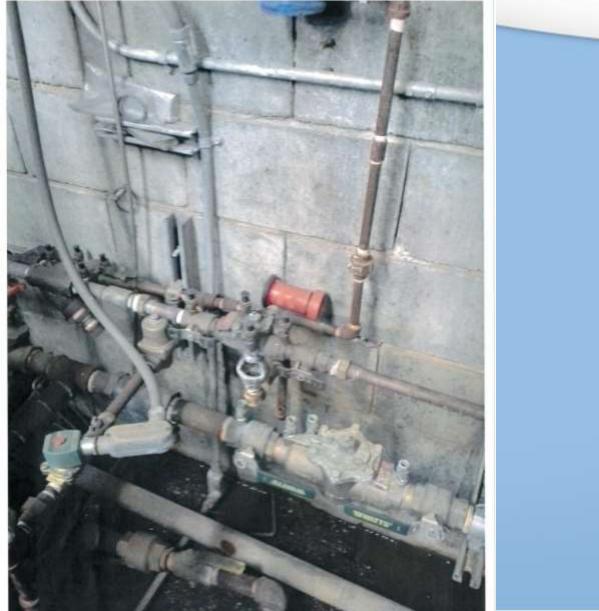
Owner was very cooperative and willing to address all issues

Several RPBA's were installed and/or replaced



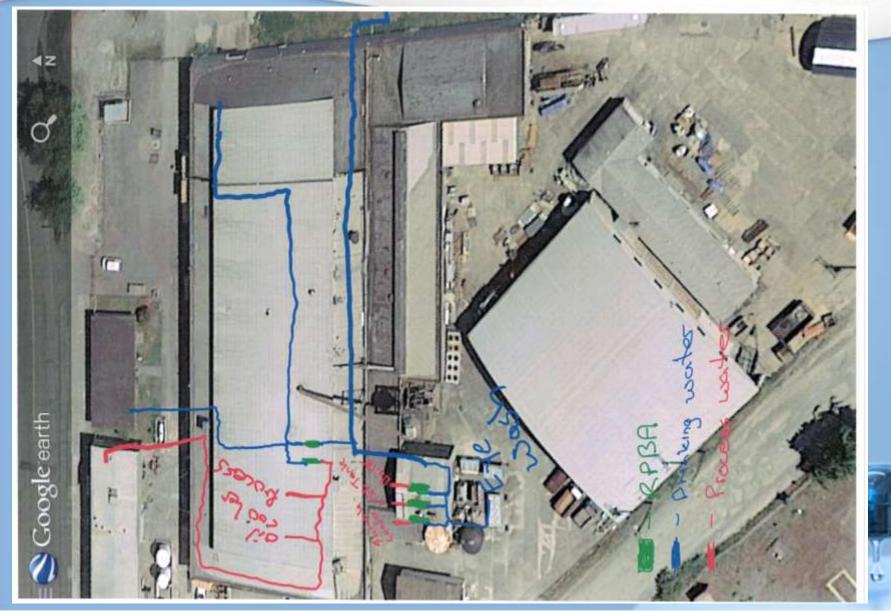




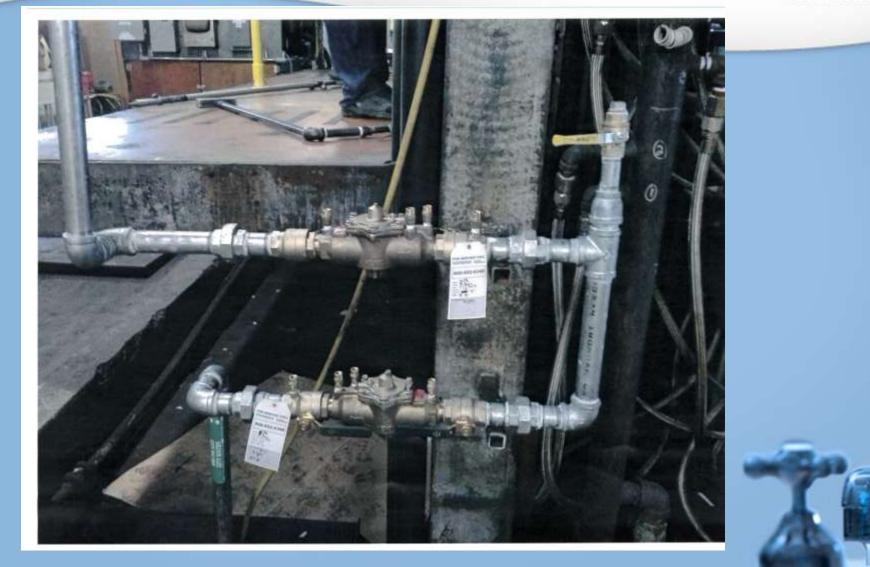














THE PAPERWORK



Error Connection Control Prop BACKFLOW INCIDENT REPORT FORM

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CONCLUSION



SURVEYS ARE CRITICAL TO PROTECTING YOUR WATER SYSTEM, YOUR CUSTOMERS AND PUBLIC HEALTH

THINGS MAY NOT BE AS THEY SEEM

COOPERATION BETWEEN ALL PARTIES INVOLVED IS ESSENTIAL



QUESTIONS?



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