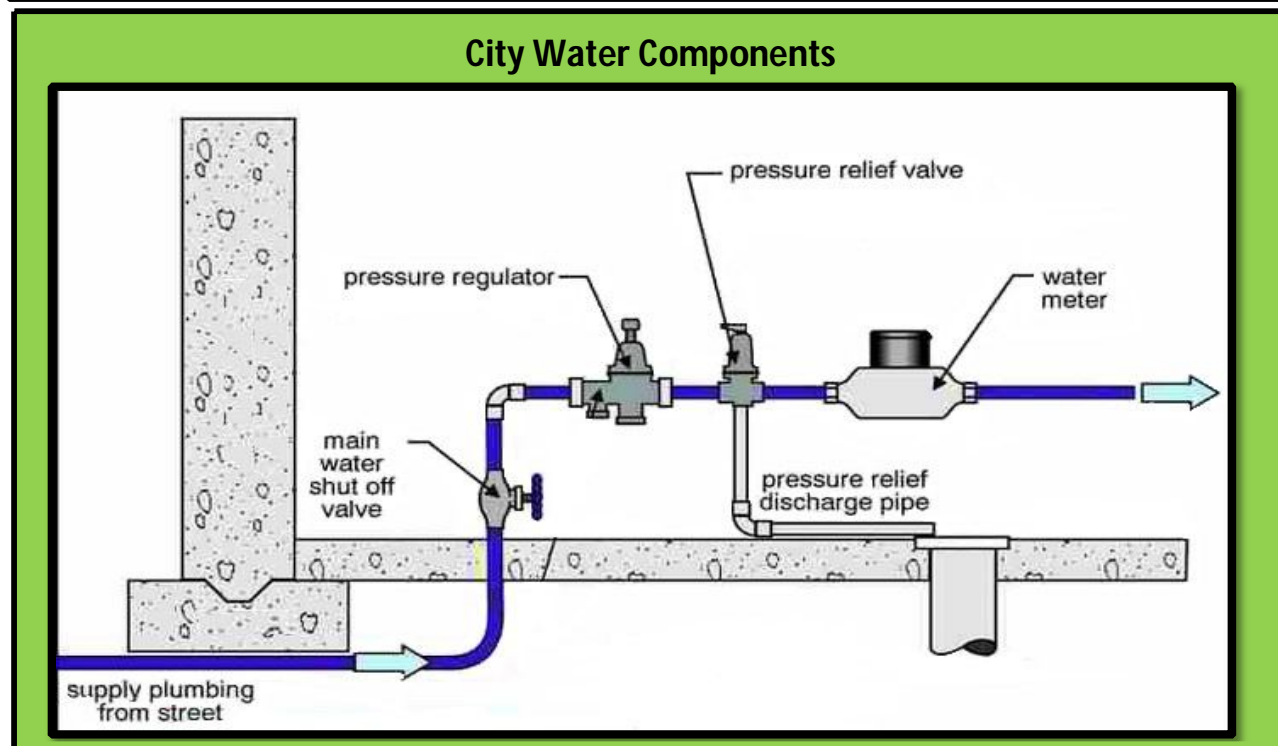
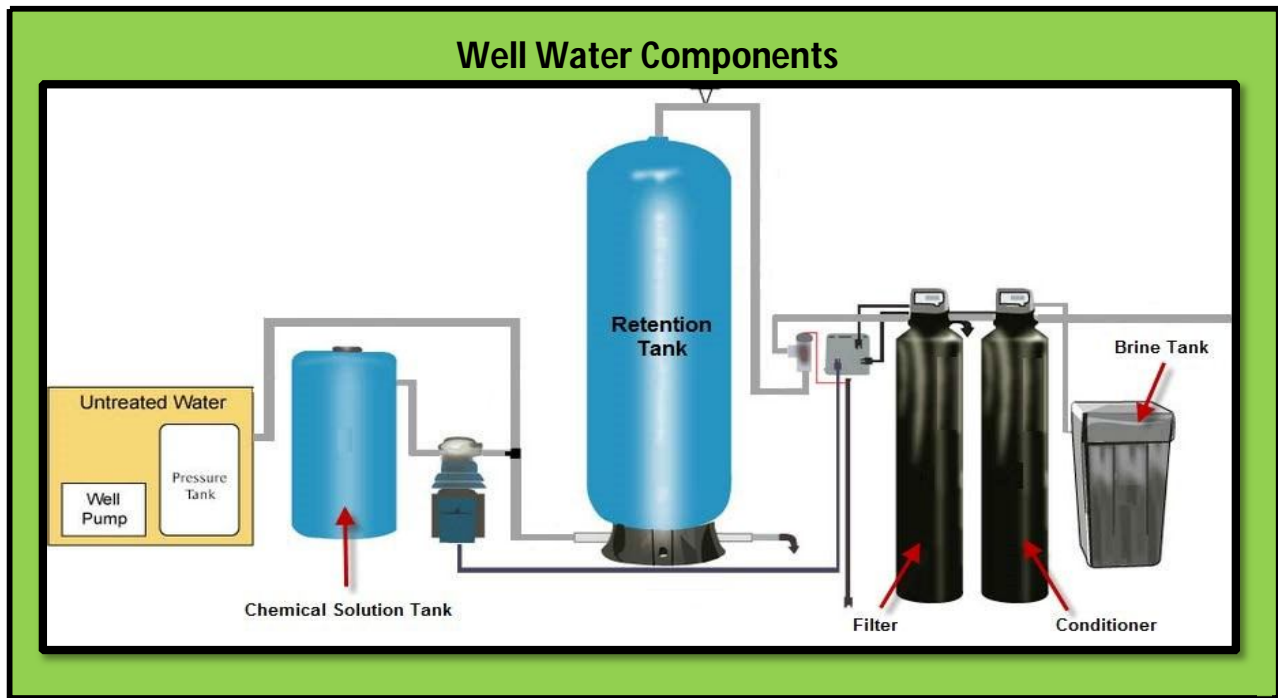


Plumbing Identification and Damage Assessment Guide

*Please note that not all systems will be represented exactly by these diagrams and photos. As a vendor, it is required that you familiar yourself with all types of existing systems to assure you and your company maintains vital and accurate information.

Water System Identification

- ❖ To properly inspect the plumbing system, determine if the property has city water or well water. The below photos will assist you in determining what kind of water system the property has.



Plumbing Component Identification

- ❖ Plumbing components are items within the property that either provide or store water into the home or drain water from the home. The items that supply water to the home are kitchen and bathroom sinks, toilets, bathtubs, showers, interior and exterior faucets, hot water heater, water meter, and shutoff valves.
- ❖ Items that drain water from the home are drainage pipes and drainage traps.

Exterior Water Meter



Interior Water Meter



Exterior Water Faucet



Interior Water Faucet



Plumbing Component Identification Continued...

Water Meter Shut Off Valve



Toilet Shut Off Valve



Kitchen Faucet



Bathroom Faucet



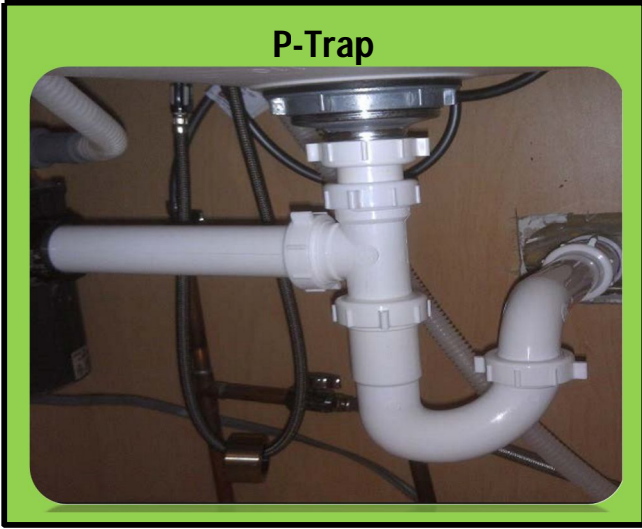
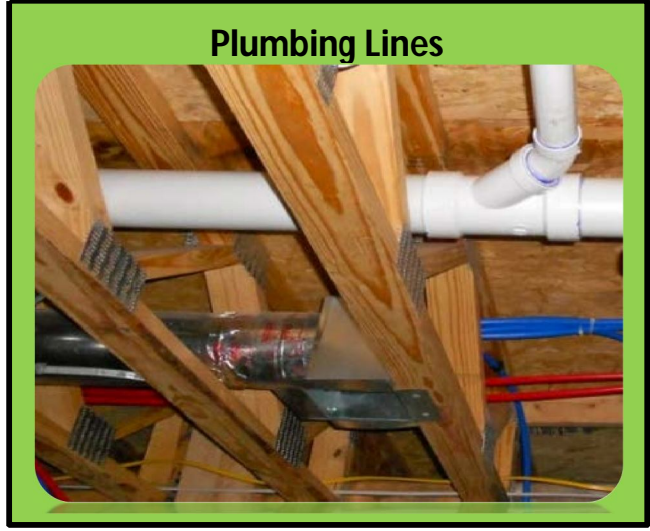
Shower and Bathtub



Toilet

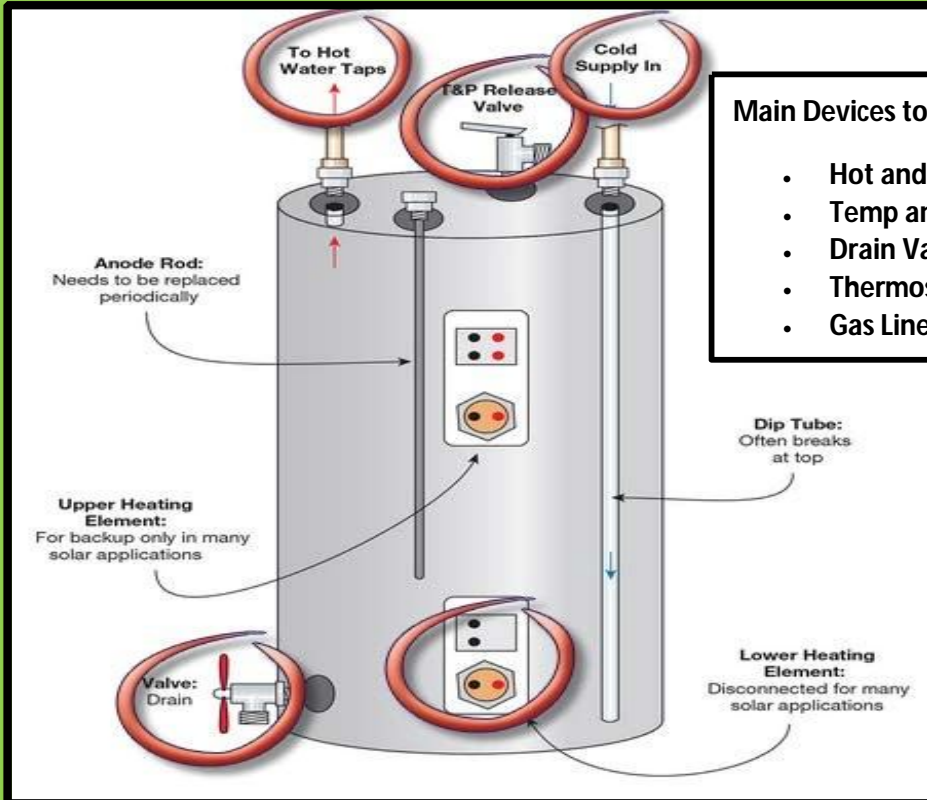


Plumbing Component Identification Continued...



Plumbing Component Identification Continued...

Conventional Water Heater



Main Devices to Document:

- Hot and Cold Water Supply Lines
- Temp and Pressure Relief Valve
- Drain Valve
- Thermostat
- Gas Line Entry Point

Anode Rod:
Needs to be replaced periodically

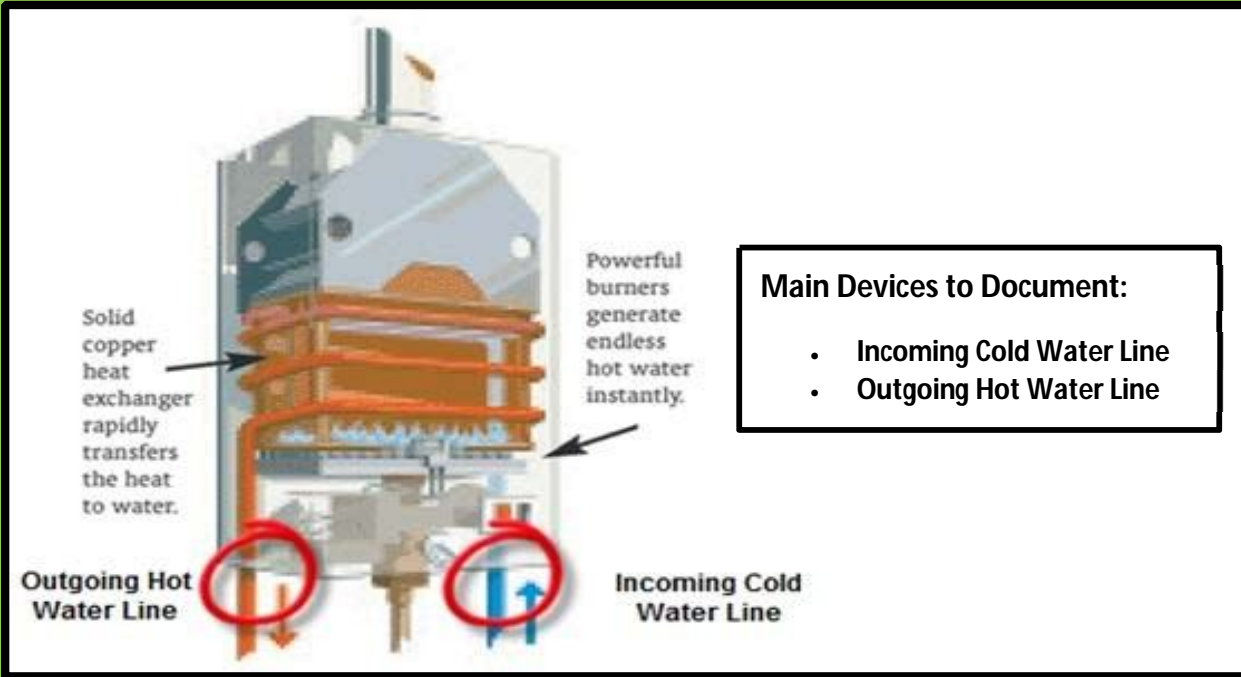
Upper Heating Element:
For backup only in many solar applications

Dip Tube:
Often breaks at top

Lower Heating Element:
Disconnected for many solar applications

Valve:
Drain

Tankless Water Heater



Main Devices to Document:

- Incoming Cold Water Line
- Outgoing Hot Water Line

Solid copper heat exchanger rapidly transfers the heat to water.

Powerful burners generate endless hot water instantly.

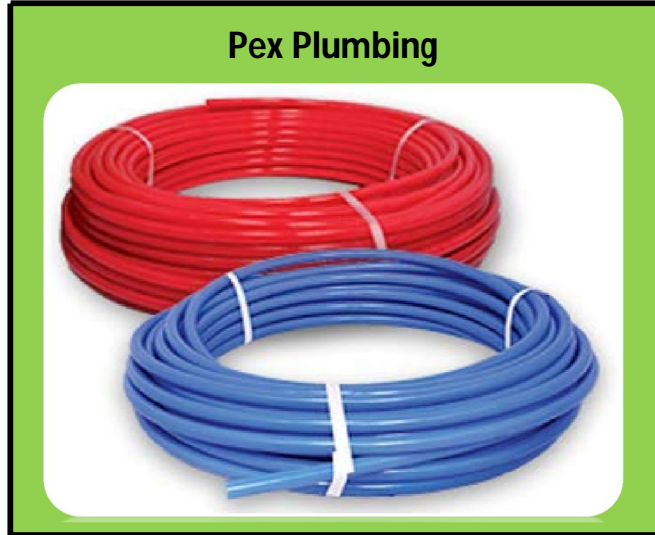
Outgoing Hot Water Line

Incoming Cold Water Line

Plumbing Assessment

❖ Determine the Type of Plumbing in the Property.

- There are numerous types of plumbing that can be present inside of a property. These can include copper, PVC, cast iron, Pex, or a combination of any of these types. It is important to identify what type of material is used in order to bid correctly on a repair or replacement.



❖ Inspect All Exposed Water Lines in Basement.

- In many homes, plumbing is visible and runs along the ceiling. To accompany the visual inspection, you should always run your hand along all visible plumbing to feel for any breaks or cuts in the plumbing. This will assist in identifying areas of damage such as theft, freeze, or deterioration.



Plumbing Assessment Continued...

❖ Determine if Drainage Pipes are Intact or if there are Signs of Damage.

- Common areas of damages that go unnoticed are drainage pipes and P-traps and are generally installed under all sinks in the bathrooms and kitchen. Any damage to P-traps must be bid or repaired accordingly as the resulting water leaks could cause further damage to the property.

Joints Appear Intact



Joints Appear Damaged



❖ Test Shut off Valves to Determine if they Appear Functional.

- Water shut off valves can be located throughout the property and serve to act as a shutoff for both the main water line and secondary lines. These can come in several different variations; however, all will have a knob or lever that should be functional to stop water flow when turned.

Valve Appears Intact



Valve Appears Damaged



Plumbing Assessment Continued...

❖ Check Supply Lines on all Water Fixtures.

- These lines will supply the incoming water from the main water lines to fixtures such as toilets, faucets, dishwashers, or refrigerator icemakers. These should be checked for the condition of the line to assure that no water is leaving through either the line itself or the connections on either end.

Line Appears Intact



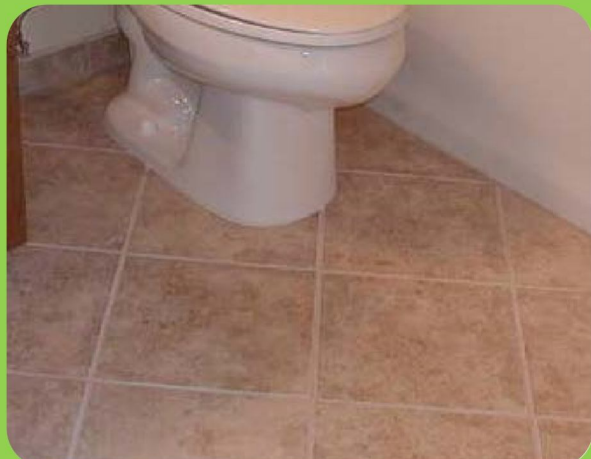
Line Appears Damaged



❖ Check for Warped Flooring around Refrigerators, Tubs, Toilets, Sinks, etc.

- Flooring condition can be an indicator of previous or existing water damage to a property. Areas such as bathroom floors surrounding a tub, toilet, sink, and areas surrounding utility areas where washing machines, hot water tanks, or furnaces are present can signal a leak that will need to be addressed.

Floor Appears Undamaged



Floor Appears Water Damaged



Plumbing Assessment Continued...

❖ Look for Signs of Water Damage on Walls and Ceilings Above and Below Bathrooms

- Similar to floors, ceilings should be an indicator of water damage as well; however often times it may be hidden as the ceiling or wall may be covering the location of the leak. In these instances, you must notate the damage and provide as much information regarding the location of the leak, but will never cut into a wall and remove unless we confirm where the leak is and the use of an allowable is approved.

Ceiling is Wet/Stained from Damage



Ceiling and Walls are Dry



❖ Once Identified, Plumbing Damages are to be marked with Green Painter's Tape

- All breaks in plumbing should be documented and numbered with painter's tape. This will assist in easy identification upon return or subsequent repairs, and help in providing accurate bidding to our Client.

Damaged Copper Properly Marked



Damaged Copper Properly Marked



Identifying Plumbing Damage Types

❖ Freeze Damage

- The plumbing system in a property is susceptible to freeze damage when the plumbing components in the property contains water and falls below freezing temperatures. The frozen water will expand and cause breaks in the components, which can then cause subsequent damage throughout the entire house. This can occur when the property has not been properly winterized, or can happen when the winterization compromised or not completed correctly. The below pictures are examples of common freeze damaged items throughout a property.

Freeze: Fissure in Copper Line



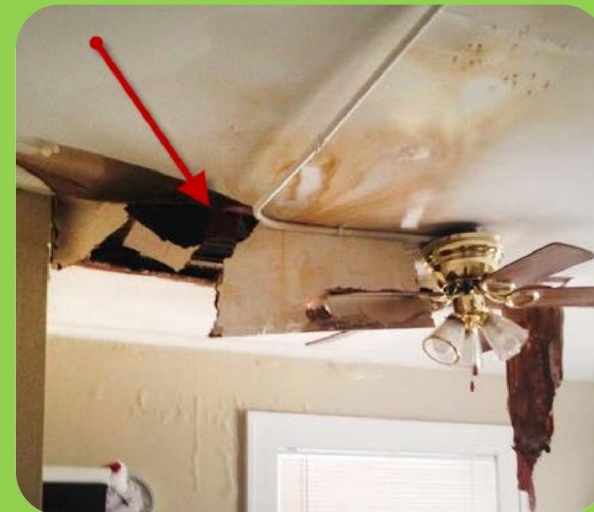
Freeze: Cracked Toilet Tank



Freeze: Section of Radiator Broken



Freeze: Subsequent Damage



Identifying Plumbing Damage Types Continued...

❖ Vandalism Damage

- Any deliberate or mischievous damage or destruction caused to the plumbing system is considered vandalism. This is often associated with deliberate theft of plumbing components within a property. Resulting damage from vandalism can cause subsequent damage throughout the property as well.

Vandalism: Copper taken from ac unit



Vandalism: Walls Opened for Copper



Vandalism damage can often be accompanied with signs of forced entry into the dwelling.

Vandalism: Pipe Insulation on Ground



Vandalism: Pinch Cut to Remove Copper



Identifying Plumbing Damage Types Continued...

❖ Mortgage Neglect

- Any damage to the property that occurs naturally or inevitably is a result of normal wear, tear, and deterioration. This type of damage will occur without a single act of impairment such as freeze or vandalism damage, and often times will occur regardless of care and maintenance. Below are examples of deteriorated plumbing components that would need to be reported.

Corrosion: Damage to Copper Line



Corrosion: Damage to Heating Element



Corrosion: Supply Line Damaged

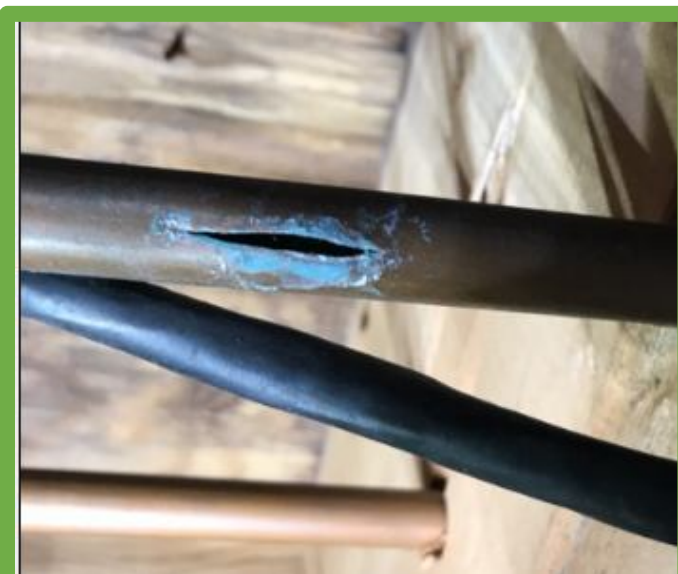


Corrosion: P-Trap Damaged



Reporting Damages Correctly

- ❖ Now that we have reviewed the above damage types, it is important to ensure these damages are reported correctly in vendor web.
 - Non-visible breaks should not be reported as freeze damage if there are no photos to support the damage.
 - We must be careful not to report vandalism or mortgagor neglect as freeze damage.
- ❖ Below are examples of when the damaged plumbing should be reported as freeze damage.



Reporting Damages Correctly Continued...

- ❖ Below are examples of when the damaged plumbing should not be reported as freeze damage.
 - Missing plumbing fixtures should be reported as vandalism.
 - Corrosion or oxidation should be reported as mortgagor neglect.

