

## Inspection Report For:

Alpine Mutual Water Co

Aspendell CA



50 KG Concrete Below-Grade Tank

Date Completed: 06-30-2023

Diver: L. Peirce

Dive Controller: J. Zollman

Tender: M. Langford

## Scope of Work

Our team completed sediment removal using underwater vacuum equipment. Sediment averaging 1/16" of silt was removed from the tank floor. When the cleaning process was finished, a full visual inspection was performed of the tank interior and all interior fixtures. The team also performed a full visual inspection of the tank exterior and all attached fixtures. The details of the inspection findings follow.

## Summary of the Inspection

### Exterior Inspection

1. The overflow structure utilizes an end cap discharge opening, which was covered by an intact #24 mesh screen. The opening was located 3 inches above ground with no obstructions to water flow. The overflow overall condition was good. The overflow consists of a PVC pipe.
2. The 29 inch diameter round roof access hatch was in excellent overall condition. The hatch was locked and had an intact gasket present. There were no defects found in the coating or corrosion.
3. The vent had a #24 mesh screen covering that was intact. Less than 0.01% uniform surface corrosion and concentrated cell corrosion were detected on the vent, which was in good overall condition.

### Interior Inspection

1. The interior roof is concrete and was in good overall condition, with only minor popouts noted. There were no signs of movement, irregularities, or deficiencies.
2. The interior ladder is located in the northwest corner. It exhibited good overall condition, with minor sagging and moderate sediment staining on the coating. Less than 0.01% concentrated cell corrosion was detected.
3. The interior overflow is located in the northeast corner and was in good overall condition. No coating or corrosion deficiencies were found.
4. The interior walls are concrete and were in good overall condition. Minor hairline cracking, popouts, voids, and exposed aggregate were present on the concrete walls, along with moderate organic growth.
5. The interior concrete floor was in good condition, with no deficiencies. Moderate micro and macro blistering were noted.
6. The common inlet/outlet is located in the northwest corner and was in good overall condition. The coating showed minor sediment staining. No corrosion deficiencies were found.

## Recommendations

1. Continue to schedule time to clean and inspect Every 3-5 years per AWWA recommendations.
2. Recommend further evaluation recommended to be performed by structural engineer to investigate encroachment of vegetation on concrete joints.



## Access

Did the team go portable to access the tank?	Yes The road is too narrow to access with trailer
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## Security

Is the tank in a secured, gated area?	No
Is the tank equipped with a vandal guard on the access ladder(s)?	N/A
Are all of the access hatches locked?	Yes
Are all of the vents/discharge openings properly covered?	Yes
Does the tank exterior show any signs of trespass?	No
Is the area surrounding the tank well lit?	No
Are there any additional security features?	No

## Overflow Structure Condition

### Overflow Photos



Discharge Opening Type	End Cap
Is there a screen covering the discharge opening?	Yes - #24 Mesh
How high above the ground is the discharge opening?	3"
Are there any obstructions to water flow?	No
Welds/Seams Condition	Good

### Overflow Overall Condition

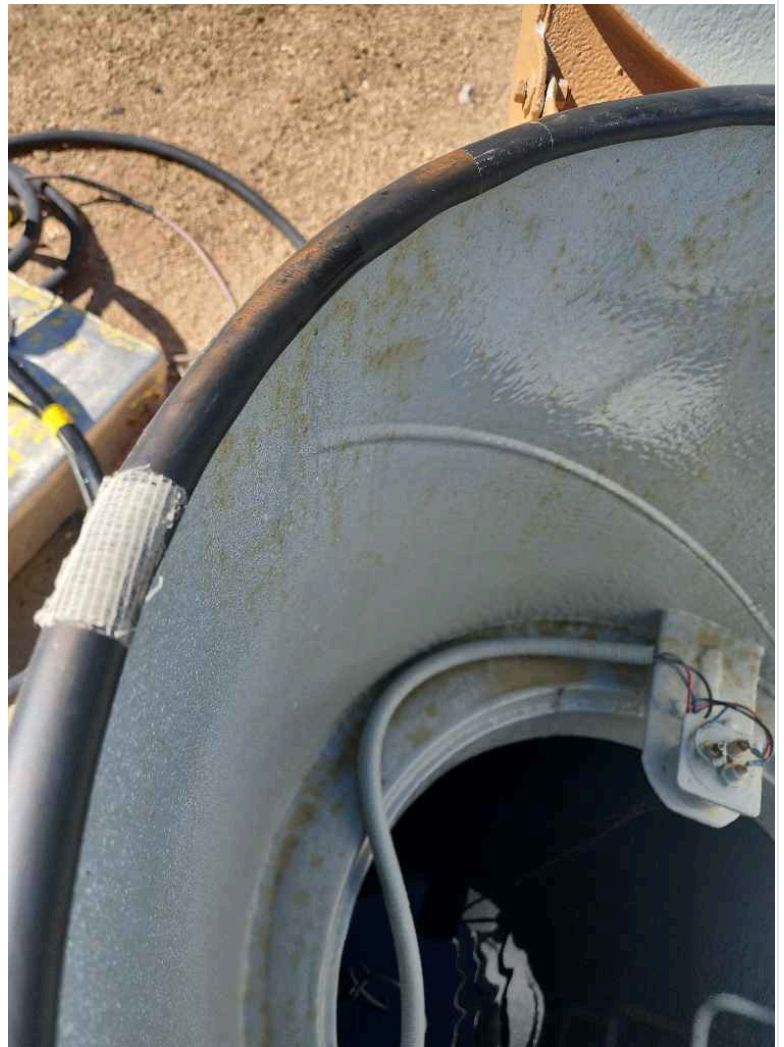
What is the overall condition of the Overflow?	Good
Overflow Summary	Overflow is a pvc pipe

### Access Hatch Condition

Access Hatch Photos







Access Hatch Shape	Round
Access Hatch Size	29"
Riser Height	24"
Lid Height	1.5"
Was the hatch locked?	Yes
Hinge Condition	Good
Is a gasket present?	Yes
Is the gasket intact?	Yes
Is there any dirt or debris below the hatch?	No
Is the hatch coated?	Yes

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 Centennial, CO 80015  
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 Fax: 303.400.4215

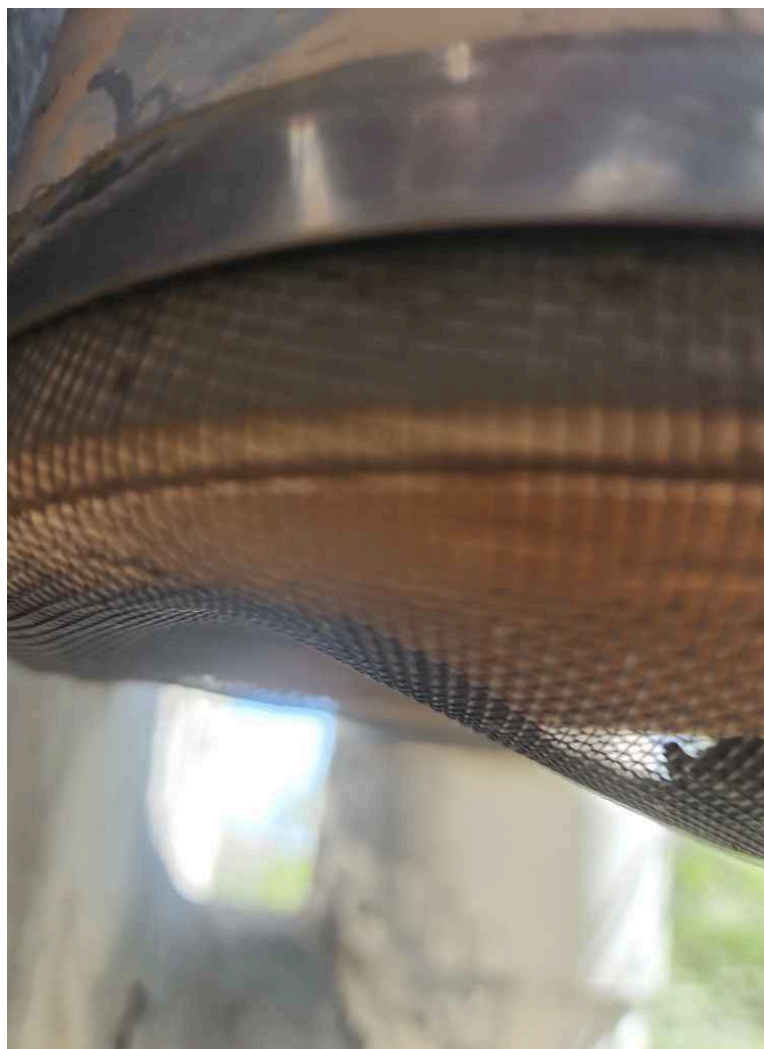
Welds/Seams Condition	Good
<b>Hatch Coating Condition</b>	
Oxidation?	None
Delamination?	None
Staining	None
Blistering?	None
Chalking?	None
Cracking in the Coating?	None
Pinholes?	None
Sags/Runs?	None
<b>Hatch Corrosion Discrepancies</b>	
Uniform Surface Corrosion	None
Concentrated Cell Corrosion	None
Rust Noduling	None
Pitting Depth	None
Galvanic Corrosion	None
De-Alloying	None
Intergranular Corrosion	None
Stress Corrosion	None
Erosion Corrosion	None
<b>Access Hatch Overall</b>	
Overall Condition	Excellent



## Vent Condition

Vent Photos





Is there a vent covering the screen?	Yes - #24 mesh
Vent Screen Condition	Good
Are all openings sealed/covered?	Yes
Cap Condition	Good
Is the vent coated?	No
<b>Vent Corrosion Discrepancies</b>	
Uniform Surface Corrosion	Grade 10 – less than 0.01%
Concentrated Cell Corrosion	Grade 10 – less than 0.01%
Rust Noduling	None
Pitting Depth	None
Galvanic Corrosion	None

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De-Alloying	None
Intergranular Corrosion	None
Stress Corrosion	None
Erosion Corrosion	None
<b>Vent Overall</b>	
Vent Overall Condition	Good



## Interior Roof Condition

Roof Photo	
Is the roof concrete or steel?	Concrete
Are there any low spots?	No
Are there any holes in the roof/can daylight be seen at the roof/wall seam?	No
Are there any signs of movement?	No
Are there any irregularities or structural deficiencies?	No
Seams/Welds	Good
<b>Interior Roof Concrete Condition</b>	
Hairline Cracking	None



Settling Cracking	None
Pressure Cracking	None
Checking	None
Popouts	Minor
Spalling	None
Voids	None
Exposed Reinforcement	None
Exposed Aggregate	None
Organic Growth	None
<b>Interior Roof Overall</b>	
What is the overall condition of the interior roof?	Good

### Interior Ladder Condition

Is there an interior ladder?	Yes
Access Ladder Photos	



Interior Ladder Location	Northwest
Stand-Offs Condition	Good
Seams/Welds Condition	Good
<b>Access Ladder Coating Condition</b>	
Coating Condition	Good
Oxidation?	None
Delamination?	None
Staining?	Moderate sediment
Blistering?	None
Chalking?	None
Cracking in the Coating?	None



Pinholes?	None
Sags/Runs?	Minor
<b>Access Ladder Corrosion Discrepancies</b>	
Uniform Surface Corrosion	None
Concentrated Cell Corrosion	Grade 10 – less than 0.01%
Rust Noduling	None
Pitting Depth	None
Galvanic Corrosion	None
De-Alloying	None
Intergranular Corrosion	None
Stress Corrosion	None
Erosion Corrosion	None
<b>Access Ladder Overall</b>	
Interior Ladder Overall Condition	Good

### Interior Overflow Condition

<p>Overflow Photo</p>	
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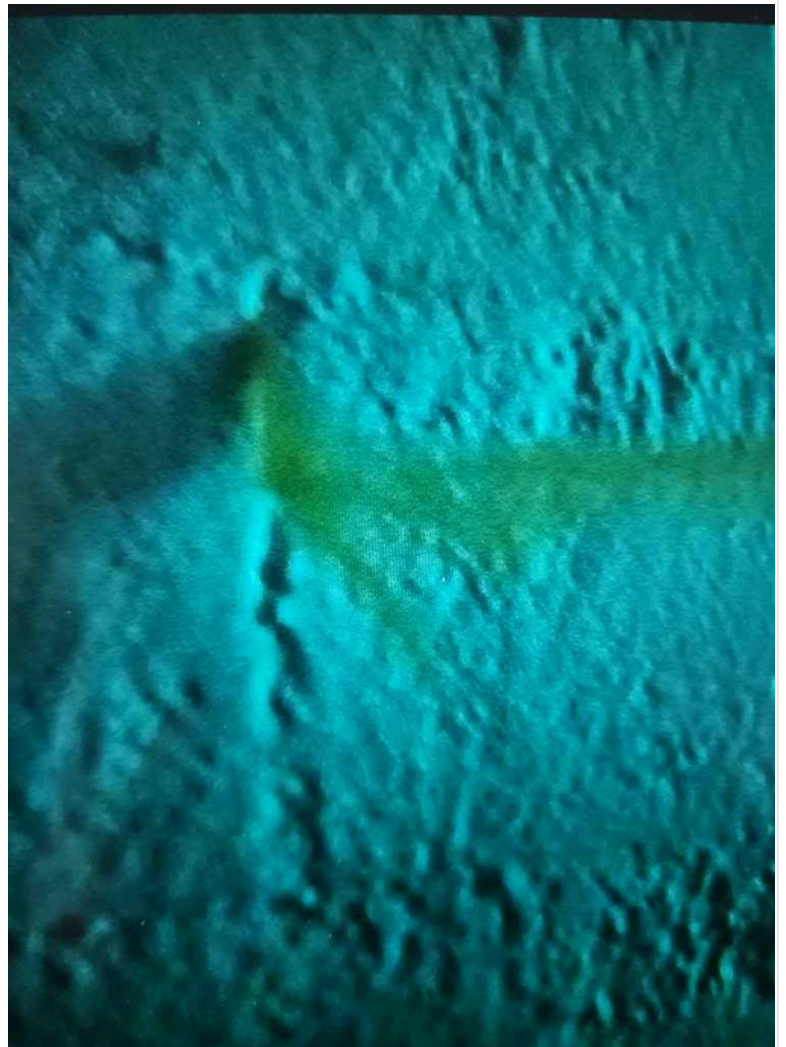
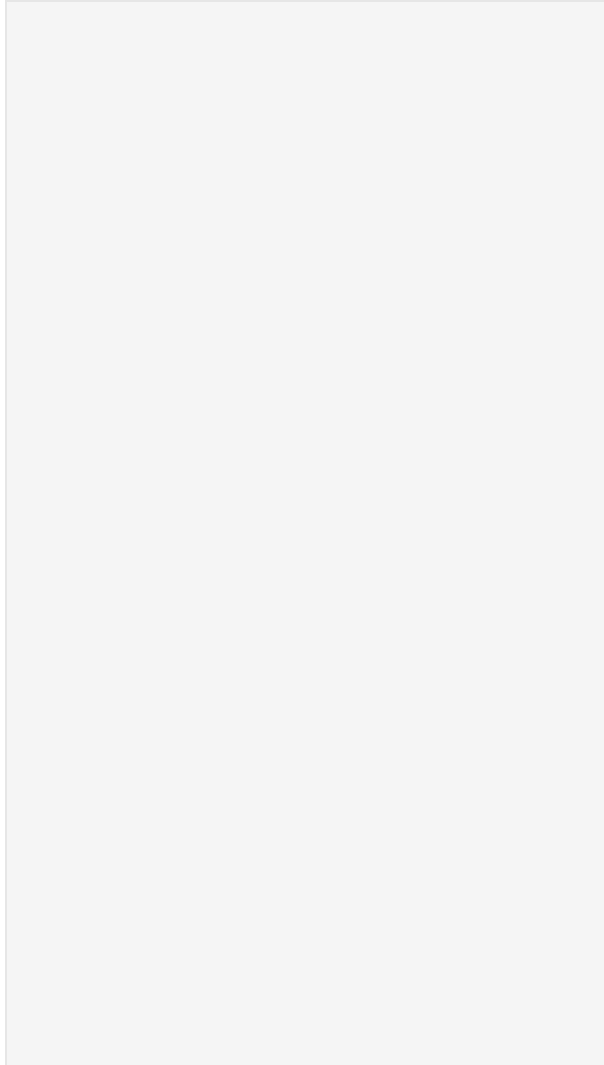
Welds/Seams Condition	Good
Overflow Location	Northeast Corner
<b>Interior Overflow Coating Condition</b>	
Coating Condition	Good
Oxidation?	None
Delamination?	None
Staining?	None
Blistering?	None
Chalking?	None
Cracking in the Coating?	None
Pinholes?	None
Sags/Runs?	None
<b>Interior Overflow Corrosion Discrepancies</b>	
Uniform Surface Corrosion	None
Concentrated Cell Corrosion	None
Rust Noduling	None
Pitting Depth	None
Galvanic Corrosion	None
De-Alloying	None
Intergranular Corrosion	None
Stress Corrosion	None
Erosion Corrosion	None
<b>Interior Overflow Overall Condition</b>	
What is the overall condition of the interior overflow?	Good



## Interior Wall Condition

Wall Photos





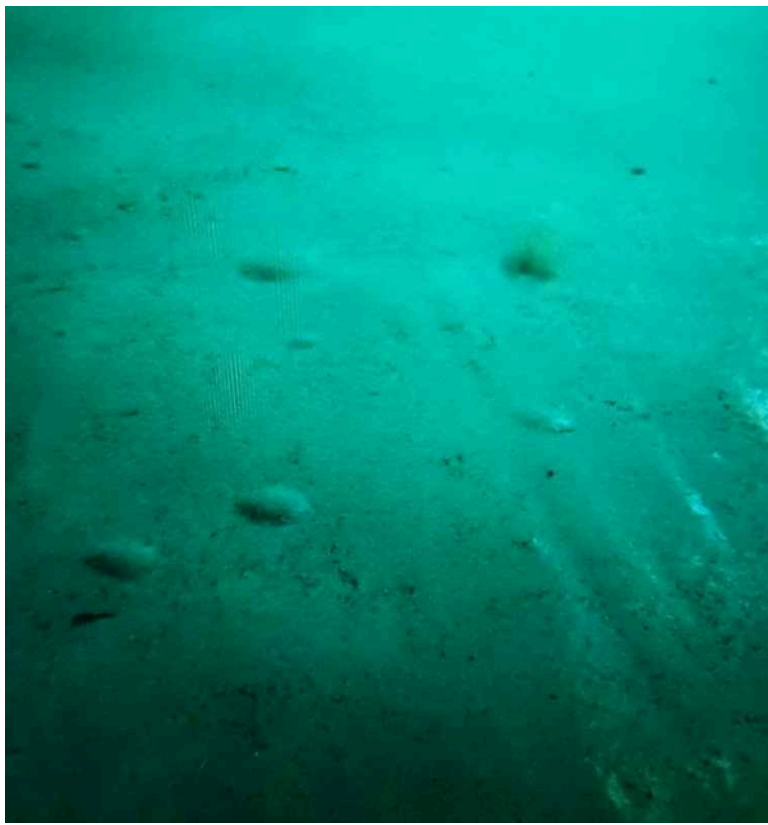


Is the wall concrete or steel?	Concrete
Are there any signs of movement?	No
Are there any irregularities or structural deficiencies?	No
Are there any signs of leaking?	No
Is Biofilm present on the walls?	No
Seams/Welds	Good
<b>Interior Wall Concrete Condition</b>	
Hairline Cracking	Minor
Settling Cracking	None
Pressure Cracking	None



Checking	None
Popouts	Minor
Spalling	None
Voids	Minor
Exposed Reinforcement	None
Exposed Aggregate	Minor
<b>Interior Wall Overall Condition</b>	
What is the overall condition of the interior wall?	Good
Interior Wall Summary	Moderate organic growth

### Interior Floor Condition

Floor Photo	
Is the floor concrete or steel?	Concrete
Are there any signs of movement?	No



Are there any irregularities or structural deficiencies?	No
Are there any signs of leaking?	No
Seams/Welds	Good
<b>Interior Floor Concrete Condition</b>	
Hairline Cracking	None
Settling Cracking	None
Pressure Cracking	None
Checking	None
Popouts	None
Spalling	None
Voids	None
Exposed Reinforcement	None
Exposed Aggregate	None
<b>Interior Floor Overall Condition</b>	
What is the overall condition of the tank floor?	Good
Tank Floor Summary	Moderate Micro and macro blistering

### Interior Inlet & Outlet Condition

Are the inlet and outlet separate or common?	Common Inlet/Outlet
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Common Inlet/Outlet Photo



Common Inlet/Outlet Location	west corner
Common Inlet/Outlet Seams/Welds Condition	Good
<b>Common Inlet/Outlet Coating Condition</b>	
Coating Condition	Good
Oxidation?	None
Delamination?	None
Staining?	Minor sediment
Blistering?	None
Chalking?	None
Cracking in the Coating?	None

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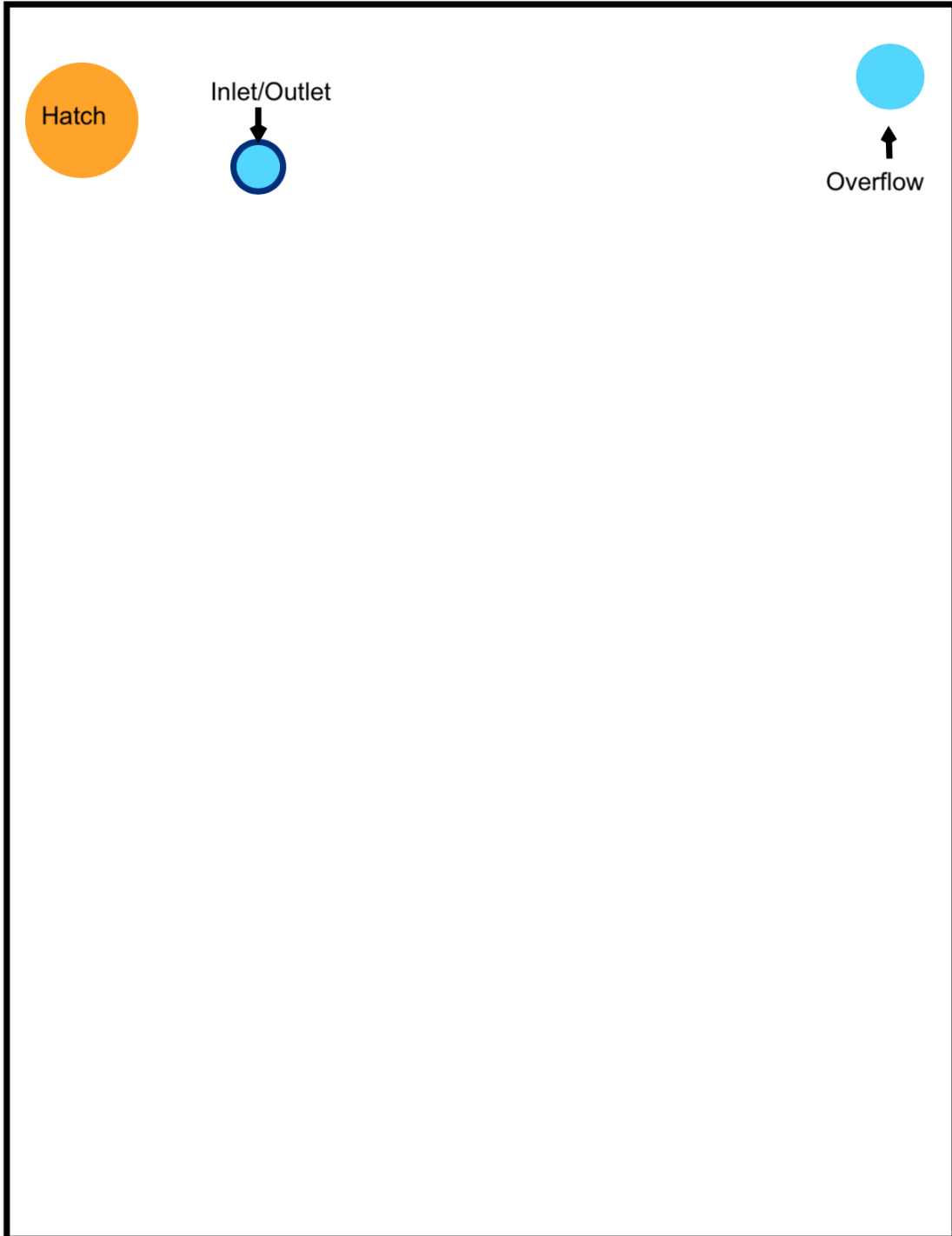
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Pinholes?	None
Sags/Runs?	None
<b>Common Inlet/Outlet Corrosion Discrepancies</b>	
Uniform Surface Corrosion	None
Concentrated Cell Corrosion	None
Rust Noduling	None
Pitting Depth	None
Galvanic Corrosion	None
De-Alloying	None
Intergranular Corrosion	None
Stress Corrosion	None
Erosion Corrosion	None
<b>Common Inlet/Outlet Overall Condition</b>	
What is the overall condition of the common inlet/outlet?	Good

## Tank Map







## Tank Condition

Does the tank appear to be structurally sound?	Yes
Are there any unprotected openings in the tank (breaches, leaks, daylight, etc.)?	Yes Holes in the south wall that allow organic material to get in
When viewed from inside the tank, is there visible daylight around the hatches, vents, joints or other fixtures?	No

## Tank Cleaning

Was the tank cleaned?	Yes
Sediment Depth Before Cleaning	1/16"
Sediment Type	Silt
List any objects found inside the tank during cleaning that may have introduced contamination:	Organic material

## Recommendations

Standard Clean and Inspect - How often?	Every 3-5 years
Does the tank need any screens, hatch gaskets, or locks?	None
Are epoxy repairs needed?	No
Does the tank need a blast and recoat?	No
Please list/describe any additional recommendations. If none, type "n/a"	Recommend further evaluation recommended to be performed by structural engineer to investigate encroachment of vegetation on concrete joints.